

AN IMPROBABLE VENTURE

A HISTORY OF THE
UNIVERSITY OF CALIFORNIA, SAN DIEGO

NANCY SCOTT ANDERSON

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FOREWORD

IN HIS 1993 COMMENCEMENT ADDRESS, Chancellor Richard C. Atkinson referred to the establishment and development of the University of California at San Diego as "an improbable venture." He said it with real pride in the efforts of the individuals who had, in a little over three decades, created a world-class university. He said it also with the recognition that UCSD had come of age. Any institution that has come as far and as fast as UCSD runs the risk of spluttering out: most accounts of rapid growth are roman-candle histories. But, by any accounting, UCSD's history is, in all of its complexities, the history of a remarkable success.

The idea of recording this story arose about six years ago and was initially a project of Roy Ritchie, a professor of History then serving as associate chancellor. The position of associate chancellor at UCSD is unique in the University of California system. When Richard C. Atkinson became chancellor in 1980, he immediately saw the value of having in his office a senior faculty member whose career path did not lie in the direction of administration. While not speaking for the faculty, the associate chancellor is there to make sure that the faculty perspective is represented in every decision. He or she advises the chancellor on the entire range of university matters, stands in for the chancellor on occasion, and is charged with identifying new projects and opportunities.

One such project is the present history. Roy Ritchie was the second associate chancellor. He had come to the campus as a faculty member in 1969, in time to know most of the individuals who had played key roles in the founding and development of the campus. It was clear to him that if such a

history were to be written, it should be started immediately. Many of those from the first generation of the University were getting on in age; some had retired, and several had died. Since much of the history would depend on interviews with the participants, time was of the essence.

As is academic wont, a committee was established. Ritchie served as chair. The other members included Stanley Chodorow, associate vice-chancellor for academic planning and dean of arts and humanities; Linda Claassen, director of the University Library's Special Collections; John Galbraith, second chancellor of UCSD; Patrick Ledden, provost of Muir College and the first associate chancellor; and William Thompson, professor of Physics.

The committee first determined that this should not be an "official history." Such would have required more time in archival research and official reviews than was realistic at this stage in UCSD's development. Nor, they agreed, should the book be intended for public relations purposes. Rather, the committee wanted something that gave a sense of the key elements in the institution's history without claiming either to be completely comprehensive or authorized by the university. It was decided also that a writer who was not affiliated with the university might produce a more objective account. The committee set about finding an author who would have both the skills and the independence to bring off the task.

Readers of this book are fortunate that the committee found Nancy Scott Anderson, author of *The Generals: Ulysses S. Grant and Robert E. Lee* (Knopf, 1988; Vintage, 1989). Her writing combines an attention to historical detail, an eye for the revelatory vignette, a grasp of the whole, and a felicitous prose style. In addition, Ms Anderson had worked as a journalist in La Jolla for many years and knew the area and the campus. In December, 1988, a contract was signed and the project began.

In 1990, Donald Tuzin, professor of Anthropology, succeeded Ritchie as associate chancellor and supervised the project as the manuscript was coming into being. As sections were completed, several individuals who had played key roles in the university's development were asked to check the parts relevant to them for accuracy and completeness, although not for interpretation. Thanks are due to all of these individuals for their good judgment and critical comments. Aside from Donald Tuzin and myself, the entire manuscript

has been read by the members of the committee; by William McGill, the third chancellor of UCSD; and by Winifred Cox, the director of Public Relations for UCSD. Believing that as serving chancellor he might unduly influence the author, Chancellor Atkinson chose not to read the manuscript prior to publication.

This book is the result of Ms Anderson's work. It is her book and hers alone. I do believe, however, that she has ably captured the wonders, confusions, trials and achievements that have made UCSD what it is today. I have been a faculty member here for many years, but still learned a great deal about my university from this book and enjoyed the discoveries. I hope that other readers will have the same sense of discovery and enjoyment.

Tracy B. Strong
Associate Chancellor
and Professor of Political Science

PREFACE

ABOUT SIX MONTHS AFTER I SIGNED the contract to write this book, I was asked by one of UCSD's early faculty members if the proposed campus history was to be "official."

Being of Irish background and therefore touchy, I sensed patronization and retorted that the project was official in the sense that I was getting paid for it, but was not *official* as I believed he meant it, with evidence being cooked into public relations' pap.

The professor expressed reservations, then inquired, archly, if I were aware that there was a "dark side" to the university's story. I answered, not knowing how prescient I was, that since any university is a human enterprise, the wonder is that a sizable light side exists.

Years passed. My boxes of research materials multiplied. The numbers of tapes from my interviews with university founders, administrators and faculty members grew.

With few exceptions, each of the founders and current administrators I interviewed impressed me with their fine hearts. Good hearts are more rare in a university than good heads, and it seems to me UCSD has been, and is, unusually lucky in that. Perhaps it has to do with the wildcatting nature of the venture, and the seeking natures of the men and women who staked their professional claims on the campus.

Though it is perhaps an odd element to celebrate in a globally important institution known for its brilliant research, it is because of those hearts that I take with me from this project a sense of relief that our communal future—through the education of the young, the creation of our science and technology,

the analysis of our politics and art—is so fondly and carefully held. The bright, luminous side of this university is very much larger than the dark.

I had much help with the book, but except for free access to the files, none from Chancellor Richard C. Atkinson. Over the years, he frustrated me beyond words by refusing even to look at completed chapters. It was what he wanted. And though this initially kept me off my balance, it allowed me, after I found my own feet, to tell the story that I saw. That story is, like any work of history, partial and even subjective in terms of what I excluded and the ways I handled the information I included.

I have had the benefit of criticism and advice from a number of readers of various versions of the manuscript, including former Chancellor John Galbraith, each of the three associate chancellors who have held office since this project began in 1990—Roy Ritchie, Donald Tuzin and Tracy B. Strong—public information office director Win Cox, and Deborah Day, archivist at Scripps Institution of Oceanography, who was a beneficent and stalwart guide. Other readers—known to me only by handwritten comments on the manuscript—pointed out errors both subtle and glaring. My most careful and literate readers were the university's third chancellor, Bill McGill, and my son Theodore Kielsselbach.

UCSD special collections librarian Lynda Claassen gave me the run of the archives, and dozens of faculty members, administrators, administrative assistants—among them Dottie Keffala, Marian Reale and Geri White—generously provided me with information and guidance. I also had the aid of some excellent research assistants, chief among them, Elliott Posner, but also Cindi Malinick, Barak Kassar, Joyce Wycoff, Pat Schaelchlin, Katherine Pandora and Karen Makkreel. Kathryn Ringrose's oral history interviews were invaluable.

I got direction, support and encouragement from Bill Johnson, an outstanding journalist and writer who died last fall, and from Liz Johnson, Katie Sanford, Fritz Anderson, Cathy Sheel, Gary Burke, and Lillian Weller. My agent, Margaret McBride, was instrumental in the book's very being.

I thank them all.

Nancy Scott Anderson
Lexington, Virginia

INTRODUCTION

THE MODEL AND ITS MECHANISM

THE UNIVERSITY OF CALIFORNIA AT SAN DIEGO is recognized as the best institution of higher education established in the United States since the Second World War. Measured against other universities engaged in high-level research, it ranks among the top few anywhere, outstripping ivy-covered legends and earning the respect of educators who once dismissed it as an upstart. It attracted from its inception an outstanding faculty that in the late eighties included 64 members of the National Academy of Science and eight Nobel laureates. Winners of six National Medals of Science, two Pulitzer Prizes, two Field medals in mathematics and six MacArthur Foundation fellowships have taught at UCSD. The faculty have collectively received more than one hundred Guggenheim fellowships. Given such excellence, it is not surprising that more of its graduates earn Ph.D.'s or M.D.'s than do those of any other public university in the country. No institution has more principal investigators doing federally funded research than UCSD's School of Medicine faculty; only four institutions get more federal research money.

During its brief, three-decade history, UCSD has made substantial contributions to international scholarship and has fundamentally changed San Diego. As the county's second largest employer, the university pours almost one billion dollars a year into the local economy and has pushed the city toward a level of cultural and intellectual sophistication previously unimaginable to long-term dwellers.

The university survived its angst-ridden sixties beginnings and came of age in a dramatic and often difficult era in California education. Founded as a privileged institution for research during the Cold War science boom, it has matured

into a well-rounded campus where fine arts, humanities, and health and social sciences flourish. The transformation was not easy. But in the struggle to become *itself*, UCSD became a unique center of higher education. And despite its youth, or perhaps because of it, with its prize-winning faculty and grant-rich budget it illustrates better than most why the American research university is emulated around the world and both celebrated and criticized at home.

* * *

It is likely that no university system in the world has been more copied, censured, and acclaimed than California's. Characterized variously as a training school for the plutocracy and a den of communist influence, it was democratically created by the 1862 Morrill Land Grant Act. That Lincoln-backed law gave to the people of each state some 150,000 acres of federal land. Citizens of states with no federal land got scrip which could be redeemed in other states. The land could be sold, and proceeds used to pay for establishing schools or departments of agriculture and "mechanic arts." Any student who could do the work would be admitted to land grant colleges.¹

After much dispute about curricula and the nature of education, the California legislature in 1866 established the Agricultural, Mining, and Mechanical Arts College of California on a base of land-grant money. A year later, that college was grafted onto a struggling liberal arts school barely holding onto a prime parcel of San Francisco Bay-front real estate called Berkeley. Legislators in 1868 chartered the University of California through an article in the state constitution, an extraordinary gesture which protected the university from political meddling and endowed it from the outset with import ratified by the citizens. The act defined the aspirations of the new state and acknowledged the solemnity of the undertaking.

The land-grab that followed seemed more in keeping with California's gold-rush past. Though crafty businessmen had lobbied to exclude mineral or railroad land from the Morrill Act, Eastern scrip holders flooded into El Dorado. The demand was so great that even before university surveyors got to work, half a million acres of the best property had been cornered. A third of those went to a member of the new university's board of regents who resigned his post before submitting a bid for the entire university allotment. His \$3.50

an acre was turned down. A fellow regent offered \$5 an acre and got 20,000 of them. Since his was an average price, no conflict of interest was seen. By 1900, with most of the land sold, the university's executives had far bettered the national land-grant average of \$1.65 an acre.²

* * *

In addition to selling real estate, the regents had also started to build a real university. The first universities established in the Middle Ages had been swept away in the revolutions of the eighteenth century as centers of church-ridden dogma. The profoundly Protestant University of Berlin, established in 1809, took its bearings from the Industrial Revolution and focused on non-ecclesiastical philosophy and science. With emphasis on research and graduate instruction, its faculty were academic dictators whose departments were life-time sinecures supported by students eager to become expert at manipulating the riches of modernity. It served as a tantalizing model for more than a century's efforts by academic reformers in the United States.

But only 15 years before California established its university, Dublin's University College founder John Henry Cardinal Newman declared in his *Idea of a University* that higher education should aim at "raising the intellectual tone of society, at cultivating the private mind, at purifying the national taste . . . and refining the intercourse of private life." Research had no place on Newman's campus, for if scientific discovery were its mission, he saw no reason "why a University should have any students." This was also the view of keepers of colonial American colleges. Their mission, as they saw it, was to adorn the minds of the well-born young and shepherd nascent clergymen into the proper sectarian sanctums. After the Revolution, neither Thomas Jefferson, who established the University of Virginia on principles of freedom of academic choice, nor Benjamin Franklin, who somewhat wistfully hoped that the University of Pennsylvania might "serve mankind" with courses in applied science and agriculture, could steer American education away from conservative academic creed.

It was not until 1876 and the founding of Johns Hopkins University that an example of the German college was erected on American soil. The builder was Daniel Coit Gilman, who had spent one miserable year as president of the

new University of California. At his inauguration in Berkeley, Gilman had enlarged upon the implications of the Land Grant Act and told his audience that a state university should be a "foundation for the promotion and diffusion of knowledge—a group of agencies organized to advance the arts and sciences." Democratic and open, a university's purpose also was "to bring before the society of to-day, the failures and successes of societies in the past; it is to discover and make known how the forces of nature may be subservient to mankind; it is to hand down to the generations which come after us, the torch of experience by which we have been enlightened. . . ." ³

With emphasis on promoting, advancing, and discovering (all of which implied research) Gilman's vision—though its focus included traditional studies—could not be seen very well in a California intent upon shedding a frontier image by assuming the dress of the conservative East. But later, in Baltimore, Gilman was allowed to create a graduate school which came to be called the "most stimulating influence that higher education in America had ever known." Harvard, Cornell, Michigan, Columbia, Minnesota, Stanford, and Chicago followed the Hopkins lead into the twentieth century. So too, eventually, did the University of California.

By the middle of the twentieth century, the American research university had become a reality, woven from seemingly disparate strands of educational tradition. Former University of California president Clark Kerr described the result as one incorporating Germanic graduate schools, Newmanesque undergraduate schools, and professional schools that take their bearings from Land Grant Act pragmatism. In many ways they were more like busy municipalities or self-contained feudal estates than the intellectual monastic retreats of romance. The University of California produces research and educates students, maintains huge contacts with government and industry, and runs presses, institutes, libraries, nuclear laboratories, research units, off-campus extensions, museums, and theaters. It supports post-graduate programs and hospitals, fields sports teams and marching bands, fills art galleries and concert halls, constructs buildings, delivers babies, buys land, launches ships, lobbies politicians, grows crops, advises Presidents, and analyzes wars and peace. Its diversity requires an unwieldy bureaucracy which makes it vulnerable to

attack. As a way of coping, it has created a system of governance that is as complex as that of many good-sized nations.⁴

* * *

Under provisions of the California state constitution, the university is operated and maintained by a board of regents, an independent corporation subject only to "such legislative control as may be necessary to insure the security of its funds and compliance with the terms of the endowments." The president of the board is the governor of California. He controls the university budget by his veto, which takes a two-thirds vote in the state senate to override. In addition to the governor, other ex-officio regents, who serve because of other posts they hold, are the lieutenant governor, the speaker of the assembly, the superintendent of public instruction, the president and vice president of the alumni association, and the president of the university. Initially, representatives of the mining and agricultural industries served as well. In the late 1980s, the 18 official members were appointed for 12-year terms by the governor with consent of the state senate; at the board's discretion, another two—informally, a faculty member and a student—served for one year.

The charter mandates that no "sectarian, political, or partisan test" could "ever be allowed or exercised in the appointment of Regents," but some governors have been less than vigilant in maintaining this ideal. All of them can imprint the board, and Ronald Reagan was accused of salting it with members antagonistic to the university in order to wound what he believed was a rebellious, if not dangerous, institution. Although there is no requirement for geographic representation on the board, traditionally the governor has been at least open to appointing regents from regions where campuses are located. Despite this, southern California has long complained about a northern regental bias.

No regents need to be particularly interested in education, but they must show excellence in some sphere, usually financial, cultural, or social. Over the years, most have been rich. Those who are not have connections with friends who are. All are powerful in one way or another, and some seek to exercise that power by attempting to control the university. Gilman feared the regents; much later, a candidate refused the presidency, wondering how "the university

could be so great with such a poor board." But president David Gardner, who served through the 1980s, said that with rare exceptions regents, whose tenure is often longer than that of the governor who appoints them, have been non-partisan, independent, and "very protective" of the institution they serve.⁵

Every acre of university land, every square foot of building space, each library book, desk, bed, lamp, pencil, reactor, supercomputer, and electron microscope is held in trust by the regents. So are the laboratory animals, the theater seats, the basketballs, the paintings, the plantings, the laboratories, and the cars. Each meal served or tablet sold is sold by the regents. Technically, they hire every professor and secretary, grant each degree. They found new campuses and run the nuclear labs. The regents control all university records, and have ultimate authority over all academic plans. They select presidents, appoint chancellors, and, in the early 1990s, employed 145,000 men and women. They manage an endowment fund with a market value of \$1.5 billion—which they wish was much larger—and oversee the welfare of 165,000 students. They apportion a multi-billion dollar annual budget among 9 campuses, 5 hospitals, and 200 organized research units. They conduct business at meetings usually held once a month, but committees as diverse as academic policy, buildings and grounds, and finance gather more often.

Arguably, the most important duty of the regents is appointing the university president, who, according to the charter, has "full authority and responsibility over the administration of all affairs and operations of the university" except those expressly retained by the regents. He or she is directly responsible for all other university administrators, and maintains an office of vice presidents for academic affairs, administration, budget, and others.⁶

Despite the carefully constructed non-political bias of the university charter, presidential appointments have occasionally been politicized. The precedent was set in 1868 when the first board, in that post-Civil War Republican era, offered the presidency to George McClellan, deposed head of the Union's Army of the Potomac and unsuccessful Democratic candidate against Abraham Lincoln in the election of 1864. McClellan declined. Gilman, who had turned down the job in 1870, replaced first president Henry Durant in 1872. He soon tired of regents so jealous of their prerogatives that he was grudgingly given permission to hire university janitors only if he did so on

an interim basis and immediately reported the action. Warning that the institution was too vulnerable to misguided public pressure, he resigned after just two years.

Benjamin Ide Wheeler said the presidency was "a hard berth . . . between Regents and Barons," but took the job in 1899. A former University of Berlin faculty member, he strengthened research and enlarged the library. He also opened the university to popular support, stumping at county fairs and lobbying in Sacramento. When he retired in 1919, amidst whispers of a too-ardent affection for World War I Germany, the University of California was one of the best in the world. A constitutional amendment had tightened its governance and guaranteed that neither students nor faculty would be selected on sectarian, political, or gender bases. A state funding procedure was in place and was augmented by a routine of private giving. The university was also set on an imperial course that led it to Davis and Riverside, San Francisco, Los Angeles and San Diego, where it had taken over a biological institute in 1912.

Robert Gordon Sproul, in 1930, became president of what he liked to call the "One Great University." Described by contemporaries as a "born politician," in his very person he was reassuringly emblematic of the university's land-grant success. An alumnus, Sproul had worked his way even through elementary school, and had grown up with the university as a Wheeler-era administrator. He knew how to play the Sacramento ropes with a style described as blending the "political stance of progressive Republicanism, the morality of the Presbyterian church, and the ethics of his fellow Rotarians." He was immensely popular. He was also devoted to the university, and guided it in what one of his predecessors had dismissed as the "centrifugal tendencies" of even greater growth, which included absorbing a teacher's college in Santa Barbara in the forties, enlarging Davis and Riverside into four-year colleges, and appointing chancellors at UCLA and Berkeley in the fifties.⁷

He closed upon his duties with unyielding zeal and was dedicated to providing the students with the best faculty available. He bent both rules and tradition to get and keep outstanding scholars. He set the pace during the first year of his presidency by drumming up outside money for Ernest O. Lawrence, thus keeping the physicist from bolting to Northwestern with his prototype cyclotron. In his inaugural address, Sproul had said it was silly to have great

teachers "drifting about in laboratories with a couple of test tubes in their hands making themselves useless in a most arduous and time-consuming way, while men who might be good investigators are wearing out their patience and the students in a vain effort to expound and to inspire large classes. . . ." Many non-teaching faculty arrangements were made in Sproul's 28-year tenure.

He welcomed requests from government, industry, and foundations for faculty research and consultation, and was the first university president to refer to such "public service," in fields other than agriculture, as equal to research and teaching in fulfilling the university's special role in society. At one point, that special role seemed threatened by the most politically damaging event that occurred in Sproul's administration. Communism, popular on the nation's campuses during the thirties, was attracting widespread support after the Second World War. A series of labor strikes in coal mines, the railroads, and steel mills, rumored to be Communist inspired, prompted both nationalization of industry by President Truman and harsh measures from a hostile Congress led by Senator Joe McCarthy. Mirroring Washington's Red scare, Sacramento mounted an Un-American Activities Committee of California, which in 1949 produced a bill for a constitutional amendment that would give the legislature control over the loyalty of University of California officers and employees. University comptroller Jim Corley suggested to Sproul that a way of staving off such political action, which stood a good chance of passing, was to come up with a loyalty test of its own. Shortly, Sproul laid before the regents the infamous Loyalty Oath abjuring Communist affiliation.⁸

Although Sproul, in time, recanted, and the state supreme court eventually found the oath unconstitutional, the issue was destructive and durable. Sproul lost face and footing with a faculty that was itself divided in lingering and pernicious ways, and the people of California had begun to doubt the soundness of an educational system protected by the state constitution—a system over which they seemingly exercised no control.

Clark Kerr, a wily defender of academic freedom during the Loyalty Oath controversy, was rewarded by being his fellow Berkeley faculty members' choice for campus chancellor. In that capacity, his powers of suasion, disarming candor, and clarity of mind impressed the regents, who appointed him president

upon Sproul's retirement. Serving from 1958 until his dismissal in 1967, he has been described as the university's greatest president, a man who became one of education's great statesmen. A labor relations specialist and a graduate of Swarthmore, he shared Sproul's commitment to building and maintaining faculty excellence, which he described as perhaps the president's greatest charge: "If that is done badly and you do everything else well, you don't have a great university, but if that is done well and everything else is done badly you can still have a great university."

He inherited an administration so unwieldy that as chancellor he had had to explain to Sproul exactly where in his office he would place a requisitioned filing cabinet. As one of his first presidential steps, he undertook what he described as "the most massive reorganization" in the university's history, "past and likely for a long time in its future." In addition to paring the presidential staff, Kerr instituted chancellorships at Santa Barbara, Davis, and Riverside as a way of loosening regental grasp on the details of daily university management and passing on from the president control of individual campuses. He said that one result of the change was to make the presidency an office of influence rather than power. Power was retained only in the area of finance—"in making the budget, you make a lot of policy"—and in the creation of new campuses. Kerr oversaw the establishment of UCSD, Irvine, and Santa Cruz, and put his stamp on each. But he also left his mark on Berkeley. His handling of the student demonstrations in the sixties was widely criticized, and he was considered intransigent by some and far too flexible by others. Analysts of the era think that he was caught in circumstances that even his considerable skills of negotiation could not change. He believes the trap was set by Ronald Reagan.⁹

Kerr said Sproul had terrible relations with then-governor Goodwin Knight, "but Knight never tried to interfere with the university." Kerr's first governor, Pat Brown, initially was leery about the university's value to the state, but was won over and became a benevolent factor in its development. But Kerr said Reagan ran for governor on an anti-university plank, and, once elected, started to nail it in place on the issue of Kerr's being "soft" on student radicals. "I'm a Quaker, I didn't want to use the police except as a last resort. I feel that very deeply," Kerr said. But he believes that the public and "a pair of very powerful Regents" disagreed. The erosion of his support on the board

made him vulnerable when Reagan "intervened to get me." Reagan, Kerr said, cut the university budget by \$30 million, but promised to give it back if he could have a president who would be "more cooperative." The governor also agreed to reappoint "one of the very important regents" whose term had expired in exchange for a vote for dismissal of Kerr. And conjuring up the specter of the Loyalty Oath again, Reagan threatened to have former CIA head John McCone mount an investigation of the university faculty, but said he would withdraw it if Kerr resigned. In essence, Reagan "bargained with the regents" for Kerr's head.

H.R. "Bob" Haldeman, who would later play an even larger role in the Nixon White House, was then alumni regent and was tapped by Reagan to garner anti-Kerr votes on the board. Among them, said Kerr, was the one of his most consistent supporters, Buffy Chandler. Chandler, married to the publisher of the Los Angeles Times, invited Kerr to her home, where she told him she had been convinced that to save the university she would have to vote against him.

The regents asked Kerr to resign, promising that he would be "very, very well taken care of." He refused, he said, in order to make an example of the dangers of gubernatorial interference in university affairs. Over the years, he said, he had often bailed the regents out of their political difficulties. "This was one they were going to have to handle for themselves and take the responsibility. So it was a very lonely decision."

Reagan set the time—10 a.m. to 2 p.m.—for the February 1967 regents' meeting in Los Angeles. Kerr arrived, knowing he was going to be dismissed, "but I didn't realize it was going to be effective immediately. But in the course of the meeting, which had been broken into for Reagan's attendance, I was told I was to be removed immediately. I turned to the Chair and I said, 'Did you say immediately?' and he said 'Yes,' and I said 'Yes, but there's quite an agenda still to be completed. Would you be willing to interpret "immediately" as being at the end of this board meeting?' And they agreed to that."

"The regents sold me. That's a very strong word. . . . They got a price for my removal. They got \$30 million restored and they got the McCone thing called off and they got a very powerful, very important and very good regent reappointed. . . . And I paid the price of being dismissed. When you're dismissed by the Board of Regents in California, it's almost as if you've been

convicted of a crime. I suffered a lot of indignities. In California. Not outside California."¹⁰

Kerr's firing became a national issue. The respected Fred M. Hechinger of the *New York Times* wrote that California's regents do not "check their political guns outside the board room, Western fashion," and "Dr. Kerr's liberalism and independent-mindedness left many scars. An upsurge of conservatism, as reflected in the Reagan election victory, brought these old grievances back to life." In addition, he had given footholds to his opponents by decentralizing university governance. "A strong central administration, if it enjoys popular support, can put up an effective battle against the political powers, and even against the trustees." But a confederacy of campuses "may tempt political forces in the State House, the Legislature, and within the Regents, to divide and conquer."

Such division was a potential of the newly strengthened framework of chancellors. Chancellors are officially appointed by the regents on recommendation of the president, who usually approves candidates selected by campus-based search committees. Chancellors act as chief campus officers and both create and execute policy as well as prepare budgets, make faculty appointments, and raise money. With the exception of Kerr, who fought bitter battles with Sproul—"it took me two years before I could get a copy of the budget I was supposed to be administering"—Berkeley's chancellors have perhaps been the most repressed by the physical presence of the president in University Hall. Los Angeles' chancellors have been the most political, with at least two, Ray Allen and Franklin Murphy, hoping to use their offices as way-stations on the road to the presidency.¹¹

Initially, San Diego's chancellors were the most short-lived. The campus had three in its first eight years. But chancellor Richard Atkinson has marked thirteen years in office, and his immediate predecessor, William McElroy, eight. Each of UCSD's five chancellors has had a different response to what can be a difficult role, one that often requires occupying a political and public relations cat's cradle—stretched between the president and regents, the students, the community and the faculty. No member of the administration has closer contact, for good or ill, with the Academic Senate.

After Benjamin Ide Wheeler's retirement in 1919, the statewide faculty, restive under what they saw as the dictatorship of an interregnum committee, challenged the regents in a polite show of force that clarified the duties and privileges of the Academic Senate. This gave the senate a crucial voice in appointments of professors, deans, and directors, and reserved to it supervision over curricula, admissions, and the granting of degrees. Celebrated by faculty and feared by administrators nationwide, the University of California Academic Senate is the most powerful professorial body in the country. Although it functions by grace of a standing order that, technically, the regents could rescind, no board in recent history has had the temerity to suggest changing the rules. The original senate was divided, when UCLA was founded, into a northern section and a southern section and, later, further divided into campus divisions. Members include, in addition to most teaching faculty, the university president and vice presidents, and campus chancellors, vice chancellors, deans, provosts, directors of academic programs, directors of admission, registrars, and librarians. These members serve on a variety of committees that tie divisions to one another, to the chancellor, to the president, and to the regents.¹²

Despite public opinion that if one faculty member is a raving liberal then several thousand together will be a radical mob, the Academic Senate is no more uniform ideologically than its national legislative counterpart in Washington, D.C. The senate's failure to reach a consensus in its fight against the Loyalty Oath has been said by one critic to have contributed to the over-long agony of the issue. Disagreements over later student unrest were ongoing and deeply felt. And even Kerr's dismissal has been traced to a collapse—"self absorption"—of senate moderates who were unable or unwilling to form a coalition in order to protect the presidency from the governor. One analyst laid that failure at the door of decentralization that had kindled "competition, jealousies and divisions" among the different parts of the university. UCSD was seen by some as part of the problem.

UCLA had struggled for years under the carapace of Berkeley's greater prestige and power, and was only half-heartedly committed to a new campus in San Diego. Though some UCSD founders remember Berkeley as being worse, ongoing and acrimonious debates about dividing precious research and faculty

funds with the newcomer to the south were not uncommon at UCLA. Sproul and Kerr were both accused by Los Angeles faculty of playing favorites by funding above-scale appointments and underwriting what was called a "lavish" graduate program at San Diego. Moreover, UCLA had controlled the granting of degrees at San Diego's Scripps Institution of Oceanography, an independent, universitywide research center. Seeing Scripps slip its Los Angeles traces—and, transmogrified as UCSD, become a competitor—left hard feelings. This was not something expected from a campus that had its beginnings in a wave-lashed boathouse swaying atop San Diego Bay.¹³

CHAPTER ONE

OCEAN ORIGINS

THE UNIVERSITY OF CALIFORNIA AT SAN DIEGO might be said to have emerged from a commercial romance of the nineteenth century's end. William Ritter, a Wisconsin farmer who somehow had developed a passion for marine biology, had been educated at the University of California and Harvard. Recently appointed chairman of Berkeley's new department of zoology, he had come to San Diego on his honeymoon and rowed around the bay collecting specimens until his boat swamped and sank. This was an auspicious start for his studies.

After several summer seasons of scantily funded research, Ritter petitioned President Wheeler for a permanent marine biology program. He said he wanted something like the recently established Johns Hopkins University, a "simple, inexpensive laboratory," with no undergraduates, from whence came "the most important contributions to biological science that have been made by American workers during recent years." The generative words were *important* and *inexpensive*. In 1900, Wheeler approved the funding, and Ritter selected San Pedro as the site for the program.

This disappointed Fred Baker, a San Diego physician who gathered shells less as a pastime than as an obsession. Though beloved by fellow San Diegans who elected him president of both their medical society and their school board, Baker was lonely in his mollusk-collecting and was eager to repeat the exciting conversations he had had with Ritter during the latter's 1891 wedding trip. He knew Ritter's ambition to build in California a marine biological station that would "surpass the greatest one in the world." And he wanted it for San Diego. Luck and the Scripps family were on his side.

In 1903, Ritter told Baker that if a lab could be found and equipped and \$500 could be raised, he would bring his research program to San Diego. Baker was a canny as well as an energetic fund raiser. To San Diegans intent on making a fortune in a hoped-for real estate boom, he pitched what he called Ritter's "Aquaria" as "an advertisement" that would "rival anything on the coast." He also contacted the man he described to Ritter as a "wealthy rancher," E.W. Scripps, who he said "might put your whole project on its feet."

Custom supported Baker's boast. Other princes of American industry were making bids for immortality and soothing their consciences by establishing schools and universities just then. Carnegie's institute, Rockefeller's university in Chicago, Stanford's in California, and Vanderbilt's in Tennessee were precedents the "rancher" certainly knew about. The previous year, Ritter himself had courted the founder of the Southern Pacific Railroad, who had initially encouraged his request for \$25,000, a 100-ton ship, and a shore lab. Nothing came of it, and Ritter had been reduced to begging for \$3,000 to underwrite a summer's work. Even that was denied. He was understandably cautious, and would wait, he said, to count his San Diego chickens until they were "fully pinfeathered out." E.W. Scripps, after going on record as saying that he didn't give a damn about advertising San Diego, did donate the needed \$500.¹

Baker got the lab building from the owner of the Hotel del Coronado, who donated the summer use of the hotel's boathouse on Glorietta Bay, southwest of San Diego. The accommodations were simple and inexpensive, and the scientists seemed not to mind working in a high-Victorian folly perched somewhat disturbingly over the choppy bay. They were no more remarkable than the rowdy crowd of vacationers living in a tent city on the nearby beach. But Ritter, wanting something less provisional, set up a meeting with his potential benefactor.

E.W. Scripps had settled in what he called the "busted, broken-down boom town" of San Diego, "probably more difficult of access than any other spot in the whole country," ten years earlier. From his 2,000-acre Miramar ranch northeast of the city he ran a newspaper empire he had started building after going to work on his brother James' *Detroit Free Press*. In his press investments, and in all his other professional and business dealings, he relied on the woman who had raised him, his half-sister Ellen Browning Scripps, who lived

in La Jolla, a developing suburb north of San Diego. She was with him on the August afternoon Ritter came to call. Surprisingly, Scripps, a mercurial loner who admitted he could establish rapport with almost no one, liked Ritter. Apparently the two men—and Ellen, a graduate of radical Knox College in Illinois—shared a midwestern progressive liberal mindset as well as a boundless curiosity about the nature of life. After lunch, Ritter talked about building a first-class biological station in San Diego and forming a board to raise funds. A month later, E.W., looking for other money, told a wealthy backer that "we are going to make this the biggest thing of its kind in the world."

Though Ritter's meeting with E.W. set the foundation for a friendship that lasted even through the newspaperman's disenchantment with the local science enterprise, the real merit of the afternoon was establishing a relationship with Ellen Browning Scripps. She and her sister Virginia visited Ritter after he had returned to Berkeley. The hopeful marine biologist had in mind a generous "naming" gift from her, and put on his best show for the future underwriting of his institute. She promised \$1,500 a year operating money and accepted the vice presidency of the Marine Biological Association of San Diego.

E.W. then donated his yacht, the *Loma*, and agreed to pay to refit it for scientific purposes at a shipyard in San Francisco. It was then that the universal antagonism between commerce and the academy began to tell. E.W. lost patience with what he considered the bungling of the project, and fired off an acid letter to Ritter saying he had been "so schooled and trained in business that I have acquired the vulgar habits of my vulgar class." What he saw as mishandling the boat work provoked him more, he said, than he could "possibly be exhilarated by the feeling that I helped to discover ten thousand new kinds of bugs."²

E.W. eventually calmed down, but soon was exercised again. The laboratory began a move to a site loaned to the scientists at the La Jolla Cove, where they planned a building E.W. believed was an exorbitant waste. Simplicity, he said—perhaps rubbing Ritter's expectations in the much-vaunted Hopkins model—was "the first and fundamental principle of any purposeful work," and any "shack would do" for research. Not unpredictably, what was built was a

wooden shanty, painted green, which cost \$1,000. At the end of 1905, Ellen Browning Scripps pledged the fledgling institute \$50,000.

* * *

La Jolla, set on cliffs that form a bulbous northwest face above San Diego, was reached by a tram line that land speculators had installed to lure investors to the area. It was little more than a desultory collection of dusty streets peopled with the kind of get-rich dreams common to other near-empty areas along the California coast. Its cultural amenities included dances held in a bathhouse overlooking the rocky Cove, edifying rides in glass-bottom boats, and regularly scheduled dives by a "professor" who set himself aflame before plunging, thrillingly, into the cool waters of the Pacific Ocean.

Ritter's lab fit right in. It was popular with the city and a favorite of beach-going visitors, who poked through specimens the scientists displayed for public viewing. But Miss Scripps' money made the laboratory interesting to the University of California. Governor Pardee had already paid a visit to the Scripps family, and now President Wheeler made the trip south to accept her \$50,000 gift which Ritter hoped would spur the university into accepting the new science of marine biology as part of the curriculum. In this, he was disappointed, but undaunted, he pushed forward with plans to build the institute a permanent home at the Cove. E.W. had in mind a different location.

The Scripps family had earlier bought from the city two parcels of public land, part of the original San Diego pueblo, on seafront bluffs north of La Jolla. Pueblo lot number 1298, south of those and still city-owned, was what E.W. wanted for the biological institution. Since city fathers tended to want whatever E.W. wanted, they were open to his proposal to put the 170 acres up for public sale. No one seemed surprised when the City Hall sale on August 11, 1907, attracted only one bidder for land that was clearly worth more than \$30,000. It went for \$1,000 to a Marine Biological Association board member. E.W. made a deal with the city for a water pipeline to the property in exchange for eucalyptus trees that he would plant on the site. He also offered to build a road using his personal fleet of equipment, which had already gridded the rolling scrub-filled county with usable public roads at his own expense. Unlike the others, which tended to converge on Miramar Ranch, this road would go to

Ritter's new lab. Ellen Browning Scripps gave \$10,000 to build it. In early 1909, she added a codicil to her will giving an additional \$150,000 to the institution and brooked her brother by backing a relatively costly Irving Gill-designed building Ritter wanted. That summer, the marine biologist and his wife moved permanently to La Jolla.

In 1912, the regents accepted the association as part of the University of California. The name would be the Scripps Institution for Biological Research. Its estimated \$300,000 in assets included a commons, a main administration and laboratory building, a public aquarium and library/museum, a pier, and two dozen single-board cottages described by Mary Ritter as "truly masculine in their planning and lack of conveniences." It sat at the end of E.W.'s two-mile road that was dusty in summer, muddy in winter, and generally avoided year-round. Groceries arrived once a week from town. Otherwise, the scientists at Scripps tended to be left alone.

Biologist Francis Sumner, who joined the staff in 1913, became sensitive, immediately, to what he called "the blighting effects of our isolated life. . . ." No one but the director owned a car, and the "small group of ultraspecialized specialists" at Scripps lived "alongside a community of laymen knowing little of our work and caring even less." Worse, there was "little real intellectual comradeship among the staff," and "each of us kept to his own little cubicle and seldom left it. We lacked both the stimulation and the corrective restraint which come from competitive endeavor and intelligent criticism. . . . And so we tended to become more and more introverted, and more and more lacking in perspective."

As an expert on the land-fast *peromyscus* mouse, Sumner might have had more reason than most for feeling isolated amidst a colony of marine biologists, but he was not alone in welcoming Scripps' increasing participation in the American Academy of Sciences and the American Association for the Advancement of Science. Work during World War I for the Department of Agriculture and the Bureau of Fish, as well as for the Council of Defense of California, broadened the scope of the place if not its acceptance by the La Jolla community. Though townsfolk liked to look at little sea creatures, they distrusted the scientists who studied them, and during the war started mean rumors about Scripps' pro-German activities.³

But the federal government had become so keen on marine studies during the war that Ritter could somewhat smugly chide Washington for seeing the sea only as "a world highway and fighting arena." Scripps scientists helped define areas of study for the National Research Council and in return asked that data be collected by lighthouse-keepers and by Navy ships. The institution itself had no ship. E.W. Scripps' *Loma* was long since gone, and in 1917 Ritter sold the ship Ellen Browning Scripps had donated, the *Alexander Agassiz*, on the grounds that it was too expensive to maintain. But even landlocked, Scripps underwent a sea change in World War I, and that new direction was sustained by the post-war director who replaced Ritter.

T. Wayland Vaughan, an ocean-floor geologist, brought a natty and formalizing influence to what San Diegans called the "bug house." As a member of the U.S. Geological Survey in Washington, D.C., he had formed the kind of close government associations he thought were more important to marine science than ocean expeditions. Among his demands before accepting the directorship was the extension of the institution's programs to include marine geology, chemistry, and bacteriology. With this development, Sumner saw the approaching end of the mouse colony he had built behind Scripps' central lab, and he was not surprised when, shortly after Vaughan arrived in February 1924, the new director suggested that Sumner and his "important researches" be transferred to Berkeley. There were other changes too. Vaughan fired the business manager and demanded increased financial commitments from the state and from local supporters, including brother and sister Scripps. The state complied. E.W. did not. He at last and forever withdrew his financial backing, and he died in 1926 aboard his yacht *Ohio* off the coast of Liberia. It was the end of an era.⁴

Vaughan's presence at Scripps signalled the start of another era, one reflected by the 1925 name change to Scripps Institution of Oceanography. Always carefully turned out in coat and tie, often accompanied by his German shepherd, the man whom staffers called "the great Texas autocrat" made daily rounds of the property that upon his arrival he had declared to be in "lamentable condition." Unimpressed by E.W.'s eucalyptus trees, he used his own money and donations from Miss Scripps and the university to plant thousands of trees and shrubs on the barren, windswept Scripps land. He was also able to

double the annual budget and enlarge the staff, being careful to select as colleagues those individuals who could pass tests of gentlemanly demeanor. He knitted up project work with the federal government, successfully wooed southern California power companies to support meteorology, and, in 1929, persuaded the state legislature to grant \$40,000 for a new lab that would house biochemistry and biophysics. Miss Scripps matched the funds, and in 1930 the Rockefeller Foundation added \$40,000. Though Vaughan was congratulated for the Rockefeller grant, in fact he had voted with other National Academy of Sciences committee members to give \$3 million to the Marine Biological Laboratory at Woods Hole, Massachusetts.⁵

Nevertheless, even \$40,000 helped, and the \$120,000 Ritter Hall, designed by Irving Gill's nephew Louis Gill, was ready for occupancy in September of 1931. A year later, Vaughan wrote Robert Gordon Sproul, then two years into his presidency, that he wanted to retire within a year or two, to "step out and make way for a successor who would take the lead in operations at sea."

Despite buying an old 64-foot purse seiner renamed the Scripps, Vaughan was criticized for a less-than-passionate attachment to saltwater research. A staff member told Sproul that he wondered why Scripps, with its "mongrel characteristics," and only 130 days at sea in six years, was even "called an Institution of Oceanography." In fact, the institution still depended on Navy ships and lighthouse-keepers to collect samples, but the enterprise was apt to produce responses such as came from a man who kept an Aleutian Islands station. He was happy to comply, he said, if the scientists did not mind mails that might take four or five months. But he needed clear instructions, "as I do not know what 'Plankton' is. . . ."

Not many people did. Henry Bigelow, first director of Woods Hole, told Vaughan on the matter of his replacement that there "ain't no such animal" as a biological oceanographer in the country. "You must either import him or bring him up." On the bringing-up level, Scripps in 1930 awarded its first doctorate in oceanography, issued by Berkeley, and in 1931 attracted a pair of first-rate research assistants: Richard Fleming and Roger Revelle. For importing, Vaughan took leave from Scripps in 1932 for a National Academy of Sciences international fact-finding tour. He intended to scout the waters

for his successor during the trip but, before he left, reported that "the Institution would shoot forward" under Norwegian Harald Sverdrup, "whom I know we cannot get. . ."

Sverdrup, widely regarded as one of the world's best physical oceanographers, with strength in geophysics and chemistry as well, had spent two six-month stints at the Carnegie Institution. Apparently his Washington experience had either given him a taste for life in the United States, or made him vulnerable to pressures there, for quite unexpectedly he agreed to come to Scripps.⁶

When he arrived in the autumn of 1936, he found a campus not very much improved from the one that had appalled Vaughan. Mrs. Sverdrup collapsed in tears. Despite an annual budget of about \$800,000, the diverse but predominantly biology-inclined staff were in need of direction. Sverdrup wanted to get the oceanographic institution to sea as soon as possible, but his hopes were dashed the following November when the *Scripps* burned and sank at its San Diego Yacht Club berth. Beached again, the institution got a Christmas card that year from a staff member who swore, "If Santa were a sailor, he'd bring us all a ship. He'd fill it full of lab supplies and take us on a trip."

E.W.'s son Robert Scripps came through with \$50,000 and a 100-foot sailing schooner. The staff named it for his father and set out on short forays in 1937 and 1938. In 1939 and 1940, the institution undertook lengthy expeditions to the Sea of Cortez and found that the natives on Tiburon island were not, in fact, cannibals; the sea was not, in fact, level; the Japan Current did not, in fact, reach the California coast. Perhaps of greatest future value was young Roger Revelle's announcement that the Sea of Cortez might, in fact, be in the process of forming a huge oil field. The news was especially portentous just then, for Scripps would certainly participate in the University of California's upcoming war work.⁷

* * *

Even after the German invasion of Poland, a majority of University of California students opposed what they saw as President Franklin Roosevelt's tampering with the nation's neutrality status. A petition declaring imprisonment

preferable to military service gathered many signatures. Earlier, thousands of California students and faculty had joined nationwide demonstrations against involvement in Europe, and had clashed with the regents over compulsory university-sponsored military training. Sproul repeatedly assured students that he sympathized with their aversion to war, but he was deeply committed to the university's doing its part for national security. In his 1940 commencement address, he urged military preparations against the "priests of political witchcraft." That August, after the fall of France, he proposed that the university be named a government defense agency, and sharply warned that students who disagreed with the policy might have to "defer their enjoyment of an education at the state's expense."

That fall, Sproul closed some laboratories at Berkeley and Los Angeles to foreign visitors and authorized the locking of others for "either secrecy or safety." Faculty members quietly drifted eastward to work at MIT on radar, and a University of California Defense Council was formed with regent's secretary Robert Underhill named to negotiate the business end of government work. The Army started officer-training schools at Berkeley and Los Angeles, and entirely converted the agricultural station at Davis into a Signal Corps facility. The Navy—perhaps carrying on its tradition of good manners—merely enrolled its members in already scheduled classes that had been revamped for wartime needs. Soon, the university launched militarily inclined curricula along with programs for designing airplanes and artificial limbs, producing dried food and rubber, discovering treatments for epidemic diseases and the bends, studying underwater sound and surface waves, and building an atom bomb.⁸

In January 1941, Sproul announced that the university was placing its atom-splitting cyclotron at the disposal of the federal government. Its developer, Ernest O. Lawrence, in Washington, D.C. when Pearl Harbor was attacked, urged that research to develop the atom bomb be divided. Work on plutonium, discovered that spring by Berkeley physicist Glenn Seaborg, should be moved to the University of Chicago. Some uranium 235 work should be shipped to Columbia while the rest stayed at Berkeley. Three weeks later, Berkeley's Radiation Laboratory received \$340,000 seed money that soon grew into a \$3 million contract. By 1942, work done by J. Robert Oppenheimer and

a staff of 1,250—including Edward Teller, Hans Bethe, Robert Serber, Emil Konopinski, and Felix Bloch—had outgrown its warren of hilltop Berkeley buildings, and Oppenheimer suggested the Los Alamos Ranch School for boys near his own New Mexico vacation home as an additional site. Cloaked by fictitious names, blind post box numbers—1663, Santa Fe, N.M.—and new mysterious language, Los Alamos eventually housed not the expected 30 scientists, but 3,000. It operated under auspices of the Manhattan Engineer District overseen by Army general Leslie Groves, whose determination to control the project was exceeded by that of the university's Underhill. In April 1943, the document giving the University of California oversight of the laboratory was signed. This would have a profound effect on San Diego.

By then, Scripps was immersed in naval work that had started in 1941, after UCLA physicist Vern Knudsen did a survey of submarine warfare readiness for the National Academy of Sciences. Knudsen made some suggestions to the Navy's Bureau of Ships on how Scripps Institution might help weaken German U-boat strength, and in August San Diego's UC Division of War Research opened shop. The professional staff of scientists and technicians from Scripps and other universities was supported by a clerical and administrative team drawn to San Diego from around the country by the industry of war. By the time UCDWR moved into Navy-built laboratories and offices on Point Loma, some 600 physicists, electrical and electronic engineers, psychologists, oceanographers, marine biologists, mathematicians, chemists, and structural and hydromechanics experts were working toward three interrelated ends: learning about sound and all properties of the ocean that might have some bearing on underwater sounds, developing offensive and defensive equipment for submarine warfare, and training servicemen to operate the resulting instruments. The work was fueled by urgency. As late as 1943, Atlantic Coast beaches were fouled by oil from U.S. tankers torpedoed by U-boats, and harbors from Jacksonville to New York were blockaded by German-laid mines. In the Pacific, the Japanese commercial fleet needed to be destroyed. American submarines in both seas had to seek as well as hide, and UCDWR work on sonar, which uses sound waves to detect distant objects, would help them do their job amidst the sea's noisy garble.⁹

Odd, perhaps electronic, chattering picked up by detectors turned out to be vast schools of snapping shrimp; the creatures were soon pressed into secret service hiding American subs. Puzzling echoes related to currents, tides, salinity, temperature and pressure, and strangely shifting depth readings—phantom bottoms, caused by a vast sheet of tiny organisms that rose at dusk and fell at dawn—could camouflage submarines and be turned to aggressive advantage. All work, including an American Petroleum Institute-funded search for oil, was done under round-the-clock deadlines that Sverdrup said put a "peculiar strain" on scientists accustomed to the more measured routines of university research.

Sverdrup, who had decided not to return to German-occupied Norway, had trouble with his security clearance. So did Austrian graduate student Walter Munk, working for the Army Air Force's meteorological division. Roger Revelle's intervention kept them involved in the serious effort of watching waves. Aided by University of Chicago physicist Carl Eckart and Berkeley engineers Willard Bascom and John Isaacs, Munk and Sverdrup developed the system of forecasting waves that was first used successfully during the amphibious assault in North Africa. Eventually, the work informed decisions on landings worldwide, perhaps most dramatically for the D-Day invasion of Normandy. In 1943 the project was absorbed into the Washington Hydrographic Office, where it formed the nucleus of the wartime oceanographic section being run by Revelle.¹⁰

Revelle had gone on active Navy duty before the country was at war, and was military officer in charge of research at UCDWR. At his request, he was transferred to the Hydrographic Office in early 1942, but his actual duties were in the Bureau of Ships' electronics division. He directed underwater sound-related research at UCDWR, Woods Hole, and the Navy Underwater Sound Laboratory in New London, Connecticut. Eventually, he became project officer for all the Bureau of Ships' oceanographic contracts. He made certain that San Diego got its share. Trading ships and information with the Navy—combat vessels fitted with measuring devices collected huge amounts of basic information about the sea—Scripps became ever more closely linked with the Navy's interests as the war wore on.

* * *

Scripps was part of a thoroughly mobilized San Diego. Even before the formal declaration of war, military effort had created what the national press called a "blitzboom" in what was described as a new Detroit. Between 1940 and 1944, almost 165,000 defense "migrants" arrived, more than doubling the size of the city. The workers occupied hastily built housing on Kearny Mesa or moved into even more quickly assembled trailer parks in Mission Valley. Straining city sewers and schools, these new San Diegans—mostly from Iowa, Illinois, and Indiana—were employed by an aircraft industry enriched by gifts of municipal land and enlarged by government-backed building projects that ringed Lindbergh Field with camouflaged factories (turkey feathers on net was a favorite).

Some 40,000 worked for Reuben Fleet at Consolidated Aircraft, which was operating a city-backed training school in Balboa Park's Ford Building. Tens of thousands of others were punching clocks at Ryan, Solar, and Rohr. Combined aeronautic payrolls during the first war year alone were \$50 million. To cope with the largely unwelcome results of being the nation's fastest-growing city, civic leaders hauled in Works Project Administration experts—they were responsible for the trailer parks—and sent formal requests to Washington for financial aid. This was only fitting, since by 1943 the federal government had commandeered some 30,000 county acres, lost to the tax rolls, for military installations that were among the largest in the world.

As headquarters for the 11th Naval District—the Pacific Fleet—San Diego was home to a Navy training center, a supply depot, a radio station, a destroyer base, a fuel depot, and an air station on Coronado that crouched behind a pair of highly visible and very large "bombproof concrete hangars. The city had given the Navy its municipal pier. Later, 20 acres of its municipal park would become the world's largest naval hospital. The Coast Guard had a base on the other side of the bay, in back of a large Marine Corps Recruit Depot. The Marines also ran a 10,000-man combat training center at Camp Elliott, adjoining E.W. Scripps' Miramar Ranch, and a 545-acre rifle range, Camp Matthews, backing onto Scripps Institution's campus in La Jolla. On the north side of Scripps, the Army rented 700-acre Camp Callan from the city and was teaching some 15,000 soldiers how to handle coast artillery; another 3,000 were doing similar duty next to Fort Rosecrans on Point Loma. The

1,000 cavalrymen training in backcountry Campo were considered of negligible import. In all, during the war's first year there were some 35,000 service personnel in this city that throbbed, hummed, and yowled with wartime activity.

Much of it was considered unsavory by locals, who complained about downtown strip joints and Horton Plaza clogged with bored sailors and marines. In a show of anxiety that it would repeat 20 years later when students began showing up, La Jolla mounted a ladies' home guard that stationed itself at barricades erected along Torrey Pines Road to bar entry to the village center. But fear of depredations by Americans in uniform was replaced by the greater worry of possible foreign invasion. In 1942, the local newspaper warned that Japanese landings "may be attempted at any time" and that it was "quite possible that submarines will attempt to contact Axis sympathizers now within this area and with whom a rendezvous has been arranged." Many beach-dwellers carefully painted their houses camouflage green, learned to live with earsplitting and window-shattering reassurances of safety coming from local gunnery practice, and finally welcomed "the better sort" of servicemen to patriotically mounted—and carefully chaperoned—parties to which busloads of female students from San Diego State College were ferried.

But in the summer of 1945, an atom bomb with a Berkeley- and Chicago-developed uranium 235 payload was dropped on Hiroshima. When the one carrying Seaborg's plutonium went down on Nagasaki, the war was over, and so was San Diego's boom. Almost overnight, unfilled orders that at Consolidated reached well over \$400 million a year vanished. An ominous silence fell over a city choking on now unemployed defense migrants.

The UCDWR scientists had work waiting back home, and they were eager to go. But this also caused great concern. Peace threatened to destroy the national system of research and development that had not only won the war and enriched industry, but had forever changed science.¹¹

* * *

In June 1940, Franklin Roosevelt had set up the National Defense Research Committee and named Vannevar Bush as its head. Bush was an engineer, a co-founder of Raytheon, and a developer of a nascent computer he

called a "differential analyzer." He has been described as the greatest science innovator in the country's history, a man who forged an unbeatable wartime alliance between government, industry, and the academy. He had done work for the Navy during World War I and had come to believe that modern war was too complicated for the military, not a position that endeared him to the armed services. Writing after the war, he admitted that setting up the NDRC was seen by many as "an end run, a grab by which a small company of scientists and engineers, acting outside of established channels, got hold of authority and money for the program developing new weapons. That is exactly what it was." Though he claimed in his autobiography that not a "single idea of mine ever amounted to shucks," he is credited with "the greatest mobilization of scientific and technical talent and resources the world had seen. . . ."¹²

The NDRC, funded directly by Congress and the executive branch, bypassed military budgets and reviews. It spent the money on a research and development structure that closely linked university laboratories with industries capable of quickly converting ideas into procedures and products. Depending on advice from the military about areas of need, and giving the military direction about operations, the mechanism worked so well that in June 1942 an impressed President Roosevelt put the NDRC under the new, much larger Office of Scientific Research and Development. Bush led that too. After Enrico Fermi's December 1942 controlled chain reaction at the University of Chicago, Bush found himself directing a war effort gone nuclear and become breathtakingly costly, with a billion dollar commitment in June 1943 to build The Bomb.

The old NDRC, now headed by Harvard president James Conant, administered programs for the Navy, including the one on sub-surface warfare that oversaw the University of California Division of War Research. UCDWR was one of half a dozen "in-house" university laboratories working with contracted industries such as Bell Telephone and Gulf Research and Development, whose prewar oil-locating appliances were retooled to find submarines. Sonar, improved radar, more sophisticated communications gear (including underwater listening devices), the proximity fuse, and all manner of stealth, search, and sleuth hardware resulted from the combined efforts. So did an enormous amount of basic geophysical and oceanographic information.¹³

As early as 1943, members of the Navy's research coordination office staff were preparing a plan for federally funded research that might keep OSRD scientists at their war work during peacetime. In the late fall of 1944, they tried to have the National Academy of Sciences establish a Research Board for National Security with an admiral as its head. That failed, but a new version of the plan was accepted, and the Office of Naval Research (ONR) was established in August 1946 as the primary federal agency supporting academic research.

The agency was popular almost from the outset. During the war, Congress had been won over to the benefits of research, and the armed services had come to see scientists not as irrelevant intellectuals but as saviors of western civilization whose genius could mobilize strategy, arm and feed troops, and inform policy. Hiroshima and Nagasaki dissipated whatever doubts lingered. By 1946, with the Cold War freezing eastern Europe into a hostile nuclear camp, the entire country seemed to believe it needed science and technology to survive.

Set up in the office of the Secretary of the Navy, with power shared by a civilian director and a military chief of Naval Research, the ONR aimed at fostering "fundamental knowledge upon which the entire military establishment may draw" and overcoming "scientific bottlenecks" (such as the Navy being shut out of the Manhattan Project). Certain work—mostly classified—was transferred to San Diego's Radio and Sound Lab, renamed the Naval Electronics Lab to reflect its post-war business more accurately. Participating university labs such as Scripps, Caltech, and MIT were bundled together with for-profit groups—Gulf and Bell labs still among them—in the contract process. Most significantly for the future of scientific research in the United States, skeptical universities were brought into the fold with promises of single, overall contracts that permitted publishable, unclassified basic research to be done by individuals who might then engage in summer work at the classified labs.¹⁴

Supporters of the plan argued that only in this way would an orderly flow of creative scientists and well-trained technicians be ensured for ongoing research and development. Equally important was the degree of civilian control possible in university settings—a factor that could thwart overzealous military

use of the results—and the amount of congressional goodwill that could be generated by spreading research dollars into many states.

Understanding that in 1946 the "last thing" civilian scientists "wanted to see was another Naval officer," ONR promoters hoped that the post-war universities' relative impoverishment would make such contracts more appealing. The University of California's annual federal income had grown from just over \$1 million in 1942 to more than \$26 million in 1945; like other institutions, it had easily accustomed itself to that level of funding. A year after the war's end, with only \$100,000 of in-house research money, it was vulnerable to Washington seductions. The ONR—with some \$40 million in unspent war-project money, a reported \$32 million from the Bureau of Aeronautics, and the entire budget of the Atomic Energy Commission at its disposal—had more than enough to spend on the relatively small fraternity of war-research colleagues.

