

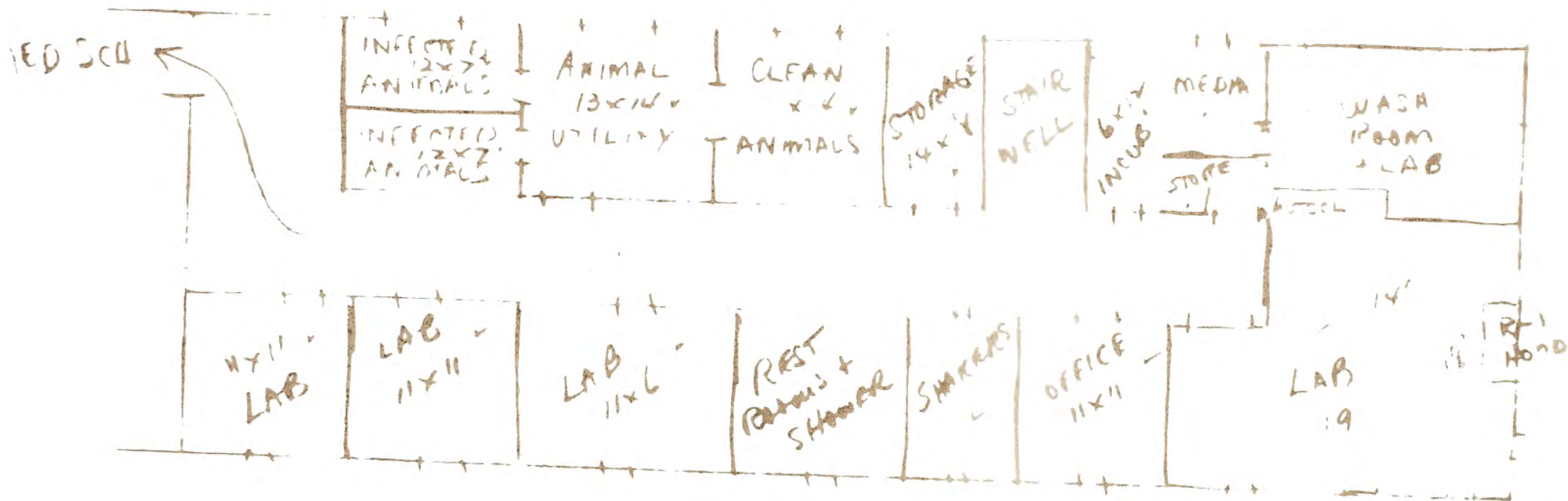
Dr. S. J. Land

X-Ray	293 Sq. Ft.
W-1	118 " "
W-2	123 " "
W-3	171 " "
W-4	150 " "
W-12	154 " "

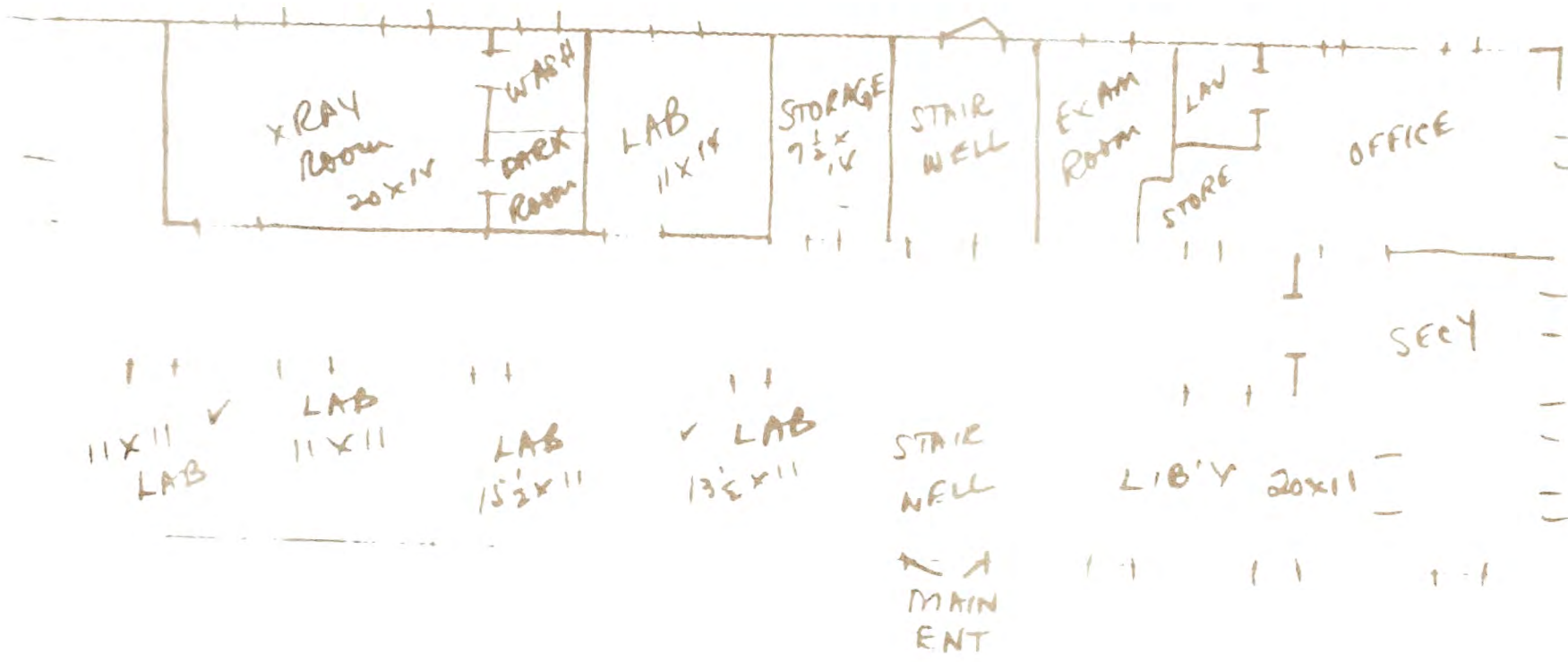
Basement

B-1	118 Sq. Ft.
B-2	123 " "
B-3	179 " "
B-8 Shaker Room	92 " "
B-9	118 " "
B-10	334 " "
B-11 Wash Room	253 " "
B-14 Sterile Room	42 " "
B-15 Incubator	86 " "
B-19 Clean Animals	154 " "
B-20 Animal Utility	182 " "
B-21 Infected Animal	82 " "
B-22 Infected Animal	82 " "

1600 Sq. Ft.



Lower floor
 gas suction & comp. air -
 oak lab tables.



MAIN FLOOR

Salt Lake City
 250,000
 125

 26700
 13000

 40 258

FLOYD B. ODLUM

Finance & Investments. Age 72
 Father a minister
 Went to University of Colorado
 Married Jacqueline Cochran

Past Business Associations

Chairman of Board, Atlas Corp.
 RKO Radio Pictures 1937-1948. Chairman of board.
 Consolidated Vultee Aircraft. 1947-1953. Chairman of Bd.
 OPA. 1940-1944.
 Director, Office of Production Management. 1941-1942.
 Chairman: Arthritis & Rheumatism Foundation.
 CURRENTLY < Lovelace Foundation for Medical Education & Research, Albuquerque, N.M.

Member: American Bar Ass'n.

Clubs

Madison Square Garden Club
 Metropolitan
 N.Y. Yacht
 Piping Rock
 Sands Point Golf
 Lotos
 Bel Air Country

Church Affiliation: Methodist

Home: Cochran-Odlum Ranch, Indio, Calif.

Office: 33 Pine St., New York 5, N.Y.

Is now: Chairman of Board, Federal Resources Corp., Salt Lake City, Utah. -- a mining and development corporation. \$3 million sales. 200 employees.

file: Salk

INSTITUTE FOR BIOLOGICAL STUDIES
SAN DIEGO, CALIFORNIA

A meeting of Fellows was held in New York on 25 October 1962. There were present: Dr. Jonas E. Salk (Director), Dr. Warren Weaver (in the Chair), Seymour Benzer, J. Bronowski, Renato Dulbecco, Jacques Monod, William Glazier and Earl Walls.

1. Dr. Salk reported that he was in the process of moving his laboratory to La Jolla and would take up work there on 1 January 1963. He had been given facilities at the Scripps Clinic and Research Foundation as a Visiting Investigator. He had also arranged to open offices for the Institute in La Jolla from that date and to have storage facilities for apparatus, books, etc. destined for ultimate use by the Institute.
2. Dr. Salk pointed out that with his move to La Jolla, the Institute would begin functioning as a settled organization. It was, therefore, desirable to recruit staff to give service to the Fellows, and he was, for example, engaging a purchasing officer shortly. The meeting agreed that it would be desirable now to prepare an organization chart of all such supporting services for the scientists. William Glazier was instructed to study the organization of The Rockefeller Institute and any other similar models and to prepare a scheme of organization of supporting services. William Glazier would submit this to the next Fellows' meeting.
3. The meeting had received a proposed benefits program, and found this acceptable in general. Dr. Weaver and Dr. Benzer undertook to revise it in detail and to submit their agreed version to the Trustees' meeting on 7 November. Dr. Weaver was authorized to inform the Trustees that the revised document was acceptable to the Fellows in details as well as in general.
4. Dr. Weaver made a statement in which he outlined the financial support guaranteed for the Institute by The National Foundation. (The basis of this statement appears in the exchange of letters, between Mr. Basil O'Connor of The National Foundation and Dr. Weaver, already distributed to all Fellows.)

5. Dr. Weaver informed the meeting of the plans to launch an independent capital funds drive. Mr. Walker Cisler had accepted the Chairmanship of a committee to organize this appeal and future meetings of the Fellows would be informed of the progress.
6. Dr. Salk explained to the meeting that it was now desirable to have Resident Fellows join him as soon as practicable in San Diego in order that the Institute should begin to function as a corporate scientific body for research. It was not desirable to postpone corporate working until the completion of the Institute buildings, and he was therefore negotiating for the temporary use of research facilities with the University of California. The meeting agreed that this was desirable in principle, and indeed that it was desirable to begin forging academic links with other institutions. For example, it would certainly be desirable in the future to have research students working at the Institute under conditions which qualified them for Ph. D. and other postgraduate degrees. However, it was stressed that any such links should not be of an exclusive kind either with the University of California or any other institution.
7. Dr. Salk expressed the hope that the arrangements for temporary research facilities that he was negotiating would enable some Fellows to take up residence from 1 July 1963. It might not be possible, of course, for all Fellows to be in permanent residence from this date, and Dr. Bronowski proposed that there should be a closing date by which all Resident Fellows would be expected to be working collectively in San Diego. This later date would have to be fixed in relation to the completion of the Institute buildings, and would be fixed when that could be realistically determined.
8. Earl Walls described the manner in which the laboratory space could be utilized by the individual scientists and showed sketches of furnishings that he was designing, and they had the general approval of the meeting. Dr. Benzer pointed out that the building lacked one facility which he (and he thought others) found important, namely, dumb waiters to communicate between different floors of one laboratory. It was agreed that he would discuss his needs with Earl Walls.
9. Earl Walls informed the meeting that he would circulate to each Fellow outline grids of the laboratory space available to him. When received the Fellows are to mark on these grids their requirements for apparatus, furnishings, etc. and return them to him.