Some university leaders worried about maintaining the integrity of the academy under the pressure to perform and deliver for outside elements. Among them, despite his NDRC connection, was Harvard's Conant. Raymond Birge, chairman of Berkeley's physics department and of its Committee on Research, said in 1948 that university involvement in defense projects was dangerous because the work related to development rather than to research. But president Sproul overruled him. In time, all major universities joined in the ONR-funding plan. The procedure worked so well that with certain changes—the addition of peer review and the subtraction of Navy applicability—it became the model for the National Science Foundation, chartered in 1950, and for the National Institutes of Health.¹⁵

The hands-off ONR system lasted about a decade. Eventually, politics won out, and the Secretary of the Navy lost the ONR to the Chief of Naval Operations, whose job it was to keep the Navy in a state of war-readiness. This meant that research projects needed demonstrable applicability, and the process of getting funding became an exercise in outguessing the admirals by "painting projects blue." Oceanography needed little straining to prove its worth to the Navy, which was just as well, for Revelle, in the Bureau of Ships, had assigned specific, applicable projects to researchers and found that they

failed. He learned then that the only good research was done by scientists who "were driven by curiosity, the desire for discovery and the desire for fame . . . "

* * *

In June 1945, two months before Nagasaki, Admiral G.S. Bryan of the Navy's Bureau of Ships told American Geophysical Union members that oceanographic work during the war had paved the way to final victory. Paying "particular tribute" to Roger Revelle, and citing work done at Scripps, Bryan said he intended "to retain the Oceanographic Unit as a permanent component of the Hydrographic Office." The following year, Bryan's successor reported that the unit had been established by Navy secretary James Forrestal because "the development of modern global warfare" had made oceanography essential to national security. The Soviet Union had scooped up most of Germany's submarine war booty and was threatening to turn it against the United States.¹⁶

In a relatively short period of time, ONR grants would be Scripps' most important source of funding, and money from an oil industry becoming increasingly dependent on offshore prospecting would fatten budgets. But in December 1944, Revelle went to Berkeley to discuss with Sproul Scripps' participation in the original version of Navy-funded, post-war classified work. Sproul asked the advice of his staff, who suggested setting up a separate administrative unit in San Diego—exactly what Revelle wanted. He told Sproul that his choice for director was physicist Carl Eckart.

In early 1946, the Bureau of Ships' Edward Cochrane sent Sproul a letter, apparently written by Revelle and several young officers a year earlier, after Revelle had returned to Washington from Berkeley. In the letter, Cochrane proposed an annually renewable contract for work on underwater sound to be done by university personnel at the Naval Electronics Lab. Implying that such work would be carried out in an independent university research unit, Cochrane offered several suggestions for its administration, and said that funding—which he estimated as starting at about \$175,000 a year—would continue "for as long as national defense policy makes funds available." By then, UCDWR's final contract of almost half a million dollars—which technically ran out at war's end—had been transferred to the Bureau of Ships.

It took Sproul two months to talk through the difficulties with his faculty and staff and to smooth out potential conflicts with Washington. But an agreement was finally reached establishing the Marine Physical Laboratory, headed by Eckart, who would have a faculty appointment at Scripps. Work funded by both the Bureau of Ships and the ONR would be done in collaboration with the Naval Electronics Laboratory, and it would be classified.¹⁷

In 1946 Revelle headed the ONR's geophysics branch, but he wanted to succeed Sverdrup, who was retiring as director of Scripps. What he later characterized as "opposition within the Institution and University" made that impossible, so he proposed Eckart as director with himself in charge of research and development. Eckart apparently had no desire for the job, but was willing to hold it for Revelle, who demanded "adequate authority" to keep Scripps from slipping "downhill" in peacetime.¹⁸

When he returned to San Diego in the summer of 1948, Revelle was a veteran of Operation Crossroads, the nation's first nuclear tests at Bikini Atoll. Due in large part to its demands for operational independence during the war, the Navy had been badly hurt by being excluded from work on the bomb. Though the Army too was bypassed when President Truman decided in favor of a civilian-led Atomic Energy Commission as the nation's nuclear research agency, successful lobbying inside the Truman administration put Crossroads under the Joint Chiefs of Staff. The Bureau of Ships got the job of planning the operation, and Revelle, appointed chief oceanographer, managed a staff of 85 scientists and technicians who measured ocean surge, radioactivity levels, and other phenomena.

Scripps was back at Bikini the following year, for further test-result studies, and again, with Revelle in charge, in 1950 as a stop-over on the institution's most ambitious venture. Underwritten by the Bureau of Ships and the ONR, this huge expedition, code-named MidPac, was fruitful beyond hope. Results, which included the discovery of the underwater Mid-Pacific Mountains, were "revolutionary," Revelle said later. "Nothing that we expected was true. Everything we *didn't* expect was true. The sea floor was young, not old. The sediments were thin, not thick. The heat flow was high, not low. The bottom was rough, not smooth." These findings set the stage for later plate tectonic

work, but MidPac immediately opened for Scripps more than a decade of dramatic oceangoing exploration.

Two years later, in October 1952, Scripps ships again steamed west, this time for a role in Operation Ivy, the underwater hydrogen bomb test. Preliminary studies had convinced Walter Munk and John Isaacs, as well as Revelle, that the detonation of "Mike," the 22-ton, boxcar-shaped bomb, would cause a landslide that might trigger a tsunami. Revelle later said they "conned the Navy into spending a hell of a lot of money to be prepared to evacuate all the Pacific Islands that were liable to be affected by it, to make many of the observations from the air rather than from ships." No tsunami ensued. But the Scripps ship *Horizon*, anchored directly under the fallout, became too "hot" for further radioactive work. It was used after the test, however, for the Capricorn voyage to Tahiti, Tonga, and the Marquesas.¹⁹

The final Scripps venture into nuclear waters was close to home. Operation Wigwam, in 1954, tested an underwater device just south and west of San Diego. Revelle said later that little oceanography was learned from the tests, but that it was Scripps' duty to participate in them. "I'd been in the Navy for eight years, and all of us had been involved with World War II. We felt that we ought to do what we could to help the United States government." He believed the Atomic Energy Commission lied to the public about the extent of radioactive contamination from the tests, and he disapproved of that, but he refused to join the Federation of American Scientists, an anti-nuclear weapons group. As director of Scripps, he felt he should "be as apolitical as possible."

With China going to Mao, the outbreak of the Korean War, and the Cold War heating up the South China Sea and Southeast Asia, Scripps' continuing involvement in the Pacific Ocean appeared to be political, but these were quiet connections. The oceangoing scientific work was what made headlines, and San Diego grew exceedingly proud of the institution that forged worldwide research connections and hosted visits from exotic enemies and friends. The decade that began in 1950 was a hearty one, a period of "great hope" and "great optimism" in the sciences, Revelle said.²⁰

Part of the optimism was generated by exceedingly handsome budgets, and those were augmented from a very homely source. In 1947, the sardine catches that created California's Cannery Row were only a third as large as they had

been a decade earlier. Scripps got \$300,000 from the state to learn why. Ships were borrowed from the Navy, and the study was named the Marine Life Research Program. It was housed in Point Loma quarters near the Naval Electronics Lab. During its first year the project, which would be led in the future by two Crossroads veterans, nearly doubled Scripps' staff. In time, sardine-research funding of \$ 1 million a year, which included proceeds from a state-mandated fishermen's landing tax, supported almost every area of Scripps' work and served as a sonar testing field. Thus tiny fish became guinea pigs in big defense research, causing an administrator with the California Academy of Sciences to urge Scripps' Carl Hubbs to "wise the boys up on where the money comes from."

By then, Revelle had been named director of Scripps over the objections of at least four faculty members. His opponents complained to Sproul about Revelle's arrogance, poor judgment ("Out of a generous heart he added to the staff a psychopathic misfit who had been dropped from NEL"), ambition (his "active and obvious campaigning has displeased us"), and "impetuous enthusiasm and crusading spirit," which caused him to abandon major projects "in midstream." But Revelle, who had an inside track anyway, mounted a Charter Day conference attended by representatives from the American Petroleum Institute, by national fisheries groups, and by the president of the National Academy of Sciences. Sproul was impressed, and when Eckart said he was leaving in 1950 whether or not a replacement was named, Revelle got the job.

The budget that year was \$1.5 million. When Revelle left in 1964 it was \$12 million, mostly from the federal government, which paid for submarine research that became the keystone of the nation's Cold War deterrence structure. The Marine Physical Laboratory and the Marine Life Research Program, the darkly mysterious Visibility Laboratory that moved to Scripps from MIT, the Applied Oceanography Group with Gifford Ewing, the Institute of Marine Resources, the Marine Physiology Research Laboratory, and, later, Walter Munk's Institute of Geophysics and Planetary Physics were generously funded. All were created with Revelle's support, and he always believed that his "principal contribution to science has been in organizing things."²¹

Selected to represent Scripps' opposition to the Loyalty Oath, he forged Academic Senate friendships that changed him, he said, from a "Navy-

mind" science director into a university politician. He also learned how to build a faculty. Initially, attempting to be a good administrator he said, he tried to strengthen weak departments and ended, he believed, by weakening Scripps. That taught him to recruit "people who were bright and let them do what they wanted to do." Though he personally knew many candidates, he also learned to rely on the University of California system to get the people he wanted: "We emphasized the university's standards for appointments and promotion. We always treated our research staff as if they were faculty members."

Though this practice would cause some trouble later, it did underscore Revelle's commitment to get the Navy to understand research. For years, scientists at the Marine Physical Laboratory working on the development of a low-frequency underwater listening device were plagued by the Navy's need for secrecy. Embarrassing problems with security clearances was one difficulty; another, more significant, was an embargo on publishing results. This meant that few colleagues and almost no potential graduate students knew what kind of work was being done there, or by whom. Like religious sects that forbid marriage, the lab, it seemed, was doomed to a single generation, a dismal prospect that disheartened and finally depressed the staff.

Revelle got the Navy to declassify bottom-sounding data, which helped, and as early as 1951 he began to expand the graduate training program with advanced courses in basic sciences. He hoped this would improve the consistently poor showing of Scripps graduate students on their UCLA-conducted doctoral exams. This was the step that set in motion the founding of the University of California at San Diego.²²

CHAPTER TWO

A CATHEDRAL ON A BLUFF

IN PRINCETON IN DECEMBER 1958, Revelle told a group of graduate school advisers that any university "must be distinctive" in order to be distinguished, and to be distinctive should be built "from the top down and not from the bottom up—from the inside out, not from the outside in." He said faculty should be appointed in "one field at a time or in a very small number of closely related fields" in order to create a stimulating "critical mass" of scholars. He also believed it was imperative to "desegregate" the sciences, humanities, and social sciences "because of the profound effect of technology and scientific discovery upon all aspects of our modern society."

His ideal campus would be one where teaching was conducted in multi-discipline "divisions of instruction" and research was done in institutes based not on objects of study, but rather "on the emotions of scientists and scholars." Three such institutes he hoped to establish immediately were the Benjamin Franklin Institute, devoted to solving societal problems; the Alfred North Whitehead Institute, which would address pure reason; and the Charles Darwin Institute, dedicated to the study and description of the physical world.

These institutes would fit into a university that would resemble, from within, a human cell, a "complex open system" where "great things happen through the interaction of great men following the pathways of ideas." From without, this university would be like a cathedral: "the center to which all men turn to find the meaning of their lives and from which emanates a wondrous light, the light of understanding."

This was what he wanted for San Diego.¹

* * *

Southern California businessmen were a worldly lot for cathedral-building, but they had been trying since 1924 to get a full-fledged University of California campus established in San Diego. By the mid-fifties the city was still in a post-war economic decline dismal enough to recall E.W. Scripps' "broken down boomtown." With 1945 peace, proud and profitable factories such as Consolidated Aircraft had gone begging and ended by being bought. Solar had turned its airplane manifold company to the production of stainless steel coffins. Production everywhere dropped to less than 10 percent of its wartime level. Though the financial picture had been brightened by the \$57 billion Korean War with its appetite for jet airplanes, aircraft carriers, and conventional weapons, San Diego industry in the fifties believed it needed to go nuclear to regain financial stability. For this, it needed physicists and engineers. For them, it needed a university. For that, the Chamber of Commerce in early 1955 welcomed California assemblyman Sheridan Hegland's request to back a resolution he intended to introduce in Sacramento the following week.

The Hegland measure passed in the assembly on March 30. The language would be important. The regents of the University of California were requested to "conduct an investigation of the feasibility, desirability and practicability of establishing a branch of the University of California at San Diego, either by expansion of the present institution at La Jolla or by creating a complete new branch. . . ."²

The regents never liked being pressured by the legislature, and they usually complied with such requests quickly as a way of preempting further intrusions. Within weeks, the regents referred the question of a San Diego campus to President Sproul, who immediately turned the matter over to the Liaison Committee which represented the university, state college, and junior college systems.

In August Revelle confidentially told a Sproul aide that the new campus should be "something like" a publicly supported Caltech. Its purpose, he said, should be "education for the new profession of scientific research rather than the older, more orthodox professions of law, medicine and engineering." Ignoring even the possibility of an entirely new campus, he said an "expansion" of Scripps was extremely important to local industry. Knowing how

tender the university was on the subject, he warned that San Diego State, "now doing a satisfactory job of undergraduate education," might make a bid at becoming "a full-fledged university," competing with whatever the university might decide to do.

That fall, the San Diego Chamber of Commerce appointed Bob Biron to head the group's education committee and created a campaign chest for its battle to get a university. Biron was vice president of Convair, the old Consolidated Aircraft Company renamed and made a division of General Dynamics. He told the chamber that General Dynamics' president, John Jay Hopkins, was considering building a \$10 million "pure and applied science" research center. With an "appropriate academic atmosphere," it would go in San Diego.

Two days later Hopkins, characterized in the press as the "top boss of San Diego's biggest business," jokingly told local reporters that the city "may be rife with atomic energy. You may have it running out of your ears." A gregarious lawyer, large of stature and wide of face, Hopkins was a golfer and financier who had worked his way into the presidency of the Electric Boat Company—a manufacturer of submarines—in 1947. He sheltered the company under General Dynamics, a company he formed in 1952, the year he bought Gulf Research and Development, one of the companies that worked with Scripps on ONR contracts. In 1954, when he first suggested a San Diego university campus to the mayor, he absorbed Convair and turned it to making ICBM missiles in a new \$40 million Kearny Mesa plant. Next, he bought the Stromberg-Carlson electronics firm. In 1955, he was pushing for a huge expansion in nuclear research for his new General Atomic division, which would be housed on a piece of Torrey Pines mesa land donated by the city.³

Delighting his listeners with tales of nuclear submarines and "atomic airplanes," Hopkins expressed the hope—long held, he said—that the university would see fit to provide a branch for Convair's would-be scholars. Though he did not mention it, adding a state-supported academic member to his local military-industrial conglomerate would mean creating in San Diego a science and technology mechanism that mirrored the wartime OSRD structure that had made him a very rich man. Within the month, San Diego Aircraft Industries Association vice president Leland Webb warned the press about the

ominous shortage of U.S. engineers. Weeks later, Admiral Chester Nimitz, who had retired into the ranks of the board of regents, told a reporter that the nation needed the San Diego school because the United States was falling behind the Soviet Union in the production of war machinery.

In December 1955, the city council met to discuss its appropriate action and ended by disagreeing with the chamber of commerce on the ends it sought. City manager O.W. Campbell believed that popular will dictated building something different from a public Caltech. Population projections indicated there would be huge numbers of college-age San Diegans in need of schooling in another ten years, but Campbell may have taken his bearings from the past. Thirty years earlier, when the university began looking for a site to replace the old Los Angeles Normal School campus, the San Diego City Council formed a committee to push for establishing the university in La Jolla. Ellen Browning Scripps was a member of the committee. The council offered land near the city farm in back of Scripps Institution for what was said to be a 10,000- to 20,000-student campus. Westwood made a better bid, but some San Diegans remembered the disappointment and apparently meant to try harder this time. Once again, the city council voted to offer the university, at no cost, "certain City-owned lands," but for an undergraduate school "for students who are desirous of entering into the professional field of engineering."⁴

Three days later, December 16, 1955, University of California alumnus Jim Archer led a San Diego delegation, accompanied by Hopkins, to the board of regents meeting in Los Angeles. The chamber of commerce-dominated group included Naval Electronics Laboratory director Henry Bernstein, Convair science director Edward Creutz, Manhattan Project veteran Frederic de Hoffmann for General Atomic, and representatives from the Convair-based Engineers and Architects Association, which anticipated at least 1,500 of its members attending institute classes.

Ignoring the city council's resolution, the San Diegans proposed to the regents the immediate establishment of an "Institute of Pure and Applied Physics" and an "Institute of Mechanics" that would contribute to national security, enhance state education, save the local economy, and also "give necessary support and balance to the Institution of Oceanography." Further development would include "more extensive graduate teaching and the

addition of undergraduate facilities." In the future, depending on "the university needs of the State of California," more institutes could be added. The regents, favorably disposed, submitted the matter to multi-level committees and requested that Revelle, as chief local administrative officer, prepare a general statement about the campus.

The San Diegans went home to stump Archer, an attorney with one of the city's most prestigious law firms who had locked ideological horns with Revelle over the Loyalty Oath, wrote for support from regents Nimitz and McLaughlin—keeping quiet about the possibility that Governor Goodwin Knight might name him as one of their colleagues. Chamber of commerce assistant manager Arnold Klaus mounted gala social events and organized sightseeing trips for potential backers. In April, a blue-ribbon and be-brassed local contingent gave a lunch for the Sproul-appointed Special Administrative Committee chaired by plutonium-discoverer Glenn Seaborg. Guests included Revelle's former Navy boss Admiral Rawson Bennett, now military director of the Office of Naval Research.⁵

The pressures were hardly subtle, but Hopkins, a Berkeley alumnus, believed in a more direct approach. He wrote Sproul on March 1, 1956, that the General Dynamics board had that day agreed to give \$1 million "over a period of the next few years provided that the University's proposed plan to establish an 'Institute for Pure and Applied Physics' and an 'Institute of Mechanics' at the La Jolla campus . . . is adequately implemented." He expressed the hope that these two initial institutes, modelled on "lines so successfully followed by the Scripps Institution of Oceanography," would be the first of several devoted to pure and applied mathematics, geochemistry and geology, biology, and the somewhat nebulous "Living Arts." The institute format—"which enables different scholarly disciplines to be applied to a broad but common goal"—would "powerfully accelerate scientific progress." Sounding very much like a latter-day E.W. Scripps, he closed with the hope that his very large prod might similarly stimulate university deliberations.

A month later, Seaborg wrote Sproul that with an important exception his committee, though divided, had approved Revelle's proposal for the new campus. "We believe that the organization should be along more or less conventional departmental lines rather than on the Institute Plan." Members

agreed that the school should be primarily a graduate one, and suggested that San Diego State strengthen its undergraduate science curricula and that the two schools should work together closely. Opposition to the majority vote came from faculty who believed money available for enlarging science programs should go to UCLA and Berkeley and from university vice president Jim Corley, who feared that even mentioning San Diego State might reawaken the ambition of all state colleges to grant graduate degrees.⁶

That same month, April 1956, the very powerful statewide Academic Senate committee on educational policy had its say: No new university. Despite, or perhaps because of, Revelle's citing the "complete lack of local university facilities at the graduate level in all fields except those now covered by the Scripps," the senate reported that nothing more than the Scripps Institution was needed in San Diego. And what was more, any future such foolishness "should be thoroughly reviewed by the appropriate Senate committees."

Though Seaborg's even more powerful faculty voice could overrule such antagonism, it could not be heard very distinctly just then. An exceedingly boisterous assortment of opinions was being submitted by any number of analysts. The following month another, separate, university advisory committee recommended the establishment in San Diego of an "additional major center of instruction and research which will offer *undergraduate* work of a high quality" and only gradually develop a graduate school. This was an enlarged version of the San Diego City Council's choice, and may have reflected the wishes of the legislature, but it never had a chance. The next week, the Liaison Committee offered a politically astute compromise that in effect backed the Seaborg committee-approved Revelle plan. The La Jolla campus should have facilities for graduate instruction leading to the Ph.D. degree "in the physical sciences and engineering for a small but highly selected group of students and employed personnel." Research results, "insofar as consistent with national security," should "be made available to the public." However, "to take advantage of the broad undergraduate potential," area high schools and "existing undergraduate institutions" should begin combing student bodies for "exceptionally promising students. . . ."

Though institutes were not mentioned, they were not outright denied; equally important, the report affirmed keeping San Diego State in the under-

graduate classroom and off university turf. In August 1956, the regents' Committee on Educational Policy changed its earlier recommendation for "graduate and undergraduate" education in sciences and technology to one in favor of a "graduate program in science and technology, with such undergraduate instruction as is essential to support the graduate program."⁷

The full board of regents that voted for the proposal the following day was chaired by Edwin Pauley, a Berkeley graduate who lived near the UCLA campus and enjoyed a fortune considerably enhanced by Sea of Cortez oil fields first suggested by Scripps' work in the late thirties. A power in the state and national Democratic parties, Pauley had been a mainstay in World War II Naval Oil Reserves work, an adviser of Harry Truman, and a friend of Robert Gordon Sproul. In the summer of 1956, he was also host on his private Hawaiian island to Roger Revelle for a few days' sun and talk. Undoubtedly the two discussed the school. And apparently Pauley at that time supported the graduate institute, which the board approved, with a \$12 million to \$15 million budget.

Soon after the meeting, Sproul asked Revelle to have the Scripps staff prepare a formal proposal for the new school, and to include information about "sources of support" such as the contemplated \$ 1 million General Dynamics pledge and "the publicized gift of land by the City of San Diego," along with "its relationship to laboratory facilities of General Dynamics. . . ." In October, at the La Jolla Woman's Club, an Assembly Ways and Means Committee heard near-unanimous support for campus plans from university officials and local civic, educational, and industrial leaders. Present were representatives from General Atomic, Convair, Stromberg-Carlson, Ryan Aeronautical, Solar Aircraft, Kelco, Kay-Lab, Cal Western, the University of San Diego, and Palomar College. San Diego State College president Malcolm Love endorsed the "research institution" that would be a "fitting climax and capstone to one of the finest educational systems in the United States." Love apparently meant for his support to carry the message that a research institute, not an undergraduate campus, was what he expected to be built.⁸

Revelle assured the audience that the new "institute" would pose no threat to local colleges. For at least two decades, he said, the student body would not

be larger than 1,000, and in the unlikely event it should mount a football team, he hoped it "would never win a game."

The Ways and Means Committee approved a San Diego campus that would "provide advice and leadership to the industrial and military scientists already established there, and, by furnishing a center for advanced studies available to them, would bolster technical recruitment progress." This, in turn, would strengthen California's "national position."

In December, six weeks after the regents deposited \$100,000 from General Dynamics' and formally received the company's \$1 million pledge, another Sproul committee, chaired by Revelle, not surprisingly accepted the Scripps-generated academic plan which, among other things, called for 1 faculty member for every 3.2 graduate students. When undergraduates were admitted, there would be 1 professor for every 5.8 students. Revelle said the demands of research imposed the inordinately low student-faculty ratio—the university average was 1 to 12. But the research could afford it, for like Scripps Institution work it would be funded by "foundations, corporations and philanthropists." Moreover, money would be easier to raise and use within the institute that would operate like Scripps, or even the Marine Physical Lab—as an organized research unit outside usual university channels.⁹

Entirely unexpectedly during debates preceding the full board of regents' vote on the school, Pauley suddenly suggested that UCLA handle the actual planning for the San Diego campus. UCLA was still awarding Scripps' doctorates, and it also ran an extension engineering division in San Diego. It may well have been reluctant to lose control, and Pauley may have been speaking for his Los Angeles friends. Or he may have had personal reasons. Revelle, as usual outspoken, told the regents that Pauley's idea was preposterous.

For the time, Pauley kept his peace and voted with the rest of the board to approve a graduate school in San Diego. Provisions, which stipulated Scripps' "continued integrity" or independence within the organization, were made for instruction in science and technology, and research in basic and applied mathematics, physics, chemistry, and earth and biological sciences. Although the school should emphasize work toward the Ph.D., planning should allow for undergraduates; however, none would be immediately enrolled. "If and when

undergraduate students are enrolled," course work should "prepare students for graduate study in science and technology."

Just barely within the time frame allotted for studying the matter, Sproul was able, in January 1957, to send to the assembly a letter supporting the feasibility, desirability, and practicability of founding a "well-developed graduate school for instruction and research in science and technology." He included a bill for preliminary expenses of \$370,000, which the legislature approved in May. By that time, the regents' finance committee had sketched out a five-year, \$24-million building and site-development program for the campus.¹⁰

* * *

During most of 1956, everyone involved in the San Diego process knew that the Liaison Committee was working on the legislature's study of higher education in California. It seemed likely, given activity in the assembly, that more general campuses would be called for.

When the university system somewhat reluctantly absorbed Santa Barbara College in the early forties, critics claimed it was growing greedy. This charge prompted a study from which came a 1946 initiative constitutional amendment defining the separate arenas of higher education in California. State colleges would be part of the public school system and would be limited to undergraduate and graduate education to the level of the master's degree. The university, in addition to educating undergraduates, would conduct research, award the Ph.D., and control professional education. It should not enroll more students.

But the state had to handle thousands of new post-war college students, and the legislature, in the early 1950s, asked the Liaison Committee to take another look. The resulting 1953 "Restudy," based on new demographic projections, recommended lifting enrollment ceilings at university and college campuses, without building any new ones. But while the committee was soberly counting young California heads, the legislature was sprouting bills proposing new campuses. By the time the craze passed, measures for new state colleges in dozens of counties, including San Joaquin, Alameda, Sonoma, Stanislaus, Amador, Imperial, Santa Cruz, Kern, Napa, and Solano, had been introduced and amended to include worthies such as "Frog U." in Calaveras. Though all

the bills died in committee or in Governor Goodwin Knight's pocket, the activity convinced the politicians that yet another study was needed. They once again set the Liaison Committee to work, and in 1957 got back the "Additional Centers" report. Bowing to obvious public demand, the committee this time lifted the embargo on building and set guidelines for creating new campuses. San Diego was ranked as the second most deserving site.¹¹

The study provided the germ of what would become Clark Kerr's great Master Plan for Higher Education, which opened avenues that any California youngster could use for advanced schooling. But in 1957 it added another difficulty to the founding process in San Diego. Now, there were three distinct elements working for what would be three totally different school plans: General Dynamics/the Chamber of Commerce; the City Council/State Legislature; and the Liaison Committee. Each represented shifting coalitions. And there were still other planners who wanted no campus in San Diego at all.

The university's statewide Academic Senate used the Additional Centers report for its final argument against San Diego's "narrow yet extravagant" school. The senate implied that the planned institute primarily would serve the military-industrial sector, and said that it represented "an all-out commitment of a major University program to a pattern of research organization of which the long-range merits are subject to serious questions." In addition, the "sumptuous program"—the teacher-student ratio had gored a tender faculty ox—by its concentration on research would actually accentuate the "extreme shortage of teaching talent at the top levels in the sciences." Perhaps even worse, it would jeopardize university harmony and "confer upon the faculty and students on that campus a preferred status gravely disproportionate with respect to treatment accorded faculty and students in like positions and fields on other campuses. . . ." The report ended with a reminder that Revelle's research institute ignored the state-mandated requirement for university growth, and that it would be an abrogation of university responsibility to provide undergraduate education. Perhaps as a way of clearing what they may have believed were waters intentionally muddied by the Scripps director, the Academic Senate committee sourly noted that the "eventual development of a major campus of the University in the San Diego area" was consistent with Revelle's having

recently told the press that 15,000 students and a staff of 6,000 were expected on campus by 1985.

This time Sproul created a "reconstituted, enlarged and representative Special Planning Committee on Policies and Program" to examine the senate report, and he did not appoint Revelle chairman. But while Revelle scurried to respond to criticisms, the regents in June 1957 approved a \$2 million 1958-1959 and a \$3.3 million 1959-1960 capital-improvement budget for the science and technology graduate school. But at Sproul's request, they named it the University of California, La Jolla.

By then, General Dynamics' John Jay Hopkins was dead. The announcement was made May 3 in San Diego newspapers that also carried information about the funeral of Senator Joe McCarthy, the Sixth Fleet's activities off Lebanon, and a warning to the Soviets that the United States was prepared to use the hydrogen bomb against any attack. There was also an item about the USSR building 1,200 missile-carrying submarines, and a quote from Senate minority leader William Knowland of California, saying he opposed the president's atoms-for-peace program. Strangely, all the day's news was pan of a Cold War reality that fostered the creation of UCSD.¹²

* * *

The death of Josef Stalin in 1953 had not made Eastern Europe seem any less a monolithic danger, and the Middle East looked increasingly to be the cradle of a Third World War. In 1954, Eisenhower's secretary of state, John Foster Dulles, hinted darkly at U.S. intervention in Indochina, where Ho Chi Minh's Communist-backed troops had besieged the French for two months in Dien Bien Phu. In 1951, a year after the People's Republic of China signed a treaty of friendship with the Soviet Union, President Truman had announced that the United States probably would not use the atomic bomb on the new Asian nation, which meant there had been talk it might. Three years later, Dulles said the future basis of U.S. defense policy was "a great capacity to retaliate instantly by means and at places of its own choosing." Two months after that, the first hydrogen bomb was exploded in the Operation Ivy test surveyed by Scripps staff. The Wigwam nuclear test was conducted off San Diego's coast in May 1956, just before the Liaison Committee approved a

graduate school for the city, and just after Nikita Khrushchev announced in England that the Soviet Union would produce a guided missile with a thermonuclear payload.

By then, scientists, engineers, military experts, and University of California administrators knew that the kind of instant retaliation Dulles mentioned meant missiles and control of space both above the earth and below the seas. It was a suddenly vulnerable nation that in October 1957 watched the Soviet-launched *Sputnik* satellite blinking eerily overhead as a superscience omen that the United States might well lose the Cold War. Eisenhower had to admit to the public that the USSR had more scientists and engineers and was "producing graduates in these fields at a greater rate" than the United States. A common warning, heeded in the nation's capital and repeated in San Diego by Roger Revelle, was that the nation's youngsters must learn either science or Russian. The response on the street, in boardrooms, and in Washington was to demand bigger and better science, and to crank up across-the-board funding to unprecedented levels. Navy research spending alone reached what at the time was a staggering \$15 billion a year, and work was hurried along at an urgent "hot war" pace.

No university system in the world was more politically sensitized than was California's in the fifties. With continuing oversight of Los Alamos, augmented national nuclear labs at Berkeley, and ongoing defense-related work in San Diego, none was more conscious of its centrality in the structure of academic-oriented national defense. Sproul was as committed to the university's doing its patriotic duty in 1957 as he had been in 1941. He stumped for the new campus by issuing a press release that stated his conviction that the United States' "industrial civilization and our very survival as a country depend critically on increasing the numbers of able young scientists and engineers. The proposed expansion would greatly aid the University in carrying out its responsibilities to the State and the Nation. . . ."

Other supporters of the San Diego campus implied that potential faculty members, working with scientists at General Dynamics, might avert national disaster by developing defenses as unimaginable as the threats announced by *Sputnik*. This seemed clearly understood by a San Diego establishment that was politically conservative, friendly to the military, and—like the rest of the

country—committed to enhancing the near mystical safeguards promised by technology. The work being done by Scripps-liaison personnel at the Marine Physical Laboratory in conjunction with the Naval Electronics Laboratory was known to be top secret and very important; General Dynamics not only held a very large economic umbrella over city fortunes, but also was engaged in work believed to be vitally significant to national security. It was into this defense-rich climate that the notion of creating a science and engineering institute in San Diego was introduced.¹³

But support for the endeavor was not uniform enough to satisfy local planners. At Glenn Seaborg's suggestion, Revelle asked Ernest O. Lawrence for his "critically important help," and sent to Sproul a closely reasoned argument for going ahead with the already approved institute. This, he said, was actually the best way to fulfill the requirement for a new general campus, because institutes could simply be repeated, as necessary, in a series of "identifiable and somewhat separate vertical units" of about 2,000 students each that would provide "optimum interrelationship between undergraduate and graduate students, faculty and research workers." Further, the science institute would be cheap because it would not require a large humanities or social science library. And it would be "the most effective way to start building the degree of distinction for the expanded campus that the University of California demands." Sproul heard almost the same arguments from his reconstituted advisory committee. Moreover, the committee suggested looking for enough San Diego land for a large general campus. In an enlarged and extremely persuasive form, the case was presented three weeks later to the full board of regents by university vice president Harry Wellman.

The August 1957 regents meeting, held at the university's Lake Arrowhead conference center, and preceded by an all-day public discussion, was devoted to the Liaison Committee's massive "Additional Centers" study. The mood was serious. The assumption underlying the study was a California population that might reach 50 million by the year 2020. Something had to be done to educate huge masses of students. At the end of the often rancorous meeting, the board voted in favor of full university campuses in San Diego, the South Central Coast, and southeast Los Angeles or Orange County. But debates had uncovered disagreements that almost immediately hardened into

obdurate problems. Among these, the most stubborn was inter-campus rivalry in the form of statewide Academic Senate opposition, and it was not helped by Vice President Wellman's urging an early start on La Jolla's institute. Pauley, who may have believed that a built institute could thwart a planned university, told members it was too late to entertain Academic Senate arguments. Since "gifts have already been accepted," renegeing on the institute was not possible. But he did not like the idea of new general campuses, and at one point suggested removing 25,000-student limits at UCLA and Berkeley and shuttling in students from other areas. Nevertheless, and somewhat mysteriously, he had already made a serious inquiry about land for a San Diego campus.¹⁴

During the 1957 version of the annual all-male communion with northern California nature held in their private grove by the uppercrust Bohemian club, Pauley had asked San Diego newspaper publisher Jim Copley what he thought were the best sites for a big new campus. Copley told him that the most obvious and compelling site, for any number of reasons, was north of La Jolla, between Scripps Institution and the new General Atomic installation, where ample city land and the Marine Corps' soon-to-be-abandoned Camp Matthews were located.

Copley put the recommendation in writing, and at the regents meeting Pauley asked Revelle to read the letter into the record. However, in what might have been an attempt to undermine Copley's position, Pauley then introduced university architect Robert Evans, who didn't like the La Jolla site. Evans earlier had complained to Sproul that the university was losing face in San Diego "because of our vacillation," but at the meeting he would say only that it might, but with difficulty, be possible to pull together about 1,000 acres in the area Copley suggested. The following day, a majority of regents' educational policy committee members approved building a La Jolla institute. But Pauley maneuvered a rider on that recommendation, stipulating that any land for the campus site "be made available with no cost to the University of California." After considerable procedural nitpicking, which covered deeper concerns, the committee agreed on language that was as vague as it was graceless: "That, subject to full consideration of the availability of adequate sites and the cost thereof, as to be determined hereafter, a large campus of the University of California be developed in the San Diego-La Jolla area. . . ."

Revelle seemed to have been outmaneuvered. As things now stood, his institute was tied to acquiring free land for a general campus. He tried to separate the two by urging an immediate start on the graduate school. Regent Ed Carter, whose skill in land development had created the state's largest retail chain, rather firmly reminded Revelle that establishing the graduate school would now have to be an integral part of building a general campus. Revelle, the recording secretary thought, "felt rather strongly" that it should not be delayed. Regent McLaughlin, out of patience and feeling that Revelle was out of line, told him that although he might go ahead with hiring faculty, he probably would not get any buildings, for the regents were not going to waste money on redundancies. That settled the matter for the regents. The meeting adjourned.¹⁵

But Revelle was not finished. A week later, he had his aide write a careful three-page letter to Sproul urging that the science and library building planned for the institute be built immediately despite regents' opposition. If that were not possible, then why not assign to that building the "priority and capital funding dates" of one already approved for Scripps and scheduled to go up in 1960. Sproul was persuaded, and he convinced the regents to make the necessary shuffle. The following summer, in July of 1958, the regents did in fact authorize the immediate establishment in La Jolla of an Institute of Technology and Engineering "to provide graduate instruction and research . . . with the understanding that the Institute later may be converted into one or more departments of instruction and research." Apparently, Revelle got what he wanted, but he was not complacent. The following January, he wrote "that any delay in establishing the new Institute of Technology and Engineering as an effective operation would be tragic, and might affect to a significant degree the very survival of the United States."¹⁶

Whether Revelle was speaking to the era or from it must remain secreted by the interwoven demands of research, personality, and politics. But the salvation of Western civilization was not an unknown function of a cathedral. Just weeks before he wrote that letter, he had given his address at Princeton about his academic city on a hill. He was determined the hill would be in La Jolla.

San Diego voters agreed in 1956 to give to the University of California 40 to 50 acres of land for the graduate institute, called the School of Science and Engineering. The land lay near the parcel offered to the university 30 years earlier at what would become the intersection of Torrey Pines Road and La Jolla Village Drive, then called Miramar Road and laid down as a main route to E.W. Scripps' ranch. It was a triangular corner of a "pueblo" or town lot, part of what originally was the 50,000-acre grant from the Spanish crown held in common by the people of San Diego and surveyed and mapped in 1870 into numbered 180-acre plots. E.W. had arranged for the Biological Association to buy one lot, Number 1298, in 1907. Revelle wanted part of Lot 1311 as the site for the School of Science and Engineering. Within the year he was pushing again, this time to obtain some 450 additional acres for what he hoped would be an 1,100-acre campus.¹⁷

By then Revelle was an old hand at real property. At the time he began his campaign for campus acreage, he also was involved in a complicated land transaction for a community theater. In 1955, Revelle convinced the regents to contribute a site to the Theater and Arts Foundation in order to keep the prestigious La Jolla Playhouse in production. He told them that the drama group's presence would help attract the kind of scientists he wanted on the staff at Scripps. But it was necessary to include the city in a three-way deal. The university promised the foundation some 12 acres of Scripps Institution's Lot 1298 off of the redrawn Torrey Pines Road. The city promised the foundation a 49-year lease on 6 acres in front of that for a parking lot. And, in exchange for 8 acres of pueblo Lot 1299 at La Jolla Junction—later the north intersection of Torrey Pines Road and La Jolla Village Drive—the university gave the city 15 acres of the southeast corner of Scripps' Lot 1298. When the Revelle-masterminded deal was made public, the city announced that it would sell, for a housing development "comparable to Bel Air in the Los Angeles area," more than 200 acres between Torrey Pines Road and what would become La Jolla Scenic Drive. The parcel, which included the land the city had gotten from the university, lay just south of a pencilled-in shopping center. The sale took place in April 1955. What was called the La Jolla Highlands subdivision would be built on portions of Lots 1298 and 1299; Vista de La Jolla—later renamed Prestwick Estates—would be built further south by devel-

oper Harry Summers. Buyers included Theater and Arts Foundation board members Helen Alvarez—who would offer her Sorrento Valley ranch as a possible campus site—and Bill Black, owner of the oceanfront La Jolla Farms above Scripps Institution's campus.¹⁸

The city master plan drawn soon after the sale included the recently sold 234 acres, the as-yet-unbuilt theater, a pair of proposed golf courses south of the city's Torrey Pines park, a La Jolla Farms subdivided into residential lots, and a parcel of about 1,200 acres east of that which was described as a prime area for residential and commercial developments. This last piece was where Revelle wanted the University of California campus. It adjoined Scripps Estates, which Revelle and a small group of Scripps faculty had bought in 1951 from Charles Poole. Poole, five years before that, had bought the 38 acres from the estate of Fred Scripps, but even earlier it had been the site selected by E.W. for free housing for Ritter's marine biologists. Revelle bankrolled some of his poorer associates, and oversaw subdivision of the land into a variety of lots, some oceanfront, all beautiful, which could be reached by a street bearing the name E.W. wanted, Ellentown Road. "Although this is not an official University of California project," said Revelle while work was in progress, "the proposed development is being carried out with the approval and support of President Robert Gordon Sproul. . . . By making it possible for present and future staff members to build and own their own homes, this development should prove to be a long-range asset to the Institution and the San Diego community."

He may have meant "long-term," but the community's immediate response to Scripps Estates was hostile. At that time and later—despite the Supreme Court's civil rights ruling—the La Jolla Real Estate Brokers Association (REBA) enforced restrictions in property deeds that denied residency in the village to all but white Christians. The language of the clauses was similar to that for a piece of property adjacent to Scripps in La Jolla Shores: No "part of said tract shall, at any time, be lived upon by any person whose blood is not entirely that of the Caucasian race. . . ." The only restrictions placed on Scripps Estates Associates (SEA) were monetary. Anyone could build and live on the \$2,000 to \$6,000 lots as long as they did not gouge future buyers. The

open-housing aspect of the development apparently infuriated many San Diegans, and REBA was the voice of their waspish xenophobia.¹⁹

But the layout of SEA and the design of the houses were popular in the city, in part due to Revelle's asking the help of naturalist Guy Fleming. Fleming, much earlier, had worked for Ellen Browning Scripps, and Revelle had served with him on the Torrey Pines Association, a group formed to protect the oceanfront park. Miss Scripps had willed to the city as part of the park the spectacular, canyon-cut portions of pueblo Lots 1338 and 1339. The bequest was conditional "upon the irrevocable dedication" of the surrounding area to parkland. The city complied in 1924. Thirty years later, the park was selected for the pair of golf courses shown in the 1955 master plan. The Torrey Pines Association threatened to sue, and stood a good chance of winning. If golf courses were built as planned, Miss Scripps' land could revert to her heirs, including Mrs. Roger Revelle. But there apparently were divisions within the association. No lawsuit was filed. Sensitive to the politics and money involved, the group merely pressed for a southern park site for the golf courses, on land occupied during the war by the Army's Camp Callan.²⁰

Revelle also included part of Camp Callan on the list of lands he wanted the university to acquire for the new campus. But the regents had not even agreed to build the university in La Jolla. In the winter of 1957, Revelle put on a hard sell for a regents' meeting, housing them near the beach, wining them in his oceanfront home, and dining them at sundown in the Beach and Tennis Club at a cost to the university of only \$3.75 each. Architect William Pereira, hired by the regents as site consultant with his partner Charles Luckman, bundled the visitors onto buses for tours of the three San Diego sites he had selected from the more than 20—including Lindbergh Field and south Rancho Santa Fe—proposed for the campus. The trip covered an area around Lake Murray, the land Revelle wanted north of Scripps, and the northeast corner of Balboa Park.²¹

The regents left without committing themselves, but Revelle, a week later, told the La Jolla Town Council in a widely publicized speech that no site other than La Jolla was possible. He said the new campus should include the Marine Corps' Camp Matthews, the present Scripps Institution land, pueblo lots made available by the city, and "all of old Camp Callan north to the golf course"—

this last despite a considerable portion of it being privately owned and already subdivided. The combined properties would link Scripps and General Atomic. Pauley was irritated by the speech and complained to Revelle, who responded in March with a conciliatory but somewhat disingenuous letter. He was "not trying to outguess the Regents," he said, but instead was trying to pull the teeth of potential opponents—chief among them La Jolla Town Council president H. Bailey Gallison—who were grumbling about a large general campus "on the grounds that it would considerably change the character of the town." His speech had been so successful, he said, that the board of education and the newspapers—apparently forgetting that publisher Copley had suggested it—had formally thrown their support to the La Jolla site. In fact, Revelle had "agreed to make several similar talks to other groups in different parts of the City." He may have been serving Pauley notice that he would take his case directly to the people. Revelle had no intention of losing his campus to Lake Murray or Balboa Park and apparently was willing to take on the university's most powerful regent to make certain he won.

In this he got support from Pereira, who in June told the regents that he liked Lake Murray but thought it would be too expensive to develop. The 1,400-acre Balboa Park, with its cultural and recreational amenities and the exciting possibility it offered of quickly building a real urban campus in the midst of an attractive neighborhood, was much better. But there was "a good deal of sensitivity against any proposal of locating a new campus in Balboa Park." La Jolla seemed best, and the areas Revelle suggested would do nicely. Pereira's partner, Luckman, said it was important to decide quickly, but did not go on record in favor of any specific site. He reminded the regents that university enrollments had declined to 45,000 in the previous decade while state college counts had tripled to 75,000. Building more state colleges was a logical solution to a population problem and the legislature was not stupid. This sent the regents on a 15-minute washroom break, from which they returned to ruminate on the nature of the university and its mission in the state. Pauley enlarged on Luckman's theme. Given the numbers, why build several new campuses? For that matter, why build any new ones at all?²²

Though the legislature had already appropriated \$800,000 to investigate getting land, when the regents' site committee met for dinner two weeks later,

chairman Phil Boyd tried and failed to keep discussion free from arguments against building additional campuses. Pauley apparently had swayed regents McLaughlin and Steinhart, who asked why not simply put more dormitories on existing campuses?

Kerr, newly appointed university president, suggested going ahead with the approved School of Science and Engineering. But he also suggested acquiring, for future use, Camp Matthews, the city's free pueblo lands, and part of the oceanfront La Jolla Farms property owned by William and Ruth Black. Doing so would assure that the land would be available and desirably zoned if a full campus were ever needed.

The committee, not unaware that Sacramento would approve of the action, agreed. Pauley seemed to accede to majority wishes. But he ended the meeting with a series of demands that were worked into resolutions adopted by the full board of regents. They voted to concentrate solely on the La Jolla site "for a limited period," provided "adequate, well-located acreage, including Pueblo land and Camp Matthews, can be secured by gift with satisfactory title"; airplane noise from nearby Naval Air Station Miramar can be "reduced and maintained in the future at a tolerable level"; new highway routes "will permit safe and convenient use of all contiguous property"; and land-use plans for the area assured "necessary housing and community development for the service and convenience of a large University campus." Two days before the meeting, General Dynamic's Pace told a reporter that the company's \$1 million gift was predicated on the university building its campus adjacent to the new General Atomic, where regents architects Pereira and Luckman were designing nine buildings.²³

The regents' demands might well have thwarted a task force less zealous than the one assembled by Revelle. The site he proposed was a combination of city, federal, and private lands scored with county and state roads that lay under the flight path of a major Navy air station, and it was pressed by planned subdivisions of expensive houses and a shopping center. The Navy would have to be convinced to quiet its airplanes and declare its Camp Matthews Marine Corps training facility surplus. Developers would have to be made to understand the benefits of a university in their midst. The city and state would have to move already approved schools and road beds. The new freeway planned to

replace major north/south Route 101, which went right through the middle of the proposed campus, would have to be eased eastward.

Moreover, the area was exploding with real estate speculation. In addition to residential developments in the immediate vicinity, pieces of Sorrento Valley to the north and already zoned industrial were rumored to be sold. And to the east, developers Carlos Tavares, Irvin Kahn, and Norman Smith were laying siege to the area they would name University City. City planner Glenn Rick, who oversaw much of the development, seeing the future, resigned his public post and became a private engineer for the area that was referred to around city hall as "the promised land" of a southern California real estate boom. There were fortunes to be made. Plans, revised plans, reworkings of revisions, retoolings of reworked revisions, scrapped hopes, dashed friendships, and an enmity between the university and the city ensued.²⁴

But Revelle's corps was not daunted. A response to a potentially damaging geological report done by Pereira and Luckman was already finished, with findings that at least two apparently inactive east-west cross faults and a northwest—southeast subsurface "lateral variation" would merely restrict the kinds of foundations that could be used, but did not pose the troubling seismic threat anticipated in the earlier study. On the housing question, Revelle had Wescott Griswold of Security Title send Kerr a "not-to-scale" map and a description of a new subdivision of some 4,000 affordable single- and multiple-family dwellings in Mira Mesa, which appeared to be very close to the proposed campus. In any event, he told the regents, housing anywhere in San Diego was an easy commute from the proposed campus.²⁵

Revelle had answered enough regents' questions to appear before the San Diego City Council with a formal request for voter approval on transferring to the university all or part of six pueblo lots. He also asked for more of Lot 1299 to go with the little piece the city had traded to Scripps earlier as part of the La Jolla Playhouse land swap. The whole pie-shaped area hopscotched north from the Scripps campus along the east edge of La Jolla Farms up to the land the city had given General Dynamics for its General Atomic building, then dropped southeast along what would become Genesee Avenue. Its south edge was old Miramar Road. The southwest corner would abutt School of Science and Engineering land. Revelle, perhaps again reaching for a point not

yet made, told council members that La Jolla had been given highest priority by the regents to develop into a campus comparable to Berkeley and Los Angeles. Jim Archer, who appeared at the meeting with Revelle and university vice president McCaffrey, said quick action was necessary to foil campus-building in other California areas. McCaffrey added that the university's "contribution" of a campus to San Diego "will be comparable to that of the Radiation Laboratory at Berkeley toward the survival of our way of life. . . ." The council voted to place the proposal on the November ballot.

But the Navy was not keen to quiet down Naval Air Station Miramar, and Pereira and Luckman later told Kerr that "any favorable solution must be arrived at at the Washington level." On the bright side, McCaffrey said he had gotten "reasonable assurances" that Camp Matthews would be available with "sufficient pressure in Washington." Moving the freeways and highways seemed easy enough, and San Diego planners were working on restrictions and zoning for the area adjacent to the campus. He did not mention the "promised land" aspects.²⁶

In August, a Berkeley contingent visited San Diego to try to clear up some of the remaining problems. Jim Copley's editorial writer, Captain E. Robert Anderson, arranged a lunch with Navy Secretary Thomas Gates, who was socializing with southern California friends. Revelle and McCaffrey attended, as did Jim Archer, Bob Biron, Phil Anewalt, and a trio of local admirals. The university crowd managed to buttonhole Gates on the subject of Miramar noise and got assurances of cooperation and personal interest. Camp Matthews was on the post-lunch agenda, and Revelle, McCaffrey, Archer, Biron, and Arnold Klaus met with Congressman Bob Wilson, who had learned about decommissioning government property when he managed the transfer of a downtown post office site to Convair. Wilson was willing to help the university get the Marine Corps camp, and he proposed introducing the transfer as an amendment to an appropriations bill. This would save years of red tape.

The group also worked with city council representatives on wording for the November referendum conveying pueblo land to the university. Then there were lengthy three-way negotiations between the city, the university, and the Scripps Hospital board, which earlier that year had successfully petitioned for 35 acres of pueblo land for a new building financed in part by Ellen

Browning Scripps' trust money. Unfortunately, that parcel was in the middle of land the university wanted. A solution to what McCaffrey called "the conflict" was reached, but probably did not endear the university to Scripps Hospital supporters, who had also hired the very busy Pereira and Luckman as architects.

The exhausting day ended in strained talks with Convair vice president Biron. In early August, General Dynamics' Pace had told Kerr that the company's original pledge—he didn't mention a dollar amount—was made to establish a graduate program if "sufficient additional funds" came from the state or other sources, and that "the timing of further financial assistance by the corporation" depended "intimately on the speed and vigor" of funding "the new graduate center of science and technology. . . ." Biron, speaking for Pace, told McCaffrey that pressing General Dynamics for further payment of the promised \$1 million would be imprudent. The university backed off.

Without a commitment for city planning that would safeguard university interests, and without the requested pieces of Lots 1299 and 1311, the ballot proposition allowing the city to transfer the desired land to the university passed on November 3, 1958. Many years and difficulties would intervene before the transaction would be complete.²⁷

During 1959, Pauley's objections to a general San Diego campus focused on Miramar aircraft noise. It was likely that he told at least some of his many friends in the Navy about his opposition. In the spring, C.C. Hartmann, commandant of the 11th Naval District who earlier had assured Kerr that the Navy was willing to help the university, wrote Kerr a harshly worded warning: Speaking for the Navy Department, he said that Miramar was a "hard core" \$60 million air station that was essential to fleet aircraft operations. It was and would remain noisy and dangerous. Because of this, the Navy suggested that its "civilian community friends" undertake only light industrial development in the area, and said it viewed "with great concern" the university's proposal to locate a campus there. The university could expect "no retreat"; the "Navy is in Miramar to stay. . . ."

Nevertheless, supporters of the La Jolla campus moved for final approval at the May 1959 regents' committee meeting. Along with a handsome San Diego community plan for 12,000 acres near the campus, they presented findings of

regent-hired consultants who reported that their studies, though not complete, indicated that noise from Miramar jets would be tolerable inside buildings. Kerr moved that the committee recommend to the full board that "the La Jolla site be approved for the development of a general University campus and a Chief Campus Officer be appointed. . . ."

Pauley, not unexpectedly, balked. He suggested that rather than building a general campus, the university take over San Diego State College for undergraduate education and leave La Jolla as a "first-rate graduate school in the physical sciences." Kerr finessed by suggesting that the word *general* be struck from the recommendation, leaving the proposal's wording that "the La Jolla site be approved for the development of a University campus." This was the form approved by the board of regents the following day. That September, the regents asked the legislature for \$5.35 million for La Jolla, most of it to be used for what would now be called the new School of Science and Engineering.²⁸

Pauley was not finished. During an October 1959 regents' committee meeting, he complained that approval of a campus in La Jolla had been made without a complete noise report. But he was countered by the regents' own noise expert, who said that none of the Scripps Institution or General Atomic staff members he had interviewed had complained about Miramar noise. And university architects reported to the committee that keeping campus buildings quiet would add no more than 2 percent to construction costs. But architect Charles Luckman, who had left the partnership with Pereira and was believed to be working for Pauley, disagreed. He told regents that muffling Miramar jet noise would add at least 10 percent to the price of La Jolla buildings.

Kerr, briefed by Revelle, pointed out that Luckman had based his estimate on designs for outside classrooms in primarily glass buildings that faced Miramar's takeoff pattern. Kerr also said that Scripps Memorial Hospital board members had told him they had been advised that dampening noise in their new building—closer to Miramar than the campus—would cost only an additional 4 percent. Pauley demanded to know who had made the Scripps Hospital estimate. Said Kerr: The hospital's chief architect, Charles Luckman.

Pauley had been not only outflanked but also outwitted. Revelle then humiliated him. Part of his support on the board came from regents he had taken to his private Hawaiian island to demonstrate how loud jet planes

from nearby Oahu Airfield were. The nearly deafened regents got Pauley's point, but Revelle found out about the caper and brought it up at the meeting. He told the committee that yes, the campus was about as close to Miramar as Pauley's Hawaiian retreat was to Oahu. But so were the campuses at Riverside to March Air Force Base, and the universities of Minnesota and Arizona to nearby commercial airports. None of the other universities reported problems with the noise.

Pauley's was the sole "No" in the vote reconfirming the board's May decision. A determined infighter with powerful connections in Washington and a friend, Pat Brown, in the California governor's mansion, Pauley did not take defeat lightly. Revelle, years later, called his October 1959 victory over the oil man, which contained a good bit of competitive pride, "pyrrhic." Opponents of Pauley's stature seldom slink quietly away and never like to be beaten. A month later, clearly against Pauley's wishes, the regents proposed some \$3 million operating money for the La Jolla campus.²⁹

* * *

The people most responsible for this new school had been odd bedfellows from the beginning. Differences could be hidden by the quest for a common goal, but as in most group efforts, the individuals involved were responding to independent and private impulses. Disagreements that were merely dormant and would awaken later had been shaped by fights over the campus. Some of the most deeply felt had been created by the very public battles between Revelle and Jonas Salk.

Salk, who had been made a national folk hero by the discovery of the polio vaccine, was scouting sites for a biological institute that would be supported by March of Dimes contributions and funded by a ten-year, \$20 million National Science Foundation grant. Apparently he had come to San Diego at the urging of campus founders who believed a liaison was possible between Salk's laboratory and the university. The San Diego City Council, led by mayor Charles Dail—a polio victim—was eager to have Salk and quietly offered him a choice of free pueblo lands. Salk picked 70 oceanview acres in pueblo Lot 1324, despite voters having already agreed to transfer a portion of that lot to the university. Though no exact boundaries had been stipulated by

the city, Revelle believed Salk wanted to cut out the bluff-top heart of the university campus. The former Camp Callan land lay just north of La Jolla Farms, which adjoined Scripps Estates. Revelle, feeling that the city had been duplicitous, wrote an outraged letter to the mayor and launched an attack on Salk, who he thought had acted in an underhanded manner. Salk refused to back down. So did Revelle. Their storied fights erupted most dramatically during a shouting match in Jim Archer's house, when Kerr put the two in separate bedrooms and failed as negotiator to settle their dispute.

Mayor Dail then proposed a solution that was either masterfully sophisticated or extraordinarily naive: Voters would be asked to approve giving an additional 40 acres of pueblo land and about 30 acres of Torrey Pines park adjacent to the golf courses. If that passed, the city would divide 70 acres between the university and Salk. Public response was immediate and angry, stirred up by a sarcastic press and citizens' meetings denouncing the university.

The regents, many of whom were believed to privately support Salk's position, thought Revelle needed to be backed into a corner on the issue, and he was. Kerr was able to tell the board in June 1960 that the Salk problem was solved. The city council had firmed its promise of 450 acres to the university. Salk could have his site, and, as Kerr reported to the board, "more cordial relations among all concerned" had been established. The university had retained "everything which it had been led to believe could be expected," and Salk's institute would make "a very desirable neighbor." Revelle naturally did not agree. The episode cost him some important support.³⁰

In July, the regents asked the city to start the legal transfer of property. Requested was a 30-acre trapezoid of the contested Lot 1324 below the golf course and above Salk land, and about 365 acres on four other lots—the big middle chunk bounded on the west by what would be Torrey Pines Road, on the north by the proposed Genesee Avenue, on the east by what would become Interstate 5, and on the south by old Miramar Road, which was the boundary with the Marine Corps' Camp Matthews. The city, perhaps to smooth university relations ruffled by the Salk flap, released 32 acres of pueblo Lot 1311 north of Miramar Road to go with the School of Science and Engineering's 55 acres south of that, which would be deeded immediately. This became the campus of Revelle College.

The university also asked for 55 acres east of the Scripps Hospital site, at the juncture of the proposed Interstate 5 and Genesee Avenue and just north of Camp Matthews land. But the city refused. In fact, the city seemed to be folding back on its own planning for the campus area, and had apparently offered North American Aviation 40 acres north of the General Atomic site that had been planned as university and GA housing. This area along old Route 101, (which became North Torrey Pines Road), was now being discussed by the city as a commercial research and development area. Revelle wanted faculty housing on that site, and, indeed, the city had earlier planned it for that use. In 1961, again confronting the city for changing its position, Revelle proposed that the university trade part of Camp Matthews to the city for the land. A very uneasy university architect begged Kerr to call off Revelle: The university did not have Camp Matthews and it looked like there would be trouble getting it.³¹

The major portion of Camp Matthews' Marine Corps small-weapons training facility was built on some 545 acres that had been conveyed in 1937 by the city of San Diego in exchange for 60 acres of federally owned tideland. Pueblo Lots 1309 and 1310 and portions of Lots 1300, 1311, 1314, 1315, and 1316 were included. Jim Archer told university vice president McCaffrey before the regents' 1957 Lake Arrowhead conference that he had gone up and wandered around on the land and thought it was buildable. Because Archer was in charge of pushing through a \$35 million bond issue for a second southern California aqueduct, he promised there would be plenty of water for it too. Two years later, as he had agreed to do, Representative Bob Wilson introduced H.R. 8476 transferring Camp Matthews to the State of California. Wilson was more accommodating than careful, however, and so badly botched the wording that university counsel expressed doubts that, if passed, the bill would actually result in any land being transferred. Wilson subsequently introduced a neater version—H.R. 3099—on January 23, 1961, a month before Thomas Kuchel and Clair Engel introduced a similar bill in the senate.³²

It was assumed the bills would pass easily, for two years earlier, in July 1958, Revelle had realtor Phil Anewalt ask T.A. Wornham, commanding general of San Diego's Marine Corps Recruit Depot, about the university's chances. Wornham assured Anewalt that the commandant of the Marine

Corps was willing to have weapons training moved from Camp Matthews north to Camp Pendleton as soon as money was available. A month after that, Secretary of the Navy Thomas Gates told local reporters that he favored the move. But after Wilson introduced his first bill, the Navy notified the House Committee on Armed Services that it strongly opposed giving Camp Matthews to the university. It would cost \$20 million to get Pendleton up and running. Moreover, it said, Camp Matthews was too close to Miramar's jets.

This sounded like Pauley's work. Revelle had involved the Naval Electronics Lab in noise studies on the air station, and he had gotten Miramar's commander to change the takeoff pattern. But after introduction of the 1961 bills proposing transfer of the property, Rear Admiral Robert Ward, the Navy's Chief of Legislative Affairs, sent Senate Armed Services Committee chairman Richard Russell a letter repeating Navy opposition to the bill.

What followed was a power struggle involving a variety of interests, each more or less independent of the others. The senate bill's sponsors each sent President Kerr a copy of Ward's letter to Russell. Engel also sent a copy to Pauley. On June 30, Kerr wrote Engel and Kuchel to keep up the fight. The same day, Pauley wrote Engel, saying that although the university had been "counting on Camp Matthews," he, personally, was particularly interested in the Navy's concern about the proximity of Naval Air Station Miramar. "We have had studies made by people who claim to be experts in the field of sound," he wrote, "and the conclusions of these people have left questions in my mind. . . ." What's more, he had heard in Hawaii the rumor that when San Diego's Port Authority abandoned Lindbergh Field, it would locate the commercial airport at Miramar. He also wrote to fellow regent Philip Boyd and to Kerr, again citing the possibility of the commercial airport being put in at Miramar.³³

City Councilman Ivor deKirby, writing a "Dear Bob" letter, complained to Secretary of Defense McNamara about the Navy's negative reaction, which he said must rise from some "deep-rooted" opposition to the university being built in La Jolla at all. Perhaps sharing deKirby's sense of hidden agendas, Regent Boyd snapped an impatient reply back to Pauley: "It is disturbing to discover that we are still faced with your dissatisfaction with that site and that these doubts . . . are being shared with some Washington officials." McNamara told deKirby that the Navy had once again "reevaluated its position in the hope

that some solution could be found." But none was. And McNamara himself voiced Pauley-like worries. He was troubled, he said, by regents accepting the noise studies generated by Revelle troops that ignored the potential for louder and even worse airplanes in the future. That worry created another, which was shared by the Navy: that eventually the university would request the "military to cease operations at Miramar."

Around the same time, the House eliminated the \$6 million first-increment funding for a small-weapons training facility at Pendleton. A very nervous president of the San Diego Chamber of Commerce and Mayor Charles Dail complained to Secretary of the Navy John Connally. The university's lobby in Washington was called upon, and the regents, with much bitter debate, resolved on July 20, 1961, that they needed the Camp Matthews land and were willing to press their case. Harry Sheppard, chairman of the House Appropriations Committee, would have to be convinced, and Copley newspaper's Captain Anderson applied the pressure. Anderson phoned Sheppard in Washington and apparently got him to change his vote—and apparently kept him to his new commitment by promising or threatening to publicize the switch in an August 2 news story. On August 1, Anderson sent Sheppard his thanks "for the confidence you always express in my integrity when it comes to matters of public interest." He sent copies to Jim Copley and Jim Archer. Two days later, the *San Diego* Union ran the story that Representative Harry Sheppard would now support the appropriation for a new facility at Camp Pendleton. In mid-August the Senate followed the House's lead and passed the appropriations that would open the door for the Marine Corps' departure.³⁴

CHAPTER THREE

THE GUARANTORS OF SERIOUSNESS

ROGER REVELLE, LONG AFTER HE HAD DONE THEM ALL, said that starting a university, as "with most things one does for the first time—making love, becoming a father, getting a Ph.D."—was a project "approached with more enthusiasm than knowledge."

Early on, Revelle confessed to President Sproul that Scripps faculty members were reluctant to "face up" to the changes expected in the founding of a general campus. But Carl Eckart and Walter Munk, Leonard Liebermann, Ed Goldberg, and eventually Harmon Craig and Hans Suess met with Revelle to lay plans for departments of physics, chemistry, biology, earth sciences, and mathematics for the School of Science and Engineering. Arriving faculty would bring the first graduate students in the fall of 1958; if everything went well, the result would be not much different from one of the hoped-for institutes, which was not at all dissimilar to the nineteenth-century's great Johns Hopkins University that had so enthralled William Ritter. Recruiting—an opportunity to put into practice the idea of building from the top down and see if it worked—would be the first step. Revelle went to the University of Chicago and got himself a Nobel laureate.

Harold Urey was one of the first Americans so honored when he won the Nobel Prize in 1934 for his discovery of deuterium, or heavy hydrogen. He had been at the University of Chicago, attracting the brightest nuclear scientists, since shortly after the war. But with the death of Enrico Fermi in 1953, Chicago had lost its center of intellectual gravity. Money was tight, appointments were frozen, and Urey, soon to be 65, would have to be retired. But the chemist was certainly not ready "to take a gold watch and garden," said one

of his former colleagues. Moreover, Urey was in a state of professional transition. He had been director of Columbia's Substitute Alloy Materials Manhattan Project program, and had separated uranium 235, but had come to believe that nuclear weapons were "evil." Like his close friend and University of Chicago colleague Leo Szilard—who, years after discovering chain reactions, had abandoned weapons and big-time physics for biology—Urey was increasingly interested in other fields, especially geosciences and planetary science. He was attracted by General Atomic's nuclear energy research, and he wanted to work with Harmon Craig on spectroscopy. Urey told Revelle yes, and came to California in 1958 as University Professor of Chemistry, a system-wide appointment that technically allowed him to teach on any campus. But to the consternation of Berkeley and Los Angeles, he chose to be in La Jolla.

Few San Diegans had ever seen a real live Nobel laureate. So many wanted to that a lecture he gave shortly after his much-heralded arrival was dangerously overcrowded. The fire marshall ordered half the audience outside, where Urey kindly repeated his talk. Chicago's Robert Hutchins described Urey as "salt of the academic world," one of those "few who cannot imagine themselves doing anything but teaching and research" and who could not be deterred by "administrative barriers" or "lured away by any promises of power or profit." His devotion to his work was legendary and in Chicago took the form of a vigorous and ultimately unsuccessful campaign against the installation of telephones in professors' offices. In La Jolla, he refused an office with what he said was a distracting ocean view. The quintessential professor of myth, he was good-natured about stories that circulated about him, including the one that had him phoning his secretary in some distress: "I'm in Pittsburgh," he announced. "Why am I here?" Some of his students, he ruefully admitted to Carl Sagan, a former one, treated him as "the fastest gun in the West." But all of them loved him.¹

Urey had taught in a one-room schoolhouse to save the money for undergraduate study at the University of Montana, where he took a bachelor's degree in zoology. He went from a World War I chemical munitions lab to Berkeley for work with Gilbert Lewis in physical and mathematical chemistry, to Copenhagen and the study of theoretical physics with Neils Bohr. His isolation of deuterium—which, in the form of lithium deuteride, became the major

fusionable material in the hydrogen bomb—led to Columbia, then to Chicago's newly formed Institute for Nuclear Studies, where he also worked on carbon 13, oxygen 18, amino acids, and, using the atom as a paradigm, the origins of the planets.

Urey's arrival in La Jolla gave the nascent university instant legitimacy, what fellow chemist and University of Chicago colleague James Arnold called a "guarantee of seriousness." More than any other single factor, the fact of Urey was crucial to UCSD's success, for his presence first intrigued and then attracted other excellent faculty members. From the beginning, he was intensely involved with recruitment. Urey had been chairman of chemistry at Columbia, and described the politics there using a vector analogy: infighting essentially canceling everything out. He did not want that to happen in La Jolla, and he urged looking for faculty who would reinforce and help one another. This was a sentiment shared by the man who would do much of the searching.

Jim Arnold was 35 when he joined Urey in La Jolla in 1958. He had grown up in New Jersey, an only child, the son of a brilliant Rumanian emigre. He entered Princeton the week the United States entered World War II and went to work at OSRD on the Manhattan Project after his graduation in 1943. His 1946 Ph.D. dissertation is still classified. After a stint at Harvard, Arnold joined Urey's chief lieutenant, William Libby—who won the Nobel Prize for applying carbon 14 to dating—at the University of Chicago, for what he later called "the real experience, the uplifting, marking experience." But in the mid-fifties, Arnold led the pack of disaffected Chicago faculty seeking other appointments. In 1955, he took a tenured post at Princeton, but Revelle and Urey undermined his decision to stay in New Jersey. Despite offers from other universities, he came to La Jolla. He would do geochemistry and build a chemistry department that reflected his intellectual interests and his opposition to the lockstep of upper-echelon East Coast university politics.

Arnold's was the first of the transcontinental academic migrations that resulted in an instant working university department complete with students, faculty, and research money. And he was the first of the rebel recruits. These were men and women who were good enough to qualify for honors, awards, money, and prestigious sinecures at elite institutions, but who were restless, perhaps even

angry, with the social and intellectual constraints of the status quo. Like many who followed him, Arnold was also immensely ambitious. Although he only reluctantly accepted chairmanship of the new department, he eagerly set about "trying to assemble the best research faculty" in the world, looking for "distinction in science, breadth within field and breadth of interest." In addition, there were "human qualities we sought," the ones urged by Urey.²

Despite the contention by most scientists that competition was the tutelary emotion of their calling, early UCSD faculty consistently expressed yearning for fraternity. Perhaps this was a need sharpened by the nature of post-war, post-bomb research that often isolated investigators in the super-secrecy of classified defense work. Hope for a surcease of loneliness, much like that expressed 30 years earlier by Scripps biologist Sumner, not only underpinned ideas about establishing institutes, but also supported the building of bridges to other institutional and industrial science enterprises in the city. The research foundation of Scripps Clinic and the new Salk Institute (which had hired Szilard), as well as General Dynamics, offered dual appointments or consulting jobs to many faculty recruits. This meant extra money and, at least as important, a chance to collaborate with neighborly peers.

Frederic de Hoffmann had become director of General Dynamics' General Atomic division in 1956 and set it up in a schoolhouse loaned by the San Diego Board of Education. That same year he started a series of San Diego conferences that came under the Office of Naval Research's Summer Studies programs. These conferences were much like summer camp for the world's most eminent scientists, men such as Hans Bethe, Glenn Seaborg (Nobel laureate and UCSD backer who replaced Kerr as Berkeley chancellor before being named head of the Atomic Energy Commission), Edward Teller, Freeman Dyson, Alvin Weinberg, Manson Benedict, Ted Taylor, and Marshall Rosenbluth. Later participants included Neils Bohr, Curtis LeMay, Theodore von Karman, and Urey, who was interested in Taylor's work on sending a nuclear-powered spaceship to Saturn. The project, Orion, got \$1 million funding from the Advanced Research Projects Agency in 1958, the year Urey and Arnold arrived. That was the same year that a General Dynamics' Nautilus submarine slipped secretly—with great publicity—beneath the North Pole. University of California research had helped fuel the venture, as it would the

development of the Polaris missile. With a university in place, some of the help could be done on site.³

The opportunity to participate in such work, not only in the summer but year-round, was used to advantage by university recruiters who also found in one of the Summer Studies participants the founder of the university's physics department. Leonard Liebermann told Revelle and Carl Eckart that he might have uncovered a hot prospect for the crucially important appointment: Keith Brueckner, a young man visiting de Hoffmann's group who was working on a new nuclear reactor. Liebermann set up the lunch that ended with an excited Revelle offering Brueckner a job on the spot. "He was so vigorous, and so bright, and so enthusiastic, and at the same time had such good taste," Revelle said.

Revelle later said that anyone who knew Brueckner would understand "that starting a new physics department, in a non-existent university, in a remote resort town, where he would be surrounded by oceanographers, was just the kind of far-out gamble that he would be completely unable to resist." Brueckner was recruited from the University of Pennsylvania at a time when his varied interests would fill his professional closet with many hats. An entrepreneur, an insider at Los Alamos who had not worked on the Manhattan Project, and a mountain climber, Brueckner was an enormously ambitious man who had the energy and the talent to grasp most of what he reached for. At various points in his UCSD career, he headed prestigious government agencies and lucrative private industries as well as the School of Science and Engineering.

He did his undergraduate work at Minnesota, got his Ph.D. working on theoretical physics in the radiation lab at Berkeley in 1950, and did post-doctoral work at Indiana University and the Brookhaven National Lab. He arrived in La Jolla in 1959, a "big name," said a colleague, one of the "postwar hotshots." Like Arnold, drawn by the desire to make UCSD's department the best in the nation, Brueckner began to recruit with such zest that his reputation as a ruthless seducer of other institutions' faculty soon made him dreaded nationwide. The process brought him to the attention of university budget-makers as well, for he offered salary money very generously. He said "it was

necessary to supplement the state-provided funds with federal research grants and contracts. These funds were sought wherever available."⁴

In the summer of 1960, just after the announcement of a \$1.5 million Atomic Energy Commission gift to the campus, geneticist David Bonner arrived from Yale. He would be even better than Brueckner at spending money on faculty. Bonner was a non-Mormon from Utah, which may have marked him as a maverick for the rest of his days. He had earned his Ph.D. at Caltech working under George Beadle and Edward Tatum, who in 1958 shared a Nobel Prize that Bonner apparently believed was partly his.

His work on enzyme synthesis was so highly regarded that within months of his arrival in La Jolla, he put together a symposium attended by an international roster of 80 researchers whose papers were published by the National Academy of Sciences. With a Prentice-Hall textbook, *Heredity*, under his belt, Bonner began to build what would very shortly become the university's largest department, one supported by an enormous amount of outside funding. Jim Arnold, who would work closely with Bonner, described him as a "very combative" man "who fought joyously." He was perceived as a "risk taker," full of "energy and determination," who was "daunted by nothing." And he was said to be such an iconoclast that while his star was rising as a Yale medical school researcher, he refused to be an official member of the faculty. He had Hodgkin's disease, and this was seen by some as honing his ambition. He "was always aware of the imminence, of the presence of death just around the corner," Revelle later explained: "Always doing as much as he could every minute" as if he could triumph over his failed body. Bonner's research was similar to what Nobel laureate Francis Crick described 15 years earlier as "the chemical physics of biology." He hoped to establish at UCSD a series of laboratories and interrelated institute-like departments that would mix work and faculty from physics, chemistry, the Scripps Institution, and a barely mentioned medical school in a structure dedicated to molecular biology. He recruited along these lines with very great success.⁵

Technically, recruitment required approval from a committee of Scripps and UCLA faculty, but that was just bureaucratic window dressing. Revelle, Arnold, Brueckner, and, later, Bonner forayed out waving the University of California name and brandishing full-professor, even above-scale

appointments. Dangling the opportunity to build a new academic world along a southern California beach, they soon became well known. The University of Chicago—"a kind of patsy," Revelle remembered—continued as a UCSD faculty motherlode. A faculty member there said Revelle "must be one hell of a house guest," for "whenever we heard he was visiting, we knew another faculty member was about to leave town!" Bell Labs was also rich ground. Heavily involved with Scripps in OSRD submarine research during the war, Bell was working on the Army's Nike Zeus project, which brought together radar, computer science, nuclear explosives, and rocketry, fertile fields for deeper San Diego connections. Brueckner "plucked off some of their stars."⁶

In what became a set and nationally recognized raiding piece, candidates were lured to La Jolla where they were given carefully orchestrated dinner parties in faculty homes, including Revelle's on the beach in mid-La Jolla and new ones in Scripps Estates. Like social-club rushees, which in a sense they were, potential candidates shook themselves down into one-, two-, and three-party picks. The three-party people were shown buildable lots in Scripps Estates, a hint that at least implied they could live there once they joined the brotherhood.

Revelle said he would take prospects to his office after often vinous and late-night socializing featuring showers of "affection and eloquence." There he would "diagram on the blackboard how we were going to build our university," which was with a faculty that was "not only good but excellent"—one where the arts would be taught by artists, and the sciences would be the best in the nation.

Then it was time for a walk in the eucalyptus groves adjacent to Highway 101 that cut through the piece of Torrey Pines land Revelle wanted for his campus. He would shepherd marks onto the highest point, on Camp Callan land, marked by an "old, fallen brick chimney. I used to take our prospective professors up to this point, climb up on the old chimney, and look around, saying something like, "Can't you see a great campus arising all around here?"

Some saw nothing but the edge of the known world. Others were merely helpful in pointing out problems with the blackboard diagram. Some, said Revelle, were simply able to resist "our Siren ways." Among the ones who spurned the call were Nobel laureate Rudolph Mossbauer, Francis Low,

Murray Gell Mann, Donald Glaser, Murph Goldberger, Edward Salpeter, Valentine Telegdi, and James Van Allen who did not want to leave Iowa City. Ed Frieman, who much later replaced Revelle's replacement as Scripps' director, also said no, as did biologist William McElroy who would come later as chancellor. Some said yes, but were turned down. But even being asked was said to have raised salaries at a number of northeastern institutions.

Faculty who accepted brought funded grants, labs, and graduate students. They were proven researchers and often needed only to change addresses on their extramural money. Revelle said later that attracting the superstars was the cheapest way to start a research university. Which was good, for although, as Revelle said, the school had "lots of money," it had no buildings and "our new group of high-powered professors" for two or three years "had to content themselves with laboratories and offices in Sverdrup Hall and other nooks and crannies" on the Scripps campus. Various money-saving remedies, including inflatable rubber houses, were suggested, but when the time came to move into real buildings on the new campus, many were reluctant to leave. Camping out, they had lived like the pioneers they felt themselves to be.⁷

That move spelled the end of the beginning. By then, Brueckner was dean of the general university and directed recruitment in the humanities, arts, and social sciences. This meant filling slots, not finding stars, and they would have to be hired by the book. It would be done formally, by the first chancellor. Who was not Roger Revelle.

In 1961, when he knew for certain that he would not have the job, Revelle wrote Kerr that he was "disappointed and deeply hurt things have turned out this way.

"During the past several years, you have asked me to do a nearly impossible task: to manage the second largest research laboratory in the University, with its world-wide responsibilities, and at the same time to build a new School which would be the embryo of a great university, under circumstances that made it impossible to obtain adequate assistance. Evidently you and many of the Regents consider that I have failed in important aspects of this task, and I agree."

But, the faculty "and most scholarly opinion in the country consider that I have succeeded in the fundamental and critical aspects, and I hope in the long run you and the Regents will agree that this is so."

Revelle helped plan ceremonies celebrating the School of Science and Engineering's first building. Edwin Pauley and Clark Kerr would speak, and the new chancellor would be guest of honor. Then he left for Berkeley and a job as university-wide dean of research that Kerr created for him.⁸

* * *

UCSD, like many institutions, has a question buried in its cornerstone: Why was Roger Revelle not chosen to be chancellor? Revelle always believed his end-run around Regent Pauley on the issue of building the campus in La Jolla cost him the job. He is largely right, but there were many more factors, including strong community opposition, that fed dissatisfaction with Revelle among the regents, not just Pauley.

Behavior that he admitted was impatient and that others characterized as arrogant had made him powerful enemies and cost the university friends and supporters. His attempt in the early fifties at enlarging the Scripps campus, for example, was a drawn-out, acrimonious process. Revelle wanted the university to buy a piece of adjacent land. The owner, a relative of Mrs. Revelle, wanted to sell. But neighbors were bitterly opposed to the deal, and one retained the firm of future regent DeWitt Higgs to launch a lawsuit against the sale. The suit was withdrawn when the would-be plaintiff was told by university counsel that the regents could condemn property. The episode incensed the La Jolla Town Council, which went on record against the university, and the regents dropped plans to buy the property. Some blamed Revelle for what seemed an unnecessary confrontation, and Scripps' neighbors stayed angry at what they called Revelle's "high-handed" behavior.⁹

The Salk affair was also a public-relations problem. The regents quickly cut any connection with city suggestions to carve up Torrey Pines park, and some—perhaps even Kerr—blamed Revelle for again placing the university in such dubious circumstances. Scripps Institution neighbor Jim Archer, the university's best San Diego friend, increasingly was no fan of Roger Revelle. As local spokesman against the 1950 Loyalty Oath, Revelle had tangled with the

conservative Archer, most memorably, he said, during a bibulous all-night ideological battle in his house. The two clashed again, publicly, a decade later when Archer, representing significant local fears, complained that the campus seemed to be leaning Left. Moreover, Revelle's Scripps Estates blockbusting had created enmity toward him among the very groups that were the university's most ardent supporters. Clark Kerr, who as president heard all the anti-Revelle arguments, believed this issue was the most significant. Kerr said that he himself carried the "brunt" of a "bitter, bitter battle" over exclusionary clauses on the Irvine Ranch property, and knew "something of what Roger must have gone through" in San Diego.¹⁰

A stop-Revelle barricade probably was part of a drama political that occurred just before he was finally rejected as chancellor. The May 1960 rumor that Pauley was leading a group of regents who suddenly seemed to balk over accepting any land for a San Diego campus was old news. But citing "local pressure" against a general campus was new. So was the opposition of Governor Brown. Pat Brown, who later liked to tell the story that he wanted university branches built in counties that went for his opponent, Richard Nixon, in the 1958 gubernatorial elections, on June 3, 1960, referred to Regent Pauley's worry about Miramar noise when he told reporters that a start on establishing a general campus in San Diego might be more than a decade away. This goaded Sheridan Hegland, the Republican assemblyman who had introduced 1955 legislation for the campus, into charging that the governor—who was in the process of making the family fortune in oil—was politically indebted to Regent Pauley and was caving in to his demands. San Diego state senator Hugo Fisher, a Democrat, told the press that Hegland was spreading false rumors and "shooting off his mouth." Hegland said he couldn't imagine why Fisher was attacking him simply for telling the truth about Pauley, a "reclusive Democrat" who had donated more than \$1 million to the university.

But there was more involved. San Diego State College president Malcolm Love, who pointedly had supported only a graduate school, may have been expressing his hope when he told a reporter that a general UC campus might not be built in the city before 2050. Denying that he led the local anti-university faction, Love did admit that he had talked to "lots of people," including the governor, about keeping the university's hands off state college rights to

educate undergraduates. Love would have found a sympathetic ear in Brown, a seat-of-your-pants politician with no academic credentials and little affection for what was then perceived as the upperclass, expensive, and elite university. Although his own son was a Berkeley graduate, Brown's kind of students came from blue-collar backgrounds and earned their own money to pay for practical, job-related classes. There were many more of these students at state colleges.

Brown stayed coy for almost two months, which had even the *San Diego Union* lamenting the city's mysteriously losing its university. But in July, the governor urged the regents to get on with building a full university in San Diego. Several things had happened: During the interim the Salk affair had been settled, and Kerr had been persuaded not to submit Revelle's name for chancellor.¹¹

Clark Kerr, 30 years later, said Edwin Pauley's opposition to Revelle as chancellor was adamant and fixed. He worked his chairmanship of the board of regents like a ward boss, rewarding those who supported him and punishing those who did not. For many years, Revelle had been a favorite of the enigmatic Pauley, a relationship that may have started with Revelle's being the golden boy in Scripps Institution's oil work. Revelle said later that he had been a "pet" of Pauley, but the friendship cooled after he refused to accompany the oil man on a polar bear hunt in Alaska. But both men had complex relationships within California's often overlapping business and social networks, and each man fiercely protected his crowded private agenda. Pauley, for example, had close San Diego connections with Archer and with William Black, who was a fellow oil man, a colleague of Revelle on the Theater and Arts Foundation board, like Revelle an investor in land south of campus, and owner of the La Jolla Farms property the university wanted to buy.

Kerr said Pauley's motives in the Revelle affair were various, probably personal, and finally known only to the man himself: "All we can do is guess." Power "within his chosen institution, the University of California, meant more than anything, perhaps than anything in his life. So when you fought him, he was bitter and he never forgot." Pauley had influence on the board at least with Catherine Hearst and John Canaday, who was a friend of Convair's Bob Biron. He could easily gather enough votes to dump Revelle if Kerr submitted his name.

Though Revelle's many supporters on the university faculty were clamorous for his appointment as chancellor, some of his earlier Scripps faculty critics had not been won over by his tenure as director. Some still were irritated about what they saw as his cavalier attitude to the job—flying in at midnight, dictating six hours of correspondence, and flying off at dawn. And some faculty may have resented the way in which Revelle lived his private life. As a new Scripps Institution graduate student in June 1931, Revelle had married the beautiful and bright Ellen Virginia Clark and sped off for a honeymoon in British Columbia in a fancy new car that was a wedding present from the bride's great aunt, Ellen Browning Scripps. The new Mrs. Revelle, who had been born in her great aunt's La Jolla home, was the granddaughter of James Edmund Scripps. James was full brother to Ellen Browning Scripps; and while he was not the businessman his half brother, E.W., was, with his sister's help he was astute enough to found the Detroit Evening News Association, which Revelle later said provided the couple with their principal source of income.¹²

The newlyweds were related to such founding San Diegans as Kellogg and McKellar and were able to live far better than their neighbors in Scripps campus cottages. Revelle was generous with the money he always carefully characterized as his wife's, paying the salary of his assistant and picking up various faculty tabs. But his moving into a handsome oceanfront house in La Jolla, partying with social notables, and enjoying financial ease unimaginable for most academics inspired envy that produced sour criticisms of him on campus. Apparently his real estate investments, along with aspects of his private life, were the basis for some of the community complaints about him.

Revelle's complicated and considerable land deals bothered even his supporters. He was criticized for buying in 1957 a large parcel of undeveloped San Dieguito riverbed land north of the proposed campus and adjacent to property offered as an alternative campus site. He was also criticized for buying a sizable chunk of land off Ardath Road near the Prestwick subdivision south of the campus. He later said he had intended to develop the land into another Scripps Estate, but no one was interested at the time. Kerr said that no one who knew Revelle believed that his motive was greed, but almost everyone thought the land investment was ill-advised. It would not do to have a chancellor even seem to be profiting from the school.

But as much as anything, UCSD was moving into a future that would have to be far different from the wildcatting of the early institute's founding. Revelle, whom Kerr later described as one of the smartest men to administer any university anywhere, was impatient with university bureaucracy. His was the politics of founding, and he operated best on the margins or at the forefront of institutional life, where shortcuts were the best means to any end. Jim Arnold, who very much wanted him as chancellor, remembered looking at a new Scripps building with Revelle and asking why grass was being planted before sidewalks were built. "Let me give you some hard-won wisdom about the way universities work," Revelle answered. "What you do is you put in the grass, then you wait and see where people walk, then you put in sidewalks." This was not the way bureaucracies worked.

Kerr, when later pressed by Revelle, admitted that if he had put his own job on the line the regents might have appointed Revelle. But he believed that insisting would mean continual fighting, "with the San Diego dissidents using their friends as pipelines to the Regents to always keep their wounds open." In that process, UCSD, so favored—coddled even, according to university detractors—by Kerr, might be harmed beyond rescue. But Kerr said taking Revelle the news that he would not be chancellor was one of the most difficult things he had ever done. Thirty years later, the memory was still painful. If a chancellorship, like the nation's presidency, is a gift of the people, "Roger," Kerr said, "deserved it."¹³

* * *

In February 1961, area newspapers were told that the university's new chancellor was Herbert York. York, only 39, was an Ernest O. Lawrence protege, a Manhattan Project whiz kid who did physics at the Berkeley radiation lab before moving on to the Y-12 plant at Oak Ridge, Tennessee, for the duration of the war. With the restoration of peace, he returned to Berkeley, rounded up a doctorate, and, with Scripps' Hugh Bradner, designed and executed a diagnostics program for the 1950 Operation Greenhouse at Eniwetok Proving Ground.

Still a Berkeley assistant professor of physics, York, was selected in July 1952 to initiate the Radiation Lab's expansion into weapons development at

the new Livermore installation. Two years later, he was made head of Lawrence Livermore Laboratories. Four years after that, he went to Washington, D.C., as research director for the Institute of Defense Analyses (IDA) and chief scientist of the Advanced Research Projects Agency of the Office of the Secretary of Defense. Shortly thereafter, he was named Eisenhower's director of research and engineering for the Defense Department, a job that may have ruined his health.

In August 1960, when he visited various national research projects, York was administering an \$8 billion juggernaut aimed at the Soviet science lead. But during his San Diego stop, he disappointed his industry audience by telling them that unlimited research and development spending was probably a thing of the past. He took no particular notice of the city during that visit. And if his having a heart attack on the way back to Washington was portentous of San Diego's effect on him, he chose to ignore the warning. When Kerr asked if he wanted to be chancellor, York said yes.

Kerr had been York's chancellor at Berkeley as well as his president during the Lawrence Livermore era and knew he was a candidate acceptable to the board. Pauley and other anti-Revelle regents were members of the powerful committee on the nuclear labs and admired York's work. With a \$1 million Atomic Energy Commission computer—said to be the most powerful on any campus in the country—already up at UCSD and plans for a nuclear reactor being considered, San Diego could become a Livermore South. As Kerr remembered, the university "faced a huge investment of money, and Herb looked like a person who had handled big problems and big budgets and big construction projects." Later, York would say that the regents' added assumption about his having a good background in education was a mistake.¹⁴

York was born, reared, and educated in Rochester, New York, the son of a railroad employee. He was a less-than-mediocre high school math student who had subsequently travelled further than anyone expected. Still a little shaky from the heart attack, York arrived formally in May 1961 for the regents' meeting and ground-breaking planned by Revelle. He and his wife, Sybil, settled into a Frank Hope-designed house on Pepita Way, bought in the name of the regents by Jim Archer, who offered the \$85,000 asking price and suggested the owner donate much of the furniture to the non-profit university

cause. A modest man whose low-key mastery of situations would in time have him negotiating for the U.S. position in the nuclear arms limitation talks, York was less given to San Diego socializing than Revelle had been. And though the idea of York had been enormously appealing to local interests, the fact of him was not at all the hawkish hail-fellow of the military-industrial party circuit they had anticipated.

He almost immediately became aware of "a certain small awkwardness" in his relationship with Archer. He was equally ill at ease within the political context of local club life—the downtown Rotary Club was a favorite of would-be university supporters. He knew at once he "had a lot of different views about the world and everything else." And he found support for a general campus more mixed than he had anticipated: "There were those who wanted culture in the sense of a theater that would be associated with the place, and there were those who wanted support of the local science-based industries. But many or most of those people didn't like the idea that there would be left-wing professors. And a lot of them didn't want a lot of Jewish professors and so on." They certainly did not want "all these troublesome mangy students." In fact, most San Diegans "would have been happy if it had remained a school of science and engineering."

But it was going to be a full university campus, and nothing better symbolized the diverging opinions on its course than the fight over its name. Years later, York laughed about the "funny little fussy thing," but at the time, adherents of the "University of California, San Diego"—largely the chamber of commerce, city council, and countywide supporters—were faced down by "University of California, La Jolla" backers. This latter group included newspaper publisher Jim Copley, who was said to have forbidden his editors to use "San Diego" even after it became the official title. The resulting news stories about the "University of California, here" prompted York's supposition that at the mother campus, the system's newest sister would be described as the "University of California, there."¹⁵

York had stepped into the middle of the negotiations over getting Camp Matthews from the Marine Corps, and had the *San Diego Union* Captain Anderson, (whom York found to be "an unusual man who had somehow managed to weave a long career as a Naval officer with an even longer career

as an editor") write a letter, which he signed, supporting the transfer, which was stalled. Surplus military property normally was first offered to other Defense Department agencies. If there were no takers, the land was transferred to General Services Administration, where the Department of Health, Education, and Welfare usually picked it up. This was exactly what HEW Secretary Abraham Ribicoff wanted to do with Camp Matthews. York, Kerr and Governor Brown went to Washington in January 1962 to convince Ribicoff that he did not want Matthews. They succeeded, and that cleared the way for the House and Senate to vote on the two bills that would transfer the land to the university.

It took more than half a year for the measures to come up for a vote, but despite Oregon senator Wayne Morse's hour-long diatribe against it, the Senate version passed on August 8, 77 to 13. The House passed its version on September 5. On September 14, 1962, at 10:35 a.m., York got a telegram from Clair Engel: "Pleased to advise President Kennedy today signed Camp Matthews' bill."

There were some matters of wording to be worked out for the deed, and there was an interwoven problem of a Veterans Administration Hospital to be solved. The city wanted the hospital, and the university owed HEW a favor. After some juggling with the regents, Sacramento, and the city, the VA got a piece of Camp Matthews for the construction of a hospital near what would be the core of a medical school on campus.¹⁶

All this was an enormous amount of work, and expectations were that the reward would be a full complement of campus land. But problems with the city implied by omissions in the pueblo lands ordinance in 1961 became obvious. In fact, the city council seemed to renege on planning that had attracted the university to the La Jolla site. During a tense 1961 meeting, city officials tried to convince Kerr and the regents that no harm would come from changing zoning from residential to research-and-development on the land north of General Atomic. La Jolla Highlands developers Carlos Tavares and Irvin Kahn promised to increase density in planned housing and add green space for golf courses and parks south of the campus. City planner Harry Haelsing did allow that much of the promised land lay in "natural canyons and valleys" but thought that was not a problem. Kerr was not impressed. He reminded Mayor

Dail that the regents selected La Jolla largely because of housing shown in the 1959 plan.

On November 15, 1963, without resolving planning problems, the university accepted the deed to 456 city acres conveyed that past June. The university paid the city \$350,000, and promised another \$99,000 for development of La Jolla Scenic Drive, Regents Road, and Genesee Avenue, and contracted for some \$340,000 worth of utilities work. Formal San Diego ceremonies were held the following March and featured new mayor Frank Curran helping former mayor Charles Dail dump a bucket of dirt on a table while a smiling Kerr and bemused-looking York looked on.

The transfer of Camp Matthews occurred eight months later. York accepted the "key" to the land from Bruno Hochmuth, commander of San Diego's Marine Corps Recruit Depot, on October 7, 1964. Kerr spoke during the militaristic proceedings, and a week later wrote a thank-you to new Secretary of the Navy Paul Nitze, saying the condition of camp buildings "far exceeded" the university's expectations.¹⁷

The note was politic as well as polite, for the university was trying to get yet more Navy land, this time on the backside of Naval Air Station Miramar, at the east end of Miramar Road. During the summer of 1960, while the university was moving ahead on pueblo lands and negotiating for Camp Matthews, it learned that some of the 27,000-acre Camp Elliott would soon be declared surplus. Revelle had written vice president Harry Wellman that the university wanted up to 3,000 acres for an engineering experimental station where rocket motors could be tested and rockets could be launched and another 500 acres for an animal specimen farm. Other, primarily federally sponsored uses might include a "Very Large, Very High Energy Particle Accelerator" run by the Atomic Energy Commission in conjunction with the university or a primate colony run by the Public Health Service. Kerr liked the engineering field station idea best, and in May 1961, during the meeting at which York was introduced, the regents voted to proceed with that request. But three years later, in a move that duplicated what planners feared might happen at Camp Matthews, the land ended up on General Services Administration rolls and was feared lost to the university in a welter of competing commercial bids. Again, politics, which this time included a city

lawsuit against the federal government, won out, and in February 1965, the GSA gave the university 507 acres of Camp Elliott. Six months after that, the university announced plans for an animal laboratory, and seismic and laser study devices for the site. No accelerator.¹⁸

* * *

Even with its Byzantine aspect, the acquisition of land turned out to be one of York's easier duties. It was much easier than winning over a hostile faculty. Well before he arrived, he had been warned by Kerr that the many friends and fans of Revelle on campus might be a problem. A member of the chemistry department, acting as a semi-official delegate, had come to Washington to talk about distress over Revelle's not being selected. Two weeks after his appointment was announced, York heard from Cambridge don and wartime Scripps visitor Teddy Bullard. Revelle, Bullard wrote, "had set his heart on being Chancellor and is bitterly disappointed. I can easily understand the reasons for the Regents' decision, and had told my friends in La Jolla that I felt sure it would go as it has. . . ." But he suggested "that it would be a good thing to try and persuade him to stay as director of Scripps."

In his memoirs, York said it was Potomac Fever that made him restive in southern California, but the specter of a disappointed Revelle looming over his job may have caused a degree of discomfort as well. Jim Arnold remembered the faculty being openly antagonistic, afraid of "what Herb York might be and imply—Chief Scientist, Department of Defense; Director of the Livermore Laboratory at age 28, which made him a disciple of Edward Teller in our eyes, quite wrongly, but that was how we saw it. . . ." In time, York changed Arnold's mind. "This guy had been raised in a tough world, the Pentagon and all that sort of thing. He had dealt with aerospace companies. The impression I had was that by his second day on campus he was at home."¹⁹

Not quite. Being a seasoned Pentagon insider had not prepared him for the myriad difficulties he faced as chancellor. Revelle, Arnold, and Brueckner had already accumulated a brilliant physics and chemistry faculty, and Bonner was netting some of the nation's best biologists. But with applications for the first freshman class scheduled to go out in 1963, a semblance of a full-service undergraduate school needed to be up and running, and that meant physicist York

had to hire in mathematics, the fine arts, humanities, and social sciences. It also meant he had to oversee the creation of a set of academic and physical campus plans and put together an administrative framework. He had told Kerr he favored starting a medical school; but when he arrived in San Diego, he found out that his opinion hardly mattered: The medical school was a forgone scheme and he had to find a dean to run it. Being unfamiliar with administering a university, and thus dependent on precedent, York followed traditional procedures and formed a number of committees. He very soon found himself pushed aside as an impediment to their debates.

York was working with a collection of faculty members described in scholarly circles as a gifted group of academic outlaws who saw in San Diego the chance to shed the constraints of ordinary university life. A new physics appointee best symbolized the spirit when, failing to find a parking place on campus, he drove home, ordered a taxi, and sent the bill to York. The man was an archetypal Revelle recruit. Himself a product of American exceptionalism whose career had leapfrogged customary academics, York said later that his arguments with other planners were based on what he saw as their putting anti-orthodoxy before anything else.

A serious early conflict had to do with the highly unorthodox and much-loved institutes. Though the regents and the legislature had abandoned the idea of building them, many early planners kept trying to smuggle them in. York was considered dangerously reactionary for rejecting the notion that the campus would be "an elite, mainly graduate school, state-supported Caltech."²⁰

The Revelle-born dream of a complex of institutes was based on a vision of reproducing Scripps Institution, which had been one of the University of California's first organized research units. The idea was to assemble a collegial body of researchers who would focus their diverse expertise on one subject in a mutually supportive environment. No single discipline would dictate the approach, and in the free exchange of information and ideas, new solutions could be found, new material developed. Such research units were almost independent of regular university funding and governance. This made them ideal homes for powerful academic outsiders, tolerated and perhaps envied by their more conventionally situated peers.

When Kerr was Berkeley chancellor, he watched the imaginary assembling of San Diego's institutes from the sidelines, he said, and he started dismantling them soon after he was sworn in as president in the summer of 1958. Revelle, later, said scuttling the institute plan and steering the campus into a more ordinary University of California channel left no hard feelings, but certain of the Scripps faculty sulked for decades over its loss. At the time, it seemed that the best way to preserve any aspect of the idea was to cut it down slightly and dress it in a different name. This was the way UCSD's college system came into being.

Kerr sent a team of investigators to England to study various university systems there, and he saw in the establishment of three new University of California campuses an opportunity to build solutions to the problems he perceived in higher education. San Diego's colleges seemed an ideal way to nurture sophisticated science and technology while accommodating the state's charge to educate undergraduates—and do it all in a humane and stimulating way.

Though Revelle said the complex of colleges could fight the impersonality of Berkeley and UCLA, where "if the student can't cut it, that's his tough luck," the plan would also aid faculty by shrinking individual campuses to human size. "There is no substitute for personal contact, for meeting a person face to face to find out what he's thinking, for the expression of affection and of concern for his problems," Revelle said. One of the anticipated benefits of the system was allowing small faculties from various disciplines to "learn to act in academic planning and programs and not simply to react—usually negatively—as was the case with the unwieldy large faculties of Berkeley and UCLA." In fact, as originally envisioned, the beneficiaries of the colleges were to be faculty members, not students. Jim Arnold, who helped draw up the first informal plan for the system, remembered Carl Eckart, for one, opposing departmental "rigidities" and strongly supporting a loose confederation of colleges as the best way to protect creativity.²¹

Given his distaste for the process that produced it, it is ironic that the York-era formal academic plan that grafted a student-centered system onto the faculty-centered institutes would forever after bear his name. Based on Revelle's structure, the plan identified a series of semi-autonomous colleges for

a projected 27,500 students—approximately 25 percent lower-division, 39 percent upper-division, and 28 percent graduate—by 1995. Each of the planned-for dozen colleges would admit some 2,300 students, provide dormitory and dining facilities, and set rules for grades and requirements for graduation.

Each college would be headed by a provost, who would coordinate planning and operation and oversee the grouping of academic subjects into a format that would foster special strength in certain scholastic fields and provide its students with about two-thirds of the courses required for undergraduate degrees. Each would have its own classrooms, teaching and research labs, and faculty offices. Faculty would work on a dual appointment system, which based them in a college with a group of colleagues who might number as few as five, and in a traditional campuswide department that might have as many as 100 members. Graduate students technically would be members of colleges, but a dean of graduate studies would grant their degrees through campuswide departments that might include some faculty not assigned to colleges.

The colleges would replicate themselves, with variations, in an orderly process of growth. As individual colleges got too large, they would spin off faculty and students. Second College, for example, was to open in 1967. By 1970, it was expected to enroll 2,500 students. Some of those would go to Third College, which would open in 1970 and reach enrollment of 2,500 in 1973, when Fourth College would come on line. By 1976, both Second and Third would have settled back to 2,300 students. Departments were to be equally orderly in their dispersal among the various colleges.²²

The plan attracted national attention and was heralded as an exciting innovation during an era of educational novelty. With his background in the collegial atmosphere of the nuclear labs, York conceivably was the right man to husband the colleges. But he was stymied even by the planning process, which he later described as one of those institutional "curiosities" carried out in "marvelously arbitrary ways."

The college system, with its call for separate and equal accommodations, would be very, very expensive. To local budget-makers, it appeared the university's future was steaming toward San Diego on a money-laden research train, a train York guessed would never arrive. He was "badly out of step with almost

everybody" at UCSD on that, he said, for they "just knew the money was there and all they had to do was keep asking for it." Faculty planners assumed that "doing research was what America was going to do with its affluence." York did not agree.

His naysaying was no more welcome within debates about hiring faculty. A committee of scientists formed to plan recruitment in the fine arts and humanities bristled at the notion that their selections would be tainted in any way by advice from what they considered middling departments at UCLA or Berkeley. Since York had already consulted other university faculty on hiring, he was criticized for that as well. Deciding what those faculty members would teach finally taught York the limits of his new job. At Berkeley and Livermore he had been only dimly aware of the power of the Academic Senate, but in La Jolla he learned firsthand that the faculty and not the chancellor has authority over academic matters such as curriculum. "In a sense," he said, "the undergraduate curriculum is one of the most important things, and the chancellor has almost no place in it. . . . I soon discovered that the chancellor had authority over parking lots and a few things like that, and in really interesting, substantive things, the chancellor had no authority."

By autumn 1963, with 269 graduate students from 21 countries enrolled in the School of Science and Engineering, and applications going out to potential undergraduates for admission to the new university, York's position seemed more burdensome than not. In part, he said later, his past experience of exercising "real executive authority" had not prepared him for being chancellor. At Livermore, Ernest O. Lawrence never told him what to do. The two secretaries of defense he worked under did not tell him what to do. "And even on those rare occasions when it involved the President," Eisenhower did not tell him what to do. And so, "it wasn't just all these local egos, it was the university system," which he believed was the "right system," but one that did not fit him. "People who grow up in it probably feel good about it, but I didn't particularly like it." And, he said, "I was spoiled, and that's very important. . . . I'd been an executive for nine years before I became chancellor. I started very young. I mean, peculiarly young." Although he turned down the directorship of the National Science Foundation while he was chancellor, he had not severed his Washington ties. "That's where my real intellectual interest was." In

December 1963, he told Clark Kerr he wanted to be relieved.²³

It could be seen as a symbol of York's difficulty that during the month in which he resigned as chancellor, Roger Revelle was testifying on Capitol Hill as spokesman for UCSD. Revelle, bored with his non-job as University Dean of Research, was flexing his San Diego authority again. He wanted, or at least his friends wanted him, to be York's replacement. Apparently, along with those of Dean Rusk and McGeorge Bundy, his name was submitted as new chancellor. His San Diego supporters sent Kerr a letter expressing affection for Revelle and gratitude for his civic service on hospital, bank, and art boards. Faculty members rallied and forwarded a request for him to be made their leader, and Governor Brown reportedly backed his candidacy this time around. But a group of San Diego businessmen buttonholed Kerr during a San Diego dinner for Jim Archer. Listing the reasons Revelle had been rejected the first time, they said they would not have him. They could not have been won over by Revelle's Senate testimony, in which he had tended to aggrandize the achievement of UCSD founders who had to work in a backwater, nor could they have been pleased when he publicly described San Diego as "far from being an intellectual center as one could get." He was not selected.

After this rebuff, which was said to be harder than the first, Revelle left not only the campus, but the state. He resigned at Scripps and accepted a job as founding director of Harvard's Center for Population Studies. He parted with a piece of advice to his successors: "Never take a second rate man. Only take first rate people." This could be understood on several levels, but apparently he was talking about faculty.²⁴

* * *

Kerr needed to find a new chancellor and quickly too. Skill with recruitment, budgeting, and public relations was important for the job, he said. A science background was not. In the spring of 1964, as a way to stop the administrative gap, he created a pair of vice chancellors for the UCSD campus. General Dynamics' Bob Biron would be vice chancellor for business and finance. John Galbraith, former chairman of UCLA's history department, would be vice chancellor for academic affairs. Although York's first choice for academic vice chancellor, Andreas Papandreou, would have made an inter-

esting UCSD footnote had he accepted the job rather than returning to Greece, John Galbraith was a more than acceptable alternative. "I liked John's academic style," York said, "and he had good experience." In addition, Galbraith "was a historian and we were frustrated about getting history going here."

Galbraith knew when he arrived that if he kept his head and feet, he would be the new chancellor. For the time being, he would coordinate the academic administration of an 80-member, mainly science faculty that now included 2 Nobel laureates and 13 members of the National Academy of Sciences. The new university, described as "one of the most interesting experiments in American higher education," would result from the School of Science and Engineering being collapsed into the First College of the university and its students—all graduate—shifting into UCSD departments of physics, chemistry, and biology. That September, 1964, Galbraith attended events surrounding a week-long orientation of UCSD's first undergraduate class of 121 young men and 64 young women, all but 32 from San Diego County. Later that fall, with classes already underway in what would be called Revelle College, Galbraith began representing York at regents' meetings. His appointment as chancellor was announced in December.²⁵

CHAPTER FOUR

A UNIVERSITY TAKES SHAPE

JOHN GALBRAITH HAS BEEN DESCRIBED as the most ambitious of UCSD's early chancellors. A complex man, son of the Scottish working class who became the first member of his family to get a college degree, Galbraith had a taste for ceremony and an unshakable sense of his own authority. He had chaired the UCLA department of history from 1954 to 1958 and headed the southern branch of the Academic Senate from 1962 until he came to San Diego. He was the man Kerr sent to England to study ways in which the modern universities there adapted to multiple colleges. This trip, and the apparent ease with which he managed the political ropes of the university system, made him an attractive choice for leader of a campus that planned one day to have a dozen colleges.

Galbraith had grown up in Ohio, graduated from Miami University, and earned his doctorate in history at the University of Iowa. He taught history and coached basketball—a traditional combination in the midwest—in small colleges until he moved to California, where he became involved in suburban Los Angeles politics. His specialty was the British Empire, an interest that may have informed his sense of government. When he accepted the San Diego job, he did not "cut the cords" to Los Angeles, he said. He was offered the chancellorship and a comfortable \$25,000 salary in early November, after most UCSD departmental chairmen wrote Kerr urging that he be selected. He replied on November 3, telling Kerr that among other contingencies was an acceptable chancellor's residence—the Yorks' Pepita Way house was "quite unsuitable," he later said—and "Regental acceptance of the principle" of UCSD having the system's "third great library." He recognized, he wrote, the "fiscal realities" that

would make library-building slow, but if the university would move on it "as soon as possible," he "would be prepared to accept" the chancellorship.¹

The library would become the trademark of Galbraith's administration. But he maintained at the time and later that the issue was ancillary to his main purpose, which was "to build the most exciting intellectual environment in the States." In order to do that, he needed three things, he said: energetic refinement of the college plan, ongoing recruitment of high-caliber faculty, and a great library. The last two were the crucial items: Scholars made the university; a library made the scholars.

The UCSD library was headed by Melvin Voigt, hired from Kansas State in September 1960 and ever after claimed as one of the early years' best coups. Voigt had endeared himself to the regents by formulating a money-saving purchase plan of core books for all three new campuses, which put the same volumes on the shelves at San Diego, Santa Cruz and Irvine. This was fine during the science-first founding of UCSD, when faculty needed little more than their own money, the equipment they could bring with them, and bench space. But the humanists and social scientists due on campus needed additional books and journals. Galbraith promised candidates they could have them, and could even build the library collection.²

Telling a reporter at the time of his appointment that UCSD had "been granted a start like no other university for the past sixty years," Galbraith was acknowledging the university's privileged treatment, which he had watched with wonder and envy while chairman of UCLA's senate budget committee. He was also saying that the time had come to get on with the post-foundation period. The "start," clearly weighted in the sciences, was over. Although literature, philosophy, and economics had been approved in 1963, and anthropology, history, linguistics, and psychology in 1964, they were largely unfledged, even unstaffed, and entirely overshadowed by the dominant sciences. An administrator's enthusiastic claim that UCSD's faculty members were not merely the "best people in California" but "the best people *anywhere*" was not rooted in the humanities, which Galbraith believed had a "proletariat" status on the campus. This, he said later, he "was determined to change," and said it "wasn't just an accident" that he "picked on the library" to represent his cause.

His confrontation with the faculty power structure was equally purposeful. The science superstars, he said, had created a court of academic "dukes and earls." He always championed Harold Urey as his professorial *beau ideal*, and said his greatest support came from some scientists. But what he found at UCSD, he said, was an "unhealthy" feudal system so entrenched that in time he would believe there is "more meanness in a university than in most institutions in the country, more emphasis on ego satisfaction." Long before he arrived in San Diego, he was aware of Kerr's and the regents' explicit support for science at UCSD. As a member of the statewide Academic Senate, he knew how popular the School of Science and Engineering had been in the city. However, he also knew that the state had called for a general campus in San Diego, and he may have understood his selection as chancellor as an implicit endorsement of a new direction. But he never discussed with Kerr his private project of brooking the 15-year science tide and containing the dukes and earls.³

He would have to do it without the easy money of the earliest days. The legislature and hostile critics were saying that UCSD's special treatment—the "lavish" student-faculty ratio, the "luxurious" program, and the "profligate waste" of full-professor appointments—had to come to a stop. One academic analyst said that the time was approaching when the campus would have to "justify itself to the bookkeepers, since equity and the rules demand that the cost per student be comparable on all U.C. campuses." By the mid-sixties, the financial clouds foreseen by York were dimming the university's financial prospects. Grants were no longer easy to get, and state money was getting tight. California's faculty payscale had dropped from fourth to twenty-third in the nation. Kerr's 1964 bid to boost all faculty salaries failed. In early 1965, he prepared a report to support a second try and included in it, perhaps as a sop to irritated Berkeley faculty, an item about San Diego once again making a "very large proportion (50 per cent) of all initial appointments at full Professor (compared with 15 per cent for the University, as a whole)."

Galbraith, who wanted to make more such appointments himself, protested. Kerr's claim, he said, "like many statements which are in themselves true, gives a totally false impression." For some reason he believed Kerr was intimating that such appointments had "been carried out covertly," and he

defended them as having been made with "at least tacit support from the Universitywide administration." Galbraith then carefully spelled out that the nucleus of full professors appointed in non-science areas was crucial to changing "not only the science image but the science character of UCSD." No "caveats from Universitywide officers" were necessary to remind him that recruitment at the junior level needed to be stepped up, he testily said. And he ended with an imperious request for Kerr to remove from the report that "indictment" and other "such bald statements," which "contribute to further unpleasantness for this campus. . . ." ⁴

It was ironic that Galbraith had to defend a practice of which he did not approve, even meant to change. As one veteran scientist wistfully noted, some "old-timers have a hard time realizing we're playing a new game with a new set of rules." It was probably inevitable that Galbraith would clash with some of the rebel recruits, perhaps chief among them Keith Brueckner. Very soon after his appointment, Galbraith took the founding physicist, who was then serving as dean of graduate studies, to task for faulty academic planning. And he refused to authorize the allocation of faculty positions for a program Brueckner wanted. Galbraith had more experience than York: He knew a chancellor in fact could control curriculum if he were willing to launch a fight based on money for faculty and programs. He was also wrestling classified research off campus, and he had banished "Summer Studies" by an elite group of Defense Department advisers founded by Brueckner, the Jasons, to another site. Brueckner soon went public with his belief that the sciences were in trouble on campus, citing cuts in state funding and claiming that UCSD was "trying to do too much." Soon he resigned as dean and returned to the Institute for Radiation Physics and Aerodynamics he had founded with a renewable \$1.5 million annual grant from Advanced Research Projects Agency. Galbraith then appointed Scripps physicist Carl Eckart vice chancellor. ⁵

Establishing his power base on campus gave Galbraith a starting point to launch his other, interrelated mission: taking Kerr's decentralization of the university structure to its logical end and setting up for UCSD a kind of academic home rule. He said that as chancellor he had to be aware of the opportunities for chiselling away at Kerr's authority. One such opportunity was the library, a popular cause both on and off campus. As early as November

1964, he did not deny "rumors" that he would delay his inauguration until he got a commitment from Kerr for more books. Four months later he complained to a reporter that without more books there was "no hope of the university becoming great and especially distinguished in the humanities and social sciences; it will remain oriented to science and engineering. . . ."

He brought the issue to a head after he saw the budget for fiscal year 1965-1966. He notified Kerr that, seeing no reflection there of Kerr's verbal promise to speed up the rate of acquiring new books, he would postpone his formal inauguration. Kerr, he said later, was "flabbergasted" and asked during a meeting at the San Francisco airport if Galbraith distrusted him. After this airport meeting with Kerr, Galbraith issued a statement calling the proposed budget "disastrous. It would blight the prospects of our developing distinction in the humanities and the social sciences, and would harden the 'science institute' image of UCSD—which we are anxious to change." That same summer a local columnist and friend of Galbraith carried the item that Galbraith had put his job on the line to get the library.⁶

The next month Galbraith told the press the campus "cannot hope to keep the top men we have attracted in the humanities and social sciences unless we can fulfill our pledge for a library on a par with Berkeley and UCLA." The pledge he referred to may well have been his own, for his original agreement with Kerr indicated only a third great library, not one equal to Berkeley's. "We are being told in essence, by library cuts, that we should be satisfied with being one of the lesser campuses, or a science institute with a humanities tail."⁷

Galbraith got his books. Kerr had vice president Wellman revise the budget to include \$475,000 for 1965-1966 (a \$225,000 increase from the previous year) and \$720,000 for 1966-1967. Galbraith later said he "really forced [Kerr] into a corner" on the issue, "and I got what I wanted"—though a year later he told the faculty he wanted more than the Kerr-guaranteed 80,000 books a year. He also got additional faculty positions to flesh out the humanities and social sciences. But he believed the price he paid for it was Kerr's becoming "very chilly indeed."

Galbraith's investiture as chancellor in the fall of 1965, did not warm the relationship. It followed a rowdy, two-day dedication of the First College to Roger Revelle complete with street parties, panegyrics, and the launching of

Scripps Institution's new ship, the *Ellen B. Scripps*, by Ellen's great-niece, Mrs. Roger Revelle. The inauguration, in comparison, seemed almost stuffy. But it was the first formal academic ceremony ever mounted by UCSD, and the four-day celebration included enough doings to fill the local society columns. A ball for 600, a concert, campus tours, and a look at the results of Galbraith's recycling of old Camp Matthews' barracks into usable space were on the agenda.