10. The following specific items were taken from the report of the meeting held in Paris on 25 July 1962:
- a. William Glazier had reported in Paris that the completion of the shell of the building was expected on 1 July 1963, but that this date was subject to revision as the building progressed. The meeting was informed that revision of the date was indeed necessary, and would be communicated to the Fellows as soon as it could be made realistically.
 - b. Resident Fellows had been asked to make plans to recruit members of their staff, and had been assured that they would be advised of the appropriate scales of salaries and associated benefits. The meeting asked for these scales and benefits to be fixed as soon as possible, since without them recruiting must be delayed.
 - c. The meeting in Paris had advised the Director to inform Dr. Theodore Puck that the position of Resident Fellow remained open to him until 30 September 1962. Dr. Salk reported that Dr. Puck felt he was not in a position to accept an appointment at this time and preferred to have his name withdrawn.
 - d. The meeting in Paris had also proposed that, before any further offers were made, the Board of Trustees should be asked to state the number of Resident Fellows that they would wish to see at the Institute in the initial stages. It was agreed that this approach to the Trustees be postponed until there were proposals for future offers of Resident Fellowships.

In other respects the meeting endorsed the decisions and proposals of the Paris meeting.

cc: Dr. Weaver
✓ Dr. Bronowski
Dr. Szilard
Dr. Benzer
Dr. Dulbecco
Mr. Glazier

File

Reprints

CNS.

EMBRYOLOGY AND DIFFERENTIATION

THE NERVOUS SYSTEM

"Facts and Hypotheses"

Annual Meeting of Fellows

The Salk Institute for Biological Studies
San Diego, California

22 - 26 February 1964

PROGRAM

23 - 26 February 1964

<u>Time</u>	<u>Speakers</u>	<u>Presiding</u>
<u>Sunday</u> 1:30 P.M.	Dr. Grobstein Dr. Wilt *(Dr. Hubel)	Dr. Benzer
<u>Monday</u> 9:00 A.M.	Dr. Nauta Dr. Robertson	Dr. Bronowski
1:30 P.M.	Dr. Lowry Dr. Pomerat	Dr. Cohn
<u>Tuesday</u> 9:00 A.M.	Dr. Levi-Montalcini Dr. Sperry	Dr. Dulbecco
1:30 P.M.	Dr. Hubel Dr. Adey	Dr. Lennox
<u>Wednesday</u> 9:00 A.M.	Dr. John Dr. Kety	Dr. Szilard
1:30 P.M.	Dr. Elkes Dr. Hechter	Dr. Weaver

* Dr. Hubel's presentation will be made on Sunday if he is unable to remain over.

PARTICIPANTS

Fellows

Dr. Seymour Benzer
Dr. J. Bronowski
Dr. Melvin Cohn
Dr. Francis Crick
Dr. Renato Dulbecco
Dr. Edwin Lennox
Dr. Jacques Monod
Dr. Jonas Salk
Dr. Leo Szilard
Dr. Warren Weaver

* Dr. Bartemeier

* Mr. Murrow

* Mr. O'Connor

Speakers and Discussants

Dr. Ross Adey
Dr. Joel Elkes
Dr. Donald Glaser
Dr. Clifford Grobstein
Dr. Oscar Hechter
Dr. David Hubel
Dr. Roy John
Dr. Seymour Kety
Dr. Rita Levi-Montalcini
Dr. Robert Livingston
Dr. Oliver Lowry
Dr. Walle J. H. Nauta
Dr. Leslie Orgel
Dr. C. M. Pomerat
Dr. James David Robertson
Dr. Roger Sperry
Dr. Fred Wilt

* Members of the Board of Trustees

SPEAKERS AND DISCUSSANTS

Dr. Ross Adey
University of California
Brain Research Institute
Los Angeles, California

Dr. Joel Elkes
The Johns Hopkins Hospital
Department of Psychiatry
Baltimore, Maryland

Dr. Donald Glaser
University of California
Virus Laboratory
Berkeley, California

Dr. Clifford Grobstein
Stanford University
Department of Biology
Palo Alto, California

Dr. Oscar Hechter
Worcester Foundation for
Experimental Biology
Shrewsbury, Massachusetts

Dr. David Hubel
Harvard Medical School
Neuro Physiology Laboratory
Boston, Massachusetts

Dr. Roy John
New York Medical College
Flower Fifth Avenue Hospital
Fifth Avenue
New York, New York

Dr. Seymour Kety, Chief
Laboratory of Clinical Science
National Institutes of Health
Bethesda, Maryland

Dr. Rita Levi-Montalcini
Washington University
Department of Zoology
St. Louis, Missouri

Dr. Robert Livingston
National Institutes of Health
Bethesda
Maryland

Dr. Oliver Lowry
Washington University
School of Medicine
Dept. of Pharmacology
St. Louis, Missouri

Dr. Walle J. H. Nauta
Walter Reed Army In-
stitute of Research
Dept. of Neurophysiology
Washington, D. C.

Dr. Leslie Orgel
Massachusetts Institute
of Technology
Department of Biology
Cambridge, Massachusetts

Dr. C. M. Pomerat
Director of Research
Pasadena Foundation for
Medical Research
Pasadena, California

Dr. James David Robertson
Harvard Medical School
Assoc. Prof. of Neuro
Pathology
Boston, Massachusetts

McLean Hospital
Associate Biophysicist
Belmont 79
Massachusetts

Dr. Roger Sperry
California Institute of
Technology
Division of Biology
Pasadena, California

Dr. Fred Wilt
Stanford University
Department of Biology
Palo Alto, California

W. Ross Adey

PROCESSES OF INFORMATION TRANSACTION AND STORAGE IN BRAIN SYSTEMS

My laboratory has been concerned for the past five years in the electro-physiological processes in brain tissue relating to learning and performance of learned tasks. These studies have focused attention on the electrical wave activity in cerebral tissue as a possible basis for processes of information transaction. These studies have involved a consideration of the activity of single neurons during learning in relation to concurrent wave processes occurring simultaneously in the same volume of tissue. We have developed a series of new computing techniques for the analysis of the wave processes and developed a series of stochastic models of cerebral organization based on these analyses. We have developed the concept of a tricompartamental model of brain tissue and given consideration to the part that neuroglial tissue might play as a modulating influence determining some aspects of neuronal wave activity in brain tissue. Our studies in this area have involved a series of impedance measuring technique which have allowed us to detect changes in electrical impedance of brain tissue relating to the acquisition of a learned behavioral habit. Our interpretation of these results at this time stresses the significance of the interface between neuronal and neuroglial tissue as a possible site for the deposition of a "memory tract." In this hypothesis, the wave activity in brain tissue is viewed as integral to the initial deposition of information, and to its subsequent recall on the basis of a "best fit" condition in the subsequent patterns of waves.

Joel Elkes

PSYCHOMIMETIC DRUGS

The properties of the main group of psychomimetic drugs of plant origin and their synthetic analogues will be briefly reviewed and their mode of action considered in relation to the regional economy of the brain.

Clifford Grobstein

EPITHELIO-MESENCHYMAL INTERACTIONS AS THEY RELATE TO CONTROL OF
CYTODIFFERENTIATION

A recent paper describing the subject is:

"Cytodifferentiation and Macromolecular Synthesis,"
M. Locke, Ed. Acad. Press, 1963.

Oscar Hechter

ON THE NATURE OF MACROMOLECULAR CODING IN NEURONAL MEMORY

"This is an attempt to contribute to the class of ideas concerning a possible molecular basis for the memory engram, one of the major aspects of the mind problem. In suggesting plausible reactions at the molecular level dealing with "memory" and "recall" we are fully conscious of the many gaps in our formulation and are aware that the approach employed, has in effect by-passed all of the really "difficult" conceptual questions inherent in the problem for example, Farley, 1960; Elkes, 1961. Our purpose is not to present an all-inclusive theory of the memory engram but to suggest possible areas for future work which may contribute to the development of a "molecular neurology."

"The theory to be presented postulates that environmental information is transduced by a directed methyl transfer to the nucleotide bases of a replicating polynucleotide into a stable form, has obvious mechanistic implications for "normal" immunology and antibody synthesis as it occurs in plasma cells. In this case, exogenous antigen in a plasma cell would correspond to the "coded" histone in neurons. Finally, it should be mentioned that maturation and differentiation of brain function in our view is achieved by way of a mutational methylation of a replicating RNA species. Is it not possible that differentiation in a more general sense involves ordered mutational methylations of a stencil-type RNA in cells generally? Such a view permits epigenesis to be retained in biology together with an inviolate DNA."

From: A Discussion Paper in Bulletin, edited for the Neurosciences Research Program, 1(1), 1963.

A POSSIBLE MOLECULAR BASIS FOR "POLYPEPTIDE CODING" IN THE ACTION OF POLYPEPTIDE HORMONES UPON ALL MEMBRANE RECEPTORS

The ideas here are based upon the concept developed by Donald Warner that biologically active peptides, and certain proteins as well, assume a unique hexagonal conformation. I should like to indicate how Warner's ideas can be extrapolated not only to provide a basis for understanding the primary reactions of various types of hormones with receptors at the molecular level (whether at the cell membrane or at the nuclear locus) but to the phenomenon of "depolarization" in the nerve membrane as well. The principles involved here may apply to the nature of the "recognition" reaction in interactions of antigen with antibody, of virus interaction with specific cell types, and perhaps to the action of corepressors and inducers at the genetic level.

David H. Hubel

CENTRAL-NERVOUS PROCESSING OF VISUAL INFORMATION, ESPECIALLY AS REGARDS FORM AND COLOR, IN CAT AND MONKEY

"The visual cortex appears to have a rich assortment of functions. It rearranges the input from the lateral geniculate body in a way that makes lines and contours the most important stimuli. What appears to be a first step in perceptual generalization results from the response of cortical cells to the orientation of a stimulus, apart from its exact retinal position. Movement is also an important stimulus factor; its rate and direction must both be specified if a cell is to be effectively driven.

One cannot expect to "explain" vision, however, from a knowledge of the behavior of a single set of cells, geniculate or cortical, any more than one could understand a wood-pulp mill from an examination of the machine that cuts the logs into chips. We are now studying how still "higher" structures build on the information they receive from these cortical cells, rearranging it to produce an even greater complexity of response.

In all of this work we have been particularly encouraged to find that the areas we study can be understood in terms of comparatively simple concepts such as the nerve impulse, convergence of many nerves on a single cell, excitation and inhibition. Moreover, if the connections suggested by these studies are remotely close to reality, one can conclude that at least some parts of the brain can be followed relatively easily, without necessarily requiring higher mathematics, computers or a knowledge of network theories."

From: "The Visual Cortex of the Brain," Scientific American, 209(5):54, 1963.

CHANGES THAT CAN BE INDUCED IN THE CNS BY ALTERING THE NORMAL SENSORY INFLOW IN IMMATURE ANIMALS

E. Roy John

NEUROCHEMICAL AND NEUROPHYSIOLOGICAL STUDIES OF CONDITIONING AND MEMORY

Neurochemical investigations have been primarily directed toward elucidating the effects of brain electrolyte concentration on the acquisition and performance of conditioned responses.

Neurophysiological studies have been concerned with changes in the evoked potentials during conditioning and the mathematical analysis of large amounts of such data.

Recent papers have been concerned with:

"Signal Analysis of Evoked Potentials Recorded from Cats during Conditioning."

"Neural Mechanisms and Decision Making."

"Higher Nervous Functions: Brain Functions and Learning."