On November 5, 1965, a traditional academic procession of faculty members, institutional and learned-society delegates, and the official party of regents—Pauley, Hearst, and H.R. Haldeman—accompanied Galbraith. Clark Kerr presided and Lieutenant Governor Glenn Anderson represented the state. The Marine Corps Band entertained. Galbraith told the distinguished audience that he accepted the chancellorship "with the expectation that a great research library would be developed at UCSD." With Kerr's help, and that of the regents, he said, "this campus has made substantial progress toward that goal." But such politesse could not repair the damage done subsequently by Bishop Charles Francis Buddy, president of the University of San Diego. In his invocation, Buddy sought divine intercession for a great UCSD library in what Galbraith said at the time was the "finest prayer I ever heard." The press gleefully reported the crowd's delight. But Galbraith sensed "an icy undercurrent" in Kerr's lunchtime quip that with God on his side, the new chancellor had no need for a university president.⁸

Almost from the time he became chancellor, Galbraith seemed to hold Kerr an adversary. He may have brought the notion with him from Los Angeles. He had been chairman of UCLA's Academic Senate when Franklin Murphy was appointed chancellor there. For years, even during Sproul's administration, the chairman of the board of regents—Ed Dixon before Edwin Pauley—had represented the interests of southern California and acted as the chief operating officer—president—of southern California campuses dominated by UCLA. Not until Kerr assumed the presidency did the system take its administrative bearings from Berkeley, and UCLA was restive under its Bay Area yoke. Franklin Murphy, who was believed to be yearning for the presidency of the system, was seen as the man who might restore UCLA's power. He did not share some of his faculty's hostility to a new university in San Diego, and, in fact, had invited Herb York to join in a bid to undermine

the establishment of a vigorous multi-campus system. York said later he was interested, but put off by Murphy's style. Galbraith supported Murphy's push for parity with Berkeley and headed the group charged with bringing the UCLA library up to the level of the mother campus, a campaign supported by Clark Kerr. Ironically, Galbraith's success with the UCLA library attracted Kerr's approving attention. But Kerr's support of strong campuses made him enemies at Berkeley, and, strangely, failed to make him friends at UCLA, where desires for power went beyond libraries.

Galbraith believed deeply in Murphy's vision of the university, and Murphy urged him to keep his "eyes wide open" as UCSD chancellor. The prize for vigilance might well be an entirely decentralized system of almost independent universities. This would allow Galbraith freedom to build UCSD into the broad-based institution he wanted. But making such substantive changes would have to have public approval, and just then support for higher education in the state was ebbing.⁹

* * *

The summer that Galbraith came to San Diego, just months after John Kennedy's assassination, thousands of mostly white, middle-class, northern college students went South to lend a hand to the Civil Rights Movement. They returned at the end of what was called Freedom Summer bringing with them skills honed by organizing sit-ins, marches, and voter registration campaigns.

The first Berkeley sit-in, led by Mississippi voter registration veteran Mario Savio, took place on September 30, 1964, after the university refused to let students use a small strip of campus land for politicking for the upcoming presidential elections. But very soon, campus activism included fund-raising for Civil Rights activist groups, and the several hundred who participated christened themselves the Free Speech Movement. This quickly became a catch-all for a number of discontents, not all of them extracurricular. The national press was enthralled and covered each confrontation between students and administration and every nerve twitch of local police. TV audiences nationwide thought they were watching the decline into radicalism of a sizable segment of California's university students. The regents reassured the public

that the state constitution charged them "with full and ultimate authority for conducting the affairs of the University of California." They had merely delegated "certain specific but revocable powers" and meant to take back ones sufficient to deal with the crisis.

Kerr was in a delicate situation. He disagreed with Berkeley chancellor Ray Strong's hardline against the students, and he was supported in that by Governor Brown. But direct intervention on his part would belie Kerr's commitment to his own decentralization plan. Nevertheless, his views were known, and some regents in effect accused him of supporting revolutionaries; they moved, together with the state alumni association, to support Chancellor Strong. Kerr became more actively involved and, working with regents chairman Ed Carter, managed to create somewhat conciliatory recommendations for handling the crisis. That cost him important support from chancellors. At this point, his carefully constructed structure of governance could be seen starting to sway. With the sparsely supported March "filthy speech" movement, the Berkeley students lost Governor Brown's support and goaded the regents into calls for blood. Kerr felt the regents' action countered their commitment to his authority, and on March 9, 1965, without telling the governor, Carter, or campus chancellors in advance, he submitted his resignation. Four days later, after a lopsided Academic Senate vote of confidence in him, Kerr retracted the resignation. But the following week, Galbraith chided Kerr for having kept him and his fellow chancellors in the dark. Our "professional lives are intimately bound to yours," he wrote, "and we should know the background of such a momentous decision as you had made." Kerr later remembered that the sole area of agreement among all the various factions was criticism of the president.¹⁰

The previous December, the regents, following their traditional routine in the face of crisis, had requested studies of the campus disturbances. Two reports were submitted in April. The first was prepared by a committee headed by Theodore Meyer, president of the Mechanics Institute of San Francisco and an ex-officio regent, and made up of regents Canaday, Hearst, Heller, Laurence Kennedy, McLaughlin, Mosher, Carter, and Kerr. It suggested changing university regulations regarding students and giving chancellors authority over all discipline except expulsion.

The second was a wide-reaching document prepared by a committee headed by Regent Forbes and including regents Boyd, William Coblenz, Pauley, Chandler, Tapp, and Simon. Investigation was done by Beverly Hills attorney Jerome Byrne. This report absolved the Free Speech Movement of rumored Communist influence. More importantly for governance, it also called for radical decentralization, with individual campuses to be individually "chartered," and suggested that the regents divest themselves of authority over day-to-day operations. Franklin Murphy's was a large presence—even quoted—in the southern California—dominated Byrne Report, which cited widespread administrative demoralization "at almost every level—and on every campus," caused by tensions between statewide and local administration. The report was as hard to draw an ideological bead on as it was to dismiss. Widely quoted in the press and hotly debated in Sacramento, it was a "liberal" document that appealed most strongly to conservative regents.¹¹

Although Galbraith, through vice-chancellor Bob Biron, had responded to Kerr's calls for information and advice for a third, presidential, report, San Diego's was a somewhat lackluster reply. Galbraith said later that he felt Kerr's plans did not go far enough in righting centralized wrongs. Kerr submitted his report in June 1965. By then, Galbraith had canceled his inauguration and was going public again with his dissatisfactions about the library, which did not help Kerr's case. Tension between the two kept growing and cropped up in chancellors' meetings where Galbraith aired complaints in ways Kerr found unacceptable. In December 1965—a month after the tense inauguration proceedings—Kerr put into writing his version of the UCSD library history and reminded Galbraith that at one point the new chancellor had expressed delight over the acquisition rate.

Galbraith, who had himself drafted a letter criticizing Kerr for telling a reporter that the UCSD library would not have parity with that of Berkeley or UCLA, said he had nothing to do with UCSD's faculty peppering the president's office with angry inquiries about the interview. Somewhat coyly, he told Kerr he "never thought that I would be in the category of a conservative on library development, but in the context of this campus, that is where I seem to be."¹²

It was in this generally antagonistic climate that Galbraith submitted to Kerr's office his revision of the UCSD general campus plan. The plan—which addressed difficulties such as the on-again, off-again new medical school and delicacies such as the dramatic new library building—had been very difficult to create. Galbraith was understandably anxious about its reception. Later, he said he was shocked and felt "betrayed" when Kerr removed discussion of the plan from the agenda of the February regents meeting. Kerr seemed to be countering Galbraith's authority at a time when Murphy, Galbraith, and other chancellors believed their autonomy was enhanced. Long afterward, Galbraith rhetorically asked if one could "think of anything more symbolic?" He said he sent the plans to Berkeley in December and they had either sat in vice president Elmo Morgan's office or had been delivered to Kerr. Kerr said he got them February 8. Within days, Galbraith resigned. He was, he said later, "very angry with Kerr."

Reminiscing about Galbraith's resignation, Kerr defended his unwavering support of San Diego's campus. "If anybody fought battles for it, I did.... I was the one who had to get the money and get the Regents to approve and faculties elsewhere not to rebel." Kerr maintained that his pulling the plan from the agenda was not symbolic, but based on real concerns. In Galbraith's new plan, the site for the central library had been moved. Kerr did not like the new location, or the design. An athletic stadium that pleased the regents in an earlier plan had been removed and a projected campus hospital had been enlarged to 350 beds rather than the already approved 250. Kerr called the newly planned medical school, with its \$120 million price tag, a "wild" venture that seemed to back him into endorsing a much more ambitious undertaking than he had approved. Moreover, it looked like San Diego might be pressing against the 27,500-student enrollment limit, especially since three months earlier Galbraith had told a reporter he was creating a campus for 30,000 to 40,000 students.¹³

Kerr said he wrote Galbraith a note on February 12, telling him there would be no discussion of the plans at the regents' meeting. Galbraith said he got the news from Vice Chancellor Biron—who resigned at the same time—who told him that Vice President Elmo Morgan had given him the message along with the information that Kerr had said he "didn't trust those bastards

down in San Diego." Twenty-five years later, Galbraith admitted it was unlikely that the soft-spoken Quaker would have said such a thing. He also allowed that he may have "reacted excessively" and added that a good deal of pride was involved.

"Chancellors," he said, "had become people with power, much greater power than they had before. And they were entitled to have the president talk to them, not to send some underling, in fact not even send an underling, have an underling call on the phone and say 'we have taken these two items off the agenda.' " He felt he "had to be the spokesman for a campus which would be one of the big three and not one of the whatever number of dwarfs there are." That meant struggling for "power" to govern UCSD locally, and not allowing San Diego matters to sink into the sea of bureaucracy in the president's office.

The Byrne Report seemed to bear him out. To underscore the connection, Galbraith and Biron issued a joint statement on February 21, saying their resignations related "to the present institutional framework of the University. They were dictated by our belief that there are serious deficiencies in the relationship of the administration of this campus with the University-wide administration."¹⁴

Before Galbraith submitted his resignation—which was not dated—he contacted Murphy at UCLA and asked for advice. Murphy—the author of the big-three idea and a man who Galbraith said hated Clark Kerr—told him to send a copy of his resignation to regents chairman Carter. If he sent it to Berkeley, the "document would be pigeon-holed and Clark Kerr would try to work it out somehow." Galbraith asked Murphy for his job back as a UCLA history teacher and followed his advice.

Going directly to Carter, he knew, would "not be helpful" to the beleaguered Kerr, whose star was wobbling over the Berkeley student crises. Kerr was also seen as a major obstacle in the confederation process, an irony, since his creation of the plan had created faculty antagonism over his limiting Berkeley's preeminence within the system. Biron's staff believed that Kerr's attempts to decentralize authority had produced more, not less, red tape, and Galbraith was said to be unhappy about "post audit" checks on campus finances. Jim Arnold, who did not favor the big-three campus idea, was no fan

of what he called "decentralization at the bookkeeping level," and Keith Brueckner said a "hiatus in planning" had gone on for five years.

Local support for Galbraith and Biron came most immediately from the San Diego Chamber of Commerce, which urged Governor Brown to investigate why "individuals the caliber of these men," who had worked "closely with the community and its organizations," should quit. The UCSD Academic Senate voiced confidence in Galbraith and said "continuity" was "vital to consolidate our accomplishments and achieve our ends" at the campus. Galbraith got dozens of letters of apology, support, and sympathy. Medical school faculty member Robert Livingston said he felt terrible about ignoring what he had thought were just Galbraith's "off-hand comments" and said the chancellor "must have felt more lonely than I imagined. What can we do? What can I do?" And Scripps' Walter Munk, a power in campus politics, said he was "deeply troubled about the anguish and frustration that must have led you to resign." Friends from Los Angeles offered guarded congratulations about his coming home.¹⁵

The regents refused to act on the resignations, and directed Kerr to present a full report on the matter at their next meeting, March 25. Some of the regents expected the resignation to be accepted because relations between Kerr and Galbraith had deteriorated beyond the possibility of reconciliation. Others saw the resignation as symptomatic of Kerr's ineptitude, and conservative State Superintendent of Schools Max Rafferty tied Galbraith's resignation to Ray Strong's dismissal, saying university difficulties of this nature were "like a string of firecrackers going off" and suggesting there may be more unless "regents can find out in the near future the underlying causes of these resignations."

Perhaps smelling some liberal university blood to be spilled, the *San Diego Union* editorially described the resignations as "regrettable" reflections of deeper problems in "the office of Dr. Kerr." It dismissed as absurd the regents' request for a presidential report prepared by Kerr's "subordinates." Jim Archer was quoted as being "in communication with several regents and they agree that they should do the investigation" of the resignations. A week later, the city council acted on Ivor deKirby's resolution urging Galbraith and Biron to withdraw their resignations.

On March 16 they did, with Galbraith citing community and faculty support. But the two had been in close contact with regents Carter and Canaday and were apparently persuaded by what they heard. John Canaday, a known Kerr enemy and an ardent supporter of Franklin Murphy, had formed a committee to study the systemwide administration. He told the press that the "points of irritation" that provoked the resignations were also present on other campuses, and he promised that his committee would "get at the root" of the trouble. Implementing plans for greater campus autonomy had been "disappointingly slow" at headquarters, he said.

With Canaday undertaking a Franklin Murphy-backed study that would link the railroading of conservative Berkeley chancellor Strong with the resignation of Galbraith, Kerr's base in the board was further eroded. Analysts suggested that Galbraith had hoped, naively, to force the issue of decentralization, but instead had given fuel to anti-Kerr regents. Governor Brown and pro-Kerr forces urged Galbraith, who was distressed over his status as darling of the arch-conservatives, to pull the resignation in order to avoid an ideological showdown on Kerr.¹⁶

Twenty years later, Galbraith seemed to agree that that was the case. His "becoming highly regarded by some of the regents of the conservative persuasion" was "not something I had in mind when I did this," he said. Kerr always believed that Galbraith "fell in, temporarily," with the wrong crowd, "not meaning to at all. I think he was repulsed by it." But Galbraith did admit he was well aware of germinating attempts to unseat Kerr. And knowing how his actions had fed that effort, he could not say he would not do it again. "He and I were not friends," Galbraith said. "My life was not based upon what was good for Kerr. My life was based on getting a good deal for this campus." A year after his protest resignation, Galbraith attended the regents' meeting during which Kerr was dismissed.

By this time, Galbraith was himself fielding fallout from Berkeley problems and feeling firsthand the sting of local disapprobation for the university. Believing his office required creating good community relations, he took pains to befriend San Diegans who might have been disappointed by York's apparent

coolness and put off by what Galbraith said was faculty arrogance. He got on well with Jim Archer and other San Diego conservatives, and discovered at the many black-tie events he attended that the same people who criticized the university "vie with each other to have the chancellor and his wife come to social functions." Galbraith gave numerous local speeches that were widely quoted in the press. Laura Galbraith joined various cultural groups and the couple entertained extensively. Though his photograph often appeared in society pages, he says partying was a requirement, not a choice. He "realized that the university would suffer if we did not reach out to the community." Tall, erect, with senatorial silvered hair, Galbraith gave off an aloof air of formality that San Diegans must have found archetypal Old School. His freely shared views that university education "cannot be devoted to the common man," an assessment he admitted "may sound like an aristocratic conception in an ant-heap age," was just the thing to both stimulate and quiet southern California's cultural anxieties while giving a reassuring appearance of education as class privilege.¹⁷

This was not what the faculty and students were doing just then. As part of a nationwide wave of student involvement, in mid-1965, a couple dozen carefully groomed undergraduates silently protested the United States' intervention in the Dominican Republic. The local paper addressed the event in an editorial under a cartoon showing worms labelled "Commie," "The Kooky," and "Left" burrowing into a door to "U.S. Campuses." Denouncing the demonstration as taking place while marines fell "before Communist-directed snipers in the Dominican Republic," the paper said the protest was carried out "in the manner of the rioters who brought the parent university at Berkeley to a state of anarchy." Participants included some who "wore beards"; even worse, a "few were women," and their "organizer was a graduate student who has been in this country only 15 years." The city had given land for the campus surrounded by dozens of military bases where "thousands of young men" were "waiting to give their lives, if necessary, to carry out what other unkempt youths and spiteful agitators can choose to challenge from the comfort of institutions supported by the public's beneficence."

The attack was a template for future criticism of the university, and it marked a turning point in community relations. Galbraith wrote a cool rebuttal

to the editorial, defending the legality of the demonstration and admitting his "personal views differ from those of the demonstrators." Along with the Academic Senate chairman, he submitted a letter to faculty, staff, and students reaffirming the campus commitment to "free inquiry and free expression." He also took to the service-club circuit, telling audiences that he did not condone local free speech movement demonstrations, but warning that if such dissidence were suppressed, the university might become a "propaganda agency." Relying on conservative rhetoric to make his point, he said "we have sufficient confidence in our institutions that we are willing to subject them to the test of unrestricted criticism." He did admit that beyond sensing that they were dominated by "a deadly seriousness of purpose," after talking to demonstrators he did "not understand the mind of youth."¹⁸

There were social issues as well, and Galbraith had a letter sent to Revelle College parents reassuring them that despite rumors, there was "no tumult" over private visits in dorm rooms. "Some of the students have indicated their dissatisfaction with the present regulations," and at "first they were unsure of how they should present their recommendations for consideration, but now we have worked out an orderly procedure and talks are going forward in an atmosphere that is generally both friendly and temperate." The climate off campus was heating up, however. A neighbor was not alone in complaining about faculty members "who conduct themselves like beatniks, vietniks, oafs and Okies" and did yard work in their undershirts. In May 1967, San Diego city police staged a drug bust—the first time city law enforcement had been active on campus—that netted three students and no narcotics but excited headlines into exclaiming that "Big Dope Raid Hits College Dorms Here."¹⁹

In November, as part of stepped-up nationwide anti-Vietnam War activity, a group of students ran up a Viet Minh flag on the old Camp Matthews flagpole. Galbraith, after consulting with university attorneys, declared the action within constitutional limits. For this he was denounced by assemblyman John Stull, whose Sacramento description of the event prompted a fellow legislator to declare that he was "shaken to learn the Viet Cong is now not only on the outskirts of Saigon, but on the outskirts of La Jolla."

A month later, in January 1968, Galbraith told the press that "as an individual American," he disagreed "most emphatically" with a telegram signed by

members of the philosophy and literature departments congratulating Japanese students who demonstrated against the visit of the U.S. nuclear aircraft carrier *Enterprise*. But as "chancellor of the UCSD campus, I can only affirm that the university does not endorse nor repudiate political viewpoints." While Assemblyman Stull roared his denunciations of the campus statewide, Scripps faculty framed a letter condemning telegram authors Roy Harvey Pearce and Richard Popkin that was signed by some 70 faculty, staff, and students, including Revelle College provost Ed Goldberg. Harold Urey told Galbraith that Pearce had no business serving on a town-gown peacekeeping committee after writing such a missive.²⁰

Even the students seemed irritated by what they thought was non-professorial bearing. Student body president Larry Baker said professors tutored students, worried about their happiness, invited students to their parties, and crashed the ones the kids gave. They "even hold our signs if we want to have a protest... we've got communication with the faculty coming out of our ears." It was said that "no freshman class in any university has had closer attention" than the one that entered in 1964. Galbraith handed out degrees to 77 of the 181 charter members during June 1968 commencement exercises for 124. Given the times, the student vote against wearing caps and gowns was predictable. So too, perhaps, was the chancellor's response: Those wishing to wear street clothes "should absent themselves from the ceremonies."

Such difficulties obviously contributed to Galbraith's resignation, a real one this time, announced the previous September. He had received a visiting professorship at Cambridge, and England undoubtedly seemed a peaceful alternative to La Jolla just then. What he called the "abrasive environment" surrounding his chancellorship had worsened in the nerve-grating brouhaha following the university's finally buying La Jolla Farms.²¹

In 1958, site selection adviser Charles Luckman suggested that the regents buy the Farms. Nine years of wrangling later, they did. The deed to the 132 acres was recorded March 2, 1967. What the university got was a large subdivided area of both houses and unimproved lots (some already owned and some for sale), a former thoroughbred breeding stable and horse track to the north,

the house that property owners Bill and Ruth Black had built on the south edge of the subdivision, and a spectacular mesa known as The Knoll. They also got a lot of trouble.

Oddly, that land had been a problem for years. In 1905, lawsuits over competing property lines around where the track would be built required a "Referees' Partition Map" of the pueblo lots involved—1312 and 1313. At that time, Frederick Scripps owned the southern portion of the partitioned area. After the lawsuit was settled, he bought the north part of pueblo Lot 1313. In 1946, his estate sold the south part of 1312 to Charles Poole, who sold it five years later to the Revelle-led Scripps Estates Associates. In 1948, Bill and Ruth Black bought the Scripps land in the north. By the mid-fifties, the Blacks owned all of pueblo Lots 1313 and 1312, except the Scripps Estates area, and in the fall of 1956 they advertised the subdivision of La Jolla Farms Club Estates, "a limited number of one and two-acre palisades sites" with private beach, polo grounds, and stables. The golf course that Revelle had successfully had moved southward in Torrey Pines park was also mentioned. In 1959, Black incorporated and made himself president of La Jolla Properties, Inc., which bought 62 of the Farms' subdivided lots. By then, he was certainly aware of university interest in the site, for this was a year after Revelle had started using Black's horse barn for studies to disprove Pauley's contention that planes from Miramar made too much noise to put a campus there.

Owners of individual lots also knew about university interest, and they were worried. More than a year earlier, in March 1958, General Atomic's J.R. Beyster, who would go on to be president of Science Applications International Corporation, wrote to Revelle that he had heard the university was going to buy the Farms. He had bought a lot and had a house designed, because the area "was to be developed as a section of fine homes." Now he did not know whether to assume the rumor was false and go ahead with building, or "plan to dispose of our land." Revelle's aide told Beyster the Farms were just being studied, nothing more. That summer, realtor Phil Anewalt, who at Revelle's request had contacted the Marine Corps about Camp Matthews, supplied Revelle with a price tag for the property which then had seven built houses valued at about \$245,000: \$2 million.²²

In December 1958, Charles Luckman told the regents that the Farms might cost \$1.75 million. Oddly, he pressed the importance of secrecy on further negotiations, saying he did not want the property owner to know about university interest. Pauley's was one of the few negative regental responses to buying La Jolla Farms. He pointedly reminded his fellow regents that acquiring free land was one of the conditions placed on selecting the La Jolla site.

Pauley was said by people who knew him well to have been a close personal friend of Bill Black. Black, who died on a La Jolla golf course very soon after selling the Farms to the regents—thereby taking his motives to the grave as well—may have wanted to sell because he knew his luxury housing development was going to be strangled by the populism of a university campus with its possible non-WASP inhabitants and general rowdiness. He also may have wanted to sell because lots in the posh Farms were not moving as quickly as he had hoped and the regents were cash-rich buyers. On the other hand, he may not have wanted to sell at all, but feared that his friend Pauley would not be powerful enough to stop a condemnation proceeding. Whatever his reasons, he did sell, apparently at a price well above assessed market price, and, oddly, escaped the wrath of owners of 37 already improved and 20 unimproved Farms lots. No one, at least publicly, blamed Bill Black for selling the Farms. A lot of people blamed the university for buying it.

York later said he had been too much involved with other problems to pay much attention to the Farms. He remembered being "annoyed" with the regents and with Kerr for "moving" on the issue "without discussing much with us." Kerr did discuss the property with Galbraith before he became chancellor. On November 3, 1964, in discussing conditions for his taking the chancellorship, Galbraith wrote Kerr that acquisition of La Jolla Farms would be "a great boon to this campus."²³

Three weeks after the deed was recorded, Galbraith seemed to acknowledge that the deal was no boon. He issued a statement to stem the tide of wrong and hostile reports in the press and told a meeting of Farms property owners that their desires would be considered. The university, he said, might use the track and knoll areas for faculty housing, institutes, research centers, and commercial service facilities. This seemed to appease no one and matters soon worsened.

The Black house, which now became the official chancellor's residence, was not Galbraith's choice for a home. He had wanted a seabluff house just north of Scripps Institution that architect Robert Mosher had designed at the regents' request. But the Galbraiths had to move into the house the regents had just bought, and that set off a string of news stories about the supposedly impoverished university indulging itself in the purchase of multi-million-dollar oceanfront property. Publicity focused on the \$2.7 million purchase price, and the terms of the sale: 6 percent interest over ten years with no income tax payable by the Blacks. Governor Reagan added the Farms deal to his anti-university hopper. Assemblyman Stull delivered acid and inaccurate denunciations of the action to eager conservative audiences throughout the state. In July he called for an investigation of the entire matter.

Although Stull griped about the cost to the taxpayers, the Farms would be paid for from the University Fund and the Nuclear Science Fund, neither of which received state money. But having the taxpayers' plight removed from the issue did not temper Stull's attacks. Neither did it mollify Farms homeowners or La Jolla townsfolk who supported their cause. They were much more concerned about the university as a close neighbor than they were about how much the property cost. Worry heightened when news was leaked that the old Scripps Institution site for the still-unbuilt community theater had been withdrawn in favor of the area around the horse track. A group formed SOS—Save Our Stables—to protest the action, which required zoning changes, to the city council. The council referred that matter to the city attorney, who also needed to be involved in university plans to construct a shopping mall for students on the site. Residents peppered the regents with requests to use the land only for a park.²⁴

Galbraith managed to rise above the ruckus, and in announcing his leave-taking, nicely said it was "exaggerated" to label San Diego reactionary. He also said that relations between the campus and the university president's office, now occupied by Charles Hitch, had "very definitely improved" in recent months. As soon as Galbraith's going was announced, Clark Kerr wrote him that he was sorry to see him leave San Diego, "sorry also we could not always have been of more help to each other. San Diego developed favorably under your leadership—you can be proud of your contribution."

William McGill, recently elected chairman of the Academic Senate and, as such, a member of the chancellor's search committee, said Galbraith's leaving was a cause for "deep personal regret. . . . Our chancellor is an uncommonly fine man who has worked very diligently in the interests of UCSD. In three years he has transformed UCSD from an elite science school to a functioning university campus without sacrificing any of its exceptionally fine standards."

Although his saying so was politic, McGill was right about Galbraith. He left a campus of some 3,000 students. His success at bearding the "dukes and earls" could be measured in burgeoning non-science programs. He fostered the growth of the arts, both on campus and as a town-gown exercise: The bowling alley art gallery was site for the first-ever UCSD/La Jolla museum collaboration, a 1966 show of Latin American art. It was during Galbraith's administration that Ernest W. Mandeville, an Episcopal clergyman, publisher, and printer, endowed a largely liberal lecture series. Inaugurated by Justice William O. Douglas in the fall of 1965, it featured a roster of speakers including Sidney Hook on student rights, "Ramparts" contributing editor Stanley Sheinbaum on Southeast Asia, and *New York Times* Pulitzer Prize winner Harrison Salisbury delivering a "Report from Hanoi."

Galbraith committed the campus to the college system and made sure it not only could work, but would work—by giving provosts real authority, a move most dramatically reflected by his appointing the powerful and ambitious Paul Saltman to replace Ed Goldberg as provost of Revelle College. Saltman, a USC biochemist with a Caltech doctorate, was a canny politician who was unafraid of both administrators and students. Armin Rappaport, hired from Berkeley to teach history, did not have Saltman's aggressive drive, but Galbraith made him founding provost of Third College, due to open in 1970. He appointed John Stewart, who had been hired to found the fine arts, as provost of Second College, soon called Muir, which he got up before schedule by using Camp Matthews as a staging area. And he oversaw plans for the controversial \$23 million Muir College compound and celebrated the groundbreaking there in May 1967.

In other administration moves, he left Bob Biron vice chancellor for administration and for business and finance—a posting Galbraith considered a

conflict—and created vice chancellorships for graduate studies and research and for academic planning and hired Berkeley veteran George Murphy as dean of student affairs. He hired retired Marine Corps general A.L. Bowser as gifts and endowments officer and appointed former Peace Corps staff member Martin Chamberlain to run an enlarged Extension division.

Perhaps because he did not understand the seriousness of the problems that created sixties students, he supported the creation of a version of fifties-type student life: a real yearbook staff (the *Trident's* first edition was in the spring of 1968), Halloween parties with the auctioning of "slave girls," orientation parties with fashion shows and teas, the introduction of the watermelon drop on Revelle campus complete with the election of a "Miss Splat." And he strongly supported the campus sports program that may have mirrored his old coaching days.

The UCSD-sponsored Western Intercollegiate Surfing Council started during his tenure, as did the campus rowing program. But nothing better symbolized the cusp of his administration than Galbraith's hiring of former Chargers player Walt Hackett to coach the football team the students said they wanted. Spring practice began in 1968 on the same day Students of the Independent Left mounted a demonstration mourning the death of Latin American revolutionary Che Guevera. Days later Galbraith shut down the campus in compliance with Lyndon Johnson's declaration of a day of mourning for the slain leader Martin Luther King, Jr. By summer Galbraith was gone. His replacement, Bill McGill, was starting what he would come to call "the Year of the Monkey."²⁵

CHAPTER FIVE

CONFLICT AND COMING OF AGE

WILLIAM MCGILL WAS SET to assume the chairmanship of the statewide Academic Senate when instead he succeeded Galbraith as chancellor. McGill, 48, had been recruited by Keith Brueckner in 1965 from Columbia, where he had been chairman of the psychology department. A New York native who left his lower East Side Irish beginnings forever when he graduated from Fordham, McGill earned his Ph.D. in experimental psychology at Harvard. There he had been a watchful junior member of the World War II team that fused nuclear weapons research with that of cryptology and created the thinking machine, or digital computer. One result of that work was a bridge between applied physics and social science that UCSD was using to build what would very soon be one of the best experimental psychology departments in the world. McGill's specialty was information processing and mathematical psychology.

A powerful member of the search committee that finally selected him as candidate for the chancellorship, he had been a savvy and decisive force in the local Academic Senate despite having little patience for meaningless debate. As chairman, he had told Galbraith that UCSD "has a higher concentration of amateur faculty-administrators than I have ever seen in my life. The whole ponderous structure exhibits the paralysis of unfettered democracy in its most lethal form—endless sequences of essentially therapeutic committee meetings! As you know, I came here to get away from all that. . . ." He was thought to be as politically conservative as he was toughminded—an obvious advantage in an era of widespread suspicion of liberals—and had an appetite for governance that had been informed and molded first by Fordham's Jesuits and then by

the not dissimilar rigors of his field. As Galbraith may have been chosen chancellor as a corrective in humanities and public relations, McGill might have been expected to serve as a social-science fulcrum on the developing campus. Later, he said he was appointed because the regents mistakenly assumed he was expert in psychopathology. During 1968, it seemed as if the campus, and indeed the entire University of California system, might be going collectively crazy.¹

Viewed from the outside, McGill's most pressing problems were created by the students, perhaps most dramatically by what was known as the New Left. This was a nationwide movement, not a cohesive group, represented on the UCSD campus by the Students of the Independent Left, who eventually became part of the national SDS—Students for a Democratic Society. Moving in and out of coalitions with the Congress of Racial Equality and the Student Non-Violent Coordinating Committee, New Left members had made a hero of philosophy professor Herbert Marcuse, who joined the UCSD faculty in July 1965; so doing, they focused political analysts' attention briefly on the campus and caused much alarm in the community. Locally celebrated by members as a reflection of Jeffersonian political renewal, the movement was damned by conservative local columnists as a manifestation of "that regressiveness common to both Red and Brown fascism."²

But the image of the academy raising the collective clenched fist did not reflect reality. The campus was as fragmented ideologically as it was perceived to be radical. Faculty fought one another bitterly on the issues that arose over the growth of the university and the appropriate UCSD response to events at Berkeley. As faculty members struggled with definitions of their missions, questions of affirmative action in favor of minorities and student involvement in governance were added to the traditional infighting between scientists and humanists. Choices between research and teaching were complicated by the addition of the alternative of political activism, and departments broke apart on issues of ethnicity and ideological balance. Students fought as well. Although they were quieter, the politically inactive but professionally ambitious peppered the chancellor's office with demands for scholarly peace. Even

at the height of the troubles there were far more research seminars than protest rallies, far more candidates for Who's Who than unkempt Marxist dissidents.

Amidst the mounting pressure toward activism, Galbraith's football team continued to practice. On September 28, 1968, it took the field against La Verne College. Its dismal showing was not thought to be a factor in the following spring elections when students overwhelmingly opposed private financial aid for athletes. Within two weeks, physical education chairman Ted Forbes announced the demise of the team. Apparently emboldened by the precedent of anti-war demonstrations, some 48 UCSD athletes responded with a campus boycott. They demanded a physical education major in the yet unopened Third College, summer jobs, waived fees, and all proceeds from food concessions to support varsity sports. Their fellow students dismissed them as absurd, but the issue added another element to the complex kaleidoscope of campus life.³

As in Berkeley's early Free Speech Movement, it seemed the sole consensus in UCSD's campus troubles was to get the administration. Shortly before he was selected for the chancellorship, McGill had urged regental and university support for the beleaguered Galbraith. "We put our chancellors in a most exposed position," McGill wrote. "It is, accordingly, our obligation to defend them with all our resources when they are subjected to unreasonable and unprincipled abuse." There was no reason to assume the abuse would end. He knew that Ken Pitzer, who was first offered the job, had turned down UCSD's chancellorship in favor of the presidency of Stanford, "in the somewhat mistaken view that the job would be easier."

McGill would have to juggle varying demands from students and faculty while trying to steer a growing campus on a \$70 million annual budget that was being pinched by a hostile governor. Like Revelle, York, and Galbraith, he would have to be a founder. The campus for Second or Muir College needed to be finished. The planning for the third college, suddenly caught up in ideological conflict, would have to be put back on track to meet the 1970 arrival of the first students. The medical school needed to be unsnarled again. The social sciences had to be strengthened, and the undergraduate teaching loads for science researchers had to be lightened if the university hoped to keep them. Policies for minority education and hiring needed to be instituted, governance

needed tuning, and the University-Community Master Plan had to be guarded against efforts by varied interests to sway it.

These trying, but ordinary, duties had to be carried out in an extraordinary atmosphere of siege. University lawyers were preparing briefs on "due process," McGill had legal "State of Emergency" papers drawn up in case they were necessary, and the regents took position votes that clarified chancellors' authority in civil and criminal law. The idea was to keep the peace while keeping city cops off campus. This was seen as a way of protecting zealous but benighted youngsters, but it was also a way to preserve university autonomy within the adversarial context of relations with Sacramento. The governor and legislature were trying to impose politics on the university, and at the time there was every reason to fear that a referendum changing the constitution to bypass the regents and put the university under the legislature's thumb would pass.

The degree of conservative fears at that point in American history could be seen in white supremacist George Wallace's taking almost 10 million votes in the 1968 presidential election just after McGill assumed office. Five months earlier, Bobby Kennedy had been killed in Los Angeles, and two months before that, Martin Luther King, Jr., had been gunned down in Memphis. Cleveland had erupted just that July, and Chicago was turned into a melee during the August Democratic National Convention. Columbia had exploded with student protest in April and May over issues that included, for UCSD, the dangerous one of demonstrating against the Institute for Defense Analyses.⁴

Washington was made wary by the troubles. Classified research needed to be protected, especially at places like UCSD, founded on the fortunes of outside funding and already becoming one of the principal recipients of federal research grants in the nation. That year the federal government tacked relevancy restrictions onto grants and contracts, making money harder to get and tainting what was got with direct Defense Department links. As a way of insuring its investment, it imposed tests on institutions as well. In March 1969, in a threatening letter, McGill was told by Secretary of Health, Education, and Welfare Bob Finch that Congress had attached federal laws concerning campus discipline to grant and contract awards. The same month he heard from the

National Aeronautics and Space Administration that by federal law no NASA money could go to anyone even vaguely identified with "civil disorder."⁵

But civil disorder personified had already appeared on campus. Eldridge Cleaver, four months out of a parole-violation prison term, was the presidential candidate for the Peace and Freedom party, head of the radical Black Panther party, author of *Soul on Ice*, and, in 1968, one of the designated lecturers for the Berkeley-sponsored Sociology 139X course. The course, approved by the regents as part of their 1965 Free Speech Movement appeasement package, was to address issues of special concern to the students. The teacher they selected caused more than concern to the regents. In October 1968, Cleaver arrived in San Diego with a cadre of leather-clad bodyguards who were said to be armed. He posted these outside Academic Senate chairman Walter Munk's La Jolla home while he and Munk had what Munk later said was an agreeable dinner. Afterward, Munk attended the "lecture," which had a transformed Cleaver leading students in obscene anti-Reagan cheers that Munk found "shocking for the first ten minutes," then just "repetitious." The speech, reported locally with a flock of dashes signifying four-letter words, was a stick in the hornet's nest of San Diego's worries.

McGill tried to repair the damage by saying at a press conference that Cleaver was not smart enough to be a threat: "Cleaver opens up with a five-minute night club act, then goes into obscenities. Then he closes with a kindergarten chat about Marxism." Simply letting him speak was the best defense against him. McGill shared a less glib response with a San Diego clergyman: Cleaver was awful, he wrote, but the "brutal problem is that we made Cleaver. The students like to flaunt him and his arrogance before us to tell us in no uncertain terms how they believe we have failed. It is not very pretty but then our society is not very pretty. Cleaver's obscenity is the vernacular of the ghetto as you must know. Why should the vernacular of the ghetto intrude on the elevated discourse of the University? I believe that it is because those among us who are deeply upset at what Cleaver came from wish to rub our noses in it so that we never forget. I do not believe that the cause of racial justice is advanced by this kind of wallowing in filth, but I cannot escape the feeling of horror that Cleaver is as accurate a picture of modern America as is television or the Fourth of July."

Ronald Reagan, inaugurated governor in 1967, was also an accurate picture of a modern California, one that Leftist students abhorred. When Reagan attended the November regents' meeting on the UCSD campus, he was jeered and taunted. During the meeting, the regents removed credit for Sociology 139X. Technically they had the authority to do it, but using the control over curriculum that the regents decades earlier had delegated to the Academic Senate was seen as yet another attempt to politicize the university along conservative lines. The campus erupted, and in reaction, so did the local press.⁶

But Cleaver turned out to be a passing problem. The lasting one, which became a critical catchword for university detractors, was German philosopher Herbert Marcuse. Marcuse was a veteran of the wartime Office of Strategic Services (parent of the CIA) and had been on the faculty of Brandeis' philosophy department when he was appointed to a post-retirement position at UCSD in 1965. A Marxist scholar whose writings on the repression of individual freedom in industrial societies were faulted as much in the Soviet Union as in the United States, Marcuse became a radical cause to San Diego conservatives, including the local newspaper and the American Legion. Along with his very much more dramatic graduate students—including Black activist Angela Davis—he was seen as cloven-hoofed Communism incarnate. University administrators were accused of complying in the reign of intellectual terror he was sowing in the minds of California's young. Demands for his dismissal were ongoing and shrill during 1968, and they found sympathetic responses in the hearts of the Reagan-led board of regents.

At the regents' level, the issue of Marcuse focused on his being given a continuing appointment. Although neither McGill nor senate chairman Munk was a Marcuse fan—Munk found him "stuffy, autocratic" and dull; McGill thought the man charming, the work "ponderous"—they were determined to protect the threat to academic freedom implied in assaults against him. McGill asked for advice from Galbraith and from politicians, including congressman Lionel Van Deerlin and state assemblymen Pete Wilson and Clair Burgener. He then decided to allow the traditional process of academic governance to decide the issue. He had already created a precedent when as Academic Senate chair he secured two-time Nobel prize winner Linus Pauling's post-retirement

position in UCSD's chemistry department. Then, with the help of university president Charles Hitch, he convinced the regents to delegate to the president and thence to campus chancellors the right to decide on such appointments. Although Pauling was making his own political waves at the time, his December 1968 appointment went through. But even the Academic Senate was divided about Marcuse, and McGill had to convene a special faculty committee to recommend for or against his reappointment.

McGill hoped this would quiet things down. But Marcuse, then 70 and probably grown giddy from the adulation given him by the student New Left, made an inflammatory speech that December in New York. Once again, the conservatives pounced. McGill's public response was a letter in which he said that it was "wholly inappropriate that an issue as subtle and sensitive as this one, involving as it does a senior academic appointment, should be the subject of undue pressure on the Chancellor from local newspapers and the American Legion." He said that fairness and justice to Marcuse as well as academic values and traditions were at stake, that he could be held responsible for the outcome, and in the meantime, "I ask you to stop pressuring me. I tend to dig in my heels in such circumstances, and I expect to need every bit of objectivity I have during the next several months."

McGill made the not uncommon university mistake of assuming his respondents were even interested in academic values and traditions. But he managed during a bibulous lunch with *Union* editorial writer Anderson to get that newspaper off his back. In the early winter, the appointment committee reported that Marcuse, though not highly regarded within academic philosophy ranks, was an "unusually gifted and popular teacher." It recommended renewing his appointment for a year, but not promoting him.

McGill later said that UCSD's bid for "instant greatness," based on "opportunistic recruitment of big names without regard for current effectiveness or departmental balance," had left him with "an academic retirement community." Marcuse was certainly a member, but handling him cleverly might in one stroke placate the city, quiet the campus, and rid the university's front porch of rocking chairs. McGill would shield Marcuse's reappointment with a general policy on "senior figures," which called for the termination of "all existing commitments to over-age professors as of June, 1970." He would

sign the reappointment after meeting with the regents and getting help from President Hitch. Charles Hitch, 59 in 1969, had been a Rand Corporation economist who worked for Robert McNamara's Defense Department before being hired in 1965 by Clark Kerr to serve as financial vice president of the university. He became president in early 1968. McGill recalled his "solemn face and low-key demeanor" as being scholarly rather than political and admitted that Reagan had treated Hitch with open disdain, which was not reassuring to the nine campus chancellors. But Hitch was, said McGill, "the most honorable person in the midst of conflict I have ever known." Conflict was certain during the meeting held in Berkeley with the Reagan-summoned National Guard and local police guarding the entrance to University Hall. McGill gave his report on Marcuse and was censured by regents led by the newly appointed William French Smith, Reagan's personal lawyer. The shouting match that ensued was quieted by San Diego regent DeWitt Higgs reading a telegram of city support for McGill with 37 signatures. Reagan, shaking his head in disbelief, withdrew. McGill seemed to have won.⁷

But still another problem burst out of what was beginning to look like a campus riddled with weak political pressure points. Shortly after the regents' meeting, recruitment interviews were scheduled by the Marine Corps and the Navy. Anti-war demonstrators assembled to stop them, and faculty members told the officers that the Marcuse affair had unsettled campus nerves and suggested canceling the meetings. The Navy representative retreated, but the marine would not leave until dean of students George Murphy urged him to go. Community reaction was stronger on this issue than on any other, and it went on for months. Newspapers ran editorials and cartoons about the Marine Corps having given UCSD land, and ran ads from "Citizens to End Campus Anarchy" that counted up the days that offenders went unpunished. The American Legion stepped up attacks on McGill.⁸

Like many town-gown "misunderstandings," this one centered on definitions of offense, and McGill proceeded cautiously with disciplinary action. When recruitment interviews were rescheduled, he decided to prevent another confrontation by spicing the Marine Corps representative away to University Hospital in downtown San Diego. For this, McGill was accused of casuistry by both sides. In fact, his Fordham teachers would have been proud. As in the

Marcuse case, where McGill technically reappointed the controversial professor while denying him a job, this time he had the recruiter technically doing business on university land—thus demonstrating he would not cave in to student demands—while forestalling an on-campus showdown. That same month, in a show of reasoned liberality, students voted to allow all recruitment, including military, on campus.

But the overall mood, which McGill experienced as a kind of besiegement of the soul, was hardly one in which to celebrate his chancellorship. So it was that on April 11, 1969, he was quietly inaugurated in subdued ceremonies presided over by Hitch and featuring Regent Higgs, Herb York, and Roger Revelle. No campus social events were held, and the official lunch took place at a middling local restaurant. That night, a rather more gala party hosted by Walter and Judith Munk was mounted at E.W. Scripps' old Miramar Ranch house.

The next month, with Munk's help, McGill met the faculty head-on, showing himself as the canny scrapper that had Revelle calling him—insultingly, McGill always thought—a good Irish politician. The Academic Senate, responding to Reagan's calling out the National Guard to put down Berkeley's People's Park uproar, wanted to strike the UCSD campus or devote class time to discussing events. Proposing "the medieval plan," in order not to "play into the hands" of Reagan and the police, Revelle College provost Paul Saltman called for evacuating Berkeley and moving faculty and students to other campuses, presumably San Diego. McGill, who was willing to suspend classes for only an hour, said that what he heard at the meeting that followed was "demagoguery" and "the basest form of indoctrination."⁹

The resignation two weeks later of academic vice chancellor Sol Penner was said to have been submitted in January. But it was likely the move was made in reaction to McGill's stance. Penner, in returning to his directorship of the Institute for Pure and Applied Physics, gave McGill a chilly official goodbye, wishing him "well in the years to come." In what looked like strengthening the chancellor's complex of command while extending centralized control over the campus, McGill made vice chancellorships for the director of Scripps Institution, the dean of the medical school (which had opened doors to students in 1968), and for the much-esteemed George

Murphy. Herman Johnson filled the business and finance vice chancellorship vacated by Bob Biron, who was busying himself in real estate development.

Apparently McGill thought administrative clout might be needed to deal with escalating trouble. An especially touchy issue within the Academic Senate just then was pressure, intensified by President Hitch, to appoint minority faculty. The push to open campus opportunities for minorities had been introduced by York, who hired as key members of his staff the university's first Black employees in non-menial positions. The chemistry department made the first Black faculty appointment. But minority candidates fully qualified within senate guidelines were few. As the administration saw it, relaxing requirements for research and publication and looking instead at teaching and public service was the only way to keep the university from becoming a bastion of status quo privilege.

But as York said later, although many faculty favored a wider door into university participation, few were willing to change requirements to open it. Doing so was seen as dangerously weakening academic standards. Moreover, traditional governance gave to the faculty, and not to the chancellor, the right to make such decisions. Nevertheless, McGill institutionalized Affirmative Action at UCSD. He created a position titled Assistant to the Chancellor for Minority Affairs and gave it to medical school faculty member and tennis instructor Jack Douglass. Douglass helped with the Educational Opportunity Program that included classes designed to attract minorities to premedical education as well as remedial courses and tutoring, and summer "bridge" classes. Word was carried to county high schools by UCSD's big blue and white Urban Crises outreach van.

Though it scarcely amounted to more than a forlorn hope, McGill also sought to bring reassuring news of UCSD's intellectual prowess to suspicious San Diegans. He founded a bi-monthly public relations magazine and launched a series of 19 public lectures by faculty familiar to the community, among them Harold Urey, Roger Revelle, economist Seymour Harris, Walter Munk, and Keith Brueckner. In addition, after the early 1970 invasion of Cambodia, he instituted a People to People program, suggested by faculty member Sheldon Schultz, that allowed city folk to phone the campus and arrange for rap sessions with students and faculty. He also hoped to attract the community to campus

with a broader selection of the Extension division's offerings of sixties esoterica such as "Awareness Through Creative Aesthetic Encounters" and "Self Actualization Workshop."¹⁰

That worked, for in a sense the town itself was becoming divided by this time. Liberals allied themselves with the university on issues such as the war in Vietnam—as many La Jollans as university representatives attended peace vigils at the village Friends Meeting House—and civil rights. But the founding of Third College on an affirmative-action base caused even university supporters to fear the campus was being hijacked by hardcore Black- and Hispanic-rights revolutionaries led by the famous Marxist Angela Davis. This fueled the political backlash that McGill believed was responsible for the November 1968 defeat of a bond issue that would have given the campus some \$30 million for capital expenses. He told a reporter that "this kind of reactivity, stimulated by sensational and often distorted accounts in the press, will have the effect of driving high quality professors out of the state, leaving the university system to the dissidents and militants who have no other place to go." Just weeks before the vote, Reagan had told the California Bar Association that gun sales in the state were increasing because citizens felt they must arm themselves against political crises, chief among them the one at the university. "Colleges," Reagan promised, "are not going to become launching pads for anarchy." Ten days later, he told a reporter that the people of California "have not turned this institution over to the faculty to rule by insubordination, or to the administrators to rule through appeasement and capitulation, or to the students to rule by coercion."

Rule was a term that would have sat uneasily with many regents, but McGill thought Reagan got control of the board in the spring of 1969. Smith, Hoover Institute director Glenn Campbell, and John Lawrence—brother of Ernest and in York's estimation a "flop as a Regent" who represented a tiny minority of arch-conservative University of California faculty—were appointed under Reagan's "sharper political standard." Their votes gave weight to the governor's insistence on a reduced university budget that caused raises to vanish and projects to stall.

This perhaps punitive mixing of money and politics was also seen as instrumental in the regents' decision in late 1969 to impose tuition on

students, an action that stimulated campus response most eloquently forwarded by the beloved Harold Urey. In an open letter to the regents, Urey, in February 1970, decried cuts that in five or ten years could sink "this great university" to "the level of some very ordinary college." It would take 50 years to repair the damage. Tuition, which Reagan wanted to go into the General Fund, "is the most vicious imposing of taxes on those least able to pay that has ever come to my attention.

"I received my entire education from schools supported by a country township, a town and county of Indiana, the University of Montana and the University of California," Urey wrote. "I managed this just by the skin of my teeth. Tuition at any stage would have prevented me from attending. I have a burning sympathy for any student in a similar situation." The greatness of the country, he said, arose from our ancestors taking "the little country school with them" as they moved westward. "If the present strictures against the University of California continue, the present board of regents, in my opinion, will go down in history as those who destroyed one of the greatest universities in the world. Please don't do it."¹¹

But to the public and some of the regents, students very different from Urey were dominating the university. On April 20, a small group entered the Contracts and Grants office in protest, they said, of UCSD's "involvement in war-related research." They took an August 1969 advice-of-contract-award document that had been sent by the CIA to the Scripps-connected Visibility Lab and released it to the San Diego *Street Journal* news sheet. Nine days later, opposition to university involvement in defense research was the focus of a protest meeting held in Reville Cafeteria. Some 50 students left that meeting and "occupied" a Muir College building where they were intercepted by George Murphy with a memorandum telling them they were violating the campus Standard of Conduct. This was a legal action.

On May 1, the regents' attorneys, acting on McGill's request, obtained a superior court restraining order against the seven people charged in the Contracts and Grants office entry and the more than 100 who had entered Urey Hall to demonstrate against defense research. Ten days later, a young male student, said to be despondent over the Vietnam War, perished when he set himself afire in Reville College plaza. On May 27, with the restraining

order still in effect, a group of students barred McGill from entering his office. Murphy grabbed a bullhorn and told the protestors that they were subject to contempt-of-court proceedings. Among those ordered off the campus was SDS leader Byron King. King showed up that night—in protest, he said, "against war research and against the Vietnam war"—at a regularly scheduled SDS meeting in the Undergraduate Sciences Building, and was arrested. Later, a few small fires were started in trash cans and a couple of fizzled "firebombs" were pitched onto Revelle campus.

McGill testified against the 21 people finally charged in the incident, and three days after the June 16 hearing, Judge William Macomber found 19 participants guilty. Sentences ranged from five days in jail and a \$500 fine to suspended time and probation. This sorry mess further antagonized the city and divided the student body. But defense-related campus research troubled the faculty as well, and they created an ad hoc committee led by biologist Herbert Stem to study the issue. They interviewed various scientists, including Keith Brueckner, who was identified in the student newspaper as UCSD's "Number One Warlord."¹²

Years later, McGill ruminated on the trouble that had him testifying against his own students: "It is a simple fact that every nuclear weapon ever manufactured in the United States was manufactured under the auspices and on the property of the University of California. . . . The generation of academics who grew up during the Second World War and who were enlisted into federal assistance during the Cold War saw nothing wrong with what they did. . . . That is, they felt that they were doing patriotic service, but they didn't think through the question of what is it proper to do on a university campus and what should you do in other locales." Because such research was done on campus, McGill had to have a safe built for classified documents, and neither he nor any other chancellor could be appointed without being cleared to handle classified material. "That's ridiculous. . . . How do you square the openness of a university and universal access to knowledge with the closed environment associated with security matters? You can't. One does not admit the other. . . ."

The final Academic Senate opinion on the matter would be given after McGill was gone. In announcing his resignation, he said it was his love for

Columbia University that prompted him to accept the job as its president. He was heading into a decade of trouble in New York, but he believed his experience at UCSD had prepared him for it. He had learned, he said, that if a campus leader "has any integrity at all he has got to stake out a moral position that is independent of both faculty and the students."¹³

* * *

No obvious replacement for McGill was willing to take the job. The ones who were rumored to want it—including Roger Revelle, medical school dean Clifford Grobstein, and Revelle College provost Saltman—did not get the bid. So it was that in July Herb York was announced as acting chancellor effective September 1, 1970. Almost a decade separated his chancellorships, and he believed that during the intervening years the university had become the kind of institution he could understand, with professors conducting real classes for students, a hospital with real sick people in beds, a \$4.6 million monthly payroll, and a 450-member faculty with 37 National Academy of Sciences members.

The campus was glad to have him. York's quiet, rumply response to social *Sturm und Drang* was as appreciated as his commitment to liberal ideology. He had gone on record at the beginning of student troubles with his attitude about education: If the university tried "to do defense research well, then we must examine the consequences of foreign policy; if we are to teach America's past, then we must consider deeply America's present. If we are to study successfully the diseases of individuals, we must also study the diseases of society. If we are to sponsor string quartets, we must also sponsor political discussions. Much as some might like it, we cannot produce good things and good alumni without producing ideas. To be effective citizens, the men and women who will be UCSD's alumni must try their wings and air their thoughts during student years in the sympathetic environment of the campus without being improperly and unjustly insulted and badgered by unconstructive outside forces."¹⁴

The summer he was appointed, York got a letter from Marcuse, who had fled La Jolla in response to what were believed to be threats on his life. He wrote York from France, asking him to stop the prosecution of literature department faculty member Reinhard Lettau for anti-war agitating. Explaining

that Lettau acted on the basis of firsthand experience of the German "crime of silence," Marcuse said he wrote to York because his "name has been frequently mentioned as one of the very few on the Faculty who still dares to protest—and to understand."

There was much to understand. Respectable professors ambled about unshaven and sometimes barefoot—not only the ones at Scripps, who had been unshaven and barefoot for 50 years—on a campus that bubbled with southern California alternative lifestyles. Bush hats, beads, and headbands for males, leather, tie-dye and no bras for females, and battered Volkswagen vans for everyone seemed to be the code of the campus' more dramatic element. Food, class notes, drugs, books, and domestic duties were shared, as older students and younger faculty members tried to create a kind of academic commune under the eucalyptus trees. Biology post-doctoral fellows planning genetic experiments, English graduate students planning an alternative elementary school—the Pepper Canyon School—for the campus, philosophy faculty planning trips to President Richard Nixon's San Clemente home to lob noxious chemicals over the wall of the Western White House, socialized at macrobiotic dinner parties and Muir provost John Stewart defended student theatrical productions that included frontal nudity.

Though UCSD never had a cast of academic players the size of Berkeley's, its assortment of ersatz and real revolutionaries was visible enough and poor enough to cause real alarm among townsfolk. Tanned tennis matrons withdrew in horror from students and faculty on counterculture shopping trips to the supermarket, and as the candle-carrying hundreds filed silently from campus into La Jolla in a pacific protest against the invasion of Cambodia, homeowners treated them as the enemy whose invasion had been expected in both world wars. But York seemed unflapped by either the serious or the zany aspects of campus life. UCSD dissidence, even at its most dramatic, was not a significant part of his second tenure, he said. Just "moving the university ahead was the dominant theme."

As chairman of the physics department and dean of graduate studies, York had learned the ropes of academic governance and was able to ease open the knot of disagreement over founding the Third College, get some faculty appointments made, and nudge an academic plan out of committee in time for

the fall 1970 arrival of its students. He generally did so well that he discovered he quite liked being chancellor this time around. The city, which had been represented by little more than defense-related industry ten years earlier, reciprocated his pleasure. On the night of March 19, 1971, many dozens of San Diego's socially elite and politically conservative trooped up to campus for the formal dedication of the Galbraith-commissioned central library building. The Yorks led off the receiving line. This was as good a reflection as any that the wild times that polarized the university and the town were drawing to a close. One of the major internal problems, classified research, seemed eased as well.

York believed classified research was disruptive and irrelevant—nothing classified could be used for promotion or tenure—to university routine. Though he defended individual faculty members' involvement in such work, he concurred in the January 1971 Academic Senate resolution—passed by a majority of 100—calling for the administration to "dissociate all educational activities of UCSD from classified research as soon as consistent with orderly procedure." A motion to remove the word *educational* failed, but the senate recorded its "continuing opposition to University participation in classified research on campus." It also called for decreasing the university's reliance on "mission-oriented" work.¹⁵

Moving classified research down to the Naval Electronics Lab on Point Loma was relatively easy, and it may even have allayed government worries about documents falling into radical hands. With some \$40 million in outside funding and some 135 contracts current, it would be difficult for the campus to comply with the call to decrease its mission-oriented work. But the senate's request had significance beyond the utilitarian. In effect, it reflected the university's coming of age. Twenty years earlier, when Roger Revelle began forging the Washington connection as a way of putting Scripps on the international science map, such a vote, and its results, would have been impossible to conceive.

But during the sixties, while the city focused on UCSD's most apparent trials, a conversion more profound than students shedding shoes and inhibitions occurred. The university had outgrown its beginnings as a creature of the national and local military-industrial complex. It would continue to progress as a stellar scientific institution supported by vast sums of outside funding, but

UCSD had become independent. The chancellors, first Galbraith and then McGill and York, in defending a university mission beyond training post-doctoral fellows for high-tech business, had told the city that its proprietorship was over.

York hoped he would be the chancellor leading UCSD into its promising and independent second decade. McGill had urged him to seek the appointment, and he was the choice of Jim Arnold, chairman of the search committee. But when President Hitch sounded out the regents, he learned that the onus of York's earlier resignation was too great. York believed the regents were unwilling to honor him with the job he had once spurned.

In July 1971, biologist William McElroy, director of the National Science Foundation—and an early Brueckner/Bonner target who turned down a UCSD faculty job—while visiting Los Alamos announced that he would be UCSD's next chancellor. A Texan who got an AA at Pasadena Junior College, McElroy played football at Stanford, got a master's at Oregon's Reed College and, in 1943, earned a doctorate at Princeton. He spent two wartime years at the Office of Scientific Research and Development, then went to Johns Hopkins, where he became chairman of the biology department in 1956. A member of the National Academy of Sciences, his research interest was in bioluminescence.

McElroy was said to have imposed practical constraints on the NSF after he was made director there in 1969. Like York, he believed the free-spending days of governmental support of basic research were over. Pragmatism and a firm hand were called for at UCSD as well. He somewhat hopefully—and perhaps misguidedly—said his appointment as chancellor would remove him "from the hectic environment" of Washington politics. He was described as a "vigorous, direct realist," impatient with protocol and small detail, a naturally competitive man with "an agile mind." In the kind of easy Texas manner that would make him beloved by San Diegans, he said he would be "inheriting an outstanding new family" when he arrived on February 1, 1972. It would be a difficult and disputatious family, one he would head during what could be described as the university's great depression.¹⁶

CHAPTER SIX

MAINTAINING INSTANT GREATNESS

WILLIAM MCELROY BECAME CHANCELLOR during a period when the university's greatest strength, science, needed to be safeguarded from the effects of pared-to-the-bone budgets. With the state increasingly hostile to financing university projects, federal money became all the more important and McElroy's Washington connections might make it easier to find financial resources that were already disappearing. The Academic Senate's vote against classified-project work underscored 1968 federal legislation requiring strict relevancy tests for research funded by the federal government. That mandate threatened the rich flow of support that had nourished the university's extraordinary first years. Maintaining already-achieved excellence would take increased extramural backing.

Clark Kerr believed that outside research support "added a new dimension to the eternal class struggles within a university. . . . To the student versus faculty, assistant versus tenure professors, and faculty versus administrators," he wrote, "has been added a new hierarchical point of tension—that between humanists and scientists." McGill said post-war federal funding "created a source of support for scientists like nothing that had ever existed before. . . . You will find when you talk to academics generally that the humanists think that it was a disastrous development and that the scientists cannot imagine how anything else could have been done." Harvard dean Henry Rosovsky explained the split as arising from government and industry having "no obvious need for Ph.D.'s in English, history or Celtic literature." The men and women in fields that government and industry depended upon got better salaries, better offices, travel funds, and the like. This created a "dual structure" of

academic "haves" and "have-nots," said Rosovsky. Since the disparities were not created by the university, "to eliminate them is beyond its power." Kerr agreed. In the same way that the humanism of the Renaissance affected sixteenth-century universities, "the splitting of the atom and the deciphering of the genetic code" changed those in the twentieth century. "We should expect the most money and the brightest students and the greatest prestige to follow the most exciting new ideas."

This assumption underlay the founding of UCSD's first departments.¹ The chance to work with faculty who were the best in their fields was enormously appealing to recruits. In the chemistry department, for example, Urey was a tremendous draw. Although he himself was working in space-age geochemistry, Urey urged a departmental focus on biochemistry and gave Jim Arnold names of potential colleagues. Among the first of Arnold's recruits was Stanley Miller from Columbia, who had been one of Urey's young post-doctoral fellows at Chicago. Miller had become famous for creating amino acids in his laboratory by running an electrical charge through methane and ammonia. Also from Chicago, Arnold hired Joe Mayer (whose field, physical chemistry—particularly quantum mechanics and statistical mechanics—was as much physics as chemistry) and, through what he called professional "clubbiness," also got Bruno Zimm and Teddy Traylor. Then he followed Urey's lead to Martin Kamen at Brandeis and brought back one of the faculty's most interesting members.

Kamen, who was co-author of a 1959 article that traced artistic and scientific creativity to the same source, was the nascent university's professorial ideal, a man who could guide the selection of humanities faculty and play the viola as well as do science. A musical prodigy who had paid for his University of Chicago Ph.D. in physical chemistry by playing jazz fiddle at bars, he went to Berkeley in 1937 to work on Lawrence's cyclotron and there succeeded in creating carbon 14. He was involved in the Manhattan Project during the war, but in 1944 was stripped of his security clearance and banished from Berkeley by Army Intelligence. In 1948, while he was working at Washington University, he was subpoenaed by the House Un-American Activities Committee, and the *Chicago Tribune* claimed he had shared a San Francisco lunch with a pair of Russian agents during the war. He sued the newspaper for

libel, and in searching intelligence files in preparation for the case, he uncovered evidence he said explained that he had been identified as a risk because of boyhood friendships with other musicians. Although he won his libel lawsuit in 1955, it took several more years for him to be fully restored professionally. He arrived in La Jolla with the sense that calumny and malfeasance had hobbled him in the race for science glory, won by other investigators who had gotten four Nobel Prizes for further work on carbon 14. At UCSD, Kamen worked on methane and the bioconversion of solar energy. He also had a taste for campus politics and eventually became chairman of the department that was pivotally important to the university's future.²

Arnold believed that, as part of its campus obligations, chemistry should create undergraduate classes tailored for each of the individual colleges and should participate wholeheartedly in interdisciplinary programs such as the one he designed for Revelle College. He also supported the kind of graduate work and research that made the department an excellent example of international sixties science. When Arnold said he looked for breadth in potential new faculty, he meant individuals involved in the new, hyphenated sciences created at the crossroads or interstices of traditional disciplines. This was where investigators such as Crick, Bonner, Urey, and Szilard had staked out their intellectual claims. Working in such areas, where even casual comments by colleagues from other fields might open doors to major discoveries, was seen as the future of scientific investigation. Various portions of the campus were involved, for example, in the Apollo moon shot project for almost a decade. Chemists Urey and Arnold—who worked in Houston—and Stanley Miller and Hans Suess, along with Walter Munk and Gustaf Arrhenius from the Institute of Geophysics and Planetary Physics and Harmon Craig and Edward Goldberg in the short-lived Department of Earth Sciences, all participated.³

Many such projects were started by Keith Brueckner and involved the physics department that he had built almost overnight with the help of extramural money and offers for off-campus liaison work. Research areas were solid-state and low-temperature physics, nuclear physics, particle physics, space physics, biophysics, and physics of liquids. Brueckner moved Scripps

geophysicists Liebermann and Walter Elsasser, who had been at both Pennsylvania and Utah, into faculty positions, recruited Bernd Matthias from Bell Labs and hired Walter Kohn and Maria Mayer, George Feher and Harry Suhl, Margaret and Geoffrey Burbidge, Norman Kroll, Oreste Piccioni, Sheldon Schultz, Bill Frazer, and David Wong. In 1961, when Brueckner left for Washington to follow York's lead as research director of the Institute of Defense Analysis, physics had a graduate program up and running that was second to none in the country.

* * *

In 1963, a few years after Maria Mayer joined the faculty, she became the second woman in history to win a Nobel Prize in physics. She had come from Chicago as part of a husband-and-wife team suggested by Urey. A member of the National Academy of Sciences, she was her German family's seventh-generation scholar. She was schooled at home, and studied physics under Max Born at the university at Goettingen. Three Nobel laureates were on the committee that awarded her Ph.D. in 1930, the year she married fellow student Joe Mayer and moved to Baltimore (where Johns Hopkins would not give her an appointment). She followed her husband to Columbia, where she worked half-time—she didn't want to leave her children alone all day, she said—under Urey separating uranium 235 on the Substitute Alloy Materials program.

After the war, she went to Los Alamos to work with Edward Teller, and then moved to Chicago where she taught full-time with a courtesy title and no salary at Argonne. It was then she began the work on the shell theory of the atom (also described by Hans Jensen, working with Hans Suess), which she characterized as a road map of the nucleus in which the particles, like couples at a waltz, orbit and spin at the same time and in the same direction.

With Joe, and her first formal appointment, she arrived in La Jolla for the September 1960 opening of School of Science and Engineering classes. Within weeks she had a debilitating stroke that effectively curtailed her research and teaching. Her office in the chemistry building was adjacent to that of Harold Urey, a lifelong friend. She died in 1972.⁴

Walter Kohn got his doctorate in theoretical physics at Harvard and was a consultant at Bell Labs. He left his native Vienna in 1939 and enrolled in high

school first in England and then in Canada. He did undergraduate work at the University of Toronto and served a year in the Canadian infantry. After two post-doctoral years at Harvard, he had a decade's work—with various research leaves, including one at Pennsylvania—at Carnegie Tech before coming to La Jolla at the same time as the Mayers. Kohn was a good campus citizen. In addition to chairing physics during Brueckner's absence at the Institute for Defense Analysis, he worked with Arnold on the first college-system plan and chaired the Academic Senate from 1964 to 1966. His was the most eloquent campus voice against Clark Kerr's dismissal. Elected to the National Academy of Sciences in 1969, the same year as Brueckner and geophysicist George Backus, Kohn left in 1979 to head the Institute of Theoretical Physics, which the campus had lost to Santa Barbara. His resignation was a blow to the department.

The death of Bernd Matthias the following year was said to have crippled physics for half a decade. Matthias made wonderful copy in local newspapers for his cultivated professorial strangeness. He wore bow ties, did not wear socks, and described himself as "anathema" to fellow physicists and an antithesis of the "pompousness" of modern science. "People overrate their own thinking. My attitude is this: If I find something, fine. Otherwise it doesn't really amount to anything. This is where the gamble comes in, but most people don't want to gamble, they want to publish." Revelle described Matthias as a hands-down genius who kept just missing the Nobel that everyone in physics knew he deserved.

Matthias had worked at Bell Labs since 1947, with two years at MIT and Chicago, where Fermi set him onto superconductivity. He kept the Bell connections, primarily for summer studies that he apparently did mostly at Los Alamos, and arrived in La Jolla in 1960, for work on ferromagnetism and superconductivity. He was principal investigator on a 1963 \$1-million project based in UCSD's new Institute for the Study of Matter and asked Joe Mayer and Gustaf Arrhenius to work with him. He made the National Academy of Sciences in 1965. Although he admitted to literally dreaming up some of the hundreds of superconductors he discovered, he said his success resulted from his faith in empiricism: "What puts me at odds with the theorists is that they

make things so complicated. If I find anything which is simple, it may be true. If it's complicated, it is certainly wrong."⁵

The Burbidges, like the Mayers, had to be smuggled into the university behind its ban against hiring married couples. He was a theoretical astrophysicist. She was an astronomer who became director of the Royal Greenwich Observatory in England. Jim Arnold, explaining it as "bureaucratic necessity," had to hire her in chemistry. Aided by Walter Munk, the Burbidges soon were pushing for an "astrophysics option" within the physics department. But as early as 1962, generated in part by competition for what seemed to be diminishing resources, fears were widespread that physics would weaken itself by accommodating subspecialties or spinning off applied science and engineering. Brueckner turned down the idea and urged further concentration of strength.

But Kerr, in 1964, wrote that he was "becoming more and more concerned" about the "high percentage of tenure faculty members in the Physics Department." And university vice president Harry Wellman warned York that "progress toward balance" in junior appointments was needed and that University Hall would "look forward" to campus compliance. But then-chairman Norman Kroll said that making full-professor appointments in physics was necessary to attract "government contract support." This was the kind of money that members of Jason could bring to San Diego.⁶

Jason was a highly secret weapons study group comprising some of the most influential physicists in the country. It was founded by Brueckner and others who entertained the idea of incorporating for profit, but decided to accept the sponsorship of the Department of Defense. This connection was suggested by the Institute for Defense Analyses, founded in the mid-fifties as a bridge between the Pentagon and research universities. Invitations were sent out to every eminent physicist, and those who accepted decided to call themselves Jason, after the leader of the argonauts.

Its members, said co-founder Charles Townes, would be "younger established scientists who are in their most productive period," who would "contribute effectively and creatively to national security" and allow an "easy flow of ideas and personnel between governmental organizations and intellectual centers such as our universities." Research projects, mostly classified, to be

done on campus, would be suggested at annual six-to-seven-week summer meetings attended by Pentagon representatives. Pay would be "comparable" to consulting in the National Laboratories.

These guidelines changed very little over the years. Only the informal tradition of varying meeting places was altered, and after the first decade all meetings were held in La Jolla. Initially Jason met in UCSD buildings, but after Galbraith barred them from campus the group gathered in the Bishop's School, run by the more congenial Episcopal Church. But that caused problems too, said Herb York, a member. The school also scheduled a tennis camp during the annual meeting, and Defense Department "security people thought that those girls learning summer tennis were all KGB agents that just looked like girls learning summer tennis." Meetings eventually were moved into the secret sanctums of SAIC, General Atomic, and other classified La Jolla locations.

By the mid-sixties, Jason members were being characterized by the New Left as "lesser, rather than greater, war criminals." Singled out for special condemnation were those scientists—including new Scripps Institution director William Nierenberg—who had devised "the McNamara Fence," a computer-driven surveillance system for the Vietnam no-man's-land that would blow up anyone who set foot on the area. Some Jason members went on record against the war. Others opposed it privately. In 1966, they voted as a group to stop the bombing. Brueckner, who was already attending anti-war rallies, had resigned a year earlier.⁷

As part of the campus probe into classified research, Brueckner answered the charge of being UCSD's number one warlord in a letter to the campus newspaper saying he would have preferred the title of "Supreme Warlord." More seriously, he said he believed U.S. policy in Vietnam had "deteriorated to a position of deep immorality and military lunacy. We should withdraw immediately." Nevertheless, it "is my conviction that as a qualified scientist I am obligated to respond to the best of my experience and judgement to technical problems presented to me by the U.S. Government, its laboratories, or its advisers. . . . I am also able, on the basis of my knowledge of the Government and DOD, to argue more effectively (although this unfortunately has not been particularly successful) for a rational approach to the problems of arms

control, limitation of nuclear armaments, and negotiations with the U.S.S.R. and China."

He wanted the university to "terminate any association with classified research," including managing the weapons laboratories and "the classified laboratories of SIO." Money for research should be transferred from the Department of Defense to the National Science Foundation, he said, and universities should accept it only without strings attached.⁸

But Brueckner was embarking on an entangling venture of his own. In October 1969, he applied for patents on work he had done at KMS, a private research and development company, in implosion—or fusion—of frozen hydrogen pellets by lasers. Laser fusion was at that time being hailed as a shortcut to cheap nuclear electrical power; but the government's \$68 million support of laser research was more likely committed to the simulation of nuclear weapons explosions in laboratories, a money-saving way to sidestep the nuclear test ban. In time, Brueckner filed for 24 patents, all of which were contested by the Atomic Energy Commission, which claimed that his research—some of it classified—had been done during his many years as their consultant. Despite the AEC virtually closing down KMS and stopping Brueckner's laser fusion research, the company, in late 1974, announced that Brueckner had produced thermonuclear neutrons by laser-driven implosion. This was good enough for the company to get a \$300,000 government contract, but Brueckner had already resigned to return to La Jolla, where General Atomic was gearing up for a \$26 million fusion project grant. However, ongoing and public problems between Brueckner and KMS were distasteful to the university.⁹

During York's first administration, Brueckner, as dean of the School of Science and Engineering, had often acted as chief campus officer. Once the university actually opened, he became dean of letters and science of First or Revelle College, then dean of graduate studies. But he left administration in 1965, perhaps feeling forced out by Galbraith. He did threaten to instigate a formal Academic Senate investigation of Galbraith's oft-repeated charges that science faculty were not carrying a fair share of the classroom teaching load, but he did not follow through. He was mentioned as a possible successor of Galbraith, but nothing came of it.¹⁰

Brueckner was a formidable force on campus and was accustomed to filling a lot of professional space. So too was the man who headed UCSD's biology department, David Bonner. The relationship between the two men after almost four years of working together had declined into one of mutually antagonistic swiping. The episode of the secretary was typical: In January 1964, Bonner told Brueckner that the biology department needed another secretary. Brueckner, then dean, turned down the request, which caused Bonner to say that Brueckner was legalistic and "small-minded." Brueckner retaliated by stepping up the conflict and criticizing Bonner for "the amazing figures" in the biology budget, which indicated that the department had spent \$10,000 when it had only \$600 in its account. Bonner repeated the "small-minded" charge and added to it "arrogance" and "irresponsibility."

The exchange ignited fights between various factions on campus. Grief over Bonner, who died in Scripps Clinic a few months later, did not change the nature of the conflict. The real subject of the irritable correspondence between the two men was neither secretaries nor budgets. It was a dramatic academic feud over biology's challenge to the campus dominance of physics, a challenge emerging from the "explosive experimental activity" at the cross-roads of chemistry, physics, and biology."

Just as the Second World War had created an edenic climate for physics, the 1953 Nobel Prize-winning description of the structure of DNA by James Watson and former physicist Francis Crick was making an ideal environment for the growth of biology in the sixties. Bonner's teacher George Beadle—who in 1958 won the Nobel Prize Bonner felt he should share—began his work by combining classical genetics with chemistry. This led to the kind of crossing over that had Szilard at the Salk Institute and Linus Pauling, a physical chemist with strength in quantum mechanics, briefly doing biology at UCSD. It also pointed the direction for funding, both from the federal government and from private agencies such as the Rockefeller Foundation, which helped drive the field that would become molecular biology.

Bonner was 44 when he arrived in La Jolla in 1960, a National Academy of Sciences member, and by Revelle's account the easiest to recruit of any founding department chair. He brought his student Stanley Mills with him, and a year later John DeMoss, who had been an assistant professor of microbi-

ology at Yale, arrived with Jonathan Singer, whose former appointment was in chemistry. Singer got his Ph.D. at Brooklyn Polytechnic Institute and did post-doctoral work on sickle cell anemia. With a particular interest in the antigen-antibody action—which put him among early auto-immune disease researchers—he was elected to the National Academy of Sciences in 1969.

Like other early faculty, Bonner delivered a public lecture shortly after he arrived in town and, among other things, suggested his specialty might be applied to the study of mongolism. But he soon admitted that immediate relevancy would never be important, because his department was "never going to have a 'balanced' program of research in biology." The focus would be on genetics, which meant that all the faculty would "have something in common, something to talk about."

In the fall of 1963 Singer, who often acted as Bonner's point man, warned York that UCSD would fail to realize its potential if it were satisfied with repeating the experience of Berkeley or Caltech. Those universities reflected "what was on the horizon twenty years ago," and that was "not good enough." Preparations had to be made "for the highly probable event that the majority of entering graduate students in pure sciences in the near future will be going into Biology." Bonner and Singer wanted them in a research division called the "School of Human Biology," which would have a small medical school appended. The administration demanded a more traditional department that would have ties with Scripps Institution and a completely independent medical school.

A compromise was announced in late 1963. Emphasis would be on microbial genetics and metabolism, molecular biology, immunology and immuno-chemistry, cellular ultrastructure, and growth and development. Close collaboration was anticipated with members of the physics and chemistry departments, including Kamen, Stanley Miller, Traylor, and Zimm, and with Scripps' marine biologists. The faculty would also include, as research associates, immunology hotshots Frank Dixon and William Weigle who in 1961 had come from the University of Pittsburgh to start Scripps Clinic's Division of Experimental Pathology. Initially, no one from Salk was included, perhaps because of earlier hard feelings about real estate.¹²

A month after Bonner's death, Singer—who said he knew so little biology he could not tell a rabbit from a rat—shifted himself into the departmental chair and tried to stave off some reported attacks. Although in the ascendant, biology was apparently not invulnerable to anxiety over imagined encroachments. Singer had heard that physics wanted to start up a biophysics division and Scripps Institution wanted to move into physiology. Either was "ill-advised" and an example of the "fragmentation of biology" that was "antithetical to the kind of development we hope to achieve here." He closed by saying that he and Bonner had come to UCSD "to create a biological community which is unique in the country," and he hoped no serious obstacles to that would arise. There were financial barriers to Singer's community, however, and as a way around them, he suggested founding a "Center of Developmental Studies."¹³

* * *

In the mid-sixties, the UCSD faculty was visited with a generalized fever for establishing centers, programs, or research units. Earlier attempts to establish on campus a Rand Corporation-type Institute for National Studies had failed, but Brueckner's Institute for Radiation Physics and Aerodynamics had not, and its success was a tantalizing model. Such units were not part of the university's governing structure. A research unit, for example, could be entirely supported by outside funding, which could come from any source. It could be devoted to any subject, and was itself not subject to Academic Senate restrictions. Its faculty need not be paid out of state funds, and therefore could ignore state responsibilities for classroom teaching. A research unit was powerful politically, for if it were rich and successful, it could absorb both emphases and faculty from conventional departments, and, in time, might come to dominate them or even become a department itself. In this way, the research units could be the university's most effective agents for change, for good or ill. And on their most basic level, they reflected the feudalistic science departments of the nineteenth-century Germanic universities. In part, it was this promise of a private fiefdom that made them so appealing to the university's superstars.

In January 1964, the Academic Senate's nearly all-science Committee on Educational Policy, led by chemist Kamen, wrote Brueckner that the "dual

commitment of research and of instruction in the University cannot be fulfilled if faculty personnel and facilities are provided only on the basis of State funds. . . ." The only way to get the money necessary to thrive was to create and develop research institutes that "present an attractive prospect for support by outside agencies in Government, in industry, and in the foundations."

Galbraith, then vice chancellor, sent the memo to Roger Revelle, who responded with icy criticism. Although he himself had tried to sell his institutes as conduits of easy money, he said he was "very much disturbed" by the implication that "the reason for creating and developing Research Institutes is to obtain extramural support for faculty research." Moreover, he said, he was "depressed by the Committee's position that all Institutes should conform to a single pattern and should be rigorously controlled." He then spelled out his idea for multi-discipline research institutes that did not function as "fund-raising adjuncts to departments but rather enjoyed equal status with departments."

But more than a year later, when Galbraith, as chancellor, made a general mailing of the regent-approved method for establishing Organized Research Units, he used the senate's statement and ignored Revelle's. Two months after that, Kamen told departmental chairmen that organized research units were a "means for support of research and scholarship not afforded by the University." Planning committees were formed for institutes of space sciences, physical sciences, information science, molecular biology, developmental biology, and environmental biology.

In June 1966, Revelle College provost Ed Goldberg notified Galbraith that his faculty strongly urged the speedy establishment of research institutes that could "provide most needed support for graduate students." That summer, final plans and a \$4.2 million funding request for an Institute for Information Systems were announced. Linguistics planned a Center for Language Acquisition, mathematics sought a Center of Applied Mathematics and Computing Sciences, and psychology wanted a center for Human Information Processing.

Six months later, the university's official position was presented by Frederick Wall, newly appointed vice chancellor for graduate studies and research. Wall said the principal reason for establishing Organized Research Institutes was "to

facilitate the development of advanced research programs" that were "essential" to excellence in graduate education. Only secondarily were such institutes "highly effective" avenues "for major sources of outside funding."¹⁴

No discipline would benefit more from organized research units than engineering. But engineering at UCSD, despite mid-fifties assurances to local industry—and the largely public-relations name of the School of Science and Engineering—was very difficult to launch.

Bonner wrote in 1962 that he was "amazed to find that relatively little organized thought has been given to the long range development of engineering. While it is true that innovation for the sake of innovation is not desirable, to pass up the opportunity of innovation through lack of thought, is still more reprehensible." He wanted "sophistication equal to that of our other departments" and that meant "of course, that we will not develop a traditional school of engineering." He favored "a number of departments of applied science" that would be much broader than ones being discussed in the physics department.

Despite the "of course," Bonner knew everyone on campus assumed that some form of engineering would be developed. In referring to what he knew was York's opposition to novelty for the sake of change, he also addressed physics' jealous control of its prerogatives. As early as 1955, Revelle, reflecting the sentiments of Scripps' physicists, had promised there would be no orthodox engineering at his new school. Curriculum planners in the sixties believed physics would have to be the foster parent of several engineering disciplines. But physicists were reluctant to be diverted from their own work, despite participating in planning for the "engineering sciences" of applied electronics, astronautics, and chemical engineering.

Caltech's Sol Penner—who, like Brueckner, had been research director of the Institute for Defense Analyses, and was well known to York—was the first recruit. He would bring what he called a "small group of experienced applied scientists" when he arrived on campus in early 1964 to set up a graduate program in aeronautics, astronautics, and engineering science. Research would be in fields such as combustion and propulsion, applied plasma physics, hyper-

sonic flow, and turbulence theory. Penner, whose expertise was in applied spectroscopy and high-temperature phenomena, would head what was being called the department of Aerospace Engineering, which would be changed, a year later, to the department of Aerospace and Mechanical Engineering Sciences, called AMES.¹⁵

The name change, the first of many in engineering, in part reflected the campus' unique outlook. Though space engineering seemed splendidly launched, it soon became clear that UCSD was locked in conflict over engineering curricula. Despite local industry's underwriting of faculty appointments, there was not enough money to establish the kind of wide-ranging and visionary applied-science Ph.D. programs demanded by Bonner. Utilitarian considerations, the horror of the first founders, became important, and the needs of aerospace and petrochemical industries were being stressed by local advocates of traditional engineering training. Students for the actual programs would have strong mathematics and pure science backgrounds, and would be as gifted academically as their basic-science peers, but would "be primarily interested in working on 'practical' problems with easily identifiable objectives." As in the sciences, the faculty should not be "a collection of singular points" but rather a group "with some overlapping interests who work in complementary areas of science and engineering." The program was approved in June 1964, and Penner, with a nine-person faculty ready to start teaching that fall, set out to recruit.¹⁶

An early catch was Henry Booker, who would be founding chairman of what was called the Department of Applied Electrophysics. Cambridge-educated and a lecturer in Christ College there until he went to Cornell in 1948, Booker's particular interest was in the propagation of electromagnetic waves in the earth's atmosphere. In Ithaca he was director of the School of Electrical Engineering as well as associate director of the Center for Radiophysics and Space Research. He was elected to the National Academy of Sciences in 1960. The year before he was contacted by UCSD, he wrote an article for *Science* decrying conventional university splits between physics and engineering as arbitrary and fundamentally punitive to crossover research. Carl Eckart sent him UCSD's engineering plan, which he criticized as too conservative. He also suggested that the word *engineering* be stripped from the

text lest it "turn out to be a trap."

Booker arrived during the summer of 1965 to head a graduate program of solid-state, particularly quantum electronics, physics; atmospheric, ionospheric, and solar system physics; radio astronomy; computer science; and information and communication theory. A faculty of 17 was planned by 1970, but twice that number might be possible with healthy outside funding, including a \$2.5 million National Science Foundation grant for which Booker had applied. But like his pure-science predecessors, Booker was soon complaining that others had their hands on his plans. A Center for Applied Mathematics and Computer Science had been proposed by the mathematics department, and a new department of Information Science was being discussed.¹⁷

Barely in time to accommodate the dawning craze for computer courses, Applied Electrophysics became the department of Electrical Engineering and Computer Science (EECS), which in the mid-eighties split into Computer Science and Engineering (CSE) and Electrical and Computer Engineering (ECE). For students gifted enough to keep the initials straight, the division made sense, and department members hoped it would clarify matters for extramural funding agencies. CSE would emphasize theory and software development, while ECE would focus on hardware. At the same time, tough lower-division requirements were introduced for would-be undergraduate majors whose ranks had swelled 200 percent in less than ten years. The graduate program in computer science, applied physics, and systems and communication theory was nearly as popular. By the early eighties, 7,000 inquiries about the program were received each year.

Penner went on to be a master of campus crossing over, and within a decade his department, Aerospace and Mechanical Engineering Sciences, became Applied Mechanics and Engineering Sciences. The initials stayed the same—AMES—but the name change reflected a shift away from traditional undergraduate curriculum to more professionally oriented preparation leading to the Bachelor of Science. During the seventies, the numbers of undergraduate majors exploded from some 75 to 1,100 and the faculty grew to 29. The graduate program, with about 100 students, focused on fluid mechanics research done with Scripps and the Institute for Geophysics and Planetary Physics, engineering physics, solid mechanics and structural engineering, systems

science, bio-engineering (which Bonner had promoted 30 years earlier), and chemical engineering.

Brueckner's granddaddy Institute for Radiation Physics and Aerodynamics crossed many of engineering's barriers. It merged with the Institute for the Study of Matter in late 1967, with Brueckner as director and Bernd Matthias as associate director of the result: the Institute for Pure and Applied Physical Sciences. Brueckner was later replaced as director by Penner, and Matthias became director in 1971. Faculty were drawn mainly from AMES and APIS—Applied Physics and Information Science, another reorganization of early programs—with a smattering of physicists, chemists, and mathematicians. Funding came principally from the Atomic Energy Commission, the Air Force Office of Scientific Research, ARPA, and NASA.

A Division of Engineering was established in 1981, and Lea Rudee was appointed dean. He helped forge the links with industry that created the privately funded Center for Magnetic Recording RES and the Powell Structures Lab, where five-story buildings could be subjected to simulated earthquakes. The university's competition with industry was especially fierce in engineering, and a Specialized Salary Scale and arrangements for extramural income were created to help keep bright faculty members on campus. Faculty grew steadily from 8.6 percent of campus totals in 1975 to more than 13 percent at the end of the eighties, with salaries of about \$13 million, 16 percent of total departmental wages.

Engineering expenditures of \$21 million in the late eighties were 17 percent of total departmental expenditures. But more than one-fifth of all UCSD undergraduates majored in engineering. The graduate program—with special provisions for master's degrees for practicing engineers, and opportunities to work in various organized research units or study in interdisciplinary programs such as Materials Science—was equally popular, attracting more than 20 percent of campus enrollments. By the end of the eighties, it was clear that UCSD's retreat from Bonner's innovative but unrealistic ideas for applied sciences had been inevitable. The relentless growth of new biological and information sciences in the United States after 1950 shaped the growth of UCSD's applied science departments. The directions that ultimately emerged did not converge on commercial uses of atomic energy as originally planned.

Just as university science funding outstripped that for the humanities in response to external forces, so too was the growth of the campus' engineering departments driven by outside pressures and resulting student demand.¹⁸

* * *

The huge numbers of engineering students created problems for departments that provided the lower-division preparations for the major. Mathematics was especially strained. Approved in 1963 with Stefan Warschawski as chairman, mathematics seemed to have stalled at the outset, and Clark Kerr said a year later that mathematics, especially computational mathematics, was a particular difficulty at UCSD. Apparently the problem arose over defining the department's mission. The need for a strong undergraduate math curriculum for science majors was obvious; yet this service orientation, with its heavy teaching load, was offputting to gifted theorists who were usually young and struggling to become known in a field whose hierarchy was more rigid than that of any other scholarly discipline. Despite founding problems, however, by 1970 one-tenth of all UCSD faculty members was teaching mathematics.

Twenty years later, only about 3.5 percent of UCSD's undergraduates were majoring in mathematics, despite departmental offerings in computer science and both applied mathematics—concentration on the interface with other subjects—and scientific computer programming. But the number of undergraduates taking math courses—required for majors in biology, chemistry, physics, and engineering as well as by several colleges—had risen by 200 percent. The need to teach them drove mathematics to raid other departments for graduate teaching assistants. Graduate headcounts exactly doubled during the eighties—partly in response to master's degree programs in applied mathematics and statistics available to part-time students—but remained small. Many of those wanted to study with faculty Field Medal winners—math's version of the Nobel—Michael Freedman or S.T. Yau. University hopes of creating the world's center for geometry and topology theory around the two were shaken when Yau left for Harvard in 1988. But mathematics managed to keep its National Research Council standing—twentieth of all graduate school departments in the nation—with strength in algebra and number theory,

analysis and functional analysis, geometry and topology, probability theory, logic, and foundations of mathematics.

Only the top mathematicians participate in organized research units, so junior salaries often lag. In 1980, with more faculty members than any science department, mathematics accounted for only 15 percent of total science salaries. The gap closed in the eighties, but at the decade's end, salaries were still below average for the 52 faculty members, 39 of whom were full professors.¹⁹

Biology's fortunes seemed impervious to the tidal forces of a remarkable range of specialties that afflicted mathematics. Although it wasn't until 1987 that the Institute for Molecular Genetics was funded—with \$2.18 million—Singer et al. managed to preserve biology's focus to the extent that in 1985 department spokesmen said that the "unorthodox character" of biology at UCSD "has had more than a merely symbolic significance. The absence of outmoded intellectual and administrative divisions has encouraged collaboration and allowed great flexibility in curricular design." This flexibility did not mean that the department had responded to undergraduate demand for classical biology, but rather that it had continued to concentrate on selected areas such as molecular and cellular biology, genetics, biochemistry, neurobiology, and biophysics.

In the mid-eighties, the department continued to control some ten medical school faculty positions. This helped create a faculty of 45—5.6 percent of campus total—the large majority of whom were full professors and ten of whom held above-scale appointments. These faculty members taught huge numbers of students. As an undergraduate major, biology in 1975 claimed fully one-fourth of all UCSD students. Biology's share of the undergraduate population continued higher than any other single department until the late eighties, when it finally was passed by economics.

As a graduate program, biology has been the second most popular science discipline—with just under 8 percent of the campus total—for more than 20 years. But its place among its sister disciplines has changed. Instead of following physics, as it did until the late seventies, it ended the eighties by following chemistry. As early as 1971, the American Council on Education (ACE), predecessor of the National Research Council in evaluating graduate programs

at UCSD, put the molecular biology program among the top ten in the nation. Ten years later, outside reviewers reportedly were "astonished" that so excellent a program could be built in such a short time. It happened, in part, because the university was willing to support it. In 1980 its expenditures were \$7.4 million—more than one-third of total science expenditures and 16 percent of campuswide totals. Ten years later its expenditures had doubled—\$14.28 million—but its share of science had declined to 27 percent and its campuswide total was down to 12 percent.²⁰

Although in 1971 the ACE also rated UCSD's biochemistry program among the top ten, chemistry—like the rest of the programs—suffered a loss of momentum in the late sixties and early seventies. The slowdown, according to Martin Kamen, who became chairman in 1970, was due not merely to a general loss of money, but also to the particular slings suffered by chemistry. In 1972, he said, the department had absorbed unexpectedly huge numbers of biology students to the detriment of its own biochemistry research, and had been repaid by the university by having one of the lowest support ratios in the entire system. Faculty, he said, were demoralized by slow or non-existent promotions and raises, and he numbered himself among them. Kamen's was a typical complaint, heard many times in many American universities, but nonetheless justified. In 1970, chemistry's expenditures of just over \$2 million gave it a little less than one-third of science expenditures, about the same as biology, more than math, far less than physics. But the chemistry faculty, which was larger than the biology faculty, had support levels of \$ 1.3 million, or less than one-fourth of science totals.

In 1980 the department reorganized itself into four divisions: biochemistry, which was enlarged with five medical school faculty positions and responsible for teaching first-year medical students, and physical, organic, and cosmo-inorganic chemistry. Then ranked 18 out of 144 chemistry departments studied by the National Research Council, UCSD's chemistry department mounted a campaign to consolidate itself geographically that was a rebuttal of Jim Arnold's commitment to the college system. Turning early support on its head, departmental spokesmen said the "dispersion of the faculty" into as many as eight different buildings on campus "hinders the kind of interchange that enhances research, department coherence and collegiality."

In the mid-eighties, UCSD was teaching more undergraduate chemistry than either Berkeley or UCLA and had graduated more American Chemical Society-certified chemistry majors than any other university in the country. By the late eighties, some 40 faculty members—a little over 5 percent of campus totals, the smallest of the sciences—were handling more graduate students than any other science on campus. Excluding income from organized research units its expenditures of \$13.5 million in the late eighties were less than one-third of all the sciences, its salaries—\$6.6 million—just over one-fourth.²¹

Earth sciences, taught by chemistry and Scripps Institution faculty, had been seen in the late fifties as the anchor of an "Institute of Technology and Engineering." As an interdisciplinary "department," it was to house faculty considered the best in the world: Walter Munk, George Backus, Freeman Gilbert, Bob Parker, Hugh Bradner, Walter Elsasser, Hans Suess, Harmon Craig, Al Engel, Celeste Engel, Gustaf Arrhenius, and Wolfgang Berger. Elsasser, a German-born NAS member who did theoretical physics research at the University of Pennsylvania and the University of Utah, came to La Jolla in 1955. Suess, a geochemist who had worked at the University of Hamburg until 1950, when he went to Chicago for Argonne Lab work on the shell theory, also arrived in 1955.

Jim Arnold supported an attempt in the late sixties to establish earth sciences—geology in particular—as an upper-division undergraduate major, but Scripps director Nierenberg finessed the issue by reminding Paul Saltman, then provost of Revelle College, that with no new faculty positions, Scripps Institution of Oceanography would not be able to handle additional classroom work. The teaching burden would fall on the colleges. The idea was dropped. It emerged briefly a decade later; but without the sweetening provided by new faculty positions, undergraduate earth sciences still would not gel. Revelle believed the attempt was doomed "because these guys are such individualists."

Although engineering in the eighties usurped much of UCSD's off-campus action, no single department initially forged stronger extramural ties than physics. Ironically, this contributed to a slip that required more than a decade of retrenchment. By the mid-seventies, many of the early faculty hired without state-money-funded positions, whose salaries were drawn partially or wholly from "soft money" grants and contracts, were eligible for or demanding promotion and tenure. With a legal responsibility to support its permanent faculty,

physics had to use the few precious faculty positions it got to shift academic personnel onto state or "hard" money. This, in effect, brought the department—already slowed by a decline in government funding and the university crackdown on defense-related and classified research—to a standstill. It was thus motionless when it sustained the blow of losing Kohn and the prestigious NSF-funded institute he would head to Santa Barbara. The sudden death of Matthias did not help.

But forward motion was restored by very much more generous budgets, and by the mid-eighties, only one of the department's 35 faculty members was an assistant professor; only five were associates. This was said to reflect returning vigor, and the evaluators bore that out. The National Research Council rated the department eleventh out of 127 they tested. Faculty were principal investigators on projects that commanded \$10 million in contracts and grants. And the longed-for organized research units were being built. In 1987 alone, five were funded—nonlinear science, astrophysics and space, energy and combustion, pure and applied physical science, and the particle accelerator program that used machinery at SLAC, Brookhaven, and Fermi—with almost \$10 million. The faculty grew to 45 by 1989, an increase of ten in less than five years.

The growth meant the department could recruit in areas it wished, and that meant an improvement in the numbers and qualifications of its graduate students. By the end of the decade, the department, which admitted to "unusually diversified interests," offered work in elementary particles, quantum liquids and superconductivity, solid-state and statistical physics, plasma, astrophysics, atomic and molecular collision, biophysics, and geophysics. In addition, a science and public policy course, which both York and Revelle participated in, was offered. But, ironically, much of physics' late-eighties strength was fed by its close and necessary relationship with its much-maligned stepchild, engineering. The large majority of its lower-division students came from outside the major—primarily from engineering. And biophysics, which grew from an intersection with biology, physics and chemistry, was a popular premedical major. This was an irony too: UCSD's early physicists were among the strongest critics of founding a conventional medical school.²²

CHAPTER SEVEN

EXPERIMENTS AND EDUCATION

HERB YORK FIRST HEARD THE JOKE from Clark Kerr in the early sixties:

The devil told one of the newly damned he would be president of the University of Hell.

"That's not so bad," he said. "I was a university president in mortal life."

"Ah, yes," came the diabolical answer. "But the University of Hell has *two* medical schools."

York missed the point before he came to San Diego. Four years later he would agree with Kerr that running a medical school "doubled the job" of any university administrator.

Early in 1958, well before York's appointment, the San Diego County Hospital Committee led by W.W. Stadel asked the regents to establish a medical school in the city. As an incentive, they offered the university use of a 600-bed facility planned for the county-run hospital. Since a major portion of the old building had been condemned, and the county was required by law to provide adequate health care for its citizens, the offer was not as generous as it seemed. University president Sproul rejected it.

The hospital committee shifted its attack to Sacramento, and in April the legislature asked the regents to reconsider. They were willing to reconsider. Clark Kerr, president when Stadel asked the second time, seemed to favor the idea as well. The university, which was then training only one in five physi-

cians practicing in California, would have to establish at least one new medical school, he said. San Diego, with a science-heavy university campus being considered, seemed like a good place to build one, especially in view of the "tremendous asset" provided by the county hospital. Kerr's assumptions were based on population projections for the state—which turned out to be wrong—that indicated a need by 1975 to license some 2,100 new physicians each year. It was commonly assumed that it took 10 to 15 years for a new medical school to turn out its first M.D. If the university were to fulfill its obligation—and retain control of professional education—the deadline was at hand. Kerr assigned university vice president Richard Stull to study the matter.

Stull soon reported that the \$15 million San Diego County would spend on its hospital addition was about what the hospitals for university medical schools in San Francisco and Los Angeles had cost. He said the county hospital site in the Hillcrest area of the city had ample room for labs and classrooms and that clinical teaching would get a tremendous boost from the large pool of local doctors eager to serve as faculty. Although currently there were too few sick people to support classes of 100 medical students, more could be attracted by removing the indigence requirement for county hospital admission. In all, Stull found the prospects so exciting that he suggested using half of UCLA's already-approved, \$25 million medical school expansion budget for San Diego. Regent Pauley, then balking at even an undergraduate school for the city, predictably said it was silly, in view of UCLA's having to scramble for good medical students, to assume that San Diego could do better. But he reluctantly endorsed a major study of the situation.¹

The next summer, Kerr told the regents that Governor Pat Brown wanted the medical school in San Diego and would be open to a separate appropriation to pay for it. But Brown—who described the project as his "own little baby"—was not offering support for the kind of medical school that campus planners had in mind. University committees, strongly influenced by biologist David Bonner, were pushing for a research-oriented school. They apparently persuaded Kerr's aide that a pure-science-based, institute-like school was far better than a conventional professional school that merely educated practicing physicians. That fall, sounding very much like a good UCSD citizen, Stull told the regents that founding the new school offered a "unique opportunity" for

"experimentation and development of new approaches to medical education." Citing the "trend toward large research centers" and the involvement of the basic and social sciences in medical education, Stull now recommended building a new school, which would cost twice as much as he originally estimated, on the campus in La Jolla.

Kerr, who already advocated hard science at the university and had just hired Herbert York as chancellor, got a similar report from Robert Tschirgi, universitywide planning dean and chair of the President's Advisory Committee on Medical and Health Sciences. Tschirgi, a neurophysiologist who had helped plan UCLA's medical school, wrote Kerr that, in fact, preclinical medical curriculum was closely related to university courses in biology, chemistry, and physics. These introductory classes were usually taught by Ph.D.s who also conducted graduate research programs, and they were prone to misery, "removed from contact with a general campus environment." Putting the medical school on campus would not only reduce the misery factor, it would also make research—"a primary academic function of a medical school"—easier. Without a healthy research program, "the training of medical practitioners can degenerate into vocationalism, unacceptable to the medical profession and to the University of California." Kerr was convinced.

But the regents were practical people. They knew the governor and the legislature would not be open to a research school that did nothing to ease the anticipated shortage of physicians in the state. Moreover, UCLA was being readied as the big southern California university research center. Kerr pitched UCSD's medical school to the board as a comparative bargain: The university already had \$92 million tied up in the medical schools at San Francisco and Los Angeles and planned to spend an additional \$70 million. With operating budgets of \$12 million each, enrollments at UCLA might be 1,600, at UCSF 1,350; for a mere \$25 million start-up and an annual budget of \$4-5 million, San Diego could handle 800 students and post-docs. Perhaps assuming that even with a strong research program the school would turn out doctors who treated patients, and certainly understanding the political climate, Kerr assured the regents that UCSD's medical students would be trained as practicing physicians.²

David Bonner, who wanted medical training that would actually be an appendage of his School of Human Biology, began passionately to defend what his faculty colleagues were calling "our kind" of medical school. That was one structured around the "Bonner Plan," which replaced first-year medical school departments of biochemistry, physiology, and pharmacology with graduate-school courses taught by regular campus faculty. Second-year courses in anatomy and pathology would be taught by clinicians, but students would be encouraged to continue doing research and taking elective courses in general campus graduate departments. In this way Bonner hoped to bridge what he believed was the artificial gap between professional medicine and real science.

The Bonner Plan was UCSD's version of popular programs such as those at Northwestern and Johns Hopkins, where six-year combination B.S. or B.A./M.D. programs were instituted, and at others mixing medical and graduate work into M.D./Ph.D. combinations. According to Robert Hamburger, who came with Bonner from Yale, Bonner believed that entering medical students were smarter than typical graduate students. Traditional medical education "depressed" them, stifled their creativity, and made them, by their fourth year, less imaginative and less productive than basic scientists. By keeping medical students on campus and in research, he could keep them energetic and happy.

But critics of the plan assumed that Bonner's ideal education would produce graduates who would never practice medicine. The most vociferous were San Diego's private practitioners, who had first broached the subject of founding any medical school at all. They thought the students were nascent hands-on healers whose primary teachers should not be scientists, but rather professionals like themselves, men and women who were in the business of treating patients. And the students should learn the arts of their vocations in hospitals, not classrooms.³

The California Medical Association delivered its opinion in December 1961. Not unexpectedly, the very powerful group of private doctors emphasized the importance of placing public medical schools "near the source of clinical material rather than on the academic campus." Such schools should use private-practice doctors as teachers, and academic medical school faculty should stick to teaching and not compete "with physicians in private practice."

The private practitioners had a champion in Governor Brown, who was quoted in the press as saying that San Diego should "concentrate on educating doctors," which would leave UCLA and UCSF free to "increase their attention to medical research problems."

Chemist Jim Arnold told a reporter that that kind of medical school would be adopted "over the dead body of this faculty." Bonner went public with his opinion that neither UC San Francisco nor UCLA had "an administration with real understanding of contemporary academic medicine. They are second-rate schools. . . ." The regents were furious. But Kerr went ahead and put the question of a research-oriented medical school in San Diego to the board in February 1962.

Fights over the nature of the school—its mission, its faculty, its curriculum—became focused on its site. University planners believed putting the school in San Diego, near the county hospital, would make it a creature of a middling medical establishment geared to vocational training. The private practitioners believed that building the school on the campus would effectively bar their participation, with the result that UCSD's M.D.s would be no different from basic-science Ph.D.s. These arguments over campus site versus county hospital site were actually debates over what would be done rather than where. They caused a "great pulling and hauling," Arnold said, that eventually became "a complicated, shifting war."⁴

The following October, the regents approved the school for the "broad-gauged and high-quality education of physicians for service." The language concealed the underlying polarization that became fixed in the very foundation of the school. This division would cause medical education at UCSD to be pulled back and forth between emphasis on practice and emphasis on research for the better part of two decades. The plan accepted by the regents called for some 30 students to be enrolled as early as 1964. They would be taught at the county hospital, but only until a \$13 million basic-sciences building was finished on campus. It seemed the university scientists had won. But the practice of medicine would not be ignored, although education for that practice had been cleanly withdrawn from any control local doctors might exert. Plans were to be drawn for a 250-bed hospital and a clinical research building on campus.

Against the background of the "pulling and hauling," a search for the man who would be dean of the new school "struck out," York said. Some 100 people were considered, but the ones acceptable to the university would not accept the job. The going was so slow that the entry date for first students was postponed to 1965 (then to 1966, 1967, and 1968). The man who finally agreed to become dean on January 1, 1964, Joseph Stokes III, said fear of Bonner, a dominating figure, and the low salary—\$25,000, the same as the chancellor's—turned other candidates away. But the uncertain support for what seemed to be the school's direction certainly played a part.

Stokes met the advisory committee whom Kerr had selected to work with him and got busy implementing plans. Members included Martin Kamen representing the Academic Senate, Tschirgi, Hamburger, Scripps Clinic immunologist Frank Dixon, and, from UCLA, medical school dean Sherman Melinkoff and clinical faculty members William Hewitt and Eugene Stern. David Bonner, who already was very ill, served briefly, but even after his death in May, his was the guiding spirit of what emerged from the session.⁵

The new dean sent to chairmen of the science departments a letter outlining the way the Bonner Plan would work. In a process called "interdigitation," the medical school would turn over to participating campus departments faculty positions funded by the state. With only technical oversight from Stokes, the departments could hire whomever they wished. The medical school positions carried space in the new basic-science building, but faculty to fill them would not have to work there. In fact, individuals hired by campus departments for medical school positions would not necessarily have to teach medical school classes.

It sounded like a sweetheart deal for the departments involved: more slots opening just as appointments statewide were shutting down. Even so, biology, which got the most positions, complained about the numbers, and Stokes, reflecting the desire to accommodate that would get him into trouble, apologized to Singer for implying that the dozen positions allotted to biology "would be an absolute maximum."⁶

In December 1964, Galbraith, in one of his first acts as chancellor, sent to Kerr, for regental approval, a formal plan for a \$57.6 million medical school. Separate basic-science departments would be eliminated. Clinical departments

would serve the campus and county hospitals and would have access to a new, 1,000-bed Veterans Administration hospital planned for the campus. Entrance requirements would be the same as those for entering biology graduate students, and first-year medical and graduate school students would take the same biology classes. Second-year students would take courses taught by departments of neurosciences, surgery, and medicine, and divisions of pharmacology and infectious disease; and, in a departure from Bonner Plan guidelines, normal and abnormal organ structure would be taught "under the guidance of a skilled and experienced experimental pathologist." Third and fourth years included the traditional rotations through various clinical specialties. Electives were encouraged, and students would be treated—or subjected—to various novel "educational resources."

The new 250-bed campus hospital, to which private patients would be referred, would be "intimately related to the clinical and medical science areas" of the school. No ambulatory care clinic was planned, but diagnostic laboratories, open heart and transplant surgery, and radiation therapy—including a linear accelerator—were. Nevertheless, perhaps to quiet local anxieties, planners promised that the former county hospital in Hillcrest would be "fully utilized." Citing rising living standards and the proliferation of health insurance, plan writers said the welfare-patient pool had shrunk and UCSD would have to attract many private patients. But these would be treated the same as "charity patients" in fully integrated wards accessible to all staff and students. Although each patient would have a single, personal physician, fees would be lumped together in one fund and "used to support the general medical school operation."

This would not sit well with the local private practitioners who were appointed to one-year, part-time clinical posts at the county hospital. Already chary of the medical school faculty as a "source of subsidized competition," they were not likely to be happy about the pay scale. Salaries in the UCLA and UCSF medical schools were based on a complicated equation that factored in fees earned by faculty for patient care. This created separate compensation tracks for M.D.'s and Ph.D.'s, a system that would undermine interdigitation. San Diego wanted a strict full-time rate that paid everyone the same salary. The regents, assuming support for such rigorous democracy would soon flag in

the face of fiscal realities and recruitment, approved the pay plan with provisos for changes. Changes were almost immediate, and were necessitated by attracting M.D.'s to the faculty.⁷

A month after the regents accepted the medical school plan and agreed on the \$54 million price tag, Galbraith signed a contract with the County of San Diego for use of the Hillcrest hospital. Like many university property negotiations, this one had been involved and acrimonious, and included the county renegeing on a portion of its original offer. The final agreement was believed to please no one. About 31 acres of land were to be ceded to the university immediately, and an additional 12 acres—including an old neuropsychiatric building and an abandoned TB sanatorium on Vauclain Point at the east end of the property—would be made available in 1963. In return, the university assumed responsibility for all aspects of operating the hospital except accounts-receivable bookkeeping, laundry, power plant, maintenance, and mental health. The university would provide health care for the county's poor, but the county would pay the bill. It was perhaps both symbolic and portentous that the deed to the property, although transferred, somehow got lost in a bureaucratic shuffle. The secretary of the regents announced more than a year later that he had never received it.

By then, the campus had revised the master plan for the School of Medicine. The amended price tag was \$122.3 million. This was the revision that Kerr refused to submit to the regents, causing Galbraith to resign. The intriguing thing about that new estimate is that at the time, no one spelled out how the projected costs had doubled in just a year. Apparently planners assumed they had more money to spend. The major changes anticipated by the passage that summer of Medicare and Medi-Cal could help pay for a more ambitious undertaking, and the accreditation team had recommended that the originally approved 250-bed campus hospital be enlarged. By then, everyone working on the project was aware of the dismal state of the county hospital and had some idea of the staggering amount of money needed to bring it up to university standards. They may have hoped the \$8 million Public Health Service grant for the basic science building portended better medical things all around. Still, the stated reason for the medical school's being—the relative bargain of starting it up—was forgotten in the upwardly spiralling budget estimates.⁸

Hamburger much later asked Stokes how the price of the school got doubled. Stokes gave an unexpected answer: "What we wanted was equivalence with UCLA." UCLA's medical school cost the state \$62 million, "and when we translated it into 1965 dollars, it came to over \$100 million." Kerr confirmed this, remembering during the same meeting that Galbraith was "bargaining" with him and using UCLA as a precedent. Galbraith agreed. UCLA "was the basis on which we were making our pitch." The planning committee was canted toward UCLA—Melinkoff was an especially powerful voice—and it was possible that the UCSD medical school became part of the political push for decentralization. UCLA chancellor Murphy had served on the earliest regents' committees investigating the establishment of UCSD's medical school, and, as in other San Diego planning, his opinion was consistently deferred to. It was his approval of the school that persuaded southern California regents to withdraw their opposition.

Kerr later said he had fought for the school with the regents, the governor, and the legislature, and "all of a sudden I was asked to find \$125 million." Had he submitted rather than scuttled the request, "there never would have been a medical school here because people would have felt that they had been just terribly misled." In early March 1966, vice president Harry Wellman and Tschirgi spent hours in closed-door sessions with Galbraith and vice chancellor Biron trying to pare millions from what the administration believed were out-of-control cost estimates for the campus clinical science building and hospital. In May, Kerr, implying that the process had been tamed, told the regents that San Diego had gone wild with its \$122 million plan. He recommended a new \$58.3 million plan that still contained a provision for a 350-bed campus hospital. But during the same meeting—ominously for the future of any campus hospital at all—the regents voted to exercise their option on the additional 12 acres of land at the Hillcrest county hospital site.⁹

In September, two days after groundbreaking ceremonies for the campus' basic-science building, Galbraith announced the resignation of Joe Stokes. The first dean would become chairman of the department of community medicine. Although campus rumors of Kerr making Stokes the price of backing the reduced campus plans were current 20 years later, Galbraith said the "sad" decision, the most difficult he had made during his chancellorship, was his

alone. He made it shortly after Stokes attempted to force private clinicians to pool their fees in the general teaching and research fund. The subsequent "doctors' revolt" was blamed for less than half the hospital beds being occupied. The policy was reversed days before Stokes stepped down, in a move that sounded the knell for strict full-time salaries. Later, individuals involved said that was the first blow to interdigitation.

Galbraith later said Stokes was a "decent fellow" who was operating out of his depth. Stokes ruefully admitted his resignation had reversed the Peter Principle: As professor of community medicine, he had fallen to his level of competence. Galbraith, who had hired Tschirgi to be academic vice chancellor at UCSD, now asked him to serve as interim dean. Tschirgi said later he agreed, believing he was "leaping into the breach of a disaster." His first job was visiting Stokes-hired faculty and reneging on certain promises. This did not make him popular and may have started the ongoing and intractable trouble Tschirgi had with various members of the medical school staff. "Daggers drawn" was how Galbraith described it. But, he said, "we began to get a hold on things which we hadn't done before," including better relations with the legislature, which had warned that it was time for San Diego to quit "fiddle-fooling around" and produce some practicing doctors.

Ideological disagreements about the direction of the school, and the dramatic trouble with its planning, made finding a replacement for Stokes difficult. Tschirgi later said one candidate told him he wouldn't touch the job with an 11-foot pole. Another said no one off campus would even consider it. Apparently he knew what he was talking about. In May 1967, Clifford Grobstein, hired by Jonathan Singer to replace Bonner as chairman of biology, became the dean. New York-born but UCLA-reared in zoology with a specialty in embryology, he was a member of the National Academy of Sciences and was a Public Health Service and National Cancer Institute veteran. He was former chairman of biology at Stanford, where he had sought unsuccessfully to bring his department closer to the medical school. The experience apparently was not sufficiently bad to frighten him away from administration. He was expected to be acceptable to the basic-science faculty and to have credentials enough to impress the arriving clinical faculty.¹⁰

With the June 1965 appointment of Robert Livingston (from the National Institutes of Health and formerly of Yale and UCLA) as chair of neurosciences, the medical school got its first outside faculty member and its second M.D. That same October, in a coup similar to those of early physics and chemistry recruiting, Marshall Orloff, UCLA's Markle Scholar in Academic Medicine and Professor and Chief of Surgery, accepted the chairmanship of UCSD's department of surgery. Orloff, a native of Chicago and educated at the University of Illinois, was 38, had memberships in 28 professional and honorary societies, and had written 80 scholarly papers. His San Diego billet was the old TB hospital on Vauclain Point, but the department was expected to have a cardiovascular and transplant division in La Jolla as well as general surgery at county hospital and at the VA. By the time the esteemed Eugene Braunwald came as chief of medicine in 1968, chairs in radiology—Elliott Lasser—and pathology—Averill Liebow—had also been appointed. Within six months of his arrival, Braunwald had gotten a \$5 million heart-lung grant from the National Heart Institute.

These internationally respected men made up the core of UCSD's clinical medicine faculty, and they acted as magnets for the medical school in ways that early faculty had for the science departments. They attracted sufficient numbers of top faculty and interns and residents to put UCSD on the medical education map. But just as the grant-rich superstars had created a system of "haves" and "have-nots" on the general campus, these clinicians added another and very potent factor to the ongoing power struggle between basic-science and clinical work. UCSD's famous clinicians—Galbraith said they played the princes in his court metaphor—were an added difficulty in the university's seldom-smooth early relations with the community.