Seymour Kety

BEHAVIORAL NEUROCHEMISTRY

Energy Metabolism of the Brain and Relation to Mental State

Biogenic Amines and Behavior

Neurochemical Theories of Memory

Rita Levi-Montalcini

THE NERVE GROWTH FACTOR

"Sympathetic nerve cells of birds and mammals are receptive to the growth promoting effects of a protein (NGF) which was isolated from some mouse sarcomas, snake venom and mouse salivary glands. This same protein is a normal constituent of the sympathetic cells and is present in the blood and body fluids of a variety of vertebrates, man included. An antiserum to the NGF selectively destroys the sympathetic nerve cells of newborn animals without affecting other nerve cells or organs. The "immunosympathectomized" animals are comparable to controls in growth and viability.

These results give evidence for the essential role of this particular protein in the growth, differentiation, and maintenance of sympathetic nerve cells. They also suggest that other nerve cells might also depend upon specific factors for their differentiation and growth. These results are discussed in the general framework of neurogenetic problems."

From: "Growth Control of Nerve Cells by a Protein Factor and Its Antiserum," Science, 143(3602):105, 1964.

GROWTH AND DIFFERENTIATION IN THE NERVOUS SYSTEM

Oliver Lowry

PROBLEMS THAT FACE THE NEUROCHEMIST

"Let me orient what I have to say around a fact and a conviction. The fact is that the study of the brain is difficult; the conviction is that it is not too difficult, that ways can be found to solve the most subtle problems of normal and abnormal brain.

Failure to take this ambivalent attitude toward general problems of nature may be an important reason for the long historical delay in the development and use of scientific research. Many philosophers, through the centuries, did not appreciate the complexity of nature; each tried to solve great problems by himself and consequently neglected to gather small, solid facts on which the next wise man could soundly build. Other great minds of the past thought the world so complicated that it was scarcely worthwhile to try to understand it.

With this lesson from the past in mind, my purpose is first to suggest some of the difficulties in the study of brain chemistry and the chemical changes associated with disease, and then to present evidence that the difficulties are not insurmountable if we are reasonably patient.

There are at least three major problems in studying chemical changes in diseases of brain. In the first place the structural complexity of brain makes gross chemical analyses difficult to interpret. Even a few milligrams of brain contain an almost hopeless mixture of axons, dendrites, myelin, and glial elements. Second, if the architecture of the brain is complicated, the biochemical machinery of any particular cell is even more complex. There must be thousands of different enzymes present, together with their substrates and coenzymes. These function in and around complex structures made of protein and of complicated lipides, and all these compounds are dominated by a complicated hierarchy of nucleic acids. Obviously, trouble shooting when something goes wrong might be pretty difficult, particularly since the chances are that the chemical substance at fault would be an unknown one. May I digress to point out that neurochemistry is merely biochemistry and that neurochemistry advances as biochemistry as a whole advances. A discovery made in bacteria or in grasshoppers or in liver or skin, is a discovery in brain. Neurochemists working alone would be a long time on the road.

In addition to the structural and chemical complexity of brain, there is another difficulty in the chemical study of brain disease. The secondary reactions of brain to damage produce changes which would be reflected in any chemical analysis and thereby confuse interpretation. The microscopist can see around the macrophage or the dead neuron and examine whatever he may be most interested in. He can focus on viable tumor cells and ignore, if he wishes, all other things that may be mixed with the intact cells. The chemist on the other hand scoops everything together into his test tube. He must learn to make allowance somehow for the complicating constituents. Here, more experimental studies would be very helpful. It is necessary to know more about the chemical events in Wallerian degeneration, in chromatolysis, after different degrees of ischemia, and so on. A background from experimental studies would greatly aid interpretation of results in disease.

Some of these difficulties in the chemical study of brain disease could be circumvented by carrying out microchemical analyses of individual histological elements. Let me, therefore, describe some of the tricks which make it possible to perform such analyses."

From: "Challenges in the Study of Brain Chemistry," Journal of the Mount Sinai Hospital, 30(5):375, 1963.

Walle J. H. Nauta

THE GENERAL STRUCTURE OF THE MAMMALIAN NERVOUS SYSTEM

C. M. Pomerat

ACTIVITIES ASSOCIATED WITH AXOPLASMIC FLOW

This will deal with events recorded with phase contrast, time-lapse cinematography, including the rotation of the nucleus in regenerating neurons, the activity of mitochondria in axoplasm and the behavior of growth cones, including the phenomenon of pinocytosis. A record of the complete circumnavigation of a Schwann cell nucleus around a fiber as well as a peristaltic type of activity along the course of myelin will be shown.

QUANTITATIVE STUDIES ON GLIAL CONTRACTIONS

Currently we have been able to exploit the observations which we made initially regarding the rhythmic pulsatile activity of both normal oligodendrocytes and Schwann cells. The mechanism and functional role of these very numerous and strategically located elements offered an important challenge with the use of our techniques, but we found great difficulties in quantitating the rate of their contractions. Recently, we solved the problem and have prepared a manuscript which is being submitted to the Journal of the Royal Microscopical Society under the title of "Optical Scanning and Electrical Recording of Cellular Activity." We now find it possible to assess their rates as a function of basic variables, such as temperature, pH, osmotic pressure and critical nutrients. We also hope to record any possible change in activities following perfusion of cultures with spinal fluid of non-pathological and pathological sources. Obviously fluid from subjects with demyelinating or dysmyelinating diseases would be of special interest. Our program also envisages the possibility of studying oligodendrocytes and Schwann cells obtained in the course of biopsies.

J. David Robertson

STUDIES ON THE FINE STRUCTURE OF NEURAL TISSUE

Roger Sperry

NEUROSPECIFICITY IN RELATION TO VARIOUS PROBLEMS OF BEHAVIOR AND EMBRYONIC DEVELOPMENT

"In early observations on the outgrowth and termination of nerve fibers, it appeared that different fiber types must be guided to their respective end organs and other connection sites by selective chemical or electrical forces. Explanatory terms like chemotaxis, chemotropism, galvanotaxis, and neurotropism were commonly employed by Cajal and others early in the century. These selectivity concepts later came under attack, especially during the 1930's and 40's when the application of more analytic experimental approaches to the mechanics of nerve growth seemed to rule out the presence of either chemical or electrical selectivity in favor of a predominantly mechanical interpretation."

From: "Chemoaffinity In The Orderly Growth of Nerve Fiber Patterns and Connections," Proceedings of the National Academy of Sciences, 50(4):703, 1963.

SPLIT-BRAIN EXPERIMENTS

Fred Wilt

BIOCHEMICAL APPROACHES TO CELLULAR DIFFERENTIATION

I. Introduction

A. My intentions

1. Description of current experimental approaches. Emphasis on biochemical approaches. Other speakers will redress the balance. Developmental biology is now like phage biology before the Hershey-Chase experiments. Chemical insights not always gained by chemical experiments. Necessity for judicious integration of biochemical and biological approaches. Is the coming fashion of DNA, RNA protein in dev. biol. a shibboleth like cyt. oxidase in the 30's.
2. Telescopic statement of hard facts of development, as I see them.
3. Telescopic statement of crucial issues in developmental studies. The latter two topics intended to stimulate discussion and debate.

B. General comments on developmental studies

1. Purpose of studies is to understand totality of development.
2. Development is epigenetic.
3. Enormous complexity of development leads one to expect a variety of levels of control and of mechanisms at these levels.

II. Current developmental studies emphasizing biochemical approaches

A. WHEN: are cell groups committed to a developmental pathway? are cell groups differentiated?

1. Study of commitment an old one in embryol. Primary concern prior to 1930. Study of when differentiated state attained an important recent issue. Introduction, usually in a noncritical way, of new techniques: electron microscopy, enzymology, and immunochemistry.
2. Difference between commitment and attainment of differentiated state.
 - a. Stefanelli's experiment on Mauthner's neuron
 - b. Chick embryo hemoglobin. Cell groups committed before laying; hemoglobin not formed till 36 hours of incubation.
- * 3. Commitment of cell groups may involve:
 - a. Production and storage of m-RNA during oogenesis (mosaic eggs)
 - 1) Hybridization experiments. Dispensability of paternal genes
 - 2) Initiation of protein synthesis following fertilization in the sea urchin. Experiments by Wilt and Nemer on ribosome activation. Experiments by Gross showing stored RNA is used.
 - b. Production of informational RNA during cleavage
 - 1) Characteristics of RNA produced during sea urchin cleavage. Pulse and chase exp's of Nemer and Wilt. Association of specific RNA with polysome fractions.
 - 2) Horstadius' experiments on developmental commitments made during cleavage.

** B. WHAT: is the nature of the committed (differentiated?) state

1. Has traditionally involved asking about the stability of the committed (differentiated) state.
 - a. Evidence from regeneration, mosaic eggs, nuclear transplantation, propagability of differentiated state.
 - b. On the cell and tissue level results show a decrease in plasticity of cell groups under conditions tested. Critical information limited.

- ** 2. On the molecular level, the questions are uninteresting. Stability here depends on free energy changes of chemical events involved; this could vary widely, and perhaps explains confusion on cell level. Of possible interest is the apparent exclusivity of differentiated states arising from these studies.
- C. HOW: is the committed state realized?
- ** 1. Critical role of cellular environment
- Homotypic and heterotypic effects
 - Role of extracellular materials
 - Specificity of microenvironment
 - Cell culture and cloning approaches: Konigsberg on the myoblast
2. Role of enzyme induction - depression
- Critical evidence is totally lacking
 - Difference between bacteria (needs to successfully and quickly exploit a large number of environments) and embryo (apparently seeks to maintain constant internal environment - homeostasis)
- * 3. Macromolecular synthesis and differentiation
- Brown's work on frog egg. Lack of ribosome synthesis
 - Hemoglobin synthesis (Wilt)
 - 1) Time of initial synthesis. Cyto and immunochem. 7 somites
 - 2) Time of commitment. Before egg is laid
 - 3) Differential acquisition of drug and antimetabolite insensitivity. BDU, actinomycin, 5FU, and 8 azaguanine. Differences in mechanism of action of actinomycin and 8 azaguanine.
 - Sequential appearance of enzyme systems
 - 1) Catechol amine synthesis in frogs. Caston
 - 2) Tyrosine to thyroxine pathway. Flickinger
- III. Postulates for subsequent discussion. Hard facts and warranted assumptions
- A. Molecular level
1. Some information laid down in oogenesis
 2. Do not necessarily need ribosome synthesis for commitment
 3. Little doubt genome is differentially active in embryogenesis
- B. Cell and tissue level
1. Decrease in plasticity during development. (Nuclear Changes)
 2. Apparent antagonism of mitosis and differentiation.
 3. Environmental interactions crucial.
 4. Exclusivity of differentiated states.
- * IV. Crucial issues
- A. Check assumptions
1. DNA sequence same in all cells of a given individual
 2. Only cell groups differentiate
- B. Biochemical issues
1. What is nature of commitment?
 2. What is the level of regulation for a given epigenetic event? Regulation of RNA synthesis.
 3. Precise biochemistry of the cell microenvironment.
 4. Mechanisms of storage of genetic information in cytoplasm.

- C. If we assume mechanisms of genetic depression were completely understood, and if they applied in toto to embryos, would we have a satisfying picture of mechanisms of differentiation? Is there something unique in the developing metazoan? Probably yes.
1. Regulation at the supra-operon level
 2. Organization and function of chromatin
 3. Spatial organization of cell groups

* Subjects to be treated more heavily

** Subjects to be omitted

MINUTES

Fellows Meeting - 30-31 March 1963

A meeting of the Resident Fellows was held in San Diego on 30-31 March 1963. Present were Drs. Jonas Salk (Director), Seymour Benzer, J. Bronowski, Melvin Cohn, Renato Dulbecco and Edwin Lennox. George Conn, William Glazier and Earl Walls were invited to participate.