San Diego businessmen, although bristly over dealings on the hospital site, were delighted at the prospect of a medical money-making plant in their midst. Local politicians knew UCSD's medical school had been a necessary condition of getting the very desirable VA hospital. And the university's relieving the county of operating its hospital was seen as a great economic boon. But local doctors who initially supported the medical school knew with the arrival of faculty like Orloff and Braunwald, that they would not be part of the permanent faculty. Such hopes, said medical school founders, had been chimerical

from the outset. As Revelle said, the “only thing to do with the San Diego medical community was to keep them at arm's length, as far away as possible.”¹¹

Twenty years later, private practitioners would be welcome, but in the early years, relationships were strained. Orloff tried to explain that local doctors' "hostility" was misguided, for the medical school was greatly augmenting the competent but unsophisticated practice of medicine in the city. Some of his colleagues were straightforwardly belligerent in their public dismissal of what they said was abysmal local health care. When world-famous faculty began arriving with their high-powered teams, said one analyst, some of the town physicians "felt they'd be unable to compete." Dropping names such as Michael DeBakey and airily promising temporary "Acting Chiefs of Service" positions to a dozen local practitioners apparently did little to quiet anxieties or sweeten relations.

But the local M.D.'s, described by Kerr as one of the most powerful lobbies in the state, had the times on their side. The widespread state and federal funding cuts of the late sixties paralyzed the school. Reagan's 1971 budget reduced by half all construction spending, and voters—apparently practicing physicians among them—after passing one portion of a bond issue meant to finance medical education, defeated another. Plans for the ardently desired campus hospital were scuttled in early 1972. And the clinical sciences building, long seen as the necessary interstice between the medical school and the VA hospital that opened in the spring of 1972, was "put on the shelf," said Grobstein. "The government has gone back on its commitment of faith to provide federal funds for the building and we were left with only a partly completed campus. . . ." This meant that an enlarged clinical teaching facility would have to be cobbled onto the old county hospital, now called University Hospital. It also effectively split the medical school in ways that were long-lasting and pernicious, and gave a physical adjunct to the underlying divisions between basic-science and medical practice. The basic science building seemed stranded on the campus site.

The local problems were not unique. Medical costs were rising alarmingly, and some of the nation's most prestigious medical schools, Case Western Reserve and Albert Einstein among them, were in danger of closing. One dean complained to the *Wail Street Journal* in 1970 that the schools "simply cannot

respond to the health needs of the nation without any money." What money there was seemed earmarked for clinical care.¹²

When McElroy arrived as chancellor, he told a reporter that a Reagan-imposed salary freeze "has hit hard at recruitment of the brightest young minds." The good "people of California, who have always supported their school system, simply don't realize what is happening." Although UCSD had become one of the best medical schools in the country in less than four years, it needed "a little more meat on the bone, and a cadre of Young Turks to keep the place alive." Scarcity sharpened competition, and Braunwald said clinical research was hurting as well. Insisting that the entire medical community "immediately devote all its energies and resources" to patient care was short-sighted. Such "false economy" would harm medicine, perhaps beyond repair.

Braunwald accepted the oldest chair of medicine in the United States, the Hershey Professorship at Harvard's Peter Bent Brigham Hospital. He said before leaving San Diego that California's reactionary politics, which "kicked badly" the university's pay scale and destroyed plans for a campus hospital, had been a significant eastward prod. Kenneth Ryan, superstar in reproductive medicine, announced at the same time that he was leaving because new state budgets cut off the medical school in mid-growth.

Clifford Grobstein was going as well, but only back to the biology department. His resignation as dean was announced in 1973. McElroy found himself faced with a medical school in danger of self-destructing. With clinicians bailing out, construction at a standstill, local doctors arming themselves for open conflict, and general campus faculty immersed in the misery Tschirgi had warned about, McElroy believed relieving Grobstein might bring peace."

Chemistry chairman Martin Kamen told McElroy that hoped-for basic-science research projects could not be started because of "the recent decision to allocate all available laboratory space on the campus to meet the space crisis of the Medical School." That decision "has essentially destroyed any illusion we might have about the ability of the Chancellor to provide the necessary support for such programs." Kamen, in fact, was so perturbed that he called for rescuing chemistry faculty from the medical school and setting them up in a separate department. He called university statements about "equal partnership" between campus science departments and medical school departments "at best

fantasies and at worst arrant hypocrisy." When it suited medical school administration "to gather us in as comrades they do it, and when it does not suit their purpose, they do not." As for himself, "it is fair to say that no factor has been more significant in making the job of Chairman a living nightmare than this business of having to deal with the Medical School administration." If the "present domination of the campus by the Medical School" were to continue, there would be "strong pressures on most of our top faculty to move elsewhere."

Grobstein had argued against key elements in the Bonner Plan and may have alienated basic-science faculty. At any rate, he was believed to have had little support from those quarters, and, as Galbraith said, was no match for the powerful clinicians. McElroy selected as new dean a man whose support of clinical medicine might channel and provide direction for a process that already seemed underway. John Moxley, 38, dean of the University of Maryland's School of Medicine and said to be the first choice of 15 competing medical schools, took the dean's chair effective July 1, 1973. He told reporters that the relationship between the medical school and community doctors was "far from ideal," and he had formed a committee of faculty and medical society members to correct the problem. Later, he said that UCSD administrators now understood that "in the initial years we did not pay as much attention as we should have to the development of the clinical aspects of the school." It was time to rectify past mistakes and humanize the basic-science orientation of medical education. Clearly, Moxley did not intend to strengthen the Bonner Plan.¹⁴

This new emphasis on patient care came just as California learned that the population projections Kerr had used to argue for founding the school were wrong. The state did not need any new physicians. In fact, there were already some 37,000 doctors practicing, 1,750 more than were needed. If UCSD's new M.D.'s wanted work, they would have to leave California. This was announced at a time when the excellence of the new school was attracting a tidal wave of applications from the nation's brightest students.¹⁵

In the fall of 1972, 235 medical school students were taking classes, 332 interns and residents were treating patients at a hospital that was finally operating in the black, and 75 post-docs and graduate students were doing research.

Four years after that, the school was up to full capacity with a heartening and hard-won ethnic mix of 400 medical students, 175 students in allied health professions, and 400 residents and interns.

Eight years earlier, the charter class' 20 percent female composition—called "girl doctors" in the press—got a lot of attention, but very little public notice was given the dearth of minorities. But that year a medical school admissions variance plan was put into effect along with a nationwide recruitment search for qualified minority students. With the campus in an uproar over Vietnam-Marcuse-Third College, sociology professor Jack Douglas and his Committee to Save the University accused the medical school of a pro-Black admissions bias and challenged administrators over what he said were five poorly qualified minority students accepted under a quota system. His message got great sympathy and support from a community already hostile to the university.¹⁶

In 1969, Assistant to the Chancellor Jack Douglass (no relation to the sociologist), a member of the pediatrics staff, created the Medical Careers Project, which put ten poor and minority students into summer jobs at the medical school. A premedical curriculum based on the assumption that many minority students would be interested in medicine for altruistic and socially responsive reasons was established. By 1972, 20 of the medical school's 205 students were Black, 15 were Hispanic, and 10 were Oriental. But the kind of public discontent over affirmative action that conservative agitation stimulated was heightened by competition. UCSD received many thousands of applications for about 100 medical school class places. In late 1976, the campus and the system were swept into the aftermath of Allan Bakke's, a white male student turned down by Davis medical school, having sued the university for reverse discrimination. Then university president David Saxon issued a statement—on Washington's birthday of the bicentennial year—in which he said the university's affirmative action program was "an effort to confront the problems created by a society that tolerated human slavery but little more than 100 years ago." Education, he said, was "the chief instrument in our society for accomplishing equality," and the university would "pursue our case before the highest court with unrelenting vigor. . . ." A year and a half later, after the state courts and the U.S. Supreme Court found in favor of Bakke, Dean Moxley told

reporters that UCSD had no entrance quota—slots set aside for minority students—and that he believed the school's affirmative action program was untouched by the Court's decision.¹⁷

* * *

It was not unexpected that the general social climate of the seventies, which had university faculty and students nationwide manning the various barricades of disparate causes, would be reflected in UCSD's new medical school. The drug culture was big news, and the local press struck when, in February 1974, Arnold Mandell, co-chairman of the department of psychiatry, was accused of prescribing massive amounts of amphetamines to San Diego Charger football players. Mandell defended his action as an unorthodox method of getting team members off other, uncontrolled, drugs. He made public a sports drug-use problem no one wanted to see, and the issue, which Mandell would chronicle in his book about drugs in professional football, fueled snide news articles and tongue-in-cheek columns for more than a year. Mandell had founded the university's drug-abuse program, which the National Institute of Mental Health rated along with that of the University of Chicago as the nation's best. But after the Chargers controversy, the university lost to Teledyne Economic Development Corporation the \$1.5 million annual contract for administering the county's controversial methadone heroin detoxification program. Mandell was later placed on five years' probation by the Medical Quality Assurances Board. But his fans were legion, and in 1984 he won a coveted MacArthur Prize, called the "genius award" for its scope and rigorous requirements.¹⁸

At almost the same time that Mandell was making sportswriters' headlines, the Department of Health, Education and Welfare further upset the campus by demanding repayment of \$621,000 it said had been spent without "adequate documentation." This apparently was bureaucratic punishment for sloppy clerical work, and HEW soon backed off. But two years later, a not-for-profit Surgery Education and Research fund came under fire as well. McElroy issued a call for tougher bookkeeping practices, and Dean Moxley told Marshall Orloff to dismantle the organization that paid travelling expenses, among other disbursements. Orloff told him no. The issue was seen by many as a showdown

over the autonomy of powerful faculty members like Orloff. Science superstars on the general campus had for almost two decades been able to earn outside money through summer-studies and advisor work. And within the framework of organized research units, they could escape the constraints of university administration.

An October 1977 in-house investigation found that the fund owed the university only \$12,000 for what administration Vice Chancellor Bud Sisco said was a bookkeeping error. But the chancellor and the dean were said to be irritated at not having administrative control over that enterprise and others like it. Moxley asked for Orloff's resignation as chairman of the surgery department. Orloff did submit his resignation, but almost immediately withdrew it, supported by some 40 members of the surgery department and, by the UCSD Academic Senate. Chancellor McElroy supported Moxley's position. Eventually the senate complained to the president about this and other conflicts with the chancellor. A rare vote of no-confidence led to McElroy's resignation in 1979. Moxley left shortly afterwards. Although lines of allegiance and avenues of power seemed to be clarified by the incident, no clear definition emerged of the medical school's mission or its appropriate relation with the greater university community.¹⁹

* * *

In the early eighties, about 30 percent of the university system's state money was going to health sciences. Sacramento was griping again about too little return on too much spent, and there was discussion about closing one of the five university medical schools (Irvine was said to be the obvious choice). In response, President Saxon said the current condition was not different from what had been anticipated 20 years earlier, and one important result of "biting off more than we could chew is that we ended up stunting the development of the university in other important directions." Legislators, repeating their 20-year-old position, called for fewer researchers and specialists and for more "primary-care physicians" by way of solution, while the Graduate Medical Education National Advisory Committee recommended admitting fewer students to shrink a projected glut of 70,000 doctors by 1990. But a former San Francisco chancellor offered little hope for any changes of any kind. Medical

school "policy is set by powerful people," he said, "department chairs, people who run important units. . . . It is hard even for the campus administration to exert any control and next to impossible for the statewide administration to do it."

Yet another search to find a dean who could tie down such loose cannon yielded Robert Petersdorf, a very big gun indeed. Petersdorf was Yale-trained and a former faculty member at the University of Washington and Johns Hopkins. When he arrived in town, he immediately mounted a review of book-keeping and called for a study of the Medical School Clinical Compensation Plan. Then he attacked the faculty. He called the UCSD process of subspecialization an "overheated system" run by training program directors who "think that they have a God-given right to produce progeny in their own image." He changed the heads of pediatrics, ob/gyn, radiology, and anesthesiology and, as one insider put it, "created a vacancy" by forcing Helen Ranney to step down in the department of medicine. Outspoken, even abrasive, and described by other administrators as being "one of the really significant leaders nationally in academic medicine," Petersdorf was said to have made a "very powerful and lasting impact" on the medical school and its hospital. In forcing his will on the faculty, he accomplished what Moxley had been unable to do.²⁰

Petersdorf also hoped to find a permanent solution to the problem of running University Hospital. He hired Michael Stringer to bring to heel what soon was called the UCSD Medical Center. The Hillcrest hospital, which was at least symbolically responsible for the medical school's beginning, ironically became a symbol of the failure of the original plans. Roger Revelle was only one of the original supporters of acquiring the hospital who criticized having done so. But as Galbraith explained, early certainty that a hospital would be built on campus turned to "hope and then to hopelessness, because that money was not going to be there. . . ."

* * *

The university started operating the hospital in 1965 with a staff of local doctors and 45 interns and residents. From the outset, it was badly in debt—uncomfortably described as hemorrhaging—and had so many empty beds that sales ploys such as candlelit dinners for new parents were tried. McElroy, in a

more substantive attempt to stanch the flow, in early 1972 hired Sheldon King, from the Bronx Municipal Hospital, as director. But a cure was evasive and the bleeding continued. Of the \$50 million accounts receivable owed the entire University of California, 20 percent was due UCSD's hospital. Most of that \$11 million was owed by San Diego County.

The university was running county hospitals in Los Angeles, Sacramento, and San Francisco as well as San Diego and was providing health care for the indigent, elderly, and young, mandated by state law to be supplied by the counties. According to the initial agreement, the county would reimburse the university for supplying such care. But on the very day UCSD took over the hospital, July 1, 1966, Medicare and Medi-Cal went into effect. This meant that the old and poor could see private physicians in private hospitals which would be reimbursed by the federal or state governments. Moreover, the university hospital would have to compete for private patients who would rather not be treated with, or treated like, the poor.

The first clinical faculty dismissed the hospital—described as looking like the interior of a Soviet railway station—as not suitable for the modern practice of medicine, a product of the county satisfying its legal obligation to "take care of its indigent population with the smallest outlay of funds." Braunwald, when he arrived, had expressed horror at the "primitive" facilities, which lacked intensive care units and other modern necessities. Even after changes in 1971 reduced the number of beds to 423, the occupancy rate stayed about 60 percent, in part because it was the most expensive hospital in San Diego. But Braunwald—announcing that one-third of Harvard medical school's graduating class had applied for internships there—said the hospital was being boycotted by local doctors whose apparent motto was, "If you can't join them, beat them." Most of his referrals came from outside the county, and he had treated more patients from San Diego when he was at the National Institutes of Health than he did at UCSD.²¹

During the summer of 1975, President Saxon called the university's arrangements with its hospitals "untenable." The regents wanted new contracts negotiated in San Diego to include "no-loss" provisions. This caused the county board of supervisors to threaten to take the hospital back. By early 1976, with ground already broken for an ambulatory care center that it hoped

would attract paying patients, the university released the bad news that the hospital could lose some \$2 million that year—less than Davis' \$6.3 million, but bad enough. Apparently driven by the notion that spending money was required to make money, two years later the university planned to acquire some 15 additional acres at the hospital site and develop Vauclain Point at the end of Third Avenue for clinical support facilities. New buildings to go on the land—five acres of which were still privately owned—would double the size of the hospital, to 1.4 million square feet.

Long-range plans were laid for better patient care and flossier facilities, but the hospital continued to scrape for money and fight with the county for payment. One regent said the county was "shunning" its civic duty by pawning off on the university the care of its citizenry. Another said the university, which in the mid-seventies was paying almost half a million dollars in rent, was "snookered" by the county. But the public was claiming in 1979 that the university was not doing its duty. In an odd reversal of past history and future expectations, that year the state assembly Health Committee met in San Diego to investigate charges that the hospital had turned away a pair of indigent patients, one a Mexican-American and one a Mexican national.

Hospital director King used the investigation to mount a flank attack, claiming that University Hospital had received some 61 patients—47 indigent—who had been thrown out of other San Diego emergency rooms that year, and had accepted some 250 transfer patients, 68 percent of whom could not pay their bills. Between January and April of 1979, the hospital had provided some \$3 million in medical care to the poor, many of whom were not U.S. citizens. And while doing this, UCSD was forced to compete for paying patients with private San Diego hospitals that "dumped" their non-paying on the university's doorstep.²²

In November, the assembly chastised the county and prescribed procedures for emergency care that supported the university's cry for help (which had been accompanied by threats to sue the county for \$7.5 million). The friendly climate in Sacramento seemed right for making a major move. The following year the university offered to buy the hospital for \$17 million. County Supervisors, led by Jim Bates and Roger Hedgecock, agreed to the sale and to

pping annual county payments to \$2.3 million. Although the deal was hung up by a pair of lawsuits, it went through in 1981.

Despite millions spent to enlarge and buff up the hospital, and despite marketing and savvy political moves by new hospital director Michael Stringer, beds still went empty in the eighties. As a way of curing patient-care ills, Stringer and Petersdorf began pushing again to get a hospital built on the campus. This one would be a small (120 beds), elite, \$74 million treatment center for patients who wanted medical cossetting amidst the highest-tech surroundings and had the money to pay for it. It was hoped that by competing head-on with Scripps Memorial Hospital and Scripps Clinic—which had amenities such as gourmet kitchens and valet parking—what was now called the "satellite" campus hospital would be able to generate enough income to carry the Hillcrest medical center. This time the regents agreed. But critics wondered if the medical center might be the healthy hospital in an era hostile to expensive health care. Like most university projects, the originally scheduled completion date for the hospital could not be met, and private fund-raising was slow despite a multi-million-dollar naming gift from San Diego philanthropists Sally and John Thornton.

By the late eighties, AIDS and Alzheimer's patients threatened to once again overtax the system, which saw a projected \$5 million surplus evaporate in a cloud of increased indigent care. Now, the very success of the medical center—an 86 percent occupancy rate, the highest in the University of California system—was cause for further concern.²³

Net operating revenue climbed steadily during the late eighties, but operating expenses rose as well—from \$153 million in 1986 to \$207 million in 1989 when the hospital admitted some 20,000 patients and also handled 280,000 outpatient and 45,000 emergency room visits. A new 42,000-square-foot ambulatory care center opened, and work started on a massive \$30 million project to bring the old "tower" up to seismic code and add more space for growing programs in cardiology, orthopedics, and oncology. Although it still scrambled in local competition, the UCSD Medical Center, with its stellar staff, world-famous programs, and Cancer Center, was internationally renowned.

The UCSD Cancer Center opened in 1982 under popular director John Mendelsohn with such fervent community support and expectation that it was credited with being the university's best instrument of public relations. It was one of 16 National Cancer Institute-designated clinical care centers in the United States. (The La Jolla Cancer Research Foundation and the Armand Hammer Center for Cancer Biology at Salk were designated as "basic" or research centers.) But it handled patients only within the department of medicine's hematology/oncology division. With a good deal of political infighting after Mendelsohn left for New York's Sloane-Kettering, the administration finally decided to bring all cancer patients under the institute's aegis, go for a very much more prestigious "comprehensive" NCI designation such as UCLA had, and replace Mendelsohn's successor, Mark Green, who would remain as chief of hematology/oncology. There were changes in other areas as well.

The clinical practice plan, including pay rates, had been revamped, and talks were started with administrators at Children's Hospital and Health Center over lodging UCSD's pediatrics department there. The long-awaited clinical sciences building and a technologically advanced eye clinic (funded in part by donors Don and Darlene Shiley) were going up on campus along with a local edition of the Howard Hughes Medical Institute. The door to the medical school swung wide to local practitioners as well. By the end of the eighties, some 400 community doctors were working as part-time, clinical faculty. Representing an upsurge in sophisticated private medicine in the city, they joined some 340 board-certified or board-eligible full-time members of the faculty. A strong, broad-ranged, and highly effective system of clinical medicine had finally been created. But it was not achieved at the expense of research.²⁴

The establishment in the eighties of the Center for Molecular Genetics gave the entire School of Medicine an extraordinarily prestigious anchor in the explosive growth of biotechnology research occurring then. Ironically, although the field, genetics, was that of David Bonner, the advances were made outside the ever-weaker structure of the medical school plan that bore his name. The only relative losers in the School of Medicine's overall growth during the period were the basic-science faculty. In 1972, there were 28 general-campus faculty teaching in the medical school. In 1980, the number

had dropped to 21. Despite a huge increase in medical school faculty numbers, a decade later—with representatives from the departments of AMES (Applied Mechanics and Engineering Sciences), biology, chemistry, mathematics, and sociology—there were still just 21 general campus faculty teaching in the school. Bonner's interdigitation plan had been unclasped by attrition.²⁵

Like a mercury thermometer dropped on a hospital floor, administration at the medical school has seemed barely able to contain its tendency to scatter. Perhaps it has to do with the battles royal carried on by men and women whose proclivities and training have made strength of personality an effective weapon in the academic power war. Politics within the medical school are very much more vicious than elsewhere in the academy. The traditional cause for this has been the polarization of clinical versus academic medicine. But starting in the late seventies, opportunities for researchers to make major fortunes while still acting as professors has confused the simple hostilities of the past. It was one thing for a researcher to dismiss as limited and crass a colleague who joined the country club of private practice, but for that same researcher to patent the results of work on cloning revolutionary medical materials, for example, and then make a fortune producing them, was a much more complicated kind of issue. Keeping the lid on those kinds of conflicts and competitions, and on the jostling for space, grants, contracts, patients, students, and salaries, takes a firm hand in the dean's office, one which the chancellor can hold and sometimes direct.

The enmity that Petersdorf created by the very vigor that produced his achievements would have forced him out had he not responded to the drift of things and left in September 1986 to head the Association of American Medical Colleges in Washington, D.C.

After another very long search, Gerard Burrow (chief of medicine at the University of Toronto, where he ran a department larger than many medical schools) agreed to be UCSD's new dean. A New Englander and a graduate of Brown, he had taken his M.D. at Yale, where he served a residency under Robert Petersdorf. Petersdorf, on hearing of the appointment, cryptically told a reporter that Burrow "deserved it." Burrow arrived on campus in March 1988, a culturally adept—he had been the board member in charge of fund-raising for the acclaimed National Ballet of Canada—addition to a School of Medicine

campaign for private donations. Burrow announced that he wanted to impress upon the city "what a treasure it has in its medical school." And he wanted to forge stronger links between the clinical and research aspects of the school. But the school, said an insider, has a way of "eating deans." Burrow left after just four years.²⁶

* * *

At the end of the eighties, the School of Medicine functioned via a complex system of associate deans, assistant deans, and department and division heads working under the dean, who was also vice chancellor for health sciences. Departments at the UCSD Medical Center were divided into subspecialties, multi-discipline programs, and organized research units. Arguably the most powerful focused on biomedical genetics—with connections to other medical school departments, the general campus, and local industry—which took off in the seventies with Bill Nyhan, J. Edwin Seegmiller, and John O'Brien. Other stellar general-campus ties were made in bio-engineering, a combined discipline founded at the medical school by Benjamin Zweifach and Yuan-Cheng Fung.

The department of community and family medicine founded by first dean Joe Stokes contained divisions of epidemiology, family medicine, health-care sciences, and international health and cross-cultural medicine. The department of medicine, with several hundred part-time clinicians on the faculty, doubled the number of state-supported faculty positions, to 51, during the seventies, and added 82 more during the eighties. Departmental divisions included allergy, arthritis, cardiology, dermatology, endocrinology, gastroenterology, internal medicine and geriatrics, hematology and oncology, infectious diseases, medical genetics, nephrology, physiology, pulmonary and critical care medicine, and rheumatology.

Described as almost a free-standing school, the department of medicine flexed its power as it grew rich and famous, home to some of the world's most outstanding practitioners and researchers. Given its size, it is not surprising that medicine was the top dollar department. In the late eighties, its instructional expenditures of \$ 11 million—about one-fifth of medical school totals—were not very different from second-place surgery's expenditures of \$10 million. But

its research expenditures were \$20 million, three times that of second-place pediatrics and one-sixth of the school's total.

In the late eighties, the medical school's department of neurosciences was still home to a pair of first founders, Robert Livingston and Robert Tschirgi. With research connections to the cognitive science group on the main campus and the medical school's psychiatry departments, neurosciences grew to eminence in brain research under early faculty members Larry Squire, Robert Katzman, Steve Hilliard, Rusty Gage, and David Janowski. The department of ophthalmology, with its cornea, glaucoma, and retina divisions, was led by Stuart Brown, a charismatic physician who oversaw a group of superstars while attracting international attention and enough money to open and run the new Shiley Eye Center. Pathology, with divisions in anatomic and laboratory pathology, was very little changed in size since its founding in 1966 by Averill Liebow, but its experimental arm, helped by early Scripps Clinic researchers such as Frank Dixon and Tom Edgington, provided the germ of the university's genetics' work in auto-immune disease.

Pediatrics, where Robert Hamburger had an emeritus appointment in the late eighties, reflected the scientific community's growing interest in children and had divisions in adolescent medicine, biochemical genetics, cardiology, critical care, dysmorphology, endocrinology, gastroenterology, general pediatrics, hematology/oncology, immunology, infectious diseases, metabolic diseases, molecular genetics, neonatology, neurology, nephrology, and pulmonary medicine. Like the department of medicine, it had several hundred clinical faculty members.

Pharmacology became a freestanding department in the late eighties, and although it remained little changed from its mid-seventies size, like radiology it benefitted from extraordinarily rapid advances in research and development. Reproductive medicine, which staked an early claim on pharmacological abortion with the work of Sam Yen, had divisions of gynecologic oncology, obstetrics and gynecology, perinatal medicine, and reproductive endocrinology. Psychiatry was able over the years to move well beyond its early basis in the Naval and Veterans Administration hospitals. By the late eighties, the department was internationally known for its work in manic-depressive disorder.

Although in 1990 all its 22 full professors were male, the embarrassment was being remedied by a good proportion of female junior faculty.

Surgery, the most dramatic element of any medical school, started big and just kept going. Divisions of cardio-thoracic surgery, neurosurgery, orthopedics and rehabilitation, otolaryngology, pediatric surgery, plastic surgery, trauma, anatomy, and urology attracted the applause of an international roster of patients, Marshall Orloff was still on the faculty, and so was hotshot heart-lung replacement specialist Stuart Jamieson, passionately wooed in 1989. Surgery's community clinical faculty is the largest of any in the medical school.²⁷

In the late eighties, of the \$145 million UCSD spent on all instruction in a year, \$58 million went to the medical school; of \$160 million spent on research, more than \$65 million went to the medical school. The campus spent almost \$6.5 million on medical labs, more than \$100 million on the hospital, and many more millions on various other medical school expenses. Close to \$330 million out of a campus total of \$680 million in expenditures went to support the School of Medicine. But medicine was also a money-maker. Sales and services at the hospital brought in \$174 million, sales and services of educational activities—a category for clinical fees—another \$45 million. Although accounts are kept strictly separate, clinical fees have a 6 percent "dean's tax" imposed on them, and that amount is transferred to the School of Medicine's budget. Federal grants and contracts expenditures were \$52 million, out of campus totals of \$132 million; private gifts, grants, and contracts were \$14 million out of \$32 million. Along with various other income sources—local government, state appropriations, and contracts—the School of Medicine and its medical center were huge, complex, frustrating, but going concerns. This was what founders and first students expected.

The charter class of students, like the first faculty, were enormously proud to be participating in what was seen in 1968 as the founding of a great new medical institution. Many of the 47 who graduated in June 1972 said they felt pressured toward research at UCSD. One, who had intended to practice pediatrics in a small town, probably represented her classmates when she said that by the end of her schooling she felt she would be "copping out if I went into private practice." But time and politics on and off campus changed the emphasis at the school. In part, the social consciousness of the sixties and

seventies, with emphasis on patient care and special programs for minority students who were willing to practice among the socially and financially underprivileged, underwrote the erosion of basic-science research power at the medical school. Perhaps in a larger part, clinical faculty who spoke loudly and carried very big campus sticks finally tilted medical education in their direction. They drew strength from administrations who were actively hostile to the plan that Bonner et al. had backed.

Very many critics of the Bonner Plan, including certain chancellors and deans, saw it as little more than institutionalized raids by basic-science departments, biology chief among them, on positions and money earmarked for the medical school. York later dismissed early medical school ideology as irrelevant to state needs. And Revelle said that although Bonner had cared very much about students, he seemed disinterested in what those students wanted to become—physicians.

By 1990, the very large majority of School of Medicine graduates were bound for private practice. They had participated in classes built around a core curriculum that would have surprised the original founders and outraged David Bonner. Only a one-quarter graduate school-based course was taught—cell biology and biochemistry—and introductory clinical courses were started in the winter quarter of the first year.

Hamburger, 20 years after the first student matriculated, expressed disappointment over the direction the school had taken. But Jim Arnold saw evidence of the early idealism in the blend that accounted for the school not only training practicing doctors, but also being a "top research institution" with some half dozen faculty members who were "world-class scientists." York thought that was the mixture founders should have been seeking in the first place. In order to educate doctors, "you've got to have professors who know what it is to be sick, not just know what molecular biology is all about. And in order to train students, you've got to have a hospital with patients." That might mean that UCSD became "a quality conventional school," but, "to be honest, I never thought it was going to be anything else." The radical Bonner Plan, with the basic sciences calling all the shots, "never had a chance," York said.²⁸

The School of Medicine was not intended to be UCSD's sole venture into professional education. A 1965 plan prepared under Keith Brueckner proposed several professional schools. Included were a dental school; a small school such as law, public policy, social welfare, or librarianship; one large school such as business administration, education, or engineering; and a medium-sized school such as environmental design and regional planning. Professional school faculty counts were expected to be 286, and enrollment was projected at 1,415 by 1976.

Although plans for business administration—controversial even in the first discussions—were soon dismissed as too patently vocational, other professional schools, which were great money-makers, were seen by many members of the planning committee as inevitable or even desirable. With apparent misgivings and much pussyfooting around, the Academic Senate suggested a school of public policy. Environmental design was also discussed. But by the time anyone was ready to do anything about founding one, the resources needed to open another professional school were gone. Dentistry was forgotten. Engineering, transformed into applied science, was subsumed into the departmental structure of the campus. This was the kind of action that Scripps Institution of Oceanography had feared and resisted since the 1950s.²⁹

* * *

Since its early attraction of excitable beachgoers, no component of the university has been better loved locally than Scripps Institution of Oceanography. With reason, Scripps' faculty members believe that without the institution, there would not be a university. And, since the launching of the School of Science and Engineering, Scripps insisted on its independence, and based its superiority to the "upper campus" on its international reputation, its success at attracting money, and its seniority. For more than 20 years Scripps' preeminent isolation was protected by a major academic iconoclast, William Nierenberg.

Nierenberg, with a Columbia Ph.D. in physics, had also been part of Urey's SAM Manhattan Project team during World War II. He went to Berkeley's Nuclear Labs in 1950 and built atomic beam laboratories to measure electronic and nuclear properties of radioactive atoms. He was an active

member of Jason and a prime mover in the entrepreneurial world of Cold War physics when he arrived in La Jolla in 1965, appointed by Clark Kerr after Revelle left for Harvard. Within months, Nierenberg revealed himself to be at least as aggressive a fund-raiser as Revelle and, if anything, perhaps even more careful of Scripps' particularity. He had become familiar with the computer age while at the Nuclear Labs, then and later the largest single consumer for super and regular computers in the world. In the mid-sixties, he had one of Scripps' prize ships, the *Thomas Washington*, equipped with a powerful computer manned by IBM personnel, and he set up the Shipboard Computer Group to run an ever-larger Scripps computer bank.

In 1969, Nierenberg established the Applied Ocean Engineering Laboratory and took Marion Johnson and then Gerard Fisher away from Columbia's Hudson Labs to run it. Although projects seemed oceanographic enough—installation of mid-ocean buoys and research on stable floating platforms, subsurface pressure recording devices, and the like—AOEL work was strongly canted toward the kind of defense work necessary for ARPA funding. Participants in addition to Nierenberg himself included John Isaacs, Fred Spiess, Walter Munk, and Hugh Bradner (the last three were Jason members; the first a bomb-test veteran).

Nierenberg, described by one university administrator as being politically to the right of Attila the Hun, maintained career-long ties with the federal government as advisor and chair of various committees. These connections no doubt aided Scripps in its exceptionally successful quest for government funding. In handling the huge grants and contracts that came SIO's way, Nierenberg attempted various management measures aimed at keeping what was known as "the only state institution that is run by the inmates" separate from the growing main campus.

Many SIO faculty were excellent university citizens. Carl Eckart, although he had no taste for management, served for many years in many upper-campus administrative capacities, and chancellors McGill and York both said Walter Munk's service as Academic Senate chair was essential to campus peace. But the Scripps faculty, which was about the same size in the late eighties as it had been in the late fifties, prided itself on its singularity; before McGill made Nierenberg a Vice-Chancellor, the Scripps director reported only to the

university president, some said only to God. This autonomy actually enhanced Scripps' standing in the community, and during the political bad times, chancellors could and did trundle the institution onstage as a noncontroversial university representative. More classified and dangerous research was done at Scripps than in any other UCSD area, but the public did not know it, for the institution had a long history of painting projects white and presenting its defense-related work in its most pacific colors.

In the eighties, Scripps was publicly best known for research on the greenhouse effect and global warming, interrelated popular subjects that benefitted from seismic and anti-submarine warfare technology. But as the final decade of the twentieth century started, SIO was preparing to float an undergraduate program as part of a general reorganization effort that saw 15 percent of the faculty replaced. By 1986, under director Edward Frieman, a Princeton physicist who came to San Diego initially as director of Science Applications International Corporation, Scripps finally seemed ready to take an upper-campus place.

Frieman said Scripps' mission was to solve "the major problems facing our planet," and as SIO director and vice chancellor and dean of marine sciences, he reportedly was much more interested in working with the upper campus than against it, a relief for the chancellor. He headed an administration that included deputies, associates, special assistants, and a faculty chair who served with him in a regal-sounding "directorship." The directorship was split into policy and executive councils made up of heads of laboratories, special research units, and research divisions. The density of the structure indicated how committed the administration was to controlling Scripps' many elements.

University-wide institutes—Institute of Geophysics and Planetary Physics, Institute of Marine Resources, and the California Space Institute headed by astronaut Sally Ride—interacted with the management team but reported directly to Frieman. Other programs, such as the lucrative Sea Grant College Program and the Ocean Engineering Research Group, were independent of the Scripps/University connection.

The Marine Life Research Group worked on a base laid by the 1930s sardine fishery spin-off, CalCOFI, the California Cooperative Oceanic Fisheries Investigations. Following the admission in 1961 that the sardine was

in fact inconsequential to California's economy and had been an artificially induced American eating habit growing out of World War II patriotic duty, the Marine Life Research Group—headquartered in what was called the swanky Fish Hilton—and CalCOFI amassed the largest oceanic time series in the world. This allowed long-distance, long-term tracking of various phenomena such as El Niño, which could be used in global-warming studies.³⁰

Carl Eckart, who brought the Marine Physical Laboratory into the Scripps fold, continued to be its tutelary spirit until his death in 1973. MPL, one of the most controversial and classified of all SIO divisions, in the late eighties continued to study underwater acoustics and signal processing, subjects that had founded the work almost half a century earlier. With more than 150 staff members and ongoing liaison with the Navy and its Point Loma facility—renamed the Naval Ocean Systems Center—MPL may well be Scripps' most powerful arm, for it was here that much of the original work on heat flow, marine geophysics, and magnetism was done. Certainly it was Scripps' most technologically productive, with its various science-fiction-type vehicles and platforms—ORB (Oceanographic Research Buoy), the very famous FLIP (Floating Instrument Platform), which upended itself hundreds of times while newsreel cameras ran, RUM (Remote Underwater Manipulator), and a mid-sixties benthic device used with Sealab and launched with appropriate press coverage.

The Ocean Research Division, which at one time covered climate research, marine biology, marine chemistry, physical oceanography, and marine physics, was dismantled in 1989. Projects, including highly publicized investigations of global warming, were divided among newly created or realigned divisions. One of the Ocean Research Division's largest projects had been the long-term collection of physical ocean data—still, surprisingly, a largely hit or miss procedure dependent on volunteer help from commercial shipping lines. Nevertheless, aided by automatic probe launchers, computers, and the like, Scripps scientists, who participated in the World Ocean Circulation Experiment during the 1990s, have collected enough information to prove for the first time that currents do move, and that in the tropics they carry with them huge pools of warm water that have a strong influence on the atmosphere.

The Marine Biology Research Division, which had been an odd backwater of shark tanks and aquariums during the age of physics, became a stellar aspect of SIO after the biology explosion. Particular strength was said to be in molecular, biochemical, physiological, and ecological aspects of marine plants, animals, and bacteria—the last one always important for the oil industry. Work in the Physiological Research Laboratory, which addresses the behavioral, physiological, and biochemical adaptations of sea and land animals, and in the Neurobiology Unit, which focuses research on the structure and function of the nervous system, formed bridges with the School of Medicine and the upper campus. The physiology division was established by Per Scholander (A. Baird Hasting's fellow at Harvard) in 1963 over biologist Singer's objections, with enough National Science Foundation money for a ship and a pool and enough National Institutes of Health money for a lab. The ship, the *Alpha Helix* (Scholander wanted to call it *Caprice*) was launched by the mid-sixties and immediately took off, with an international cast of 44, for a six-month expedition to the Great Barrier Reef. Subsequent trips were up the Amazon River, to the Bering Sea, to New Guinea, the Galapagos, and Antarctica. But by the late seventies, the good times seemed to have dried up. *Alpha Helix* became a National Ship—in the way Los Alamos was a National Lab. Funding changed to accountability-minded National Science Foundation project grants, and requirements were instituted for participants to submit abstracts of their papers before they even left the ship.

In the late eighties, the Geologic Research Division—a latter-day manifestation of the longed-for Earth Studies department—claimed founding UCSD scientists such as Jim Arnold, Gustaf Arrhenius, Harmon Craig, and Devendra Lal. Work on boron isotopes, prehistoric climate change, paleomagnetism, and sea floor geochemistry was dominant. In the 1960s, marine geology had captured the public imagination with its description of plate tectonics. Francis Shepard had started the work at Scripps and, with later carbon 14 help from Hans Suess, was able to establish the ocean floor's time-to-depth ratio: 25 feet every thousand years. From 1951 to 1957, Shepard directed the huge American Petroleum Institute grant aimed at unearthing oil in the Gulf of Mexico. Under another director, work was shifted to Scripps' original oil-study site, the Sea of Cortez, but SIO ended its API grant in 1962.

By that time, the institution was zeroing in on a project that seemed to be an underwater glory hole. The idea was first mentioned by Walter Munk as a joke after a National Science Foundation meeting in the late fifties. He said a dream project—never mind the cost or feasibility—that would provide the most fertile field for further investigation would be drilling through the mantle of the earth, the Mohorovicic discontinuity. A small group, including Munk, got \$15,000 seed money from the NSF. Very much more money for what was called Mohole soon materialized. Using a retrofitted oil-industry ship described as having "the sleek race lines of an outhouse standing on a garbage scow," Scripps started drilling. In March 1961, in more than 3,000 feet of water 25 miles off La Jolla, the researchers broke records by drilling more than 1,000 feet into the San Diego Trough. The operation moved to Guadalupe Island, and with novelist John Steinbeck and a photographer from *Life* magazine on board to record the event, in 12,000 feet of water the scientists bit into 600 feet of the earth's crust. John Kennedy, no doubt relieved that the nation's science program, which was having such trouble going up, was doing well at going down, sent a telegram of congratulations for the "remarkable achievement."

Given the nature of science in the early sixties, it was reasonable for everyone to assume that this was only the beginning. And in fact Mohole was the opening act of the Deep Sea Drilling Project, a staggeringly expensive drama involving Scripps in the highest level of government-funded science. The National Academy of Sciences bowed out of negotiations that placed the National Science Foundation in the position of fielding congressional criticism for a project that required a drilling barge the size of a 30-story building. Undeterred, scientists from Scripps joined scientists from Woods Hole and Lamont in a search for an appropriate site. In 1965, Mohole was scuttled by a Congress restive over having spent more than \$20 million for a project described as "the albatross of the scientific community." But drilling went on, funded as the result of the formation of Joint Oceanographic Institutions Deep Earth Sampling (JOIDES), which in 1965, the year Nierenberg became director, specified Scripps as the operating institution for the Deep Sea Drilling Project. That same year Scripps submitted a proposal to NSF for further funding; in 1967 a contract was signed. The following March, Edith Nierenberg christened the *Glomar Challenger*, which on its maiden voyage

made the happy discovery of more oil fields in the Gulf of Mexico. By the mid-seventies, within a sharply curtailed set of expectations that now excluded really deep drilling, the Deep Sea Drilling Project was believed to be Scripps' most dramatic and lucrative involvement. But in 1987 the profitable project moved to Texas A & M.³¹

No agency at Scripps had a more direct relationship with the Deep Sea Drilling Project than the Institute of Geophysics and Planetary Physics (IGPP). Roger Revelle, 20 years after the formation of the universitywide institute, liked to tell the story that IGPP was created to keep Walter Munk from leaving San Diego. Munk's seigniorial relationship to IGPP lends credence to the story that he disapproved of the growth that would result from opening the general UCSD campus and wanted his own lab. IGPP has branches in Los Angeles and Riverside and at Los Alamos and Lawrence Livermore. Its particular strength is in seismology—which could address the spread of the ocean floor or nuclear tests—and space geodesy using Defense Department survey satellites.

An equally important but higher-profile intercampus agency was the California Space Institute, founded in 1980. Like all organized research units, Cal Space, with headquarters at SIO, was a multi-discipline agency. It had close relations with various NASA and Jet Propulsion Lab programs and the California aerospace industry, and acted as a liaison between the academy, industry, and government, providing seed money and advice for non-mission-directed research projects in remote sensing, climate, advanced technologies, space resources and human needs, astronomy, astrophysics, and space sciences. It was directed by Jim Arnold until astronaut Ride took over in 1989.

The Institute of Marine Resources—another organized research unit—did research on the food chain and ocean engineering. IMR administered the huge California Sea Grant College Program with its 40 projects and some 60 trainees. Saltwater work in the late eighties was done with the aid of a four-ship flotilla. The two large ships, *Melville* and *Thomas Washington*, were 1960s Navy-owned vessels; the two smaller, *New Horizon* and *Robert Gordon Sprout*, were leased by the university. All are berthed at Point Loma's Chester W. Nimitz Marine Facilities, dedicated in 1966.

From the outset, when E.W. Scripps donated his yacht to the Marine Biological Association, the aspect of going down to the sea in ships has been

the romance of Scripps. Space exploration, although decidedly compelling, seems a sterile substitute for salt-encrusted derring-do by scientists struggling to fathom the elemental secrets of the sea. Also, from Scripps' beginning, the chance to look at mysterious ocean-born creatures has proven irresistible to generations of sightseers and students. Since its early days under canvas at the La Jolla Cove, Scripps' aquarium has been the institution's most popular attraction—and one of San Diego's as well. Millions of children have watched in horror or delight while eels or anemones, seabass or squid silently ply their lives in glass-walled tanks. More than half a million people visit the aquarium each year. Many thousand participate in associate and outreach programs that will be enhanced by the new aquarium and museum (financed in part by the Stephen and Mary Birch Foundation), which opened in handsome headquarters high above the Pacific in the early nineties. And at least several hundred of the many youngsters who attend various learning sessions at the aquarium each year will decide to be oceanographers. Some of them mean it.

At the end of the eighties, they would have had to be college graduates and very, very gifted intellectually to apply successfully to the highly competitive Scripps program. The graduate department offered the Ph.D. in oceanography, marine biology, and earth sciences. Work needed to be finished within five years, a change from the days when seafaring graduate students were notoriously—and understandably—reluctant to leave. Curriculum, which included applied ocean sciences offered in conjunction with AMES (Applied Mechanics and Engineering Sciences) and ECE (Electrical and Computer Engineering) on the upper campus, concentrated on geochemistry and marine chemistry, geological sciences, geophysics, marine biology, and physical and biological oceanography. By the late eighties, only 25 new graduate students were admitted each year—about the same number as 20 years earlier—and half of those were in marine biology and biological oceanography, a change from the physics-heavy sixties. Total graduate head-count was just under 200.

Annual expenditures at Scripps in the late eighties were \$70 million, and half of those came from the National Science Foundation and the Department of the Navy. But with more than half of its 265-member academic and research staff dependent in part or wholly on contracts and grants, such outside funding

was a source of growing uneasiness; the nineties threatened to be as austere as the seventies.

Money from the office of Naval Research was pegged *at a* 2 percent increase through the mid-nineties, but seemed to be bogging down in attached strings. Despite ONR director Fred Saalfeld telling the press that the Navy would continue, proudly, to pay for basic research, he added that it wanted specific results. For Scripps, he said, "we might try to stimulate proposals in acoustics or in ocean optics." These were the same kinds of suggestions made in the late sixties. But with work on the greenhouse effect—first identified by Revelle and Hans Suess in 1957 and studied by SIO's Charles Keeling since 1958—and plate tectonics being just two of the alternative areas of current oceanographic research, developing ways to hide submarines may not sound like much fun. Frieman told a reporter that oceanography generally needed to seek "new partnerships, new agencies of support."³²

CHAPTER EIGHT

VARIOUS APPROACHES TO HEAVEN

WHEN REVELLE SAID AT PRINCETON in 1958 that he wanted to build institutes based on the "emotions of scientists and scholars," he was describing what he called the chapels of his university-as-cathedral. But chapels for scholars were not what the State of California had in mind for its new campus, and it soon became clear to UCSD founders that the desires of legislators and regents would dictate something different. The early institute plan got its first knock in the fifties, when the statewide Academic Senate complained that the best teachers would be lured into the laboratories rather than staying in the classrooms. Critics of the college system that replaced the institute plan feared that all the teachers would be scattered haphazardly throughout the university. This prospect threatened the traditions of academic life.

The framework of higher education in the United States is built around single-subject departments that are hierarchical, conservative, and committed to preserving their power and reproducing themselves by a system of apprenticeship with origins in the middle ages. Departments control undergraduate education by regulating requirements for the major. By restricting admissions and setting rigid conditions for the Ph.D., the departments dominate graduate education. With power over recruitment and the granting of tenure, the departments shape their own futures through the choice of their faculty. Collectively, their several policies determine the intellectual orientation and quality of an entire university.

UCSD's colleges, headed by chancellor-appointed provosts, menaced that control, for the provosts were charged with determining a pattern of coursework that would make each college unique. In addition, each college was to

have separate requirements for graduation, and this might mean provosts would impose their own, student-centered demands on curricula. Among those demands was sure to be one for classroom teaching, and this was not reassuring to the largely research-oriented early faculty. These scholars, despite desires to cross over disciplines and work with peers outside their fields, found their greatest fraternity at home, in their departments. There were sure to be conflicts, but early planning committees sidestepped the more obvious ones.¹

* * *

First College opened in 1964. Its curriculum had been discussed for at least six years and was described by Revelle as offering "languages and mathematics as tools to think with, literature, philosophy and history as things to think about, and the social and natural sciences as foundations for understanding." The lower-division core program included more science for humanities majors and more humanities for science majors than in almost any other university in the country. The driving idea was to subvert what was seen as the undesirable and even dangerous polarization of the sciences and the arts and humanities. Led by physicist Ed Goldberg as provost, First, later Revelle, College was intended, according to the catalog description, to produce after only one undergraduate year a student who "will have become increasingly a member of a community of young scholars. . . . Not yet a specialist, he will nonetheless be ready to become one, and also to understand and appreciate the specialties of others."

Such brave new beginnings carried the seeds of disappointment. The earliest planners were the School of Science and Engineering faculty, who were eager to reproduce in students the breadth of their own interests. They were very bright people who had little concept of how the less-gifted think or learn. Each, to some extent, was projecting his own undergraduate experience onto First College, tidying up the ragged edges, sweeping away the failures, and setting up what would have been a perfect undergraduate education for him. A faculty member boasted that the entering freshmen—fewer than the hoped-for 200—would be treated like graduate students. Each student took calculus and analytical geometry, and a foreign language class described by a faculty member as "one of the great triumphs" of the curriculum. It was based on three hours

each week studying linguistics, three hours in basic tutorials with native speakers, and six to nine hours with taped programmed materials. Foreign language proficiency in the undergraduate major was a requirement for graduation. This was considered more practical than an early hope of having entire courses taught in foreign languages. The two-semester, interdisciplinary science sequence—150 of the students were science majors—started with classical physics and included quantum physics, chemistry, and basic biology. The same format was used in humanities and social sciences, and students might typically get a month-long "Search for Meaning" segment that included substantial readings in Ortega y Gasset, T.S. Eliot, Albert Camus, E.M. Forster, and William Faulkner, and a two-week "Retreat from Reason" with heavy doses of Nietzsche, Freud, Kafka, and Thomas Mann, all with papers required.²

"For the next 25 years," a faculty member enthused to a reporter, "all the critical issues of higher education will be raised again and again in this university.... And if we see something that needs to be changed, we'll be able to make the changes immediately." Apparently something needed to be changed right away. Most of the 181 students came from San Diego County and lived at home, but 36 males camped out in a local motel while the females lived in oceanview married-student housing north of Scripps. A student health service, activities office, financial aid office, and a placement office for part-time students or "wives," were up and running. In November, undergraduates constituted Associated Students and the following month elected class officers and named themselves the Tritons. But they failed to prosper.

Area high school counselors were warning their college-bound that UCSD should be avoided, and a student used a billboard to tell visiting regents why: "This Place is Damned Hard." Apparently it wasn't much fun either. A young woman complained to a reporter that campus "sex life is lousy," while a male wished for "some swinging young capitalist" who might erect coffee houses and beer joints. The "morale" problem, Arnold later said, "shocked us." The freshmen "thought they were being crucified." Like many American students, they had "breezed through high school and gotten A's and all of a sudden they were studying nights and weekends." Galbraith was worried and said a three-part negative article in the Los Angeles Times was "depressing." UCSD "sounds

like Riverside all over again. . . . What can we do, short of providing our freshman girls with junior escorts... ?"

Provost Goldberg suggested madrigal groups or fraternities, and literature professor Roy Harvey Pearce somewhat ruefully admitted the humanities course was "too stiff" and would be revised. The chancellor, who months earlier told reporters he expected "our students to sweat," now wanted math requirements lowered. Upper-division courses in aerospace-mechanical engineering, biology, chemistry, earth sciences, math, and physics were started early, and upper-division humanities classes were promised as a way of luring some 900 undergraduates to campus in 1965-66.

A cheery news release at semester's end, announcing that "seven students, four girls and three men, received grade point averages of 4.00," seemed more grim than otherwise. At any rate, the grade point averages dropped by the end of the year, and 30 of the original 181 students dropped out. Nevertheless, in August, Intention-to-Register statements were received from 643 freshmen and 88 new advanced-standing students. In order to assure even more, the campus instituted an outreach program aimed at changing the minds of high school counselors, and Galbraith sent out to townsfolk and parents of prospective students a hearty-sounding public relations brochure of the university's good news.³

Math was eased slightly, and humanities courses were changed. Core requirements remained essentially untouched, but tinkering with the curriculum made it possible, Galbraith said later, for a student to get through Revelle College without having a nervous breakdown. At the time, he told a reporter there were "various approaches to Heaven," and offered the Second College as an alternate route opening in 1967.

In late 1964, Galbraith asked John Stewart, hired from Dartmouth to found the arts on campus, to be provost of the college that would be named for the naturalist John Muir. He gave him a virtual blank check to set it up. Stewart was understandably excited, and described planning being done by a congenial group of 25, including two who had been presidential advisors, "sitting in my living room drinking beer and deciding what we're going to do. . . ." But Jim Arnold, who was one of the 25, said the work was not much fun: "As Revelle College got started it was easy. There was only one college

and we were still small and everything was lovely, and then we started Muir. . . ."

The colleges, with their repetition of classrooms, offices, and laboratories, their separate libraries, bookstores, and athletic facilities, were very, very expensive as planned. By the mid-sixties, it was clear the budget would never stretch far enough to build them in their ideal state. Early on, a decision to cluster the colleges in groups served by common facilities was reached. Somewhat later, the notion of having offices for faculty from all departments in all the colleges had to be abandoned. Muir College would have departments missing from Revelle, but the trick, said Stewart, "was to assemble them so they could make up another liberal arts college with a different constitution" and "different specialties among the members." This lent a certain patchwork quality to the planning. For example, George Mandler had already been hired to start psychology, but there had been no room for any psychology offices in Revelle College buildings; therefore, psychology would go to Muir. So would linguistics, some biology, anthropology, sociology, and history, all the arts, Applied Mathematics and Engineering Sciences, and French and Italian language courses. Spanish and German language went to Revelle.

The college, which would have overnight sleeping rooms for commuter students and meeting rooms in dorms, was to be "a community engaged in inquiry and the exchange of ideas that reach beyond the classrooms into many aspects of life. . . ." Departmental representatives worked with Stewart on a general-education curriculum that Galbraith wanted to be more attractive to California's high school seniors than was Revelle's. The program was said to encourage "active rather than passive learning," and it mixed honors- and independent-study courses with requirements that included two quarters of "contemporary issues," three-term sequences in math, "cultural tradition," and the humanities or fine arts, and four science courses. In whatever foreign language they had chosen, Muir graduates had to demonstrate "conversational proficiency" and reading ability sufficient for the Graduate Record Examination. In addition to satisfying the universitywide Subject A writing requirement, Muir students had to have writing skills that Stewart and others thought appropriate for college. This last was an acknowledgement of how poorly prepared graduating high school students were becoming.⁴

Even before Muir opened in temporary quarters, planning had started for the third college. The original plan, submitted to the Academic Senate's Committee on Educational Policy in March 1966, was for a college devoted to history, named Clio. The Academic Senate rejected the idea and Galbraith selected a new planning group, headed, after January 1967, by provost Armin Rappaport, acting assistant dean of students. Rappaport began working on a college that would focus on the nation's diversity and include classes devoted to racial and social problems. But whatever Rappaport, a historian from Berkeley, had in mind became pointless within the context of late-sixties American politics. Race became a founding issue of the college. Rappaport soon conceded that committee work was collapsing over students' complaints "that whites always are planning for Blacks and other minority groups." With McGill's support, he invited minorities and other interested parties to become involved in the planning process.

In March 1969, the Black Student Caucus (BSC) and the Mexican American Youth Association (MAYA) presented a plan, written by faculty advisor Carlos Blanco with help from Herbert Marcuse's graduate student Angela Davis, for a college to be run by a board of student governors. It would be named for African nationalist Patrice Lumumba and Mexican revolutionary Emiliano Zapata. What ensued grew into one of UCSD's most enduring folktales. Over the years, the founding of Third College has been cited as measured academic action aimed at redressing past social and political wrongs, as well-meaning but benighted academic meddling, or as dangerous ideological war visited on a university in the clutches of murderous revolutionaries. Struggles to name the conflict and end it destroyed careers (Rappaport's among them), focused the already wary attention of the city on the campus, and briefly created a heady climate for minority undergraduates who convinced themselves—with help from their more adept leaders—that they could control a branch of the University of California.

As part of its deliberation on their plan, the Academic Senate interviewed BSC and MAYA representatives, and on April 30, 1969, released a statement acknowledging "that the present Master Plan of UCSD has not provided sufficiently for the education of minority students." No mere "ethnic studies

programs" added to "traditional curriculum" would suffice. "An education program for minority students should instead grow out of their environment, experiences and needs." The senate commended the students "for having responded imaginatively to Provost Rappaport's request."⁵

McGill, who inherited the potential crisis when he became chancellor, believed the senate had caved in to irresponsible student demands. He was none too happy with Rappaport, either. Rappaport, described as "an intense, dedicated, zealous individual whose enthusiasm for learning was matched by his ardor for administration," apparently backed many demands, including the governance of the college by a board of student directors. McGill did not. And his stand marked what seemed to be a deepening ideological chasm between the administration, the faculty, and the students. The gap widened during the May Academic Senate discussion of the college governing board, when a group of students walked out and then walked into the registrar's office in a half-hearted takeover. Some of the participants, years later, said they really did not understand what was going on and admitted that mostly Angela Davis explained things to them. She had told them that scholarly debate about rules and regulations was used as a stalling technique. Since that was what was happening in the Academic Senate meeting, they left.

But McGill, who angrily confronted the registrar interlopers, was alarmed. Someone had seen a rifle being carried into the registrar's office, and two days after the "takeover" a student turned in the bolt action of a weapon he claimed was used on that day. McGill notified the San Diego City Attorney's Office, which took no immediate action. He then fired Rappaport and named William Frazer, a mild-mannered physicist who described himself as falling somewhat to the right of faculty senate reactionaries, as acting provost of Third College. Frazer and fellow physicist Frank Halpem—an active Peace and Freedom Party veteran—invited faculty and BSC and MAYA representatives to a series of parties to see if they could just talk things out. Frazer knew that even though McGill had the delegated authority to solve his own campus problems, the Reagan-led regents would take it back if the shouting matches did not yield peaceful resolutions. The board was struggling to keep the Berkeley campus from becoming a battlefield in a shooting war. A political showdown at UCSD

could further erode regental support for the campus, which lacked Berkeley's historical continuity and was therefore far more vulnerable.

Forming a committee that included students and faculty members Blanco and chemistry professor Joe Watson, Frazer went to work on a new plan, drawing information from many sources. He finessed demands for student control of faculty recruitment and curricula, and worked out a version of the governing board that allowed McGill to accept it in an advisory capacity. In October 1969, the new Third College plan, legitimized by a quote from revolutionary George Washington in its preamble, was presented to the Academic Senate. The college, wrote Frazer, would confront the "special problems of racial and ethnic minorities in present day American society" and would offer courses that drew "heavily upon library resources and historical materials not readily available in existing college curricula." The plan outlined general education requirements, including a science and technology course created to identify able students, urban and rural studies, Third World studies that would function as the humanities sequence did in Revelle College, and communications to develop skills in speaking, reading, and writing as well as to offer a critique of national media that made minorities invisible.