1. At a meeting with Dr. David Bonner, Chairman of the Biology Department, University of California at San Diego, and members of his staff, the substance of his invitation was discussed for Benzer, Cohn, Dulbecco, Lennox and Salk to become associated with the Biology Department. The issues involved are contained in the attached letters by Bonner, Cohn, and Salk. (See A, B, and C.)
2. After considerable discussion, the following motions were adopted:
 - a. That the Institute starting date will be 1 July 1963 and the beginning of appointments of Resident Fellows is reaffirmed to be 1 July 1963 as set forth in the letter of invitation of 11 May 1962, a copy of which is attached. (See D.)
 - b. That Institute and laboratory work begin in temporary quarters to be constructed on the Institute site.

- c. That all Resident Fellows take up residence as soon as possible after the starting date. These dates are foreseen as follows:

Dulbecco - 1 July 63 (Dulbecco will spend the period from 1 September 63 to 1 April 64 in Glasgow)

Lennox - 1 September 63

Cohn - On or about 1 December 63

Bronowski - On or about 1 January 1964

Benzer - June 1964

- d. That each Fellow may, and is encouraged to, accept an appointment as Adjunct Professor in the Department of Biology, at the University of California in San Diego.
3. The above resolutions were passed on the report of the Director, following conversations with Mr. O'Connor, Mr. Piel, and Dr. Weaver, that there will be an exchange of letters between the President of the National Foundation and the President of the Institute, wherein sections (A) and (B) of the 14 March 1963 resolution of the National Foundation, which was adopted on 19 March 1963 by the Board of Trustees of the Institute, and is attached, are interpreted to mean that funds will be available to permit the letter of appointment of 11 May 1962 to go into effect on 1 July 1963.

4. Following a discussion on public information and public education, the following resolution was adopted:
 - a. That responsibility for this activity will be assumed by Dr. Bronowski, on behalf of the Fellows, and that public education and information at all levels be maintained at a scrupulously high level.
5. Decision was deferred on additional Resident Fellows until further indication from the Board of Trustees of the availability of funds for their support. The sense of the discussion was that it would be helpful to have resources available for four to six additional appointments.
6. Dr. Dulbecco will circulate a statement of his opinion on Rita Levi-Montalcini as a possible nominee for Non-Resident Fellowship.
7. The Benefits Program was discussed and Dr. Benzer was to incorporate changes agreed upon and present them to Dr. Weaver for his consideration. The agreed upon revised version will then be submitted to the Board of Trustees.
8. It was the unanimous feeling of the Fellows that this meeting marked a decisive turning point in the history of the Institute and in its evolution into a unified scientific community.

BULLETIN

31 May 1963

To: Fellows
From: William Glazier
Jonas Salk

1. It is almost two months since the meeting of Resident Fellows in La Jolla, the events of which are summarized in the accompanying minutes. The statement in the minutes, to the effect that a decisive turning point in the evolution of the Institute occurred, is well supported by all that has transpired since. Dilbecco and his group will be here on 1 July 1963; Lennox, 1 September; Cohn, 1 December; Bronowski, on or about 1 January 1964; and Benzer, 1 June 1964. Szilard had recently indicated that he might wish to exercise the option to become a Resident Fellow. Salk and Szilard have agreed upon an arrangement should he choose to exercise this option and this has been approved by the Executive Committee of the Board of Trustees.

Salk's office is already established in the temporary laboratory building; on or about 5 June it is expected that his laboratory will be transferred from the Scripps Clinic. The necessary permits have been obtained for construction of the second frame building.

2. The target date for completion of the shell of the second temporary building is 1 July; this will include the partitions in Dulbecco's area. Earl Walls is preparing a number of alternative lay-outs that derive from the present temporary laboratory and from Dulbecco's plan. Walls will communicate with Bremer, Cohn and Lembo about the lay-out for their respective areas. A list of ordered equipment will be sent to each of the Fellows concerned. Dulbecco has prepared a list of journals which he would like to have in our small library in the temporary quarters. This will be distributed for suggested additions.

Applications for grants have been made to the NIH by Cohn and to the NSF and NIH by Dulbecco. Invitations have been issued to both agencies to visit La Jolla to tell them of our plans and to determine how we might best work together.

3. At an Executive Committee Meeting, in New York, on 6 May approval was obtained for implementing budgetary requirements for commencing Institute operations on 1 July 1963 in accordance with the understanding set forth in the accompanying minutes of the Fellows Meeting of 30-31 March 1963. Approval was granted for construction and equipping additional temporary laboratory space. The benefits program was reviewed and changes from the previously designed program were approved in principle; it is now being evaluated for cost prior to submission to the Executive Committee

to permit activation of the program by 1 July 1963. The program for facilitating the purchase of housing, or land for housing, has been approved and implemented.

4. A firm estimate of cost of the permanent laboratory building is now available. The plans have had a final review for reliability of function, economy of operation, durability of materials and for determining what may be deferred until a later time. The latter refers especially to the south laboratory building, the shell of which will be completed and will then be made functional as the need arises.

5. Two meetings have been held with Mr. Cislak's associates; the list of members of the Advisory Council is being further enlarged and the follow-up has begun. We are becoming organized for systematically developing and executing plans for financial support from large foundations and from federal sources as well as through the Advisory Council mechanism.

6. It has been helpful having Dilbecko near by. His visits have been pleasantly frequent and he has been available for discussion and for decisions on a variety of questions. It is gratifying to be able to work this way and provides a foretaste of what will occur as the Fellows take up residence in La Jolla.

Institut Pasteur

25, RUE DU DOCTEUR ROUX
(XV^e Arrond')

Téléphone : SÉGUR 01-10

Paris, le 27 avril

1964.

Salk
Materials

Dr. Fazekas de Saint Groth is a remarkable specimen of a rather rare type of scientist for he is, at the same time, an anatomist, an immunologist, a virologist, a biochemist and a mathematician. He is, moreover, a man of great culture, a gentleman and something what I can only describe in french as "esprit distingué" - a rare quality - especially among scientists. He has proven to be an excellent "chef d'écoles" and has selected and oriented in a fruitful direction a number of gifted research workers. His achievements and those of his pupils and coworkers represent an objective guarantee of his talent. If I had to propose a few names for the staff of an Institute of Immunology, of Virology or of Molecular Biology, he would be one of those I would select.

André Lwoff

André LWOFF

INSTITUT PASTEUR
SERVICE DE
PHYSIOLOGIE MICROBIENNE

11

*file Salk
material*

1 May 1964

To: S. Benzer H. F. C. Crick
 J. Bronowski J. Monod
 M. Cohn W. Weaver
 R. Dulbecco
 E. Lennox
 J. Salk
 L. Szilard ✓

Dr. Cohn recently received a brief statement on Dr. Fazekas de Saint Groth from Dr. Lwoff. I am enclosing a copy of Dr. Lwoff's statement for your information.

W. Glazier
W. Glazier

Enclosure

INFORMATION BULLETIN NO. 2

Prepared by
William Glazier

15 July 1962

As all of you are aware, Salk has had an exceptionally full and active time for a good number of months. Since the inauguration of The National Foundation Building Fund Drive, on 1 June, the demands upon him have increased in number. However, this pressure is about over and he will be able to concentrate on other Institute affairs. These involve the physical facilities of the Institute, the organizational and administrative affairs and especially the implementation of the academic purposes of the Institute. All of these require review and action.

Building Progress

An attempt has been made to develop an architectural plan for immediate needs and long-term growth and expansion. This plan envisages the construction of a complete entity from the outset, even though parts of the plan will not be implemented until a later date.

The planned additions for the future will be principally for laboratory growth and expansion. Such basic units as the technical library, studies, offices, meeting center and residential units will be necessary from the beginning and these are scheduled for early completion.

The present concentration of effort is upon the laboratory-study buildings, the technical library and the offices. The goal is to have the laboratories ready for occupation and operation in the summer of 1963. As the building program progresses, this scheduled completion date will become more definite.

Although there have been some delays, these have not, as yet, affected the target date. The revisions in plans have not only brought greater flexibility into the laboratory design, they have also resulted in a set of buildings which can be constructed more quickly than was true of the earlier plan. Excavation for foundations is well underway; the foundation drawings will soon be completed and this part of the construction will get underway as soon as the excavations are completed in August.

The two initial laboratory buildings will each contain three levels of completely clear span, 65' x 240', for vertical or horizontal subdivision into laboratories or for other use. Horizontal communication will be along corridors on the outside of the building; vertical communication will be in stair and elevator towers; internal vertical communication will be possible by dumb-waiters if desired.

The mechanical services, will rise in towers, from a central unit located below ground at the end of the two buildings, and will be distributed horizontally in spaces above the ceilings and below the floors. The mechanical area is being designed to serve the entire projected complex; however, currently only sufficient equipment is to be installed to serve the 100,000 square feet of laboratory space now under construction, the technical library, the offices and the studies.

The studies will be constructed over a colonnade running along the garden side of each laboratory building. The garden between the buildings will be 100' wide. The colonnade and studies will occupy a 40' strip alongside each building.

Equipment and Laboratory Design

Now that the basic design of the buildings has been established, the plan is to move as quickly as possible into the layout of the laboratories for each group. As a result of recent discussions, equipment lists are to be prepared by Benzer, Dulbecco and Salk. Before too long the same information will be needed from Cohn and Lennox.

Salk met on 12 July, in Pittsburgh, with Earl Walls, the interior laboratory design consultant referred to in the earlier bulletin. He has been engaged and an agreement is being drawn for his services. He has reacted with great enthusiasm to the laboratory building plans as they now exist. In a short time he will be meeting with the Resident Fellows, first in the United States, to help prepare the details of their respective laboratories. Soon thereafter the Fellows in Europe will do the same.

Organizational and Administrative Affairs

Associates--That Resident Fellows be enabled to make arrangements for associates and assistants, they will need the guidance of Institute policy on these matters. Salk has suggested that I help develop with each Fellow the information concerning each individual he wishes to invite, to help establish criteria for titles and reasonable levels of compensation. This information should include background material and

a brief explanatory statement of the nature of the relationship and the responsibilities involved in each case. Such data will also be necessary for the benefits program.

Benefits Program--The development of the benefits program is progressing and details will be included in a special bulletin.

Academic Affairs

a. Salk talked with Meselson who continues to be interested but needs time to sense the nature of the atmosphere in and around the Institute before arriving at a decision. Meselson would like to be a Visiting Fellow for an extended period when the Institute opens. Salk will keep him informed of progress and will be guided by Meselson's own attitude.

Benzer hoped to see both Meselson and Berg at the recent Gordon Conference; additional information will be passed on in later bulletins.

b. The status is clear of Resident, Non-Resident and Visiting Fellows, and of Members with tenure-appointment to retirement age, who are to be associated with one of the Resident Fellows. Salk has suggested for consideration as Members, especially from among highly promising juniors, persons who are desired as associates in the Institute and whose space and budget might come directly from the Institute through the office of the Director rather than from the estate of a Resident Fellow. Such appointments would have to be approved by the Committee of Fellows. Such persons, as well as the Members associated with individual Fellows, would be eligible later for election to Fellowship under terms and conditions that are appropriate in each instance.

c. Meeting in New York, 20 June 1962--In lieu of a regular meeting of the Executive Committee of the Board of Trustees, a session was held with Bartemeier, O'Connor, Piel, Salk, Snow and myself present. This was an occasion for a review for the benefit of Sir Charles Snow and for discussion of ideas and anticipated problems.