Frazer, knowing they would gum up the likelihood of passage, had moved Lumumba-Zapata demands for creating entirely new departments and for admissions variances to an appendix. These, and the calls for a governing executive board made up mainly of students, were not acted upon. After lengthy and often passionate debate, the committee on educational policy recommended that the general senate approve the plan. It did, on December 8, 1969, by a vote of 114 to 14 with 4 abstentions. Shorn of its most controversial elements, the plan was carried by McGill, who argued eloquently for its approval, to the regents on February 19, 1970.⁶

While the college was being planned, Herb York, who would be acting chancellor after McGill left, was working with campus teams combing San Diego County high schools for minority students who might attend it. He said later he wanted an admissions policy that factored in the desire to be educated as a way to "correct past ills." He also favored hiring minority faculty on bases that counted community service as equal to research and publishing. Both proposals were approved by university president Hitch. Neither was

accepted by the Academic Senate. Some faculty opposed what they saw as lowering standards and thereby diminishing the entire university, as York believed, either "as a matter of principle" or "as a means of expressing their general hostility to the whole notion." Faculty opponents, said York, took a "hard-nosed view that yes indeed we wanted Blacks and Chicanos, but we weren't going to change a single rule or a single custom or jot. . . ." Proponents insisted on changes. The result was recruitment committees that "were just sort of choked up and not able to decide." He forced "them to come to some conclusions."

In their rush—students on the way and no approved curriculum—York said that some "mistakes" were made in accommodating the wishes of the Third College Board of Directors, made up of three students, two faculty members, and new provost Joe Watson. With Academic Senate approval, the college acted as an independent department in recruiting, and the committee requested 28 new faculty positions as well as the loan of 12 teachers from Revelle and Muir. But they eventually settled for fewer. Some appointees gave poor enough professional showings to eventually wash out in the tenure process and give colleagues bad names. Recruitment generally was conflicted enough to give the colleges a bad name. With the faculty positions available, the departments wanted to strengthen professional graduate research while planners wanted to fill Third's social science undergraduate needs. Some potential faculty members were said to be reluctant to commit their professional futures to what seemed a radical educational venture. And few of the faculty already attached to Muir were willing to move.⁷

The Committee to Save the University, a conservative faculty group led by sociology professor Jack Douglas, was formed in response to Third's founding. Members believed some of the "mistakes" were serious enough to jeopardize the future of the university. Douglas told a reporter that the Academic Senate approved college plans because voting members were intimidated by "Black Panthers and Brown Berets standing up and staring at them." Senate chairman Gabriel Jackson's statement that Douglas was talking nonsense made smaller news than large photographs of humorless-looking minority youths glaring into the camera lenses of the local press. The group submitted to York a formal request for an investigation of Third College.

When York ignored the letter, the committee complained to the board of regents, which put discussion of the issue on its October 1970 agenda.

Despite national support such as a \$150,000 Ford Foundation Grant, Third College became a conservative cause that was added to the list of UCSD's perceived errors. Within what one administrator called a "reporting network" of conservative faculty, some of whom met secretly with Governor Reagan, some CSU members apparently told Dartmouth professor and columnist Jeffrey Hart that the college's advisory board was the San Diego version of the Bay Area's Third World Liberation Front. Hart wrote a caustic *National Review* piece that was read by at least some of the regents. Columnist Robert Novak added his error-filled opinion and said "black and brown students" had "veto power over faculty appointments," an allegation that he said "not only subverted academic standards but beckoned radical students nationwide to what until recently had been a quiet campus." An irritated York invited Novak to come see first-hand how quiet the campus still was. Novak visited UCSD, was not impressed, and wrote an even more critical piece, which did little to allay the anxiety of the regents.

Meanwhile, Douglas apparently had gotten the ear of John Canaday, who asked York to prepare a report on Third College with special emphasis on Third World studies and various faculty members hired. York told the regents in October that Third College "looks different on the grounds than it does here in a report," and won his case more easily than he might have feared. Although San Diegan DeWitt Higgs inquired about admissions that favored militants, the board, said regent Ellie Heller, an Atherton aristocrat, was "vitally concerned that Third College succeeds."⁸

The college had opened several weeks earlier with mariachi music and a good deal of positive press attention. Faculty members—19 total, 10 of them new hires—were conducting classes for some 90 freshman and 70 sophomores, juniors, and seniors whose ethnic backgrounds were equally Black, Hispanic, and White-Anglo. Although there was some disagreement over the numbers, apparently slightly more than half were admitted under regular university guidelines. The rest squeezed in under an old statewide university variance usually used for athletes that allowed setting aside regular admissions requirements for 4 percent of any class.

But getting the doors of Third College opened had pulled the original college system off its base. Operating Third College as a department could be seen as the Academic Senate's attempt to control the college. It could also be seen as the administration's way of loosening the senate's grip on recruitment, which then became a challenge to the structure of the departments. The new Third College faculty caused some critics to describe faculty collegiality as a recent victim of racial conflict. They could also claim that a variety of disciplines had been harmed by forcible incorporation of people they believed were not qualified to teach. Departments advocating radical changes in the nation's response to racism were now forced to confront the problem in their own offices.

Oddly, the cataclysmic founding of Third College did not strengthen the provosts. Joe Watson, who is African-American, did not want to be provost. He said McGill "bulldozed" him into it in 1970. The Hispanic students active since early planning days did not want Watson to have the job. With its relative victory over the common WASP enemy, the Third College coalition of Hispanic and Black groups collapsed into recrimination and mutual distrust that surfaced in an ugly dump-Watson campaign that did little to make his work more pleasant. In the early seventies, he asked new chancellor McElroy to clarify his authority as provost. It was done at the expense of the board of directors, and signalled an important modification of Third College. At the same time, early student activists, some of whom had a less-than-passionate commitment to getting an education, simply wandered away from what was becoming a less-than-radical academic undertaking.

Despite efforts of Third's own student recruitment group and the campuswide Educational Opportunities Program, the college, which remained the smallest on campus for more than a decade, was changing. There were many factors, including a large influx of Asian students who were interested in medicine and science, not in revolution. But by the end of the seventies, fewer than one-third of the college's students were minorities, half were majoring in natural science, mathematics, or engineering, and fewer than a dozen were willing to serve on a Third College advisory council. If they chose, all could graduate without taking any of the consciousness-raising courses so important to the college's activist founders.

The change disappointed many. Jim Arnold said later that the creation of Third College, "the first real baptism of fire" for the college system, may have been its finest hour. Without knowing it, he said, "the rebels, the Third World types, the Lumumba-Zapata types, were a little closer to our original conception than the people who were doing the official planning. They wanted to make it really different, to give it a style of its own, and they did. . . . The rhetoric was something else, but the spirit was, I thought, good."

As the decade wore on, it began to seem that progress for the educationally disenfranchised was only imperfectly furthered by that anti-authoritarianism so characteristic of Americans of every ethnic background. In the end, the UCSD revolution was co-opted by moving into the campus mainstream, and two of Third College's academic pillars became independent departments: communication and ethnic studies.⁹

* * *

Four years after Third opened, practical, pre-professional Fourth College was founded. Despite taking its name from liberal U.S. Supreme Court justice Earl Warren, the college seemed a goal-oriented rebuttal to education as political ideology. Students, as McGill said later, "voted with their feet" and made Warren a popular bastion of the "new vocationalism" dominating all college campuses in the wake of the sixties. Finances played an important part as well. In California as elsewhere, the anticipated huge numbers of university students failed to materialize, and only vocational and professional schools showed any gains. Warren College requirements were loose—irresponsibly vague, thought faculty members who walked out of planning sessions—and included sequences in writing and "symbolic skills," a major, and two "coherent" minors. Internships were promoted, credit was given for fieldwork, and programs such as management science (a euphemism for the once-banned business administration) and undergraduate work in engineering were included.

In 1980, at the height of the sixties revolt against core curriculum, there were still 14 required lower-division courses on the books at Revelle College. Third had five. Warren had only two, both writing courses. In the mid-eighties, Revelle boosted its general-education requirements to 22 courses. Warren doubled its to four, but one of those was a relevant look at eighties excess titled

"Ethics and Society." By its fourth year, Warren had 1,700 students enrolled, more than Third, and by 1979 had more than Revelle. By the late eighties, with almost 3,500 students, Warren was overtaking Muir as the most popular college on campus.

It was not until 1988 that Fifth College opened. Based on the guiding idea that the modern world was increasingly global, Fifth in many aspects represented the closing of a full academic circle. Its plan suggested a return to the rigors of early Revelle College. Focusing on international studies, comparative culture, and foreign language, Fifth's core requirement was a six-course Making of the Modern World series, said with pride by one historian to be "impossible to teach." It opened with a "Prehistory and the Birth of Civilization" segment and progressed through the Classical era to the Medieval world, to "European Expansion and the Clash of Cultures," "Revolution, Industry and Empire," and "Our Century and After." Courses in both Western and non-Western fine arts were required, intensive university-level writing was included, and internships, especially ones abroad, were encouraged.¹⁰

By the time Fifth was founded, college governance had been systematized and a measure of authority had been guaranteed the provosts. Each provost held a tenured faculty position and reported to the Vice Chancellor for Academic Affairs. Along with the Vice Chancellor for Undergraduate Affairs, provosts supervised each college's dean of students. Galbraith put provosts on the same level as the dean of graduate studies. This established administrative parity between the departments and the colleges, but it did not last. In the eighties, provosts were given the right to review prospective faculty appointments and promotions, usually evaluating a candidate for classroom teaching skills and undergraduate concerns. The Council of Provosts assigned faculty to particular colleges and controlled seven non-tenure-track faculty positions that were used for college-based programs. Though some faculty complained that the provosts imagined that "they own various majors", they still were largely marginal, described by one department chairman as merely "an irritant."¹¹

Many department chairmen, although initially excited at the prospect of remodelling what they believed were the shopworn forms of the orthodox research university, became severe critics of the college system. As part of the 1964 planning process, Keith Brueckner had polled faculty about moving to

new colleges. At that time, humanities, fine arts, and non-experimental social sciences would be happy to be divided among all colleges; chemistry, psychology, and anthropology were willing to be divided between two; physics and math refused to be divided at all. York later said that sustaining the colleges "required greater emphasis on teaching and giving up something in research. And none of the faculty—when it really came down to the short strokes—was willing to do that. Everybody was willing to talk about it, but nobody was really willing to do it." In 1972, a student wrote in the UCSD newspaper that the university did "not have small colleges integrated into the big university structure—as originally conceived and heralded. What we have are big colleges integrated into the small university. And our advantages in the unique combination are negligible."¹²

At the same time, provost John Stewart mourned that planners were naive in thinking they could "develop in Muir some of the spirit and unity that is found on the best of the four-year liberal arts colleges. We failed to take into account the large number of commuting students, the turnover caused by transferring, which is now so commonplace among undergraduate students, the fact that the faculty must give half of its time and attention to graduate students, and research efforts, and the life styles of the men and women who come here to teach."

Only in his reference to faculty "life styles" was Stewart reading the emphasis on the colleges that had been envisioned by their founders. Revelle, in saying a few years later, that faculty members were "usually on better terms with their colleagues in the same discipline in other universities than with faculty members in other departments on their own campus," said he too could see that his colleges could not work. Mutual antagonism and struggles with the administration against encroachments created by the strains of founding Third College made the departments even more resistant. Jim Arnold believed the college system was viewed as "a source of inefficiency" that by the mid-seventies was too expensive to support. "Rather than have customized versions of, say, chemistry, for each college as in the past, it became necessary to offer twelve sections of the same course."

An accreditation team that visited the campus in 1976 found college affiliation for faculty merely formal, inconsequential, and indistinct. It was

also confusing. The philosophy department, for example, had eleven of its regular faculty appointments in Revelle College, one in Third, and one in Fourth. But the majority of undergraduate philosophy majors were in Muir, to which no one in philosophy was assigned.¹³

Those same evaluators commended the colleges for giving undergraduate students a sense of personal identity. While the departments were haggling with the colleges over boundaries, the students simply moved into the breach and made themselves at home. Although luxuries such as separate bookstores, libraries, and playing fields were lost in budget cutbacks, each of the colleges occupied a separate area of the general campus, each had separate dining facilities, and each had its own style of architecture, giving it the feel of a small village. Each college admitted its own students and granted its own degrees in separate and stylized graduation exercises, including, most touchingly, Third's, where graduates' family members and mentors participated in receiving the degrees. Perhaps most important, the provosts of each college acted as important buffers between individual students and the huge administrative complex that UCSD had become by the early 1990s. Acting as liaisons, the provosts functioned as heads of large and sometimes critically important families for the students.

Although late-eighties instruction cost less than research—\$166 million versus \$173 million—there were 15,000 undergraduates attending the university that had begun as a dream graduate institute. Graduate enrollment had only doubled since 1970, growing from 900 to 1,700 students. But there were three times as many undergraduates when Fifth College opened as there were when Third College did.¹⁴

After the mid-seventies, UCSD no longer had to fill its classes with applicants from overburdened sister campuses, but could select its own freshmen. Most entering students had graduated in the top 12 percent of their high school classes, and had excellent Scholastic Aptitude Test scores. Most were male. Far fewer were undeclared majors than at other system campuses, and far more were pursuing engineering, science, and math. Coming mainly from upper middle-class socio-economic backgrounds, they lived close to home,

believed the high schools they attended were poor, and thought they needed remedial work in science and math. They were more politically liberal than students on other UC campuses, more altruistic, and more interested in being educated than in finding jobs.

About 30 percent of all graduates went on to graduate and professional education; of those, most studied humanities, with law and engineering tying for second place. More of UCSD's graduates were accepted into medical and graduate schools than those of any other public university in the country. Although the majority of students do not graduate in four years—Revelle College, with an average of more than five years, took the longest—the "continuation rate," the numbers of students who stayed on until graduation, improved over the years. Administrators like to think that this was due to students being happier with their undergraduate experience, an experience largely grounded in the colleges.

A variety of student governing boards, including college councils and the powerful Associated Students, which controlled student activity fees of more than \$500,000 a year, were operating in the late eighties. The AS voted itself out of existence for three years in the mid-seventies, but steadily regained credibility with both students and administrators after reinstating itself in 1977. By the late eighties, it was appointing representatives to some 60 campus committees. By all estimates, student participation in the governance of the campus improved dramatically during the eighties, which meant it was active, aggressive, but non-violent. The *Guardian*, the well-respected student newspaper, became the centerpiece of a large assortment of student publications.

By the late eighties, the kinds of entertainments discussed during the Galbraith administration were actually becoming popular. Fraternities and sororities were making more than modest gains, and dances—they now included gay proms—once again were routine. Intercollegiate sports teams numbered more than 20—no football, though—and, despite not being supported by athletic scholarships, were doing well enough on the women's side to garner national championships in volleyball, tennis, and water polo. Men's soccer won a national championship in 1988. Swimming, golf, crew, basketball, fencing, baseball, softball, and cross-country all fielded teams, and track and field events took place around the handsome structure built by the

San Diego Chargers professional football team on campus land. Intramural and individual sports were supported by an attractive range of facilities that included a sailing center on Mission Bay, indoor and outdoor pools, weight rooms, and tennis courts.

Students also lived and studied in the kinds of surroundings envisioned by early college planners. Revelle College, built on an open-plaza plan using exposed concrete gussied up with paint, tile, and wood, occupied 720,000 gross square feet of building space on 34 acres of land. Of Revelle's total student population, 950 live there. Muir, a high-rise, high-density development, also of concrete, has 450,000 gross square feet on 11 acres of land. Half its dormitories are apartments, and 950 students live on the campus. The architecture of Third College figured prominently in Lumumba-Zapata demands. Some students wanted variations on African mud huts, while others promoted Hispanic buildings of stucco and tile. What everyone got is an inexpensive assortment of stucco and concrete buildings that opened in 1979. About 950 students are housed on the campus, which has 210,000 gross square feet on 28 acres, the lowest density of any college on campus. Warren College, east of the Central Library, houses 900 students and has 340,000 gross square feet on 29 acres. Fifth College has housing for 1,150 students just west of the Interstate-5 corridor. Its administration is using the Matthews campus, and it will ultimately be located east of Warren. Housing, in addition to married-student apartments near Scripps and east of the freeway, includes semi-plush apartments bought by the university in a commercial area east of campus.¹⁵

All the while the administration was making efforts to make UCSD undergraduates comfortable, it worried that too many of them came from too-comfortable backgrounds. The racial mix was disappointing. In the late eighties, UCSD's Black student population, at 3.1 percent of total enrollments, was lower than the systemwide average of 5.3 percent. It was lower than UCSD's own average 20 years earlier. Despite Third College and campuswide recruitment, there were actually fewer Black students enrolled than had attended in 1972. Hispanic enrollment was 8.2 percent, again less than the system average of 9.3, but much improved since 1970 when it was 4.2 percent. By the late eighties, Asian-American students, because of their stunningly successful University of California academic performances, were no longer

grouped with Hispanic and Black populations for the purpose of minority counts. Systemwide numbers of what were called "under-represented minorities" rose from 8,145 in 1976 to 21,129 in 1990, mirroring a nationwide trend, but freshmen minority enrollments were off 15 percent. The continuation rate for minorities at UCSD is lower than the campus average, and programs such as the one guaranteeing admission at the junior-year level to community college graduates led to more white and Asian transfers than Blacks and Hispanics.

An aggressive recruitment program for students, including seduction parties similar to those held for prospective faculty 30 years earlier, was coupled with liberal use of lowered admissions requirements to boost minority attendance. As Third College provost, Joseph Watson favored enlarging the special admissions percentage if the university was to "achieve its goal of offering quality education to significant numbers of minority youth"; as vice chancellor for undergraduate affairs, he supported an outreach program that would extend even into junior high schools as a better solution. Cecil Lytle, who replaced Faustina Soils, Watson's successor, as Third College provost, said the tiny numbers of minority students on campus tended to reinforce the assumption that they were all there on a special-admit basis. Fewer than half were, although UCSD's rate of Special Action Admissions in the mid-eighties was 7 percent, as opposed to the agreed-on systemwide norm of 4 percent. The Educational Opportunity Program, started by McGill in 1968, and the Student Affirmative Action Program, started by McElroy in 1975, provided services to ease entry into campus and included a summer "bridge" residential program, academic and personal counseling, financial aid, and Early Outreach. This last included meetings for parents and high school counselors, on-campus residential programs, writing and SAT preparation workshops, and special assistance for the children of migrant workers. Early Outreach was selected by the Office of the President as the outstanding program of its kind in the system.¹⁶

Spending money and faculty resources on such programs is not universally popular, and it got tied up and bogged down in divisive definitions of *minority*. This inevitably led to objections directed at graduate assistants as well. Like their counterparts nationwide, UCSD undergraduates complained that graduate teaching assistants, many of them foreign nationals, were often ill

prepared, uninterested, poorly qualified, and, in some cases, without enough English to be understood in the classroom. Campus administrators in the mid-eighties admitted this was true and tried to correct the problem. As with most university problems, the principal corrective was more money. Graduate school was expensive, and more scholarship money would permit out-of-state and foreign students to matriculate without appointments as teaching assistants. But Sacramento griped about underwriting students who came from other states, to say nothing of other nations.¹⁷

Concerns about graduate students were part of a higher-education vogue that gripped the nation during the eighties. In dozens of general-interest books and television commentaries and hundreds of popular-press articles, the pros and cons of research versus teaching and undergraduate versus graduate education were debated. The research university, of which UCSD became such an outstanding example in such record time, came under harsh criticism.

Proponents of liberal-arts education described research universities as soulless pools of social Darwinism where undergraduates either sink into meaningless extracurricular activities or join the dehumanizing swim towards degrees that are merely certificates of entry into professional schools or the job market. Chancellor McGill blamed the federal government's decision to channel most higher-education support to science. "The reward system was put entirely in your ability to develop world-class work and that meant graduate seminars, a stable of graduate students, production of papers. And undergraduate teaching lost its sacred quality." Clark Kerr admitted that "undergraduate education in the large university is more likely to be acceptable than outstanding." Universities "exploit" undergraduates by "teaching them cheaply with teaching assistants," he said, and in that way "save money for graduate work. That's a harsh thing to say, but it's true."

But John Stewart said that although it was "very, very difficult" to combine research and teaching, it was "not impossible." No faculty at a university like UCSD is going to be "100 percent interested in undergraduates," he said. "What you are going to have are people who are distinguished in research and turn out to have a real flair for undergraduate teaching. . . . They set the standards, and there isn't a faculty member on this campus who doesn't want to do well and who wouldn't like to be thought of highly by the undergraduates.

They may put their efforts elsewhere, because they know that is where the goodies come from ... but nonetheless, when they are standing up in front of a classroom, they would like to have those young people think highly of them."

Stewart believed that the college system, with the provosts watching over teaching, made the quality of classroom instruction better at UCSD than at many other research universities, although it would never be as good as at a small liberal arts college. But small liberal arts colleges "simply cannot support science faculties of the quality of ours because they haven't got the labs, they haven't got the facilities."

Jim Arnold said he occasionally lost potential chemistry faculty by insisting they teach. But he passionately believed the point of building a university "was to expose young minds" to brilliant research, and the way to keep research brilliant was to expose the faculty to young minds. It was that kind of dialogue that caused Chancellor Richard Atkinson to say that no undergraduate could be better educated than at the kind of high-powered research university he headed during the eighties. Harvard dean Henry Rosovsky agreed. Although permanent faculty may well spend less time in the classroom at such universities, their research makes them "more interesting and better professors. They are less likely to present their subjects in excessively cynical or reactionary terms." This is because research "is a form of optimism about the human condition." The men and women who conduct it "have faith in progress and therefore possess an intellectually optimistic disposition." They are "people who wish to remain students for the rest of their lives."¹⁸

CHAPTER NINE

ADDING OTHER CHAPELS

IT WAS SCIENTIST-STUDENTS who laid the foundation for the humanities and arts at UCSD. With the need to open doors of a full university, York had sought advice from sister campuses on the recruitment on non-science faculty. Biologist Jonathan Singer said it soon became clear "that the people who were being touted to us in the Humanities and Social Sciences were, by and large, just not of the same caliber as our scientists." The scientists complained to York, who put them on a search and advice committee that almost immediately shunted him and what they called the "Brahmins" from other campuses aside.

"That was the beginning of a great year for us," Singer remembered. The scientists had all "come from the elite institutions" and had friends who had friends. "Marvelous people streamed in and out of La Jolla at that time." Chemist Martin Kamen flexed his fine-arts antecedents and took the lead in looking for non-science colleagues who would be crosses "between Jesus Christ, Buddha, and Napoleon." Although York complained that his radical recruitment committee would never be interested in a candidate so mainstream as to come from "the Eastman School of Music or Juilliard," he agreed with them about emphasizing creativity rather than scholarship. "One of the things that distinguishes science from almost all the academic subjects is that in physics, for example, the physics faculty create the physics, and criticizing it is something quite secondary."¹

But unlike the first physicists, these new recruits would be hired on the basis of the University of California's "FTE"s. The "full time equivalent" staffing allotment is the bottom line of student-faculty-staff equations that

regulate how many faculty members any one department—or campus—can appoint. One FTE equals one full-time faculty appointment. The "equivalent" can be divided into several part-time or teaching assistant positions and so on. FTEs are figured into state formulae on the basis of students enrolled, and competition for them can stimulate vicious interdepartmental fights as well as siren course descriptions in the general catalog. FTEs technically are parcelled out by the chancellor, who customarily delegates to the vice chancellor for academic affairs the authority to decide with the deans, which department gets how many.

It had been easy, early on, to sidestep the constraints of the FTE system. Clark Kerr was always willing to ignore guidelines and hand out above-scale appointments. And Keith Brueckner padded his physics department with junior faculty supported by outside funding. No such loopholes could be used in hiring early humanists, although Brueckner was willing to spread National Science Foundation money into their salaries, and other scientists were at first eager to share resources with new colleagues. Philosophy professor Richard Popkin told a reporter he "only came here because of the kind of scientists who are here. These are men of broad interests."

Popkin got his knuckles rapped in print for saying that UCSD's founders had no intention of subordinating the humanities in the ways MIT or Caltech had done, but his feeling so was an indication of the hope held that the two traditionally polarized fields might be blended on campus. Although some of the resident scientists grumbled that the arrival of the humanists would turn "things upside down," most were at least open to the common understanding that humanities courses should not function as mere "services" to the university.²

In the same way that Revelle, Brueckner, Arnold, and Bonner trolled for Nobel scientists, humanities recruiters initially ignored the regents' mandate to build a full-service university. We hired "the first good ones we got, rather than stick to a timetable or organizational chart," said York. This tended to shape departments into vertical models of first faculty members' subspecialties—"the best possible distortion"—and one similar to the early departments of science. At the time, Brueckner told a reporter that campus recruiters were still not "interested in starting a lot of departments with one good man at the top and a

lot of mediocre people beneath him. . . . We want to jump from nothing at all to an excellent doctoral program in one year. To do that we need five superior appointments in each department." But despite variously cited attractions—the weather and view, the excitement of the program—there were mounting problems making appointments.

Galbraith thought the lack of a good library was the major obstacle, and he also believed the university was "debas[ing] its coin" by broadcasting feelers that faculty at other universities could claim were job offers they turned down. But coin of the cash kind was at least as significant. It would soon be necessary to appoint at the junior level, particularly risky in the humanities. As one administrator said, scientists could make reputations even as graduate students, but a "hot young historian hardly exists." The university needed historians, and in the early seventies funding was tight. With pressure to conform mounting in Sacramento, building the faculty would take creativity.³

Literature was first, and in late 1962, in a snowstorm in Columbus, Ohio, York followed Brueckner's lead to Roy Harvey Pearce. Despite the university's commitment to doing rather than teaching, this first non-science appointment was in literary criticism, a direction Pearce hardened when he built what he called the Ohio Mafia at UCSD, hiring colleagues and former students to fill out the literature faculty roster. Still, the program Pearce designed was, and remained, the only department of literature in the country. The driving idea—radical enough to please planners determined to eschew orthodoxy—was a broad, almost multi-discipline program that cut across and combined conventional departments of American, English, French, German, and Spanish literature. No basic writing courses would be offered. Foreign language reading and writing would be taught, but basic spoken language would be spun off into linguistics, a social science, to be headed by Leonard Newmark (then from Indiana, formerly from Ohio State), at 35 regarded as one of the best linguists in the country. The linguistics/literature division would baffle students and evaluation committees from thence forward. It was seen as something like its own interdisciplinary program, and it created no end of cross-referencing in individual course work and attentive reading in the catalog.

To Pearce, developing a curriculum was a joyous process unencumbered by official restraints. Although he was told to emphasize research and graduate

studies, he needed to get the B.A. program in place before the arrival of the first undergraduates in 1964. His only problem that first year was with what he called a "watered down" science series for humanities majors. So warmly did he feel welcomed that in gratitude he dedicated a 1969 collection of his papers to the scientists who had made him feel at home.⁴

Literature had 31 faculty members by 1969, grew to 40 by 1974, but took another 15 years to climb to 50. By the mid-seventies, various subgroups were agitating for secession. But they were kept in the department despite the kind of restiveness revealed when then-chairman Andrew Wright wrote, in 1973, that at UCSD it was little understood that "the teaching of literature is different from the teaching of mechanical engineering." He may have been bitter over circumstances that led to an exodus of French scholars in the early seventies that was only barely offset by growth in English and American literature. The department was serving large numbers of non-major undergraduates in the college core curricula, and accreditation reviewers in 1973 believed that too few faculty were teaching too many students. They also found too many graduate students—115—who were not doing very exciting work, and wondered if a return to a traditional organization of language and literature might not be beneficial.

No easy solutions were possible for the department, which became one of the largest on campus. Although lean times had the result of trimming graduate enrollments, they also restricted faculty recruitment that was already suffering from positions being used up in the establishment of writing programs in the colleges. With only one department rather than a collection of closely related ones, literature had to work from a weakened political base and to struggle for much of what it got. Moreover, with its monolithic administration, the department was said not to provide a very wide theoretical spectrum. It took 20 years to create a graduate program in literature, *per se*; until then, doctorates were granted in specific fields.

By the mid-eighties, rising stars were again coming to UCSD's literature department, staying, and turning down tempting offers from the Ivies. Department chairman Susan Kirkpatrick explained this as resulting from Chancellor Atkinson's willingness to add "goodies" to the recruitment pot. As the faculty improved, so did the quality of graduate students. Overall

enrollments, however, dropped from a high of 10 percent of campus totals in 1970 to just over 5 percent in the late eighties. The number of declared undergraduate literature majors also declined, from around 5 percent during the seventies to fewer than 4 percent during the eighties. A writing major, shunned by Pearce and early planners, became by a factor of 2 the most popular undergraduate major in the department.⁵

Although Pearce was the first humanist hired, philosophy founder Richard Popkin got UCSD's first non-science graduate program up and running. Popkin recruited Jason Saunders (classical Greek philosophy, social-political theory) and Avrum Stroll (contemporary theory of language and epistemology), and Stroll delivered the university's first non-science faculty lecture, one on Marx. He also planned a seminar for scientists that had Stanley Moore and Herbert Marcuse, both of whom were hired to teach in 1965, as speakers. With the 1963 establishment of the *Journal of the History of Philosophy*, edited by Popkin, and a reputation as the national center for Hegel studies, the department was an overnight success. But as early as 1966, Popkin told Galbraith, who undoubtedly liked the complaint, that although the philosophy department was at least the third best west of the Mississippi, it was understaffed, and what faculty there was, although excellent, was forced to loan students personal books. If matters did not improve, the department would soon be no better than that at Riverside or Santa Barbara.

Popkin, apparently in protest, left within the decade. His field, the history of philosophy, continued to dominate the department, which began to seem a little leery of its own junior faculty, granting just two of them tenure. Although the 12-member, award-winning faculty had published nine books and several dozen scholarly articles during the preceding five years, by the mid-seventies they seemed to be having trouble attracting good graduate students. The problem was seen as arising from lackluster campus and state support for philosophy, but might well have been due to activist politics that made inroads into the department. Ten years later, there were even fewer students majoring in philosophy—less than half a percent—and graduate enrollment had fallen off to less than 2 percent. But the small faculty remained select, with Guggenheim fellows and grant winners as well as outstanding scholars in Kant and the philosophy of science. In the late eighties, the department, which had grown to

19 faculty members, was forging intriguing links with psychology and biology as cognitive studies emerged along with computer science in several departments simultaneously.⁶

History, which also had scholarly connections with philosophy, was also establishing ties with science in the eighties. An outstanding faculty for the history of science was recruited to restore the direction marked out in the mid-sixties as part of the Revelle College humanities sequence. History was approved in 1964, under the tutelage of Galbraith, who hired Armin Rappaport and the eminent Geoffrey Barraclough, a fellow of Merton College, Oxford, and Arnold Toynbee's successor as director of the Royal Institute of International Affairs. Samuel Baron was named chairman. But the undergraduate major did not get senate approval for three years. The delay came from recruiting problems, which began to be solved when Gabriel Jackson came from Knox College, Ellen Browning Scripps' alma mater. Stanley Chodorow, Michael Parrish, Roy Ritchie, and Ramon Ruiz were in the department before the decade was out. Faculty numbers had doubled by 1974 and then leveled off at 22.

An Institute of World History was part of the general campus dream for organized research units, but it got caught up in the budget constrictions of the late 1960s and was swept away during the 1970s. By then, history's self-conscious good citizenship had involved it deeply with Black and Hispanic studies in Third College. By 1975, each faculty member was responsible for five courses, which was more than the university average. This unusually heavy load may well have stimulated departmental dissatisfactions, which by the early eighties had undermined the prized Latin American program and nearly crippled American history. Undergraduate majors dropped to 133 in the mid eighties, down from a high of 255 in 1975. But the department, characterized as "difficult" by one dean, was correcting itself at the decade's end, and had added faculty, including a gifted group of historians of the American South.

UCSD's humanities program was not the only one that suffered during the seventies. The number of humanities doctorates declined nationwide by 35 percent and the number of jobs fell further. By the early eighties, fewer than 6 percent of American undergraduates majored in literature, history, or philosophy, down from 17 percent in 1968-69. Although graduate enrollment in the

humanities slipped more than 25 percent between 1970 and 1990, it was always more than double that of declared undergraduate majors, which hit an all-time low of about 4 percent in 1985. The humanities have always been the research university's quintessential "have-nots." At the end of the eighties, 16 percent of UCSD's faculty taught the humanities, but earned only 11 percent of total campus wages. Almost half of that \$8.5 million went to literature.⁷

* * *

No group of disciplines had a harder time getting off the ground at UCSD or did better over the relatively short long haul than the social sciences. Planned to be up during the socially conscious sixties, the departments—except linguistics and psychology, which as taught at the university was close to a natural science—became enmeshed in the politics of founding the campus colleges, particularly Third, and then went hungry in the general financial shutdown of the seventies. It was not until the eighties that social sciences came into their own. Then, enriched by organized research units and a variety of interdisciplinary studies, they became immensely popular, attracting one-third of all undergraduate majors.

From its start as literature's stepchild, linguistics went on to be the campus' smallest star, rated among the top ten in the nation, with a handful of prize-winning faculty whose special fields are theoretical syntax and phonology. It took a decade for the department to acquire ten faculty members, and there it chose to stop. The department has had tiny undergraduate enrollment—less than 1 percent since the late seventies—and an only slightly larger percentage of graduate students. But in the late eighties, the establishment of the Institute for Research in Language, which added an additional \$355,000 to the kitty, helped enrich the budget that the department hoped to spend on computer-based studies with links to cognitive science.

Economics was approved in 1963, and Harold Urey suggested that Seymour Harris, the renowned economist who was retiring from Harvard and advising the Kennedy White House, might be willing to come to UCSD. He was. Undergraduate course work in economics started in 1965. Almost from the outset, economics enjoyed the kind of uninterrupted vigor that other departments might well have envied. Undergraduate enrollments began to

climb in the mid-seventies, and by 1980 accounted for the biggest share of social sciences. In the late eighties, almost one-tenth of all UCSD undergraduates majored in economics. Graduate enrollments, although not as large, also led the social sciences during the eighties. With strength commended by reviewers in econometrics and microeconomic theory, the department was rated among the top 20 by the National Research Council. Its very excellence cost it graduate students, who were hired away because the rigorous requirements for acceptance into the program were also desirable to prospective employers. As the second-highest funded social science, the economics department had expenditures in 1970 of a little more than \$200,000. In 1980 the figure was \$1.2 million, and in the late eighties almost \$3 million. Faculty grew accordingly, despite stingy research expenditures of about \$250,000.

Anthropology was approved in 1964, but did not have an undergraduate major until 1969. Its goal from the outset was graduate-level excellence, and with a cadre of charter faculty and graduate students, it staked out an intellectual claim on campus that was as demanding as that of the founding sciences. Despite academic planners' projections for a large department—25 to 30 faculty members—early anthropologists decided to keep theirs a small and select fellowship. The decision helped the department retain most of its early faculty. Two early recruits left during the time of the Third College upheavals, and one, Joyce Justus, an African-American, gravitated toward administration and eventually accepted a job in the president's office in Oakland. The rest have added to their group in ways that have earned for the department a reputation within the profession as being politically conservative, but "the preeminent place in the country, if not the world, to study psychological anthropology." In addition, a faculty member founded the prestigious Society for Cultural Anthropology and the department established the Melanesian Studies Resource Center and Archive. There was a flurry of youthful interest in the field in the early seventies, but generally undergraduate enrollment has been less than 1 percent of UCSD's declared majors. Just 1.5 percent of graduate students were in anthropology in the late eighties. Expenditures of \$450,000 in 1975 rose to \$800,000 in 1980, and were only a little more than \$1.3 million in 1989.

That same year, as in almost every year since its founding, psychology had science-level funding. Approved in 1964 under the chairmanship of the esteemed experimental psychologist George Mandler, the department two years later established a graduate program that quickly became internationally renowned. A year after that, the undergraduate major was approved. Its early focus on information processing, communication, learning, decision-making, and thought processes made it the natural and obvious ally of computer science, which it helped drive at UCSD. In many ways, the discipline, which was seen as arcane and overly scientific by a self-help public, came into its public-relations own in the late eighties as the popular press began to report investigations into consciousness. The psychology department's 20 faculty members were a hard-science-like group of above-scale superstars, with several members of the National Academy of Sciences and the prestigious Society of Experimental Psychologists. Two UCSD chancellors are on the faculty.

Rated by national reviewers as the eleventh best program in the nation, UCSD psychology was able to resist Academic Senate committee recommendations to add the kind of courses undergraduates seemed to like. In the late eighties, departmental expenditures of almost \$2.3 million from the state and \$800,000 from research contracts and grants gave psychology some \$2 million for salaries to divide among a 23-member permanent faculty fleshed out with visitors and adjuncts such as Sir Francis Crick of double helix fame. Its undergraduate enrollment has consistently been about 6 percent. Its graduate share peaked at slightly more than 5 percent in 1970, and by the late eighties had dropped to just 2 percent.

In 1988, psychology spun off cognitive science, which had been an undergraduate major in 1980 and a graduate program since 1984. The two departments work together in the Center for Human Information Processing, first funded in 1978. Together, psychology and cognitive science account for the large majority of externally funded social science research on campus.

Sociology was started when Jack Douglas and Joseph Gusfield were hired in 1968 and charged with getting an undergraduate major program in place in a year. This put the process squarely in the path of the founding of Third College, and Douglas' highly publicized antagonism to Third may have grown from his desire to keep his department free of the college's early ideology. It was

difficult to attract and keep outstanding faculty and gifted graduate students in a politicized environment, and recruitment stalled. However, the graduate program established in 1970 kept its strength in ethno-methodology and sociology of culture and had a relatively stable enrollment of 3 to 4 percent. But tight money in the seventies contributed to undergraduate majors falling from more than 7 percent in 1971 to about 1 percent in 1984.

This low marked a turning point for sociology, which, aided by a bigger budget, launched an aggressive recruitment campaign that netted excellent new faculty members (some from the old stamping grounds at the University of Chicago) and tripled the number of undergraduate majors in the eighties. By the late eighties a faculty of more than 25 was supported by departmental expenditures of \$2.6 million—more from the state than psychology's portion—with almost \$2 million for salaries.

Sociology participated with history and philosophy in the establishment of a multi-discipline graduate program in science studies. With political science and anthropology, it developed undergraduate education sequences for Muir and Fifth College.

Although political science was approved as a department in 1965, it took a decade to establish an undergraduate major and another five years—until 1980—to get a graduate program approved. Campus conflicts, especially over Third College programs, were cited as a cause. The department started with only two senior faculty members: founding chairman Sanford Lakoff, a political theorist, and Martin Shapiro, a public law scholar who soon left for Boalt Hall in Berkeley. The department was forced to fend for itself on the basis of restricted budgets to start its programs.

An early focus on political economy was enlarged to include international relations, American government, public law, and theory. Additional recruitment in the fields of Latin American and European politics gave political science a national reputation for excellence in comparative government. By the late eighties, despite what some analysts saw as serious problems with the size of the library (echoes of criticism by the first humanists), UCSD's was said to be the most successful department of political science established since World War II. It also attracted more than 7 percent of all undergraduates. Its graduate program had a healthy headcount of 60 students, and its 25-member

faculty (with adjuncts and joint appointments, one of the largest in the social sciences) shared departmental expenditures of some \$2.5 million.

The department helped organize the Center for U.S.-Mexican Studies in the 1970s, and was instrumental in the creation of the Graduate School of International Relations and Pacific Studies, headed by political scientist Peter Gourevitch. IRPS was the first professional school established on campus since the School of Medicine was started. It opened in 1987 with an interdisciplinary program devoted to the Pacific Rim, especially Japan, Mexico, China and newly industrialized nations. It weathered a strained shakedown period and by 1990 had attracted some 150 students who were drawn to its practical concentration on economics, politics, policy, language, and culture.

Communication, a mainstay program in Third College, in 1982 became the first department of communication in the University of California system. In response to the Academic Senate's Committee on Educational Policy 1978 criticism that the college program lacked depth and intellectual coherence, comparative psychologist Michael Cole was appointed director and charged with turning it around. Cole directed a special focus on theory and attracted a faculty strong enough by the late eighties to make communication one of UCSD's most popular majors, with some 6 percent of undergraduates enrolled. But these many were taught by just a dozen faculty members, and departmental expenditures were only \$1.3 million.

In 1990, a department of ethnic studies, firmly backed by Chancellor Richard Atkinson and overwhelmingly approved by the Academic Senate, was created to combine Black, Chicano, Native American and Asian-American studies with a one-year introductory course in American immigration history and race and ethnic relations. The department would be interdisciplinary, and so preserve the founding idea of Third. With six regular faculty members, it draws resources from a wide range of departments, and anticipates growth during a decade that promises renewed interest in multi-cultural scholarship.

Perhaps even more than the humanities, the social sciences are involved in interdisciplinary and service programs on the campus. Included are the language labs—funded at \$1 million in the late 1980s—the Urban Studies and Planning Program, Contemporary Studies in Language and Culture, the Law and Society Program, Women's Studies, and the successful Teacher Education

Program with emphasis on bilingual and science instruction for primary and secondary teacher candidates. Organized Research Units include the Center for Research in Language, the Laboratory for Comparative Human Cognition, the U.S.-Mexican Studies Center, the Center for Iberian and Latin American Studies, and the Institute on Global Conflict and Cooperation. All these add money for salaries, and funding for research and faculty positions.

Graduate enrollment in the social sciences reached 17 percent of campus totals in 1990. Expenditures were about the same. But that budget had to stretch over classes taken by 32 percent of all UCSD undergraduate majors.⁸

* * *

From the beginning of the School of Science and Engineering, the fine arts had been the focus of early faculty's cultural aspirations for the campus. Other than their own, no fields touched more closely the scientists' celebration of creativity. They were eager to get John Stewart started on a recruitment quest that they believed would open UCSD arts to the community and to the world. Stewart, an Ohio State Ph.D. and an expert on the Nashville agrarian writers, had founded the Hopkins Center for the Arts at Dartmouth College on the basis of his own experience playing music and writing poetry. He had come to believe that any art should be learned "from the inside out." This was understood as a variation on UCSD's top-down theme, and it endeared him to recruiters. During the winter of 1963, Stewart got a three-party rush along with a heady round of consultations on the state of the arts in San Diego with Civic Theatre builders, the Old Globe's Craig Noel, and representatives from the local Theater and Arts Foundation. The job he was offered— although his appointment was in literature—was to found and build the arts on campus. He accepted. He would have "carte blanche," he said—"in those days there was lots and lots of money"—to "hire people, oversee planning of buildings, develop the curriculum, the works. It was fantastic." His tabula rasa gave him "a marvelous chance to change undergraduate education in the arts, to get rid of the stupidities present in so many universities' curricula," he said. "UCSD has a Urey in science, and it is time to think of his equivalent in the arts."

Stewart, in the fall of 1964 as the first students were entering Revelle College, told a reporter that he envisioned arts education as important not

only for majors, but for every undergraduate. Citizens, he said, would need "the knowledge of something to do besides play golf." Although this patently true assumption would place his programs in jeopardy within the San Diego community, he felt strongly that "appreciation for and understanding of style and beauty affect one's values and behavior in the world of other men and other cultures in our shrinking universe. The qualities that make for good art are the qualities that make for balance, harmony and restraint in human behavior."⁹

Even with such aims, few of Stewart's early recruitment choices were interested in the jobs he offered. Perhaps they were reluctant to stake their professional futures in a city that had, said Roger Revelle, as "its best known cultural attraction" a "first-rate zoo." Stewart finally did get Paul Henry Brach, coordinator of art history at Parsons School of Design, as chairman of visual arts. Brach hired his wife, the eminent American painter Miriam Shapiro. Neither stayed, but Newton Harrison, hired in 1967, and David Antin, in 1968, did. They created a core of visual arts faculty that numbered ten in 1970, when undergraduate enrollment reached 5 percent of majors, an all-time high. The graduate program, started in 1969, reached a high enrollment of 3 percent ten years later, during the same period that the faculty count was 4 percent, again a high. That year, 1980, the faculty was criticized by reviewers for not associating with graduate students. The faculty countered by rejecting the need to establish an artistic community on campus, but accepted, if grudgingly, recommendations for enhancing art history, media, and criticism in the department. The graduate program was built on a body of "theory-oriented" courses designed to create professionals within areas of painting, sculpture, performance, environmental art, photography, film, video, and computer media.

The visual arts at UCSD have had ongoing success in attracting prize-winning practicing artists, whose shows have won great critical acclaim and whose work has done little over the years to reassure the San Diego community that it was safe from the avant garde. With the construction of Mandeville Center and its art gallery in 1975, department members had a physical space in which to exhibit their work. An annex was created for student work. Over the years the university, attempting to display its considerable prowess in this area, has held a variety of arts-on-campus shows and forums that have attracted

thousands of community people, although perhaps not as many as continued to play golf.

Stewart, after consulting with distinguished musical advisors, including Ernst Krenek, hired Will Ogdon from Illinois Wesleyan as music chairman. The department that developed afterward has been described by reviewers as consistently good, even great. In 1984, faculty member Bernard Rands, who was also composer in residence with the San Diego Symphony, won a Pulitzer Prize. In 1989, Roger Reynolds won another. Reynolds' use of computer algorithms, stemming from his first career as a systems development engineer in the missile industry, may well make of the composer the archetypal UCSD faculty member, one who stood Oppenheimer on his head. Reynolds told a reporter that scientists "are expected to explore and are expected to be accountable for their work." Thus, the science orientation of UCSD was "the ideal context for exploring and presenting the fruits of my research." In 1973, with a Rockefeller Foundation grant, he was co-founder of UCSD's Center for Music Experiment (later renamed the Center for Research on Computing and the Arts), one of the world's most prestigious laboratories devoted to the speculative and technological study of music.

Reynolds was one of three science-background members of what by the late eighties was a 19-member faculty. Departmental strength was in composition theory, performance theory, and music technology. Music has also fulfilled its campus service in offering survey courses to the few undergraduates who wish to enroll. At the graduate level, the department responded to a critical review in the late seventies by trying to improve its performance in performance, which is difficult and expensive to mount. SONOR, a contemporary ensemble, and various other programs drew an audience, but the contemporary and electronic tone of the department did not make its offerings particularly popular with San Diego concertgoers on or off campus. Chancellor McGill recalled the time when Chancellor McElroy gave a black-tie party for the official opening of Mandeville Auditorium that included a music-department concert. All but a handful of the most committed supporters had slipped away by the final curtain. The following week McElroy responded to McGill's thank-you by telling him "if this were a baseball team, today there'd be trades." Long after McElroy was gone, Reynolds told reporters he had had only "one contact

with the local symphony in 20 years, and that was an acrimonious encounter. . . ." The division was patched when a new San Diego Symphony music director scheduled an on-campus concert of Reynolds' work.¹⁰

The relationship between the town and the drama department opened on a more promising note. It had its beginnings in 1954 in the establishment of the La Jolla-San Diego County Theatre and Arts Foundation. Film stars Gregory Peck, Dorothy McGuire, and Mel Ferrer, and 27 San Diegans including mayor John Butler, Jim Copley, Fred Rohr, Armistead Carter, Hal Starkey, close university neighbor William Black, and Roger Revelle were on the board. But plans for what was conceived early on as a regional theater better than Minneapolis' Guthrie or Chicago's Goodman got bogged down in internecine battles, land development, lawsuits, and money. It took almost 30 years to emerge as UCSD's Mandell Weiss Center for the Performing Arts.

Foundation board members worked the city for money to build "an internationally significant culture center" on Scripps Institution of Oceanography land that Revelle had pressured the regents into giving. But donations were disappointing, and in 1957 Revelle, pushing then for a La Jolla general campus, took over the fund-raising campaign and named a committee of landowners, developers, real estate brokers, and bankers. The fund-raising goal was \$1.5 million for an 850-seat theater designed by architects Robert Mosher and Roy Drew and theater designer Jo Mielziner. Room was set aside for the foundation's School of Drama, founded in June 1957 with Michael O'Herlihy as director. But only about \$100,000 was raised.

By early 1959, after General Dynamics had made its \$1 million pledge to the university, Revelle was saying the theater would be used for series of science lectures co-sponsored by Scripps, Convair, and General Atomic. But groundbreaking dates kept receding. By the time York arrived as chancellor, the foundation seemed to be foundering and even a benefit premiere screening of Peck in *To Kill a Mockingbird* did not help. York later said the project "was a mare's nest of strongly held views. . . ." What some board members wanted was a "straw-hat theater for rich folks" where opening-nighters could sashay around the all-glass oceanfront foyer in fancy dress. "It was the promenade that was the important thing. . . ." York, who was having his own problems on campus,

admitted that he soon thought everyone involved with the project was crazy, "and I didn't want to fuss with it."¹¹

The promenade was abhorrent to UCSD faculty, Stewart chief among them, and they mounted a campaign to take the straw hat off the project. In February 1965 the university announced that Stewart and Chancellor Galbraith and Vice Chancellor Biron were negotiating with Stratford Ontario Shakespeare Festival director Michael Langham to establish on campus a "nationally important theater group and new \$3 million building to house it." Under this proposal, UCSD would put up half the money. Peck promised six months of his time, free, to get the project off the ground. That December, board member Andrew Kay called for a final fund-raising push, this time to reach a goal of \$3.5 million. Although the bank account had been boosted by developer Carlos Tavares' pledge of \$300,000 from his new University City subdivision, the foundation still had just over \$800,000 to spend. Galbraith, in his "Newsletter" of August 1966, said that the prospects of what was now called the University-Community theater, scheduled to be built in 1969, were "brilliant" and urged readers to send contributions to Kay.

In the meantime, Stewart offered to make Langham founding chairman of UCSD's drama department and appoint his staff as adjunct faculty. Jim Copley and Fred Rohr offered to underwrite his start-up salary. Langham accepted, and he talked the foundation board into hiring architect Bertrand Goldberg to design a completely new and very costly theater. Soon, Jack-in-the-Box founder Bob Peterson and associate Dick Silberman were involved. Peterson took over the board, on which Stewart now sat, and the straw-hat crowd was shunted to the wings. Estimated theater costs kept rising, and foundation resources kept falling—in response, it was believed, to the number of fact-finding and fund-raising tours being made.

In January 1968, the San Diego Superior Court ordered the assets of the defunct Southern California Children's Aid Foundation to be distributed to the foundation board under the control of Silberman and Peterson. Apparently those assets were valued at more than \$1 million and included two personal notes of the developer of Rancho Zorro, which then was a 240-acre undeveloped parcel near Rancho Santa Fe. But that too bogged down, and, in time, Peterson resigned from the board.¹²

Shortly after Chancellor McGill took office, he told a reporter that the entire theater project was "snakebit," and admitted that it was likely the Scripps campus site would not be used. Moreover, since the theater required "unprecedented cooperation" between the university and the community, he was "not at all confident that UCSD can bring it off. If La Jolla really wants a repertory theater, I would like to see some concrete expressions of support for the work of the Theater and Arts Foundation."

That theater never was built, Langham never returned to town, and apparently most of the money disappeared. The finances of the foundation were arranged so circuitously that for years townspeople talked about double dealing and malfeasance. A former board member told one student of the theater that deposits were so encumbered by court orders that they could not be withdrawn. This last is more or less correct, and it referred in part to the Children's Aid money. It took almost a decade to straighten out.

A new agreement, described as "almost biblical in its strength," and overseen by the state attorney general, was signed between UCSD and the Theater and Arts Foundation in 1974. This time, the foundation would provide some of the money for building and the university would help raise additional funds. The university provided land (three acres, kitty-corner from the original site), maintenance services, and parking facilities. Ground was broken in 1980. With a \$1.2 million naming gift from retired businessman Mandell Weiss—who added another million later—the state-of-the-art 492-seat theater opened with a university production in November 1982. Chancellor Richard Atkinson represented all prior UCSD chief campus officers when he welcomed the audience.

The La Jolla Playhouse, under artistic director Des McAnuff, was reborn in 1983 with the kind of critically acclaimed production that foundation backers had been dreaming about for 30 years. With the opening of the adjacent 400-seat Mandell Weiss Forum—a "theater gem"—the bond between the university and the playhouse, described by critics as "a model of how a public-private program can work," seemed assured.¹³

Those same critics and others raved about the university department of theater. Its first faculty member was Langham's assistant, the British character actor Eric Christmas, who arrived in 1968 and formed a one-man production

company. Student performances were mounted in a makeshift theater in an old Camp Matthews barracks building and even then got good reviews from city playgoers. In 1972, Stewart recruited Arthur Wagner as founding chairman of the department. A year later, Michael Addison arrived. He became chairman in 1977 and formed a graduate program directed by 15 faculty members and a corps of visiting artists. In 1981, it was admitted into the prestigious League of Professional Theater Training Programs. The department's star seemed mounted when the great director Alan Schneider decided to join the faculty. And it was secure enough to survive his untimely death in 1984.

At one time, department of theater undergraduates were said to get short shrift from faculty, who understandably were drawn to advanced students showing exceptional performance potential. But by the late eighties, the department was making successful efforts to teach undergraduates, a move that complemented the excellent graduate program, which was small, highly competitive, and considered a dependable way for its students to open professional theater doors.

Music, theater, and visual arts have consistently grown as undergraduate majors—2 percent in 1970, double that 20 years later—but reached their largest graduate enrollment, led by music, in 1980 with just over 9 percent of campus totals. Faculty FTEs were also highest then, at 10.6 percent, with visual arts outpacing music and theater. But the scales tipped as the decade wore on, and music, perhaps in recognition of its pair of Pulitzers, drew a bigger share of appointments.

More expensive to maintain than the humanities, the arts account for a statistically larger portion of campus operating expenses. And salaries, pegged to off-campus competition, are higher as well. Fine arts faculty (9.5 percent of campus totals in 1985), with the help of the Center for Music Experiment, accounted for about 9 percent of the total salary budget. Although expenditures and salary levels dropped as the decade wore on, campus commitment to the fine arts remained strong. With far fewer students and faculty members than in other disciplines, the departmental expenditure of about \$7 million was more than 6 percent of the campus total. But, Stewart later said, the original vision of having practicing artists teach undergraduates was compromised by the nature of the artists, who, if they taught at all, were naturally

looking for proto-professionals. The correlation that he had drawn between scientists and artists was born out by the history of his own departments. It soon had become clear to both faculty and administration that practicing painters, like practicing physicists, often preferred to work with their graduate students.¹⁴

* * *

The founders believed there was no place better suited to teaching than interdisciplinary programs that might reproduce in the arts, social sciences, and humanities the kind of cross-over common in the sciences. By the mid-seventies the rigors of professionalism made it unlikely that an American literature expert would be teaching art history, but the need for interdisciplinary programs, said Revelle in 1978, was acute. Few modern problems "fit into the small neat boxes of the academic disciplines. Consequently, much of the research and teaching in American universities, outside the professional schools, is becoming more and more remote from the world of affairs."

By the late 1980s, there were 27 interdisciplinary programs active at UCSD, more than the number of departments on campus. Some programs remained strong enough to become firmly rooted traditions. Others, such as Communication, Ethnic Studies, and Cognitive Science, grew strong enough to become separate departments. Of the several types of interdisciplinary programs, the ones with complete academic and administrative autonomy—such as Revelle College's *Frontiers of Science* for non-science majors, Muir's *Contemporary Issues*, and Fifth College's *Making of the Modern World*—are best off. Those with limited academic but complete administrative autonomy—*Women's Studies*, for example—often suffer as stepchildren of the departments that control them. Programs such as Chinese, Classical, and Judaic studies call their own academic shots, but are administered by the history department's Center for Area and Ethnic Studies and Research, and often must go begging. Programs with limited academic and administrative autonomy—*Chicano Studies* and *Applied Ocean Sciences*, for example—are entirely controlled by departments.

For the most part, interdisciplinary programs are hobbled by inconsistent faculty leadership and lack of space; 30 years after the university's beginnings, they had only marginal status, funded by the grace of colleges and departments

that never have enough money—or are unwilling to spend it—to keep them functioning. It was rare for interdisciplinary programs to receive money directly from the General Fund.

The programs often face hostility from the departments. "Because of the dominance of the disciplines," Revelle said, "graduate students and young research workers who are attracted to interdisciplinary or multidisciplinary fields have much greater difficulty than others in obtaining advanced degrees and in finding jobs." York believed that despite "an enormous amount of conversation," the "only walls that have ever been broken down are walls between two different disciplines which are so close that you might as well call them the same discipline." The department system operates "with ferocity" against such work. "It will not give a tenure appointment to a person who is not in the center of a discipline. And people are willing to say isn't it great that Oppenheimer was a physicist who could play the violin, but if we wanted to hire him here, they wouldn't care about the violin." Depending, critically, on a particular department for one's "institutional well being" is common to most American universities. And departments depend, critically, on their reputations, which might slip if their best faculty "started fooling around with interdisciplinary subjects."¹⁵

If an institution's values are reflected in the ways in which it spends its resources, then UCSD has never changed its early science-first course. Despite outstanding achievements in the humanities, social sciences, and fine arts, research-heavy science and technology were almost as central on the UCSD campus in the late eighties as they had been three decades earlier. More than 40 percent of all UCSD students were studying natural science and engineering. Although the campus was no longer dominated by any one department, as it had been 20 years earlier, when physics alone was scooping up almost one-third of departmental expenditures, and faculty in those disciplines were proportionately smaller—just under 37 percent of the total campus headcount—62 percent of total departmental expenditures of \$116 million went for science, math, and engineering. The argument that science is expensive to run does not account for the disparity. Neither does the richness of scientific research. Science and engineering's state-funded salaries of \$25 million were 48 percent of campus totals, exactly what they had been 20 years

earlier. Adding the \$42 million in salaries expended for research clearly gave the scientists a very much bigger piece of the faculty pay pie. Even excluding the academic plutocrats at the School of Medicine or Scripps Institution of Oceanography, science and engineering faculty were paid more than half of about \$71 million in salaries.¹⁶

CHAPTER TEN

GREAT BEYOND THEIR KNOWING

THE RELATIVE HEALTH OF ALL UCSD'S programs, departments, and administration has been formally evaluated since 1963, when Herb York invited the Accrediting Commission for Senior Colleges and Universities to campus. The group gave the newly fledged university passing marks. After a pair of provisional okays, the campus earned a five-year accreditation in 1968. But preparation for the subsequent 1973 review was desultory, and the Western Association of Schools and Colleges found UCSD wanting in many areas. Science was commended, but what was seen as the second-class status of the humanities was noted disapprovingly. Although reviewers expressed sympathy for any campus that had had six chief officers in ten years, they worried about an administrative structure in which former Revelle College provost Paul Saltman's office of vice chancellor for academic affairs seemed to control virtually the entire instructional and research framework of the university.

By 1976, the assessors identified serious tension between the colleges and the McElroy administration, which they said centered on a few key people, especially Saltman and Bernard (Bud) Sisco, Vice Chancellor for Administration. In 1980, the administration got passing marks from the accreditation team. This was surprising, for the campus was in the process of breaking in its seventh chief campus officer. Faculty discontent over what they saw as McElroy's meddling in their prerogatives had forced him to resign in August 1979. The problems over Saltman and Sisco, disputes about the Bonner Plan in the medical school, and anger over a series of personnel issues involving tenured appointments were all said to play a part. McElroy's personal and business relationships with local real estate developers and savings and

loan banks were also cited as factors in faculty enmity, which grew from what they saw as his abandonment of the community master plan when speculative development of the area around the university suddenly began to surge.¹

Richard Atkinson, in his Washington office as director of the National Science Foundation, heard about the troubles, but was not deterred. He may well have been intrigued by the challenge. He was born in Oak Park, Illinois, in 1929, and after just two years of high school, entered the University of Chicago and graduated with a bachelor's degree in philosophy in 1948. He went to Indiana University for his doctorate in psychology and mathematics, joined the faculty of UCLA in 1957, and moved to Stanford in 1961. A member of the National Academy of Sciences, he was world-renowned for his work in experimental psychology. Along with his wife, Rita, Atkinson was author of the nation's most esteemed and successful psychology textbook, *Introduction to Psychology*, originally written by Ernest Hilgard at Stanford and passed on to the Atkinsons in the third edition. Atkinson had a measured and intuitive grasp of politics, a legacy, perhaps, from his Alsatian mother who had early introduced her son to the complexities of European history.

In April 1980, two months before his official appointment, he made a short visit to La Jolla, introduced himself to the faculty, and let it be known that he wanted the resignations of senior administrators. That laid the groundwork for him to reshuffle and rebuild the badly demoralized administration into a coherent structure that functioned almost horizontally. An aide traced Atkinson's success to his hiring good people and having the sense to leave them alone.

In the mid-eighties, Atkinson built an office of the vice chancellor for administration to handle budget, fund-raising, university relations, administrative records, internal audit, and physical planning. He reorganized the office of the vice chancellor for academic affairs to include the central voice in faculty appointment and promotion and various avenues by which faculty and junior administrators could have access to power. He gave the Program Review Committee, set up in 1970 by McGill, a stronger role in the allocation of faculty positions, instruction and research support, and space. He created an office of Associate Chancellor, unique in the University of California system, and set it aside for a senior faculty member who would act as liaison and aide

and informally represent faculty concerns. He also funded the offices of deans in arts and humanities, social sciences, and natural sciences and put them on a par politically with the deans of graduate studies and research and the School of Engineering. This, in effect, empowered undergraduate education at the same time that research and graduate work was growing again at founding-era levels.²

* * *

In 1970, the university was caught up by statewide austerity and got only three new faculty positions from Sacramento, too few to safeguard its future. The "hardest thing in the world for a university is to start from not-so-good and upgrade," or "take a department which has sunk and make it better," said a faculty member. Stanley Chodorow, former chairman of the Academic Senate and a history department member, said later, as dean of arts and humanities, that all universities inhabit a world "not dissimilar" to that of the "early Germanic tribes. It's an honor world, in which everything we do—particularly in retaining and recruiting faculty—is tied to our reputation. We lose one; it goes down. We win one; it goes up." It takes money to win them, and with enough to spend, the best way to get good faculty, says Harvard dean Henry Rosovsky, is to steal them. "The move of a professorial superstar from one institution to another can result in instant recognition."

UCSD did it that way in the beginning, and those first faculty members attracted colleagues and superior graduate students, which guaranteed second and third generations. This is how institutions achieve greatness, but only if the excellent faculty members stay. Successful independent researchers, with portable, personal outside grants and loyal staff, are the dread of administrators who know how easily they might move on, taking along staff, graduate students, and money. That had happened at UCSD in the seventies. During the eighties, a new governor, George Deukmejian, loosened budget restrictions on the university; UCSD recruitment was once again healthy enough to be described as "marauding."

Atkinson, with some 40 faculty positions—15 new ones—to dispense annually, was determined to attract stellar faculty members and keep them. Recruiting, "frankly put," he said, "is an elitist concept," and "frankly put,

UCSD is an elitist institution." The faculty, he said later, "is really the key. . . . The quality of the students, the nature of the curriculum, everything follows from recruiting outstanding faculty." Like the first searches, recruitment in the eighties ignored apparent departmental needs. "You recruit the very best people, not always trying to fill in because you need one person here and one person there."

Recruitment in the eighties was a highly systematized raid, with most candidacies filtering through multiple levels of bureaucracy secured by the kind of red tape early hunters would have found impossible. Guidelines based in sixties social consciousness made the old-boy network less obviously important, but the most desirable prospects—faculty members who came in as targets-of-opportunity hires—continued to be handled in very special ways. Like UCSD's first recruiter, Atkinson got personally involved in getting the best people to come, inquiring about personal needs and giving them "some level of initial support and a lot of enthusiasm." Enticements included larger-than-normal salaries, university-underwritten real estate loans to offset San Diego's daunting housing costs, promises to make further appointments in the candidate's subspecialty, and possible employment of spouses.³

But sweetened pots are fragile vessels in public institutions, and funding cutbacks are ever-present threats. It was important to make haste. Atkinson established many organized research units and, in his first decade, UCSD's first endowed chairs, almost 40 of them. Faculty positions jumped from 753 to 1,061, a 40 percent increase. During his tenure, UCSD became one of four National Supercomputer sites, scooped up two Pulitzer Prizes, a Tony Award, five National Medals of Science, eleven Presidential Young Investigator Awards, a Verblen Prize, a Fields Medal, a National Book Critics Circle Award and eight MacArthur Prizes. Atkinson created the School of Engineering and established the Center for Magnetic Recording, the Graduate School of International Relations and Pacific Studies, the Ludwig Institute for Cancer Research, the Howard Hughes Medical Institute, the Institute for Research on Aging, the School of Architecture, Fifth College, the Center for Molecular Genetics, the U.S.-Mexican Studies Program, and the Institute for Nonlinear Science. He supported the establishment of four new departments: cognitive science, communication, cellular and molecular medicine and ethnic studies.

Such gains put the campus in a good position to withstand the hits expected from Sacramento in the late eighties, but of the state-funded faculty positions at UCSD, almost 20 percent remained temporary, twice the number recommended by the University of California. Despite teaching a very large share of undergraduate courses, few of these faculty members will ever get on the tenure track. As much as they want money, professors want tenure, which is conferred only after a candidate has weathered a lengthy probation period and emerges successfully from the often-hostile peer reviews that can be controlled by antagonistic critics. Granting a faculty member a lifetime job commits the university to decades of salary and puts a position at the service of a personal orientation that crucially affects a department.

Tenure is often viewed with deep suspicion and even hostility by the public and the legislature, which sometimes rails against sinecures at public expense. Others complain of making favorites out of individuals—traditionally white males—who manage to receive anointment. Defenders cite the necessity of intellectual independence, enabling teaching staff to fulfill obligations to students without influence from outside forces or constraint from internal politics. Harvard's Rosovsky said tenure was critically important in a country with "a long history of professorial persecution for naked political reasons." Mentioning the "ravages of McCarthyism and other kinds of witch-hunts" as examples, he said that for himself the temptation to fire certain faculty during the sixties was "almost irresistible" and he was glad he could not do it. Nothing, he wrote, "can diminish the need for academic freedom; its absence has reduced universities to caricatures in many parts of the contemporary world."⁴

* * *

But no aspect of contemporary higher education strikes critics as more likely to make the university a caricature of itself than the marketing of its intellectual wares. Academics have been translating their work into extracurricular profit for years, and even the esteemed Harold Drey became partners with Nobel laureate James Van Allen in a brains-for-stock venture called Quadri-Science. The federal government, with its post-war decision to fund research, was the first and biggest patron. But the process troubled the thoughtful. Accepting any kind of outside support meant that a "university's

control over its own destiny" was "substantially reduced," said Clark Kerr. He wrote in 1963 that he found it "interesting that American universities, which pride themselves on their autonomy, should . . . have responded with such fidelity and alacrity to national needs; that institutions which had their historical origins in the training of 'gentlemen' should have committed themselves so fully to the service of brute technology."

A quarter century later, UCSD communication professor Chandra Mukerji, author of a critique of outside funding with emphasis on Scripps Institution of Oceanography, said an "element of dishonesty" was present in the post-war "constellation" of the federal government and the university. Mukerji agreed with defenders of the practice, who said that much of it supported research with no demonstrable defense application, but she said universities were unwilling to acknowledge the control implied by accepting extramural money. MIT faculty member Harvey Sapolsky said that if project contracts or grants could be made to seem free of control, then researchers themselves agitated for more funding. This, he said, led to the "permanent mobilization" of science that was also "involved in an endless search for objectives." First it was defense, then space, then genetics and cancer, economics, energy, pharmaceuticals, and the environment. But Kerr argued that university research is "rooted in the logic of history," an "imperative rather than a reasoned choice among elegant alternatives." The ravenous public appetite for science and technology has produced what Kerr called the "knowledge industry."

So dependent has the country—indeed the world—become on the fruits of university research that Atkinson, speaking to the American Association for the Advancement of Science, said the decisions made about "investments in science and engineering during the 1990s will be critical to the nation's vitality well into the 21st century." Societies "that invest most heavily in research will have the greatest returns." And the institutions that produce the best results get the largest investments. As Kerr noted, the "better and more individual the university, the greater its chances of succumbing to the federal embrace. Washington did not waste its money on the second-rate." Nor did private industry. Some three decades after Kerr wrote, private venture capital was added to public university support in ways that had one critic complaining that what was going on was not research, it was a "Gold Rush"; faculty work leading

to private gain through patented products and processes became one of the thornier issues confronting university administrators.⁵

In 1988, UCSD opened a Technology Transfer Office, which would link laboratories and private industry interested in developing new products, and it would work with the UCSD Extension "Connect" program founded to apprise the business community of what was coming down the research pike. Although faculty mingling in the marketplace struck some analysts as dangerous, others endorsed the move, which essentially had Atkinson repeating on a local level what Vannevar Bush had done during the Second World War. One East Coast academic commended a number of his colleagues—"among them molecular biologists and economists"—who recently had become multi-millionaires. "The trick," he said, "is to commercialize some process invented in a laboratory or researched in a library, to acquire the backing of venture capitalists, and to go public. At that point, the originator of the idea—i.e., the professor—will have made a bundle."

Supporting extracurricular for-profit activity is one way universities hold on to good faculty. Although a gifted researcher might be attracted to a decorously professorial life among the eucalyptus on a seaside campus, gilded bids from business—such as Japanese computer companies that began raiding American universities in the late 1980s with reported \$250,000 annual salary offers—can be formidable opponents. Brookings Institution economist Robert Lawrence saw such forays as positive. "Here are people who have acquired knowledge and are being allowed to sell it to the highest bidder. What's wrong with that?" Few administrators would argue. From the outset, UCSD recruiters supported faculty having feet in both the academy and industry. In the early sixties, Keith Brueckner told Roger Revelle that "any physicist who's any good will earn at least as much outside the university as inside." These outside earnings came from government-funded Summer Studies or advisory work, financial investment, or even ownership of research and development companies.

Proponents of such arrangements saw going into business as no different from writing textbooks. But opponents were disturbed about public funding that produced private gain, and they warned about research done in secret, in haste, and for profit. UCSD's Mukerji believed the move toward commercial-

izing research "undermines the legitimacy of the university." Although such practices "in the short run are smart in the American way of 'smart,'" she said, she worried about long-term effects. With "a lot more people working with high technology," and with increased "government interest in medical research" and industry's ever-present involvement, the university is in danger of losing sight of its "basic mission, which is to provide a shield against government and industry" and becoming a commercial handmaiden. But one UCSD administrator's reply to Mukerji was a reminder that most American universities are creatures of the government. New kinds of institutions that would stand halfway between universities and business, shielding and regulating both, have been proposed as solutions to the problem, which is itself an answer to the grinding difficulties of funding university research. As government withdraws its support, fund-raising of all kinds grows more competitive.⁶

Each of UCSD's chancellors has had to grapple with the issue. Atkinson had to confront it during an administration that coincided with an explosion in technological, especially genetic, advances. As early as the mid-seventies, as part of a nationwide wave of interest in the subject, the campus was agitating for a sophisticated recombinant genetics laboratory. Descriptions of research to be done—combining genetic material from "two different species, possibly resulting in organisms with new properties and powers"—were not reassuring to a public that had learned about such science at horror movies. Alarms were sounded, and then-mayor Pete Wilson promised a municipal investigation. Soon, the university's plans to build three moderate-risk gene-splicing laboratories were making local headlines. The labs would be built without help from the National Cancer Institute, which found the university's grant proposal "poorly prepared," and without environmental-impact clearance, which might have garnered more positive public opinion.

Although some critics, such as former medical school dean Clifford Grobstein, continued to urge caution, by 1980 the anxieties fed by novels such as Salk fellow Michael Crichton's book *The Andromeda Strain* seemed quieted, and alarms within and without the academy were likened to rubes' reactions to horseless carriages. But Atkinson, who inherited all the early decisions and alarms, had to announce shortly after his arrival that virologist Ian Kennedy had unexpectedly cloned a very dangerous virus. A week later, Kennedy's lab

was burglarized. The stolen bottle of rabies vaccine virus was found unopened, but the stir caused another round of dark rumors, charges, and countercharges. Apparently successful at putting the right interpretation on the research—no killer slime oozing off campus—the university then had to cope with the industrial results of its effects.⁷

By the early nineties, some 100 high-technology companies had been built in San Diego County, and many had "rolled down the hill" from UCSD. Almost all were at least indirectly related to the university. Nationwide, the growth of big biology business was seen as "the first chance that biologists ever had to get rich. Not just personally, but through support of their work. Physicists and chemists have been getting rich for years." Lab staff worried about "guys who see themselves becoming millionaires," said one. "When there's that amount of money involved, safety and prudence are going to take a back seat." Don Helinski, then chairman of UCSD's biology department, expressed fears that patenting results would "hinder the free exchange of data between researchers." Many other scientists agreed with Helinski. Some very dramatically did not.⁸

In the late seventies, oncologist Ivor Royston was using hybridomas, cloned by splicing spleen and tumor cells. He co-founded a company he called Hybritech. By the early eighties, after getting Food and Drug Administration approval to market diagnostic kits based on the hybridomas, Royston was becoming very very rich. At the same time, UCSD School of Medicine's first faculty member, Robert Hamburger, with half a dozen venture capitalists, launched the Immunetech company to develop and market his IgE pentapeptide allergy remedy. Soon, companies such as Cytogen, Mycogen, Synbiotics, and Lee BioMolecular were budding so vigorously that then-mayor Roger Hedgecock was trumpeting San Diego as the biotechnology center of the world. Scripps Clinic was working with Johnson & Johnson, and Salk Institute had formed a for-profit arm—Salk Institute Biotechnology/Industrial Associates—with Phillips Petroleum for genetic engineering work and had spun that into Animal Vaccine Research Corporation with money from a backer in Texas. Despite a nasty lawsuit involving a post-doctoral fellow who took some of the genetic material back to Japan with him, UCSD's problems with San Diego's new boom industry seemed minor.⁹

The benefits seemed enormous. Nationally, the biotechnology business was seen as a guardian of an economy deflated by the exportation of the steel, automotive, and electronics industries. Locally, Royston and partners sold Hybritech to Eli Lilly for \$480 million, and Royston launched IDEC, a company that would market monoclonal antibodies for detection of lymphoma. Royston's interests by then included a Hollywood film production company, and he would soon resign his university post to found a new cancer research center. The May 1987 dedication of the Center for Molecular Genetics building reflected a campus commitment to bigtime biology. The center would house and coordinate genetic research by medical school and chemistry and biology department faculty and would act as a bridge to industry. As a way of watching the bridge, UCSD established a review committee chaired by Paul Saltman that was charged with executing new university guidelines aimed at subverting conflict-of-interest problems from research gone public. If a faculty member or other university employee discovered a patentable process or product in the course of doing work on campus, the university got the patent and 60 percent of any profits. University researchers could establish for-profit companies, but they could not channel money from those companies into their campus research. This would guarantee that ethics played a big part in the big business.¹⁰

* * *

The Center for Molecular Genetics and the Technology Transfer Office were the kinds of community connections envisioned by the San Diego Chamber of Commerce 30 years earlier. But commerce between UCSD and local industry in the 1980s occurred in a different atmosphere. In the 1950s, the university was wooed by San Diego politicians who responded to the needs of businessmen dependent on the fruits of research. The city, then, pressed its suit with promises to fulfill all the university's wishes and needs, among them free land and the control of the area around campus. Perhaps it was inevitable, in an area where building lots the size of postage stamps conventionally fetched million-dollar offers, that land itself would become the prize in university-community relations that occasionally collapsed into warfare.

Over the years, from various sources—donations, court orders, and purchases—the regents had acquired additional pieces of San Diego land to go with the city's pueblo offerings and the Marine Corps' Camp Matthews and Camp Elliott. The first to be acquired was the 8.5-acre nip atop pueblo Lot 1299 that Revelle had been after since the 1950s; the next was a square of city land below the university's 15 acres east of Scripps Hospital. The university assigned about 12 acres to the city for roadway easements and 112 acres to the state for Interstate 5. In 1965 it conveyed 11.4 acres to the Theater and Arts Foundation for its theater. The next year, the regents gave the city 16 acres that hung off the bottom of Camp Matthews pueblo Lot 1300. They got, in return, 8.6 acres of Lot 1299 and 5.7 acres of the old Scripps Institution lots that had been set aside as an easement in 1912. In 1968 the state returned about 40 excess acres along Interstate 5. The university turned over to the city 14 acres of that, along with 26 more acres at the bottom of Camp Matthews, in exchange for 30 acres near Scripps Hospital. That same year, 1969, the Theater and Arts Foundation gave back the 11.4 acres of Lot 1298.

The Camp Matthews panhandle, cut through by Interstate 5 and gouged by the interchange with what would be La Jolla Village Drive, seemed to York to comprise small, isolated wedges of land that were useless to the university. The city sold the land almost immediately. In time, the smaller western portion would become the La Jolla Village Square shopping center, developed by a group of investors that included former UCSD vice chancellor of finance Bob Biron. The eastern segment of the panhandle would eventually become a large commercial conglomeration of hotels, offices, and even a Mormon temple.

Now, only minor sweeping up remained. Included in the university's lands were about 20 acres in Pacific Beach fronting Mission Bay at the corner of Crown Point and Mission Bay drives (a "forced" gift), about 163 acres adjoining the Squires Dam facility in the Agua Hedionda area of Vista/Carlsbad, some 10 acres atop Mount Soledad in La Jolla (this was court-ordered), a lot for a medical clinic on Sunset Cliffs Boulevard in Ocean Beach, the 55-acre Hillcrest medical center site, 5.8 acres—the Scripps dock facility—fronting the bay in Point Loma, 2.3 acres on North Torrey Pines Road, and some 12 acres, including the \$29 million La Jolla Del Sol apartments, in the La Jolla Colony region, south of university land on the east side of Interstate 5.

Total county acreage owned by the regents is about 1,930 acres. This is far more than originally anticipated, but with speculative real estate development, the land surrounding the core campus was far less useful for academic support than the regents or campus founders had been led to believe when the city wrote a community master plan in 1959.¹¹

Initially, the city was eager to comply with university recommendations about land use. In 1956, in a letter to mayor Charles Dail that he copied and sent to Bill Black and Jim Copley as well, Roger Revelle made suggestions about road placements and urged relocation of the site of a planned La Jolla Country Day school. Both were done. The new Interstate 5 was put where the university wanted it, and development of Sorrento Valley was slowed down at Revelle's request. When city planners presented their master plan to the regents in 1959, campus founders had every reason to assume their influence would be almost limitless. The master plan, a fancy, heavy-stock, 58-page document, contained plans for about 11,000 acres that were drawn to accommodate a university population of 25,000 students, 2,100 faculty members and their families, 7,500 staff members and their families, and another 14,000 who would be drawn to the area by the excitement of it all. Schools, parks, cultural centers, and industrial and commercial areas were included.

In that plan, the University City housing development shared the southeast corner of the campus. What was called the University Town Center was an egg-shaped parcel on the southern edge of Camp Matthews. It would be created by the university trading to the city a piece of Matthews and the city adding land north of the La Jolla Highlands subdivision at what would become the intersection of La Jolla Village Drive and Torrey Pines Road. The shopping center already planned for the site was thus enlarged, and the university and the city together "would then be able to jointly control the development of the town center which has the potential of becoming, in spirit, an actual part of both..." A pedestrian mall would link the Town Center's bookstores, shops, hotels, and banks to the campus core.

The regents were delighted with the plan. Revelle told the city council that "California and I urge its adoption." Bob Biron, then vice president of General Dynamics and a representative of the chamber of commerce, said the plan was "the single most important factor in the future economic develop-

ment of our community." University vice president Corley called it "the start of a wonderful town and gown relationship."¹²

But as plans are apt to do, the 1959 one went astray. Well before the university took back the piece of Camp Matthews promised for the shopping center and gave it to the Veterans Administration, property owners—including the city—decided something more profitable could be done with land around the campus. Four years after the original master plan was approved, a revised edition was also approved by the city council. The new plan included selling or giving away to developers 2,200 pueblo acres, 115 more than the original plan called for. The additional acres were slated for 845 more "living units." Apparently to appease the university, a small piece of Camp Matthews east of the new interstate, separated from the campus by the new La Jolla Village Drive, would be restored for married-student housing, and more dense housing was included for University City and the La Jolla Village area. In 1968, plans for a Holiday Inn (ground broke for that in December), a "several thousand unit" apartment complex, a shopping center, "churches, schools and parks" were announced for what would be La Jolla Village Square. An unnamed university official—probably Biron—praised the development, which very soon would include Biron, who resigned as vice chancellor, as a major investor.

Ten years later, what was planned and actually built had changed twice. It was bogged down in a series of delays that by then included ones called for by the Environmental Appeals board. The promised public "park" land had become a kind of sports square within a condominium complex. As investment money was attracted to what had become one of the hottest real estate markets in the country, a huge shopping mall with specialty stores selling costly goods and clothing was planned. Opposition included an unexpected coalition of the La Jolla Town Council, the University Community Planning Group, and UCSD faculty and students. But now university opposition did not carry much weight. Nor did university disappointment with the University Towne Centre shopping center. In 1970, plans for University Town Center—then spelled the unpretentious way—were released by its developers, Irvin Kahn and Ernest Hahn. It was presented under a cover letter that referred to Ann Arbor and Princeton and mentioned the university-as-cathedral. Kahn and Hahn promised a pedestrian-oriented center that would communicate with the

campus and whose residential and commercial facilities would cater to the "special needs and tastes of a university community." No longer cozied up to the bottom of Camp Matthews, the area had a shopping-center core surrounded by parklike space and apartments, including some north of La Jolla Village Drive and near married-student housing. But, again, there were many changes.¹³

Between its creation in 1959 and 1971, the city amended the master plan four times. In addition, in 1967—the year relations soured further over the university's purchase of La Jolla Farms—the city approved the La Jolla Community Plan, which controlled the area west of the campus core. In 1972, the city adopted the La Jolla Shores Precise Plan covering the area roughly defined by Ardath Road, La Jolla Scenic Drive, the north boundary of Scripps Institution land, and the ocean. This was implemented in 1974 by a Planned District Ordinance. Two years later, the California Coastal Commission was created, and the La Jolla Community Plan was updated. Each change seemed to erode university influence further, and each added to the strain between the campus and the city. California politics, in the Reagan-led climate of university bashing, seemed to play a part. The campus protected student and faculty dissidence by presenting itself as an unassailable bastion of academic freedom. A community frustrated in its attempts to exert any kind of conservative control over the viper in its midst might smite it by taking away its favored land status. A favorite cudgel was the gorgeous bluff-top La Jolla Farms, oceanward from the campus.¹⁴

After the papers were signed in 1967 and the chancellors were somewhat uncomfortably installed in the Black house, the regents strangely went into the La Jolla Farms real estate business, selling lots and changing their minds about what to do with the property. The residents, supported first by most La Jollans and then by many San Diegans, complained. In 1975, Chancellor McElroy's Board of Overseers, a group of prominent citizens he had created to advise the campus, issued a statement on the problem that was a masterpiece of passive-voice non-speak: "Preliminary investigations indicate a multi-use development of the subject property is feasible, as judged from an analysis by

professional commercial interests. Should some form of development prove appropriate, a phased program is desirable with detailed studies required to produce a specific phasing plan. All options including maintenance of open space on the site should be fully explored prior to any determination of usage."

Apparently the obfuscation worked some kind of trick, for it took the California legislature's Office of the Auditor General two years to issue its negative response: Other than the chancellor's residence on 6.7 acres of land, no area of the Farms was serving any "academic purpose," and that "includes 24 acres devoted to horse stables and a race track which is under lease." This last was inaccurate—it was an exercise track—but it sounded bad. It was easy for some assemblyman representing a rural constituency strapped by what was then double-digit inflation to summon up visions of horsey high times in lush seaside splendor. Not surprisingly, that year's legislative budget committee report demanded that the university come up with a plan for selling land not needed for academic purposes.

A month after the March 1, 1979, deadline for submitting such a plan, university president Saxon, acting on Board of Overseers' recommendations, told the legislature that a portion of the Farms might be included in the University Natural Land and Water Reserves System, and that the stables and track were "being studied for lease as a commercial and residential development." But the regents rejected the plan. That December, the UCSD Campus/Community Planning Committee, made up of faculty, students, and staff, recommended to McElroy that the stables area be used for housing built at higher density than zoning allowed and that the housing include a number of units for low- and moderate-income persons. If possible, UCSD faculty, staff, and students should have first dibs on anything built. McElroy, who had already resigned, sent copies of the recommendation to La Jolla Farms residents in January 1980; within weeks, he got back the not unexpected reply of a protest signed by 70 of them. The Coastal Commission's acceptance of the plan in June was meaningless. Various metaphors were used to describe the situation, but the spectacle of a campus for 27,500 students attending what was arguably the world's greatest university system being held at bay by 70 middle-class homeowners was not thought absurd.

Atkinson was determined to lay the Farms dispute to rest. After various negotiations, in January 1981 Farms residents said they would prefer that the university sell the land, but they endorsed the regents' decision to lease the stable and track for "housing and related purposes" based on current zoning. The regents placed the very beautiful knoll and canyon areas into the Natural Land and Water Reserves System, which prohibited their ever being built on. In October of that year, Atkinson appointed a panel to review all proposals for the property. There was only one: a bid from developer Sickels/O'Brien to lease the land for 50 years and build luxury homes on it. It was accepted. The option was signed in 1983, but Sickels and O'Brien had major financing troubles and the actual lease was not signed until March 1987. Terms stipulated that after 55 years all improvements, among them a luxury townhouse development, would revert to the University of California.¹⁵

UCSD's chancellors complained about being front men for the regents on the public relations problem of La Jolla Farms. They were on-site representatives of university power in real estate dealings, and as such they suffered antagonisms about many land-use issues, including what was built on campus.

* * *

When Atkinson arrived in 1980, the entire University of California capital development fund had been wiped out, a reflection, McGill said later, "of the caprice of a very capricious governor, Jerry Brown." In order to move UCSD out of financially inflicted irons and put it on a forward tack, Atkinson, said by McGill to be driven by "restless energy," had to "live by his wits" and "do things in an ad hoc and extemporaneous way." Among the ways were pushing private fund-raising and cutting deals for on-campus development that was not always popular with the faculty. Atkinson worked out lease-and-revert agreements with G A Technologies—the latest edition of General Atomic—for a supercomputer that the campus used as well, and with the San Diego Chargers for football training facilities that were also used for university sports. Similar terms had been expected for use of an area on university property east of Interstate 5 as a science park. The science park was introduced in a 1981 campus master plan, the third produced by the university.¹⁶

Although the first complete campus plan was not drawn until 1963, the layout of the site had been discussed even before the regents agreed to establish a new university in San Diego. In July 1957, Revelle aide Charles Wheelock wrote to a regents-appointed architect saying that Revelle had been "toying with the idea" of having campus facilities "arranged in groups serving not more than 2,000 people." This idea, which he said was still very confidential, was the germ of the physical design for UCSD's colleges. But it was likely to cause as much trouble as was then brewing over the School of Science and Engineering campus.

Like the academic and intellectual community it was expected to house, that campus was supposed to be "functionally different from what has gone before." Not surprisingly, there was no agreement on just how the function should diverge from tradition. The only consensus reached about those plans for the School of Science and Engineering was that everyone hated them. The buildings were too tall, too rectangular, and generally ugly. One member wanted good proletarian steel factory buildings if money was that tight; another called for more cheerful colors. Luckily, none of the regents liked them either, and that provided the chance to go back to the drawing board. By the time the site for what would become Revelle College's first building was prepared, critics included Harold Urey, who wrote an outraged letter to Jim Arnold about "the wanton cutting of trees in front of the new building." He recommended the appointment of a committee, empowered by the regents if necessary, to preserve the trees, which he guessed might be as much as 50 years old. He did admit, with his eastern hardwood eye, that the eucalyptus was a somewhat "haphazard" tree, but they were the only trees there. These were the ones E.W. planted during the landscaping of Scripps Institution on 50 acres of land tended by a gardner and a corps of unemployed vagrants supplied by the city. The city got housing for their homeless, and vegetables as a secondary gain. E.W. got his trees, which soon made a nice arbor fringing Highway 101. It was this natural avenue through the campus that UCSD's first professional planner used as his north-south axis. But he wanted the "inferior" eucalyptus trees cut down.¹⁷

Revelle may have been right in agitating for a local architect to plan the campus. When Los Angeleno Robert Alexander unveiled his model in 1962,

everyone could see a certain sound-stage influence. The Highway 101 ridge was dedicated to foot traffic, and only 20 percent of the available land would be used for buildings, which averaged five stories—thus creating a largely vertical campus, which hardly needed the north La Jolla site. To economize, Alexander suggested large quantities of undecorated concrete that might resemble weathered limestone at a fraction of the cost. This, he said, would help achieve a desirable "old world university" look so different from the "exuberant" example of the University of Mexico, which had "sown a seed of wild exhibitionism" in the New World. Imperfectly restrained himself, Alexander marked his campus central with a 350-foot tower meant to be seen from Tijuana to Leucadia. The tower would beam radio and ship-to-shore signals and sound ship bells every quarter hour. Smaller towers, to be used for ancillary zapping, stood in the middle of each of the three clusters of four colleges on sites west of what would be Interstate 5. On the east side of the freeway were sports facilities, including a 30,000-seat bullring.¹⁸

Perhaps it was visions of those towers and bullrings that caused the actual new campus to seem so drab to first faculty. There was hardly enough money to even buff up the Camp Matthews buildings abandoned by the departed Marine Corps. Although Keith Brueckner, for one, sniffed at the collection of Quonset huts, barracks, and mess halls, his more practical colleagues immediately fell to squabbling over the division of spoils. What would happen to the great gym and wonderful swimming pool where Scripps divers trained? Would the Marines leave the gas heaters? Latrines? Palm trees?

They took the palm trees and heaters, and left the latrines. Galbraith hit upon the idea of retreading the best of the usable buildings as a college staging area. Male freshmen could check out of a local motel and sign into campus digs, which meant that Muir College could be up and running ahead of schedule. Shortly, what became the Matthews Campus lent an endearing funkiness to UCSD. With the Marines' flagpole at its center, and decorated up with tie-dyed, beaded, bearded, and sandalled youngsters, it made a nice symbol. In time, its virtuous-seeming simplicity became beloved by administrators, and the chancellors built their headquarters in the midst of the barely transformed Matthews barracks.¹⁹

By 1965, when work on Matthews was started, the VA Hospital had been added to campus, and, because of three amendments to the 1959 University Community Plan, a number of things had been subtracted. The plan created under Galbraith toppled Alexander's towers, erased the boulevardlike ridge axis, and added a central library, which at the time was far from the built center of campus. Like the 1963 plan, this one had room for 27,500 students, but the three clusters of colleges were moved further south. La Jolla Village Drive now swung southward around the bottom of married-student housing located east of the freeway, and the bullring was banished.

In 1981, a third, very-much-more-modest plan was published. Fewer than 15,000 students were expected, and they would be housed in only six colleges, which would once again be strung along Alexander's original axis, now Torrey Pines Road. Open space was reserved north and east of the college sites. Perhaps as a way to make the university's accomplishments look better and its used space bigger, big cells of land for student activities and recreation were cordoned off in the midst of the college and administration areas. Land east of Interstate 5 was a medical center reserve, and the land east of that was set aside for the science park. Married-student housing was still located at the southeast corner of old Camp Matthews, but the bottom curve along La Jolla Village Drive's southward sag had been lost to private development.

The scaled-back plan was introduced at a time when environmental and social strictures, almost as much as available money, determined what could be built. Environmental impact reports and, for about half the campus within its area of oversight, California Coastal Zone approvals were now necessary. Sentiment endorsing such restrictions surfaced first when Native American artifacts were uncovered during remodelling of the chancellor's residence in La Jolla Farms in the late seventies. Work was stopped and hordes of archaeologists and journalists descended on the site, keeping McElroy's daily schedule ransomed for many months. Laws written in the late eighties stipulated that all known archeological and historical sites, like ecologically sensitive areas and view corridors, needed to be protected. Almost half the available core-campus acreage would have to stay unbuilt, and buildings with any slight historic value—those of Camp Matthews, for example—would have to stay unrazed.

Known fault lines caused the university to relocate, at great expense, the new Scripps Institution aquarium museum.

* * *

Despite increased public surveillance, in the eighties the university was turning inward. Isolated by freeways, shopping centers, and expensive housing developments, UCSD had in unforeseen ways achieved the insularity first suggested by Reville. The students who lived in dorms were encapsulated in a site with little egress. Despite university-sponsored bus service, access was difficult for students who lived far from campus in areas they could afford. Many faculty members actually preferred living in San Diego, close to regent Edwin Pauley's suggested Balboa Park campus site. Few could even dream of living in pricey La Jolla, which was self-consciously separated from San Diego. In an acknowledgment of change and limitation, Atkinson commissioned another long-range campus plan.

The splendid revision, published in 1989, described a series of "neighborhoods" which would be all things to the UCSD community. Symbolic old Matthews Campus would become "University Center," a mixed-use urban development. The ironically named center was a street-oriented collection of administrative offices, student services, and classrooms, along with the cafes, galleries, boutiques, and theaters promised for adjacent areas in 1959 by the City of San Diego. Academic neighborhoods, or corridors, would be related to departments, and the colleges would serve as residential and social undergraduate centers. This was an acceptance of reality: The departments were home to the faculty; The colleges, envisioned as collegial refuges from departments for faculty, were home to the students. A system of paths, roads, and entries unified the entire campus in ways that made it seem like an approachable and accommodating village.

At the end of the eighties, the campus was in fact an internationally important complex of some 500 structures maintained at a cost of \$75 million a year, with a capital-asset value of \$1 billion. Much of what was built had gone up amidst passionate debate. A staff member, discussing vehement faculty opposition to the removal of more of those "haphazard" eucalyptus trees, said that with the possible exception of Berkeley's, no University of California

campus gave rise to such fervid planning fights more than did San Diego's. The most enduring example of architectural dispute is the controversial Central Library. Clark Kerr's public and embarrassing criticism of the William Pereira-designed signature building set the precedent. Kerr said that he had never found Le Corbusier-like architecture appealing and that he feared the building would behave like a wind tunnel. Once built, the library was too bright; light flooding through glass walls blinded readers and bleached books. It was instantly too small as well, but enlarging the building was put off until the eighties, when battles over doubling its space were nasty enough to be described by Atkinson as one of the most trying aspects of his tenure.²⁰

Given the glacial aspects of design by committee—the chancellor must suffer advice, even if he is not compelled to take it—the wonder is that anything got built on campus. But during the eighties, some 125 structures did. And for the first time, what was being built attracted an enormous amount of off-campus interest. For 25 years, campus architecture was dismissed as undistinguished, but the vaguely tropical Graduate School of International Relations and Pacific Studies, the massively utilitarian concrete Engineering Building, the Charles Powell Structures Lab and Center for Magnetic Recording, the post-modern addition to the UCSD Medical Center in Hillcrest, the rotund clinical sciences building on campus, and the largely underground library addition were all analyzed, criticized, and argued about, at length and in print.

None received more attention than the \$25 million student center named for businessman Sol Price. The Price Center, with 167,000 square feet of usable space, went up in the late eighties as an answer to Keith Brueckner's asking in 1965 how a student union could be built within the framework of separate, self-contained colleges. It could not. Over the years, various more or less organic gathering spots were fashioned by students. But it was only when the real form of the colleges and the actual failure of the city to provide student supports was understood that a central student center could be built. The Price Center's pale stone forum design was commended by a team of visiting architects for filling needs of students isolated from a supporting community. It fit into what campus planner Patricia Collum called the architectural thrust toward "a definite downtown character" in the core of the university campus.

With a ballroom, meeting rooms, movie theater, fast-food and coffee joints, post office, travel agency, a huge and comprehensive book store, and a computer center, the Price Center responded to many needs, not the least of which was happier hanging-out for the students. Nevertheless, locally the center was damned by faint praise and loud complaint.

Much less controversial is UCSD's internationally renowned site-specific Stuart Collection of outdoor art. James DeSilva, after being rebuffed earlier, offered the project to the university in 1980. The collection, administered by director Mary Beebe, includes Nikki de Saint Phalle's *Sun God*; Terry Allen's talking eucalyptus trees (Urey would have liked that); Bruce Nauman's seven virtues and vices, seven feet high, neon, flashing around the top of a building; Robert Irwin's violet plastic-coated fencing in an old eucalyptus grove that migrating monarch butterflies visit in the fall, and Alexis Smith's *The Snake*, a 560-foot path to the knowledge of good and evil offered in the newly enlarged Central Library. The works were commissioned by an international advisory board. They are owned by the Stuart Foundation, which is underwritten by DeSilva and supported by the Colleagues, a group of donors headed by Emmy Coté, the woman who in 1964 organized the Honorary Alumni, UCSD's first support group.²¹

* * *

Private donations, called the "lifeblood of a great university" by Revelle, allow institutions, especially public ones, to reach goals beyond the scope of ordinary budgets. Beginning with Galbraith, UCSD's chancellors have addressed the issue of raising money and have developed various means by which it can turn into buildings, or endowed professorships, or numbered accounts in the endowment fund.

The UCSD Foundation was incorporated by Chancellor McElroy, Scripps director William Nierenberg, finance vice chancellor Bud Sisco, and Clifford Grobstein in 1972 at the urging of Dick Silberman and Bob Peterson, who donated an art collection valued at \$850,000. The foundation raises and manages private gifts of cash, securities, real and personal property, and art. Its assets remained virtually level through the early eighties, but by the end of the decade the foundation, governed by a board of 25 trustees from the community,

had assets of more than \$60 million, and had outstripped the university-wide average in the returns on its endowment investments.

McElroy, to streamline the process of raising money, established a formal Development Office in the seventies. This office stood a better chance for success than the ones instituted by Galbraith and McGill. It was charged with finding potential donors and convincing them to give their money to the university. This can be delicate work that occasionally results in millions lost, as in the story, sworn true, of a wealthy widow who gave her money elsewhere after a UCSD fund-raiser unwittingly insulted her over lunch. But during the first five years of Atkinson's chancellorship, gifts doubled to \$25 million a year. By the end of the eighties, private giving was \$47 million a year, and \$6.5 million of that came from individuals. Members of the alumni association, a notoriously impecunious group, provided only half a million dollars, but read rightly, the amount symbolized UCSD's success. The university's graduates are young and are more often scientists and intellectuals than captains of industry or rich investment brokers. These latter are more apt to belong to the Chancellor's Associates, a club of upper-level donors rewarded by the privilege of socializing in the academy and the most sought-after parking permits on campus.

At other universities, such supporters might be big backers of bigtime sports. But UCSD, by deliberate choice reaffirmed over the years, has succeeded without playing that kind of fund-raising game. Of the 28 public university members of the Association of American Universities, UCSD is the only one that does not field NCAA Division One teams; in fact, it is the only one that does not have athletic scholarships. Presidents of the other schools "get an enormous amount of pressure about sports," Atkinson said. But "in the long run, private giving is going to be driven by the intellectual/scientific/research quality of an institution . . . which is just the way I think it should be." That quality has attracted various "friends" and patrons for the international center, the theater, new music, the art gallery, and the cancer center as well as auxiliaries for the medical center and the university as a whole. The oldest of these is the Friends of the UCSD Library, said to be the largest such support group in the nation.²²

The university's libraries and the Extension division open UCSD's intellectual life to the entire community. Each of the libraries depends to some degree on private donations and on support from the chancellor's office. Scripps Institution of Oceanography has the largest marine sciences library in the nation, with more than 200,000 volumes. The science and engineering library, with 160,000 volumes, and the biomedical library, with about 200,000 volumes on campus and in Hillcrest, are the only research facilities of their kind in the county, and are widely used by San Diego industry. The undergraduate library is small—80,000 volumes—and geared to general use. By the end of the eighties, the Central University Library had 1.2 million volumes, one-quarter more than the building was originally meant to hold but fewer than the campus needed. Although library expenditures increased to \$12 million by the mid-eighties and the acquisition rate rose by almost 30 percent for books and 70 percent for periodicals, some disciplines—not surprisingly, the humanities and social sciences suffered most—were still thin. Repairing deficiencies in the face of rapidly escalating book prices and a Sacramento-imposed sales tax on periodicals was difficult. University librarian Dorothy Gregor, who brought the library into the computer age, helped stem the worst effects, but the return of tight money in 1990 threatened to dash UCSD's 25-year-old hopes of having a library as big and rich as Berkeley's and UCLA's.

If that goal could be reached, it would be done with the help of gifts such as Florence Riford's \$1 million for book-buying in the late eighties and the extremely valuable early Pacific Ocean voyage literature donated in the mid-seventies by Kenneth and Dorothy Hill. Gifts such as the Hills' go to the library's Mandeville Department of Special Collections, which also houses the esteemed Archive for New Poetry and a variety of manuscripts and rare books.²³

In 1989, University Extension generated more than \$5 million by offering more than 1,000 courses and seminars taken by more than 30,000 students. This was a very much larger scope than anything imagined in 1891, when the land-grant ideal of a university extending itself into neighboring towns and farms took hold at the University of California. Extension first offered courses

in San Diego in 1917, and UCLA controlled the classes from the mid forties until the early sixties. By then, as a result of Kerr's Master Plan for Higher Education, which enhanced the role of community colleges, Extension divisions statewide had to redefine themselves and operate without state money.

Since its founding, UCSD's Extension division has drawn an acute bead on popular desires. This meant that the late-sixties' course offerings stressing Esalen-south mind-expansion gave way to late-seventies' consciousness-raising and eighties' investment counseling. By the mid-eighties, the typical Extension student was, according to a demographic study, "young, female, affluent and taking a course for professional reasons." Under vice-chancellor Mary Walshok, Extension inaugurated acclaimed lecture series and symposiums, and began to move out of enrichment programs and back into its traditional role of professional development. It expanded its teacher, executive, business, and engineering courses in addition to enlarging the number of English language classes to accommodate foreign scholars and graduate students. Although few courses carried credit, Extension did offer a concurrent enrollment program that enabled students to take general campus courses. Extension courses are taught by individuals—most of them not affiliated with the university—who must pass an evaluation that includes assessments by academic departments, and, in the case of credit work, the Academic Senate.

Extension's CONNECT program, founded in the late eighties by local businessman Bill Otterson, offered a host of services to off-campus entrepreneurs who might wish to tie into UCSD's research products. Connections so established can result in generous university friends. Scripps Institution's Industrial Associates and the engineering school's Industrial Liaison Program were created as means for companies to make contributions that supported either general research and activities—a kind of thank-you for unspecified assistance—or, more typically, specific programs that have direct benefits for them.

Although some analysts now contend that local business does not give as much as it gets from UCSD, the problem was barely noticed in the resource-rich eighties. The federal government contributed \$172 million to UCSD in 1989, up \$30 million from 1985. That amount of extramural income represented power and prestige. It was the seventh largest in the nation, and

would grow in two years to fifth. But by 1985, state money had replaced federal funds as UCSD's primary source of income. Sacramento's contributions rose from \$50 million in 1975 to \$168 million ten years later, then jumped to \$207 million in 1989. But state funds are volatile, tied as they are to taxes and controlled by legislators who risk careers in awarding them. Maintaining those levels of income is only one of the chancellor's myriad and increasingly difficult responsibilities.²⁴

When Richard Atkinson celebrated his twelfth anniversary as UCSD's chancellor, he had headed a major research university longer than most of his colleagues nationwide. Between June 1989 and June 1990, more than one-third of the members of the elite Association of American Universities lost their presidents or chancellors. In the early nineties, the presidents of the University of Chicago, Yale, Stanford, the University of California, Columbia, and Duke resigned. Education-watchers were not surprised. Leading an academic institution, said Clifton Wharton, who led two — Michigan State and SUNY — is "one of the most demanding and stressful jobs there is." The pressure is unrelenting, and job skills required have been described as those of God, "on a good day." They include possessing, in abundance, a mastery of fund-raising and management, the ability to soothe and seduce a faculty, scholarship, political acumen, a competitive edge, the ability to balance what Clark Kerr called veto groups that must be overcome in order to proceed with any project, and dexterity at counting beans and blackening bottom lines.

Although the competition to fill empty chief campus offices is fierce, the frequency with which they were abandoned increased during Atkinson's tenure at UCSD. Education writer Anthony DePalma said the job had gotten much harder. "Far from the august, refined lives they offered in bygone days," these positions "have become raucous and frustrating." And, for better or worse, leading a university in the late eighties became almost as public as holding elective office, with nightly news-hour debates about politically correct curriculum and the relative merits of classroom teaching and laboratory research. What Pomona College president David Alexander saw as "acrimonious disputes and mutual denunciations" shook even the most stable

of the nation's ivory towers and included excoriations of what were often perceived as unconscionably high chancellors' and presidents' salaries.²⁵

Not immune to any of the national problems, UCSD's leaders have also had to create policy as well as execute it. With an institution so very new, all the chancellors who have served it in its brief three decades have been founders. McGill, who said he was warned by Galbraith that "academic life was ideal for the faculty and hell for the administrators," said that "like psychoanalysis or marriage, the chancellorship is not something you undertake lightly." Chancellors must answer to the university president as well as to undergraduates, take the fall for the faculty with an outraged public as Galbraith and McGill did, or take the fall for the public with an outraged faculty, in ways McElroy tried to do. The chancellors must ignore innuendo about personal investments, like Revelle had to do, or overcome painful publicity about their personal lives, as Atkinson did. Forced to the academic planning sidelines, like York during his first tenure, they must defend the intellectual directions taken by an often hostile Academic Senate and try to inveigle out of Sacramento enough money to pay for programs they may intensely dislike.

UCSD chancellors have had to steer a public-service mission that included producing globally significant defense research while maintaining commitment to an affirmative action admissions policy and planning sports fields for undergraduates. They have had to play footsie with Washington poltticos and press the flesh of San Diego socialites, charm sometimes nasty faculty and calm angry students. The trick has been to be thick-skinned enough to resist the constant barrage of criticism from all corners, yet not lose intellectual perspicacity or emotional sensitivity to fundamental issues of educating 18-year-olds who think they know better.

By any stretch of academic expectations, UCSD has been lucky in its leaders. There were many universities founded after World War II. All educators agree that UCSD is the best. Some new campuses failed immediately. Others limped along before collapsing. But UCSD has been an astonishing success, almost instantly achieving greatness measured in the ratings of its educational programs and the awards to its faculty. And, as important as what it so quickly reached is the tenacity of its grasp. Ranked among the top 20

universities in the nation, UCSD is expected to be in the top 10 by the year 2000. This extraordinary excellence did not happen by accident.

Revelle set the course. He will be remembered for putting the campus on the academic map and for his ongoing centrality to its local, statewide, and national image. McElroy already has produced polarized memories: Some claim he squandered the university's stake in the area around campus; others credit him with repairing shredded public relations and building a bridge across that space. Galbraith has been known for his work in the humanities and with the library, but he also sowed the idea in San Diego that UCSD was a real university, not a training ground for local industry. McGill protected UCSD's autonomy as he confronted both students and townsfolk and taught all of them about academic freedom, responsibility, and promise. York, who had never taught when he first took the job, during his second term protected the students with his unflappable commitment to liberal ideals, fostered Affirmative Action, and, with it, ensured the university's durably humane and decent presence in San Diego.

Atkinson, considered by the faculty to be the smartest and the most academically gifted, is said by his predecessors to be the best chancellor UCSD has ever had. McGill believed this was because Atkinson was an original, "the most extraordinary builder I have ever encountered in the academic life." These assessments of Atkinson are shared in San Diego, and they underwrite his success at fund-raising. Such esteem was unexpected in the mid-eighties, when the chancellor was the subject of widely read, humiliating news stories detailing a personal liaison that ended in lawsuits. Some observers think dogged determination was what enabled Atkinson to overcome an obstacle that might have cut another administrator off at mid-career. Others suggest that sheer excellence simply won out.

He arrived two decades after the original master plan was completed, but Atkinson, more than any other campus leader, brought that plan to fruition. Like the original founders, he aligned his personal ambition with the success of the university, and set a course before a new governor—George Deukmejian—and a new university president—David Gardner—loosened purse strings. The result, said McGill, "has been a continuing flood of expansion and construction and planned development the likes of which I have never seen anywhere else."

By the late eighties, the campus was purchasing \$300 million in goods and services every year. Its annual impact on the local economy was \$1 billion. Yet Atkinson could complain, with reason, that the presence of the university was either missed or misinterpreted by the majority of San Diegans. This was shortsighted, he said, given the state of the local economy. Banks, savings institutions, aerospace and defense industries, and real estate markets were foundering. Interestingly, the university in the 1990s represented exactly the same promise for San Diego as it did 30 years earlier. And, just as it had outgrown its military-industrial underpinnings, UCSD had outlived the corporate infrastructure that supported its founding. The university was flourishing when local industries such as Aerojet, Convair, and even General Dynamics were faltering. In many ways, being taken for granted in the 1990s is an astonishing achievement for an institution grafted uncertainly on an uncomfortable host community in the 1960s.²⁶

* * *

In January 1965, with UCSD's first-ever freshmen just finishing their first semester, a writer said that what planners liked to call the San Diego "experiment" was important not only to the University of California, "but to mass higher education across the land." Whether a university could "successfully set up shop" with only first-rate, mostly full-professor faculty members before filling in lower ranks and even before admitting significant numbers of students was a crucial question. Would the plan for the colleges work? Could the sciences and the humanities not only co-exist but even be joined, as good researchers and scholars were persuaded to teach undergraduates? And, perhaps most important, would the state give the campus enough time and money to try?

The process that in only 30 years transformed the mesa behind Scripps Institution into a university that attracted the praise of the world was described by Association of American Universities president Robert M. Rosenzweig as "an extraordinary story . . . one of the really good stories in American higher education."

The men and women who helped write it had various reactions to the reading. Revelle said the experience had convinced him that nothing in life

was more important to success than luck and timing. "We could not have started the new university five years earlier, and we could not have succeeded five years later." McGill although timing and luck were less important than "the almost naive idealism of the founders, that is Revelle, Munk, and Arnold and Bonner and Mills and Bernd Matthias among others. A lot of what they believed was nonsense. How you build a good medical school, for example. The Bonner Plan has done more harm to the construction of the medical school than any other single factor. But that doesn't make any difference. They believed it with passion, and they were trying to do something here in a state framework of unprecedented quality."

York traced UCSD's excellence to the atmosphere created by "big egos" rubbing against one another and kindling an intellectual fire that burned "in an ultimately controlled way." This "produced real brilliance." This was "easier to do in San Diego than in Peoria," he said. Other factors are the site, "the University of California name, and the opportunity to do something new, and right, after all these errors that everybody else had made. Even though it is a matter of chutzpah and ego, nevertheless it produced, ultimately, an extraordinary result." But Robert Hamburger believed the university became great in spite of San Diego. Who in their right minds would "move to Southern California, the lotus-land on the border of Mexico, an area dominated by the Navy?" he asked rhetorically. Early recruits came, he said, because they were offered the moon. "The moon was *freedom!*"

But during a symposium in the late-eighties, Kerr said he was disappointed that UCSD did not remain closer to its "original ideals" of maintaining itself as a collection of faculty-centered colleges. When the medical school's first dean, Joe Stokes, reminded Kerr that he had said there were "many paths to heaven," Kerr answered that he "would have added that there is a heaven..." Perhaps because he is a student of the British Empire, Galbraith remained unconvinced that in academics there is anything like permanent future rewards. Where other campus leaders saw their contributions as a lasting endowment, Galbraith perceived change and process. "I think that we're getting better," he said, "that's good impermanence." But Revelle saw change as loss: "From its small, chancy, exciting beginnings it has become a big, impersonal, rather fragmented place; a place we are all proud of, but which it is

rather hard to love." Nevertheless, speaking for all the founders, he quoted Kipling on praising famous men, whose "work continueth, Great beyond their knowing."²⁷

Forty years earlier, long before he set about founding one, Revelle had told a University of California Charter Day audience that like "all human institutions, a university is the product of the work and devotion of individual men and women, and it can be great only in so far as it can obtain the fullest measure of creative accomplishment from the men and women who give it life and meaning."

UCSD founders from Revelle and the first faculty members to Atkinson have given that measure and have gotten in return the satisfaction of participating in an enduring and momentous endeavor: the making of a university. They also had enormous fun.

Galbraith's greatest happiness was actually teaching history in UCSD's first humanities classrooms, knowing he was supported by the superstar scientists he feared might be his antagonists. Perhaps because he is Irish and by nature antagonistic to all authority not his own, McGill's happiest memories of his chancellorship have to do with making common cause against hostile and repressive power. Looking back at his sixties tenure, he said if "you share an ordeal and come through it successfully then that makes for friendships that are deeper than time." Among the ones he said he treasured from the era is his friendship with Paul Saltman, "who's not everybody's favorite person on this campus. But I'll never forget how he behaved when things were tough and I like him a lot." On the university level, his relationship with his fellow chancellors "was far more of a family relation than I anticipated or than others afterwards reported it to be. I never had more fun than going up there with that group, having too much to drink on an evening together and trying to figure out how to deal with those SOBs."

Revelle, who died in the UCSD Medical Center during the summer of 1991, also remembered the "marvelous fun" of the band of early brothers tweaking regents' noses and thumbing their own. Biologist Jonathan Singer remembers those early days as elysian, a "marvelous time, almost incredibly so," he said. "We were certainly not radicals, on the outside of the academic establishment. On the contrary, all were respectable and respected academics, coming here from the

best institutions." But there were "no cynics among us. They had elected to remain in their comfortable niches with the other old blues. Clearly, there were no clairvoyants among us either." We were "all restless," he said, "willing to venture, not a little visionary, and not a little naive. In a big-spirited place and time, we were all exhilarated, unleashed, and very happy."

Jim Arnold said that in San Diego in the late fifties, "I had the feeling I was doing something. It was a glorious opportunity, and, of course, it was a glorious opportunity to fall on your face... It hasn't been everything that we dreamed. But I find it hard today, looking back, to imagine a human situation in which you get one hell of a lot closer in the real world to what you were starting out to do.... Even the battles we lost were well worth fighting, well worth the effort."

Arnold said the earliest struggles were aided by a handful of women, including Ellen Revelle, Clary Eckart, Frieda Urey, Helen Raitt, Maria Mayer, Judy Munk, and Sibyl York, whose intelligence and passions "meant that the big philosophical issues got discussed at home." And although practicality was never dismissed, what was important was the "idealism," a "spiritual thing." The era, he said, "was a golden time, a great period in my life. I have had a few times in my life that were the most marvelous fun—carbon dating, later the Apollo period—but I would say that the best time in my life so far was those early years here. Everything was happening."

And it worked. "Some of the best work in the world is going on here," Atkinson said. He likes to "look around the campus and to go to seminars" and attend the annual alumni banquets when awards are given by each of the colleges to their outstanding graduates. It is clear, he said, that "the quality of the education they get here really does make a difference in their lives."

That quality can be jeopardized "if the economy of California continues to go downhill or if the attitude of the population is such that they don't want to support the university." But "great universities have a way of maintaining their momentum."

The founders knew they aimed for greatness, and only three decades after it opened, the University of California, San Diego, was poised to overtake Berkeley and UCLA. Those pioneers who gambled on an improbable venture in southern California had been right to stake their futures on the far side of the academic world.²⁸

NOTES

INTRODUCTION

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