There was discussion of the difficulty in finding humanists for appointment to the Institute. Sir Charles suggested that the pace should be very slow and careful in this area and that it would be best to invite such individuals to come initially as Visiting Fellows.

Sir Charles described the Institute Fellows as individuals who, hopefully, are at least five years ahead of their time and said that of these there are a very small number indeed.

Salk has asked me to meet with the group in Europe and then, upon my return, to meet with the group in the United States. The purpose, in part, is to effect a closer working relationship in the interim, until the Institute is built. A meeting has been arranged for 25 July in Paris; the U. S. meeting date is not yet set.

9 A.

UNIVERSITY OF CALIFORNIA, SAN DIEGO
LA JOLLA, CALIFORNIA

March 11, 1963

Dr. Edwin Linnick
Institut Pasteur
28, Rue du Dr Roux
Paris XV^e, France

Dear Ed:

I am writing to extend the hospitality of our laboratories for the coming year.

Laboratory space in La Jolla has been skimpy for the past two years. This has been true at the Scripps Clinic, the University, and the Institute. At the University, we are due for a brief (1-2 years) respite as two new buildings will be completed this summer, and it now appears that we will enjoy the anomalous situation of having our building program ahead of our recruiting program! Construction of the Institute is well under way, but it is also clear that it will not be completed for at least a year. I, therefore, wonder whether you might like to move to La Jolla this summer, and occupy quarters with us until the Institute laboratories are completed. It is true that two moves are a nuisance, but I believe this arrangement has certain merits that should not be casually overlooked.

I feel strongly that reasonable close ties between the University and the Institute should be established from the start. In developing our Biological Sciences, the Institute will obviously be of great value. If members of the Institute wish to do so, the Institute could broaden our tutorial graduate and postgraduate instruction, and it will obviously be of value in attracting first class staff and students. However, I am equally convinced that in creating a lasting Institute and one of great strength, the University is of crucial importance. A year in shared facilities could well set a pattern of fruitful interaction that would set both ventures off to a tremendous start.

A second, though perhaps a lesser, argument involves the two moves. While two moves are painful, the fact that you would be in La Jolla makes for much better planning of your Institute facilities. Your final move could, therefore, be done thoughtfully, and probably relatively easily.

In offering facilities for the coming year, I have been primarily concerned about the healthy growth of the Biological Sciences in La Jolla. It is clear that La Jolla will become a major center of modern biology in a remarkably short time. We have a unique and almost fantastic opportunity that should not be squandered. The offer of facilities does not carry with it a requirement of participation in University affairs. If you wish to give a tutorial or interest with our graduate students--fine; but such activity is in no way obligatory.

March 11, 1963

- 2 -

Various discussions concerning this arrangement have now dragged out over several months, as you know. If we are to do this, we should so decide reasonably soon. I believe we could arrive at a final decision most efficiently by having a meeting of you and your colleagues here in La Jolla. This would permit rapid crystallization of the pros and cons, and would, at the same time, permit a rational appraisal of the amount of space needed. You could also see our present facilities and give us some idea of what could be changed, and what might be newly required.

I am, therefore, writing to invite you and your colleagues to a meeting here in La Jolla to ponder these questions. I feel this meeting should be held as soon as possible, though it will also have to be held at a mutually arrived at date. A two day meeting perhaps should be planned. Needless to say, expenses incurred in your attendance at this meeting will be reimbursed.

With best regards,

Sincerely,

David H. Benzer

DLB:ap

Copy to: R. Dalbeco
S. Benzer
M. Cohn
James Salk

OFFICE COPY

7

THE SALK INSTITUTE FOR BIOLOGICAL STUDIES
POST OFFICE BOX 8171, SAN DIEGO 2, CALIFORNIA

TELEPHONE 694-4191
AREA CODE 714

7 March 1963

Dr. Melvin Cohn
Pasteur Institut
25 Rue du Docteur Roux
Paris XV, France

Dear Mel:

I was very pleased to receive your Round-Robin letter. It is to the feeling as well as to the thoughtful content to which I want to respond promptly.

In spite of distances between us we have all been thinking about and striving toward the earliest possible beginning of the Institute. I have felt that this will occur when we are all together in one place and can communicate more intimately than by the written word, with all the limitations imposed thereby. It was for this reason that I had hoped that our enforced separation could be brought to an end by the completion of the laboratory buildings by the summer of 1963.

It is not very comforting to realize that the satisfactory end result, with respect to the buildings, will have been well worth the delay--and it was for reasons of anticipated delay that I explored the possibility for a substantial interim arrangement with the University of California. Even though you and El and Jacques seemed uninterested I have kept the matter alive hoping to bring you here at a propitious time to see for yourselves exactly what we have in mind. I was hopeful that when you could see for yourselves--and not through the eyes of others--you, too, would see the value of the step proposed.

Your letter arrived on the day Dave Bunker and I talked about this matter again and you, along with all of us will receive a letter from him offering space, as Jacques has so generously done, to allow the development of your staff, and for all of us to come together in one place in a way that would cause the Institute as a whole to begin. I can assure you that the qualitative difference in my presence here, in contact with those who are so eager to serve us, has altered the nature of things to a degree that convinces us of the need for us to come together at the earliest possible moment. This is not a wish, but a necessity.

Dr. Melvin Cohn

Page 2

7 March 1963

I agree fully with your need and Eli's to begin to establish your own groups to advance the day when the unit around you will begin to function to your satisfaction. There are many imponderables which enter into a decision as to how this might best be done. Because of the importance of this critical moment of beginning, both with respect to your own groups and to the Institute as a whole, I feel that this question should have the benefit of a meeting of the Fellows, as a group, and that we not act upon our respective individual desires as they have developed under circumstances of separation. Before receiving your letter I had asked Renato to arrange a meeting, in La Jolla, of all Resident Fellows, to discuss the problem to which your letter referred. That we may discuss your proposal, and answer all the questions you have raised, as well as any alternative proposals, I have asked Bill Glazier to canvass the group for the earliest convenient date for a meeting in La Jolla. You will hear from him separately.

I am sending a copy of this to all who received your Round-Robin letter.

Sincerely,

James Salk

Institut Pasteur

25, RUE DU DOCTEUR ROUX
(IX^e Arrond)

Téléphone : SÉCUR 01-10

Paris, le

1st March

1963

Dr. Melvin COHEN
Institut Pasteur
Service de Biochimie Cellulaire
25, Rue du Dr. Roux
PARIS 15^e
France

Round Robin Letter - From Melvin COHEN

These are some general comments, ideas etc. plus an attempt to find out what plans each of us have in mind in this interim period and what the Institute can do to facilitate them.

A. In discussions with Jacques and Ed it became clear to me that I should start organizing my group now. To do this, Jacques very generously extended to me (as well as to Ed) the necessary space. I am very enthusiastic about this as the intellectual as well as physical attraction of this laboratory will greatly facilitate getting the group I have in mind. Furthermore the move to La Jolla as a working group will involve a much lesser time loss in arriving at peak activity.

Greater love hath no man, for this offer is a real sacrifice on the part of Jacques who also needs the space for his broadening training program. In order that I can accept this offer with a clear conscience I must be certain that any group I form will participate actively in his training program and will not be a drain on the physical facilities of his laboratory. This is of course part of the initial interest and primary objectives of our institute and comes as a natural starting step.

My proposed plan then would be to build a group here which would move to La Jolla in Sept. 1964 when the buildings are ready.

In order to offer positions to junior people as well as technical people 1) It must be clear that I have (available July 1, 1965) the totality of my \$100,000 budget which I can spend as I feel reasonable to facilitate the work of my group here without burdening Jacques. 2) The institute must be immediately ready to handle great requests. 3) Some scale of salaries must be clarified so that we don't have a large disparity between groups. Here I propose :

- 1 - Senior level person - greater than 3 years after doctorate
\$15 - 18,000
- 2 - Junior level person - less than 3 years after doctorate
\$12 - 15,000
- 3 - Technicians, copy, dishwashers, etc. preparatory, etc.
\$ 5 - 10,000
- 4) The fringe benefits program for these personnel should be clear and established immediately.
- 5) Since scientific personnel have the eventual hope of becoming fellows there should be an immediate mechanism set up to get comments and approval

.../...

by all of us of those people we bring with us. I would like to offer junior positions to three out of following five as an example :

Steven EISENBERG - Ph. D. with Kornberg 1961 Post Doctorate with Schellman - worked on phage induced proteins

Michael CHAMBERLAIN - Ph. D. with Berg 1963 - worked on RNA polymerase

William WOOD - Ph. D. with Berg 1963 - worked on protein synthesis in cell free extracts and properties of transfer RNA

Elliot ELSON - Ph. D. with Baldwin 1963 - theoretical physical chemist - worked on helix-coil transformation in DNA

David ZIPSER - Ph. D. with Watson 1963 - working on complementation in -galactosidase system

Carl WOESE - Ph. D. with Pollard Yale 1960 - at present with Bell telephone - working in the coding problems. Post Doctoral with Monod in whose lab he worked on the messenger RNA

Please tell me what information you would want to comment.

B. It must be clear that the Institute will arrange for funds for all initial equipment and installation so that our starting grants in Sept 1964 will involve only maintenance and running expenses. This must be outside of our institute budget.

C. Some concrete plan to approach Berg and Hasselton should be made so that the basic group can be brought to its critical mass. Other fellows should be considered, as soon as a clear program is ahead of us, so that they can contribute to the organization.

D. The Institute should consider buying land now in the area to serve in several capacities. 1) Special or unforeseen experimental programs i.e. farm for large animals for botanical work or pilot plant work etc. 2) Housing for institute members at all levels. One model is the Stanford plan where the land is leased for 90 years for home building. This will greatly facilitate the recruiting of personnel at all levels, establish a good working spirit between all of personnel levels, and create a mixed community. Furthermore in what is obviously a socially backward area, the Institute will have taken a stand, by example, on an important principle.

E. Design of laboratories - Karl Wallis might visit us here soon to discuss the laboratories and later Jean Pebody can come to organize ordering.

F. I am not happy with the publicity campaign which is hurting us in the scientific community. I am just going to quote from a letter I got after the Life article from a reporter friend of mine. "If I might offer some free public relations counsel to the Salk Institute it would be to watch out for too much publicity on all the material spender of the buildings etc. A romantic and 'materialistic' view of science can pay off in a certain limited areas of fund raising and opinion swaying, but it has been my experience that very much of that backfires - sometimes seriously. Lets have less of Salk in the sunset and more of him in the lab with that not - so-fresh white coat". James Van Sant, St. Louis.

Lets hire him as the public relations man.

G. My recent appendicitis has made me think about the fringe program which I would like to see formulated soon.

The progress in organization, fund raising and building is phenomenal and I would like to express my appreciation to Jonas, Warren, Bill and others who have been working on these aspects leaving the rest of us free to do science. Soon we will do our turn.

Best,

Mel

Mel.

c.c. : S. SALK, W. GLAZIER, S. HENGER, W. WEAVER, G. PHEL, F. CRICK,
J. MOOD, L. SILLARD, J. BRONOWSKI, R. BULWOOD, E.S. LEMCK

I, STEPHEN V. RYAN, Assistant Secretary of THE NATIONAL FOUNDATION, a corporation duly organized and existing under the laws of the State of New York, do hereby certify as follows:

That the following is a true copy of resolutions unanimously adopted at a meeting of the Board of Trustees of said Corporation held on the 14th day of March, 1963, at which a quorum was present:

"WHEREAS the National Foundation, at a meeting of its Board of Trustees held December 14, 1961, did undertake to raise and to grant \$15,000,000 for the organization and construction of the Salk Institute for Biological Studies, and in addition to grant to the Institute \$1,000,000 a year for operating costs plus \$1,000,000 a year for a period of ten years to create an endowment fund for the Institute, and

"WHEREAS The Salk Institute and the National Foundation both deem it appropriate at this time to modify such undertaking,

"NOW, THEREFORE, BE IT RESOLVED that the National Foundation hereby approves a grant to the Salk Institute for Biological Studies in the sum of \$5,000,000 to be applied against costs of the construction of the Salk Institute and its facilities at San Diego, California, such sum or unpaid part thereof to be paid to the Salk Institute prior to August 1 in the calendar year 1963, at such times and in such installments as shall be required by it, and

"BE IT FURTHER RESOLVED that the National Foundation hereby approves an additional grant to the Salk Institute in the sum of \$3,000,000 to be used for the construction of the Salk Institute and its facilities at San Diego, California, such sum to be paid to the Salk Institute at such time or times as may be agreed upon by the President of the National Foundation and the President of the Salk Institute, but in no case later than December 31, 1968, and

"BE IT FURTHER RESOLVED that the National Foundation shall continue to bear the organizational and operating expenses of the Salk Institute and that it approves additional grants to the

Salk Institute (excluding grants for the support of specific research projects), as follows:

- "(A) During calendar year 1963, the National Foundation will bear the total organizational and operating expenses of the Salk Institute in an amount to be agreed upon by the Presidents of the Salk Institute and the National Foundation.**
- "(B) During the calendar year 1964, \$500,000 to defray operating and research expenses plus such additional sums as may be agreed upon by the Presidents of the Salk Institute and the National Foundation as necessary to defray any operating and research deficit of the Salk Institute for such year.**
- "(C) During calendar year 1965, \$1,000,000 to defray the operating and research expenses of the Salk Institute plus such additional sums as may be agreed upon by the Presidents of the Salk Institute and the National Foundation as necessary to defray any operating and research deficit for said year.**
- "(D) During calendar year 1966, \$1,000,000 to defray the operating and research expenses of the Salk Institute plus such additional sums as may be agreed upon by the Presidents of the Salk Institute and the National Foundation as necessary to defray any operating and research deficit during the period January 1st through June 30th of said year.**
- "(E) Commencing in calendar year 1967, and in ensuing years, \$1,000,000 per year to defray the operating and research expenses of the Salk Institute, and**

"BE IT FURTHER RESOLVED that the National Foundation grants to the Salk Institute and additional \$10,000,000 as a capital fund for such Institute, such amount to be paid to the Salk Institute in installments of \$1,000,000 per year as of July 1st of each year, for ten years, beginning in the calendar year 1965, and

"BE IT FURTHER RESOLVED that the foregoing resolutions have been passed on the agreement by the Salk Institute and the National Foundation to the following conditions:

"(1) That the financial arrangements between the National Foundation and the Salk Institute set forth in the foregoing resolutions replace any prior financial arrangements or commitments made to the Salk Institute by the National Foundation; and

"(2) That within sixty (60) days from March 14, 1963, the Salk Institute will enter into and execute a contract to appoint and employ Dr. Jonas E. Salk as Director of the Institute for a period of ten(10) years starting not later than July 1, 1963, to carry out the responsibilities of the Director of the Institute as set forth in Article VIII of the By-Laws of the Salk Institute; and

"BE IT FURTHER RESOLVED that the proper officers of the National Foundation be, and they hereby are, authorized to do any and all things necessary or advisable to carry out the intent of the above resolutions, including the execution of appropriate agreements with the Salk Institute."

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed the seal of said Corporation this 18th day of March, 1963.


Assistant Secretary



INSTITUTE FOR BIOLOGICAL STUDIES

San Diego, California

**Pittsburgh, Penna.
11 May 1962**

**Dr. Melvin Cohn
& Rue Armand Brisson
Paris XV, France**

Dear Doctor Cohn:

The Board of Trustees of the Institute for Biological Studies at San Diego, at its meeting on 7 March 1962, authorized that an invitation be extended to you to accept an appointment as a Resident Fellow without term, which means for life. This appointment carries with it membership in the self-governing and self-perpetuating community of scholars that is being established by the organization of this Institute.

A Resident Fellow will correspond to the department head in a university. In addition to Resident Fellows, there will be Associate Fellows, with appointments terminating at a stated retirement age, who will correspond to Professor or Associate Professor in a university. An Associate Fellow will be nominated by the Resident Fellow with whom he will be associated and will be appointed in the same manner as are Resident Fellows.

An additional category of appointment, which might be called Associates, will refer to persons appointed usually for a fixed term or, in some instances, until retirement age. Such Associates will be appointed upon the recommendation of a Resident or Associate Fellow with the approval of the Director; appointments to retirement age can be made only upon the recommendation of Resident Fellows.

A budget of \$100,000 will be made available to you yearly. Against this will be charged your salary; the cost of the additional benefits that accompany this appointment; salaries and benefits for the Associate Fellows whom you choose; travel and communication; dues to professional societies for yourself and your associates; books and journals which you deem essential in the conduct of your work; salary for secretarial assistance and such other assistants, and equipment and supplies as you may need. It is

Dr. Malvin Gohn

Page 2

11 May 1962

understood that this amount will be supplemented by grants. Such grants may be used, in part, to effect items chargeable to your \$100,000 budget. Any balance of the \$100,000 remaining at the end of each twelve-month period will accumulate as a contingency fund upon which you may draw. The limit of this contingency fund will be the amount accumulated over a five-year period. Any unused portion of the balance remaining at the end of each year after the fifth year will be reduced by 50% of the total accumulated amount, reverting to the funds of the Institute.

Your basic salary will be \$25,000 per annum to be adjusted annually on the basis of an appropriately determined cost of living index. In addition, a carefully considered insurance and retirement program will be provided. When a Resident Fellow becomes eligible for and begins to receive retirement income his compensation from the Institute will be reduced by the amount of his retirement annuity.

The Institute will establish a scale of minimum salaries for various categories of associates, assistants and other personnel, and these too will be adjusted annually to reflect changes in cost of living; other increases in salary will be based upon merit. An insurance and retirement program will also be provided.

There will be available to you an adequate amount of equipped and furnished laboratory space, sufficient for reasonable expansion and for visitors who will be associated with you. There will be available shops, animal quarters and storage areas. You will also have a study, separate from the laboratory.

It seems necessary that there be a termination point in the continuation of the right of a Resident Fellow for full space and total budget allocation. When this occurs, then by action of the Resident Fellow himself or as a result of consultation between the Director and the Committee of Fellows, space and funds will be fixed for the remainder of the term of tenure of such Resident Fellow and of Associate Fellows who have been under the jurisdiction of the Resident Fellow.

Personal compensation and financial support for you and your staff will become effective on 1 July 1963. It is presently estimated that the laboratory buildings will be completed by the summer of 1963 and that equipment ordered in advance and delivered will have been installed. Because of the importance of a definite date for assumption of responsibility by the Institute, the schedule of construction will be agreed to as closely as possible.

Dr. Melvin Cohn

Page 3

11 May 1962

To facilitate the beginning of your work at the Institute, The National Foundation has agreed to finance for the first two years the annual deficits in the current cost of operating the Institute.

Two considerations have prevailed in the selection of the first Resident and Non-Resident Fellows. One has been the character and quality of the person himself, and the other has been his area of present interest. The area of initial Institute interest is expressed by the nature of those selected. It seemed sound to begin with a small cohesive group and to add others possessing different interests who will be added with the same care as those initially selected for invitation.

Invitations to Resident-Fellowship have been authorized for: Seymour Benzer, Paul Berg, J. Bransford, Renato Dulbecco, Edvin Lemmon, Matthew Meselson, Theodore Puck and yourself. Invitations will go forward to each as he indicates his desire to receive such an invitation. Invitations for appointments as Non-Resident Fellows have been authorized for: Francis Crick, Jacques Monod, Leo Sillard and Warren Weaver; all have either accepted or have indicated their intention to accept.

For extending the initial group of Resident and Non-Resident Fellows, the Board of Trustees shall create from its own number a special Nominating Committee to consider and recommend all appointments without term or that run to retirement age. Immediately upon your acceptance of this invitation, you will be added to the special Nominating Committee which will then be comprised of Trustees and the Fellows so added.

The special Nominating Committee shall be automatically dissolved on 31 December 1964, or earlier, by agreement within said Committee and with the concurrence of the Board of Trustees that a sufficient number of Resident and Non-Resident Fellows of sufficient diversity have been appointed by the special Nominating Committee.

Upon the dissolution of the special Nominating Committee the Resident Fellows and Non-Resident Fellows will assume full responsibility for nominating all future Resident and Non-Resident Fellows and will exercise all powers vested in the Fellows as set forth in the By-Laws.

Until the Committee of Fellows provided for in Article 10 Section 3 of the By-Laws shall be formed, the Fellows will act as a body. When six Resident Fellows have accepted invitations, they shall elect three of their number to serve as interim members of the Conference Committee until that Committee, as described in the By-Laws, has been created.

Dr. Melvin Gahn
Page 4
11 May 1962

In addition, and prior to each Annual Meeting of the Corporation, until the Committee of Fellows is formed, the combined group of Resident and Non-Resident Fellows will elect three of their number to serve for one year as members of the Corporation.

It would be most desirable to have your considered reply as early as convenient. This may be done by signing the accompanying copy of this letter.

Sincerely,

James Galk
Director

cc: Chairman of the Board
President
Treasurer

Journals - Renato Dulbecco

1. **Biochimica et biophysica Acta**
2. **Biochemical and biophysical Research Comm.**
3. **Cancer Research**
4. **Experimental Cell Research**
5. **Journal of Biological Chemistry**
6. **Journal of Experimental Medicine**
7. **Journal of Molecular Biology**
8. **Journal of the National Cancer Institute**
9. **Nature**
10. **Proceedings of the National Academy of Science**
11. **Virology**

To: Fellows of the Salk Institute
From: Warren Weaver (in collaboration with Jonas Salk and Bill Glazier)
Subject: News, Questions, and Reflections.

For the first time in the history of our Institute, a Non-Resident fellow is resident. (Through a strange coincidence, the Chairman of the Board of Trustees is also present, but he has very properly stayed in the background). Having spent about ten days here with a chance to visit the site and Jonas' laboratory, to be in the Institute office every day, to meet and get to know the other persons involved here, and most important of all to have numerous long and unhurried discussions with Jonas and Bill, I feel a strong urge to communicate with the entire group.

What is here written has arisen in large part out of our local and recent discussions - and has been vetted before distribution by Jonas and Bill; so that the final draft incorporates suggestions from Jonas and Bill.

I am not going to apologize for the length of this memo. One of our difficult present problems is that of communication; and the written word must, for the moment, be a principal - and hence heavily used - medium.

I want to write first concerning three basic but long-range aspects (the building program, the financing of the Institute, and the organization of the Institute); and then concerning two more immediate problems (the schedule for arrival here of the various fellows, and meetings of fellows and the communication problem between meetings).

1) Building Program

The situation in the building program cannot be understood until one realizes that we have, on the one hand, a firm of "managing-builders" (The Fuller Construction Company) which is experienced, able, energetic, and chiefly used to building rather conventional structures*, and on the other hand an architect (Louis I. Kahn) who is extremely talented, very widely known and appreciated, sensitively aware of the unusual nature of this enterprise, devoted to designing buildings that will be serviceable both to the scientific function and to the broader intellectual and aesthetic purposes of the Institute - but something of a dreamer who is bored by time schedules, who loves to keep thinking of new and better ideas, and who is therefore very hard to pin down to the calendar.

* Although they have built the Lincoln Memorial, the U. S. Supreme Court building, the U.N. buildings, etc.

Over two months ago Jonas clamped down very severely on the architect's office, with some firm deadlines they had to meet or else. This helped substantially, and foundation footings were begun on 20 December. But the detailed plans and specifications (I am speaking here, of course, only of the plans for the two laboratory buildings and the connecting underground service building) were not received until 19 January, and since then have been in the process of coordinating and checking by the builders.

There is another decelerating factor, for we do not as yet have complete and final approval of our plans from the city building authorities - a routine but necessary matter. I understand that the primary concern is to check the safety of the design relative to what in California are somewhat shyly referred to as "horizontal stresses" (i.e. those due to earthquakes). But the definitive permit approval is expected very soon, and it is unlikely indeed that this will really hold us up.

A great deal has happened at the site. A tremendous amount of dirt has been moved in connection with the excavation for the labs (about 100,000 cubic yards). A considerable amount of concrete (about 1800 yards) has been poured in the footings. A crew of only about ten men is going ahead steadily, but rather slowly, with finishing the foundations. Excellent quarters have been erected on the site for the engineers of the Fuller Company and for the architects. A full-scale mock-up of a standard lab module has been constructed, to aid in visualizing and designing lab interiors. Sample vertical slabs of concrete, of varying color and texture, have been cast to assist in choosing the most attractive appearance for the wall surfaces.

The work to complete the foundations and retaining walls will continue at just about the present speed throughout February and most of March. Release of plans from the City Building Department will then permit the construction crew to be substantially enlarged to 100 and then 200, and the place will hum with an estimated payroll at the site of about \$20,000 a week. Just last week, two contracts to the amount of \$5.7 million were let for the electrical, heating, air conditioning, plumbing, and piping in the laboratory complex; and elevator contracts have also been let.

The upshot of all this is that we are paying a price - namely a disappointingly slow start - for architectural beauty and for the functional convenience which over the long haul will certainly justify the price. The present indication is that the labs will be ready for scientists to move in about 1 July 1964, a date that could not be set until just a few days ago when a real estimate could be made. It will soon be possible to begin work on detailed plans of interiors with Earl Walls (for whom we are all indebted to Ed Lennox).

I will be sending you within a few days prints of some pictures that will give you a better idea of just where things now stand at the site.

2) Financial

One of the essential features of our whole plan is that the scientist-scholars be protected from any worry about the stability and flexibility of their basic financial support.

This is the responsibility of the Board of Trustees - not of the Fellows. I therefore want to bother you with just enough news on this subject so that you will be assured that these matters are being properly attended to.

The group which has been working on this aspect (Mr. O'Connor, Gerry Piel, Mr. Heneman, Mr. Walker Cisler, Jonas, and myself, with many assists from Bill Glazier and others) have gradually realized that the Board of Trustees of the Institute must itself be responsible for creating the identity of the Institute and for assuring the necessary financial support.

Various moves have occurred and are continuing which will help in the meeting of these responsibilities. Let me mention some of these:

a) The move of Jonas' own research group has aided greatly in establishing the reality of the fact that the Institute exists, and is located here in Southern California.

b) The Institute will presently have an office of its own in New York City (by pure accident in the same building as the office of the Sloan Foundation where I normally am situated). This office will serve all Institute needs in New York, including fund-raising activities.

c) New agreements have been reached between Mr. Piel and Mr. O'Connor, and will presently be officially ratified, under which the National Foundation agrees to grant* five million dollars towards the cost of the buildings, and further agrees to grant three million more as soon as the Institute has itself obtained seven million in cash or responsible pledges.

This leaves a completely unencumbered and well defined problem for the Institute itself to face. Mr. Walker Cisler of Detroit, President and Director of the Detroit Edison Company, and a very widely known, importantly connected, and highly admired individual, has agreed to head a truly national group which he will create (which he has in fact already partly created) the central management of which will be called the "Fiscal Advisory Committee". He is prepared to assist by undertaking to raise the seven million referred to above.

The funds being supplied by the National Foundation are being presently applied to meet the bills for the construction now going on. Mr. Cisler's group will raise their

*Previously the National Foundation stated, with respect to the capital funds, that they "would undertake to raise".

seven million dollars for the laboratories. (which will doubtless be, to the public, the most attractive portion of the necessary financing). When that seven million has been raised, the total eight million from the National Foundation will be available. In terms of formal bookkeeping the laboratory costs will be met by the seven million raised by Mr. Cisler's group (working in direct relationship to the Institute Board of Trustees) plus whatever in addition is necessary for us to assign from the National Foundation eight million. The remainder of the National Foundation contribution will be used for the Meeting Center, the residential units, grading and landscaping and grounds, etc.

Gerry Piel, Jonas, Mr. O'Connor, and Mr. Heneman had most productive and satisfactory meetings out here about three weeks ago, at which this was all blocked out. Mr. Cisler has been here this last week end. We have, of course, analyzed the "cash-flow" requirements, and see no reason why funds will not be available when needed. I repeat - we see no reason to fear any delays, in our schedule of producing physical facilities, caused by unavailability of funds.

Mr. Walker Cisler's interest goes far beyond any "one-shot" activity. We are confident that he will want to have a significant continuing relationship, aiding in the financial aspects of future development of growing plans. He may very well wish to organize a group to be known as "Salk Institute Associates".

Finally, I should make it very clear that the obligations with respect to capital funds just stated are in addition to the agreement that the National Foundation furnish one million dollars a year of core budget, plus one million dollars a year towards endowment, both pledges made for an initial period of ten years but made with the expressed interest, on the part of the National Foundation in both extending and enlarging that support. These pledges begin to operate when the Institute "starts" (a subject which will be discussed below); and in the meantime the National Foundation is very generously indeed paying all the "development bills".

3. Organization

First, under this heading, let me report to you the progress in recruiting that part of the staff of the Institute which will have no direct involvement in the scientific program, but whose job it will be to see that all the housekeeping-supply-service-maintenance aspects are handled so efficiently that the scientist-scholars can safely disregard all such matters.

These responsibilities necessarily head up, as a formal matter, in the position of Director of the Institute (and through him, to the President - Chairman of the Board - Executive Committee of the Board - Board in the infrequent and

unlikely case of a problem that cannot be disposed of at a lower level). But we are determined that Jonas be in a situation that will permit him, with complete confidence, to delegate these responsibilities to others. Only major questions with policy implications should get up to his office, and all implementation of plans and policies should rest on others.

Charles Wilson, who has served as a sort of general manager, has left our employ, and there has recently been appointed Mr. George Conn, who (I think no one has bothered as yet about the matter of the label on his door) will be a kind of managerial assistant director, responsible for the physical plant, the janitor and service staff, accounting, purchasing, shipping and receiving, travel assistance, staff work for Board meetings, etc. - in short, everything that needs to be done to furnish the scientist-scholars with the physical surroundings and service they need.

Mr. Conn will have other and in a sense higher responsibilities than these. Some of you have met Mr. Conn, who was Mr. Heneman's assistant for about ten years and who was especially engaged in work with academic institutions. For (see accompanying sheet which sketches Conn's history) he has had experience which will enable him to assist greatly in connection with our overall financial structure and our various activities for providing funds. I do not understand that he would himself go outside the Institute to raise funds; but rather that he would be importantly involved in the planning of all such activities and in aiding and servicing these activities.

Thus, very broadly, Jonas can delegate to Conn the immediate responsibility for all of the "mechanics" of the Institute, and a large responsibility for keeping a constant eye on our financial situation - expenditures, needs, and long-range plans. Several of us had contact with Conn before he was taken on; and we are enthusiastic about him. As is true, so far as I can see, of everyone else in our enterprise, he was captured primarily because of his great interest in the basic concept of the Institute.

All of you know Bill, so I need say little about him. He will function as the personal assistant to Jonas. At times I would expect him to act as a buffer between George Conn and his array of problems and Jonas, permitting only the absolutely essential matters to impinge on Jonas' attention. At other times he will serve not as a buffer, but rather as an understanding link between Jonas and the "Institute" on the one hand, and the individual scientists and scholars on the other hand. At other times Bill will just do anything he can to help Jonas. Thus Bill's role, in close personal relation with Jonas, will involve the practicalities of the Institute (George Conn's primary domain) but will also involve matters which somewhat more directly affect the intellectual and scientific activities of the Fellows and other staff members.

We have also secured the services (I understand by virtue of an initial tip from Mel Cohn) of Jean Peabody, who had experience as a purchasing agent at Stanford. There is every evidence that she is a person who knows the business of purchasing of scientific equipment, supplies, etc., and also a person whose motivation is to help the scientist - to get for him as promptly as possible what he wants and needs. We are all delighted with Jean.

George Connis here now for a few days, and he will join the staff here about March 1. On his present visit we plan to block out an over-all budget, which for the first time can give a realistic picture of the relation between our commitments and our resources. This, incidentally, will be the real beginning of the basis for answering the question all of us have been asking, with some plaintive yearning and confusion. "What are the realistic prospects for enlarging our staff and program?"

As a conclusion to this section, I would like to suggest, for your comments and criticism, some general observations on the matter of the organization of our Institute. For if we do not succeed in developing some new and improved patterns for the organization of an intellectual enterprise, we will have badly muffed one of our great chances.

I can describe, in general terms, what I think the organization scheme should accomplish. I am, incidentally, using the word "organization" in a more biological sense than the one which I suspect would be intended by professional experts on organization. As I use the word it places more stress on the effectiveness of the overall and inter-locked communication system; on the sense of personal freedom of the individual scholars; on their peace of mind when they want that and on the provision for stimulation when they want that; on their protection from silly and stupid intrusions; on the promptness with which their needs are met; on the sense of responsible participation which every Fellow should have; on their confidence that they will have just as much opportunity as they wish to affect important decisions before they are made. Almost most of all, I hope our organizational scheme will recognize that individual persons all differ and that uniformity often, if not always, tends to average out - and average down - these desirable differences.

In terms of a geometric metaphor, I think that the organization of the Institute ought to succeed in erecting a hedge, on one side of which are located problems (and mechanisms for their solution) concerning which each Fellow will say to himself "I do not wish to be personally involved in those problems, and I feel completely content and assured concerning the way they are being handled". On the other side of the hedge are located problems concerning which each Fellow will say "I do want to concern myself with these problems, and I am comfortable about my

access to these problems, my knowledge about them, and my effective contact with these problems at the various stages of their development. I know, moreover, that there is a way in which I myself can introduce problems that seem important to me."

I do not think this hedge need exist in the same location for all the Fellows. Each should have the privilege of erecting his hedge where it suits his temperament and his concerns.

And note that it is a hedge, not a wall. Anytime it is necessary, a Fellow can walk through his hedge.

We have been talking here a little about "organization charts". Some of these charts (military ones, for example) can almost be drawn in one dimension. Normally such charts use two dimensions.

I'm not sure that we need an organization chart - or in any event, one that the Fellows look at. But it does seem to me rather interesting to think about the multi-dimensional relationships that we ought to develop, with responsibility, authority, information, advice, curiosity, concern. . . . flowing on all sorts of inter-connecting routes, utilizing various dimensions of the total Institute space. It might be well to think of this in topological terms, since the important relationships should remain invariant under all sorts of stretching.

4) "Beginning" Date for the Institute"

It has become clear that there will be no one single moment of time at which all the Fellows will appear here, take up residence, and start their work.

Jonas, for example, is here now, along with his entire present group of assistants. He is pleasantly and effectively installed at the Scripps Clinic (five minutes from the office), and will be there until about the first of March at which time he will move into a temporary structure out at the site.

As I mentioned at the outset, a Non-Resident Fellow is here now, and is sorry that the plan under which both he and Bruno would be here this winter did not prove to be possible for Bruno.

The schedule for our buildings and the circumstances under which temporary space can be made available have now become sufficiently clear so that we plan to have discussions over the next two or three weeks concerning realistic and acceptable schedules for Renato, Seymour, Mel and Ed.

As for Bruno, the sooner the better, from the point of view of all of us here now. He has, entirely understandably, to bring his commitments to the Coal Board to a reasonable termination. But we are hoping most earnestly that he can come before July, 1963.

One major point should be stated with complete firmness and clarity: there is no change whatsoever in the Institute commitment to all the regular Fellows that their formal appointments become active (salary, fringe benefits, etc.) on July 1, 1963.

5) Communication

We would greatly appreciate comments and suggestions from all the Fellows - resident and non-resident - as to any communication aids that seem desirable to you. It is imperative that we maintain a unity of understanding even under these divisive circumstances.

(Separated as most of you are, you can have no conception of some of the pressures on Jonas, and the practical impossibility of keeping some things from happening - in the public press, magazines, etc., - that doubtless seem very stupid and silly as you observe them from a distance. You must all be tolerant about such mishaps. I have inserted this paragraph without Jonas' knowledge).

The occasional news bulletins by Bill, and his personal visits, are aimed at the problem of better communication. Should we have meetings - occasionally or on some schedule - here in La Jolla, in New York, in Paris, in England? We must not impose unnecessarily on your time, and we must not spend the considerable amount of money such meetings would cost unless they promise to serve important purposes.

Is there any other communication procedure that appeals to you as useful and desirable? Perhaps this present memo will at least serve as a critical experiment in a negative sense!

February 11, 1963

Salk

5 March 1963

Memo To: Fellows
From: Warren Weaver
Subject: Comments on Recent Memos

Please address any comments you wish to make concerning recent memos to me at Second Hill, New Milford, Connecticut, with copy to Jonas.

4 March 1963

Memo To: Fellows
From: Warren Weaver
Subject: Attached Draft

Please read this explanatory memo before you read the attached draft.

The Salk Institute has to communicate to a number of quite different audiences, and accordingly must communicate on differing levels and in differing ways.

The piece in Life was far from satisfactory to us here in La Jolla, but it nevertheless seems to have been effective in creating wide interest and good will. I have had considerable number of letters from friends, not scientists but solid and influential citizens, and they have all been enthusiastic.

Several, however, have said. "I want to know more - and can it be said in words of one syllable".

It is these requests, combined with a number of specific questions that I have been asked, which led me to attempt to draft an explanatory document which would be simple, direct, and understandable to persons without much background of contact with such affairs.

Will you read and criticize the inclosed draft. At the moment we think of using it only as part of our reply when someone does say to us, "Tell me more". It is possible that Mr. Walker Cisler may wish to make use of some such statement in his fund-raising activities.

No one has seen this so far but Jonas, Bill, and myself. It will not be re-drafted until all the Fellows have had a chance to criticize it. Questions you may wish to comment on are these:

- 1) Is there anything you would prefer to have omitted?
- 2) Can you suggest any clarification or simplification?
- 3) Is there any sentence you consider inaccurate, mis-leading, or otherwise unfortunate?
- 4) Do you object to the informal tone?
- 5) Is there any question and answer that should be added?

I assume that we are a democratic community, and that we would not expect to alter significantly a statement that is approved by eight or nine but objected to by one or two. If three Fellows question any statement, I would be inclined to take this very seriously.

AN INFORMAL CONVERSATION

About the Salk Institute for Biological Studies

1. What is the Salk Institute?

It is an Institute devoted to fundamental scientific research.

2. Why do you say "fundamental?" What is fundamental research?

It is research which is primarily motivated by a desire to obtain new knowledge and new understanding concerning the essential nature of things.

3. Doesn't that mean that research of that sort is essentially impractical?

Not at all. The research to be carried out will be at so fundamental a level that the knowledge gained will be very general in character, so that it can then be applied to many practical problems of widely variable sorts.

4. You keep speaking of research. Do you not have any concern for education?

Yes, we do. Our initial educational efforts, however, will be primarily concerned with very advanced scientific training, chiefly on the post-doctoral level. This sort of advanced training is steadily becoming more and more important.

5. Can you give me an illustration to make more clear the practical importance of basic research?

When a great scientist, well over one hundred years ago, made a very basic discovery about electricity he was asked what use it would ever be. He said, "Of what use is a new-born baby?" His discovery is usefully applied today in literally thousands of practical applications. Every time you make use of any device that depends upon an electric motor (and that, I can assure you, is dozens of times every day) you "use" his basic discovery.

6. Could you give me another illustration that may be a little closer to the work of the Salk Institute?

You know that Dr. Salk played an important role in connection with the problem of polio. But suppose that someone--perhaps someone in the Salk Institute--would discover enough deep and general new knowledge concerning immunity to disease so that it would then be possible to go on to the practical problem of devising a vaccine that would protect a person not against one

specific disease, but against, let us say, all the diseases caused by viruses. (Remember that cancer is related in some important way to viruses.) Don't you agree that this kind of a basic discovery would be enormously practical?

7. I certainly do agree, but if you are not trying to solve specific practical problems how do you know just where and when your new knowledge is going to be useful?

We don't know that. We can't possibly know that: for the chief characteristic of new knowledge is that it is new-- and hence no one can predict its exact nature or just how it will serve mankind. There is an act of faith involved here-- the faith that knowledge is good and that the mind of man has an obligation as well as a need to go on exploring the unknown.

8. Well, that sounds impressive, but it also sounds pretty complicated and general. Don't you have any idea about what sort of new knowledge you are after?

Of course we have. Our full name, let me remind you, is the Salk Institute for Biological Studies. The core of our activities will be research aimed at obtaining new knowledge about living things--how they are constructed, how they function, what is wrong when they are diseased, how characteristics are inherited, how they learn, etc.

9. Isn't that what all biologists try to do?

Of course it is.

10. Then what is so special about your Institute?

Well, we hope to be special in several ways, and possibly even unique in some respects. And let me emphasize that in answering your question, we do not wish to imply that numerous other institutions are not fulfilling their special roles in an excellent way.

First of all, we are assembling a staff of specially high quality. We will have a relatively small staff concentrating on research. And since we start with all of the advantages of the present but no handicaps from the past, we expect to establish a most unusual level of excellence. And we have a recruiting advantage; for we can, in a very unusual way, assure our staff complete intellectual freedom, superb physical facilities, and stable and flexible support.

We have, on our initial staff, leading scientist-scholars from England and France. We plan to maintain relations with numerous universities and research institutes in our country and in other parts of the world, by temporary exchanges of advanced students and through the participation of our Non-Resident Fellows.

11. All the facilities, the freedom and the financial security you are assuring your staff, raise a question. Will they be too comfortable, too protected? Can they, for example, spend their budgets for anything they like?

The freedom with respect to money is, you may be sure, subject to the condition that the money be used for research. And we are completely confident that we will not have an over-protected sort of monastic retreat. Our staff will be in the most stimulating contact with the whole world of scholars and the world of ideas.

12. Is that all that is special?

By no means. There are other ways in which we are special.

For example, you doubtless realize that scholars and scientists do not like to be regimented, and usually resent having to spend time on administration. On the other hand, they do not like to have important institutional decisions made over their heads and without their advice. We have an organizational scheme that would probably work only in a relatively small institution, and one that almost surely would not work in a college or university that is organized with traditional departments. In our scheme the scholar-scientists can, each to the degree he prefers, participate in initiating and debating questions of institutional policy. The scholar-scientists will also have actual control over certain decisions in areas which specially concern them. The appointments of new staff members, for example, are under full control of the staff. We think our organizational scheme is novel, good, and very important.

13. That's undoubtedly fine for your staff members, but why do you tell me about your organization?

Because we wish to convince you that your research dollars invested here will bring specially good returns. This means having the staff working under optimum conditions. They must have their full potentialities released. Incidentally, they have to be happy. I don't mean "contented-happy;" I mean "stimulated-happy."

14. O. K. Suppose you have a stellar staff, fine facilities, and conditions which do stimulate them to do their finest work. Suppose I did contribute some money. Can you not tell me a little more about what activities this money would help support?

Surely, and this allows me to add my third argument in support of the thesis that we are rather special.

For the lines along which our program will develop are, we think, really special and specially promising. It will take a moment to make this clear.

In our program we will, from the outset, have a major emphasis a minor emphasis, and a long range philosophy. I want to mention all of these.

The major emphasis will be on what has (over the last quarter century) become known as "molecular biology." This involves studying the structure and behavior of living things in an almost incredibly detailed way--actually at the level of molecular dimensions. Molecular biology is specially concerned with genetics, with detailed accounts of what goes on inside individual cells, with analyses of what makes cells "normal" and "abnormal," and with what makes cells grow and develop and take on various functions in the body (nerve cells, blood cells, muscle cells, etc.). Physics and chemistry and biology team up so intimately in such studies that it is really pointless to try to discriminate.

As part of this sub-microscopic penetration of biological problems a great deal of study will be directed toward detailed aspects of genetics, and of the biochemistry of cells. There will also be extensive studies of viruses, and of the processes (immunological) by which the body protects itself from invasion by foreign material (infections, substances causing allergic reactions, etc.). The Salk Institute will be much concerned with the problems I have mentioned so far, over half and perhaps as much as three fourths of our initial staff being thus involved.

Second, as a minor emphasis as measured by manpower but as an essential emphasis in terms of our over-all purpose, we will have on the staff persons concerned with interpreting the discoveries and insights of science, and in relating this rather analytical type of knowledge to the intuitive types of knowledge and insight possessed by the humanists and artists. It is a central thesis of the Institute that science should be a respected and friendly partner of all other creative aspects of our total life, not a suspected or feared stranger.

Of our initial staff one Fellow* and one Non-Resident Fellow will be specially concerned with these efforts to establish effective bridges between what Sir Charles P. Snow (one of our Trustees) has called "the two cultures." This topic will come up again in a moment, when I speak of our over-all philosophy.

In further explanation of our program, we plan to add to our staff scientists concerned with central nervous system phenomena--that is to say, with the way our brain and nerves work. How do we learn, how do we remember, why do we forget, how do our "emotions" affect our behavior, what abnormalities (mentally retarded states, emotionally disturbed states, etc.) can be alleviated or controlled or prevented? Why, in short, do humans behave as they do? We are convinced that science is ready for tremendous advances in these fields.

As a summing up of all this, our over-all philosophy is based upon a conviction that we think it is possible to proceed through the following steps:

- (a) Greatly increase our basic knowledge of biology.
- (b) Obtain new insights as to the biology and the behavior of man.
- (c) Get a dependable view of the evolving potentialities of men.
- (d) Contribute to a clearer view of man's present relationship to the universe in which he finds himself.
- (e) Relate all this to man's total life, and specially to his creative activities in literature, art, music, philosophy, and esthetics.

You see, all of this is rooted in biology, but we hope it will flower in a much wider realm.

* Our major full-time staff members are called Fellows. They are roughly equivalent to department heads in conventional university spheres. The Non-Resident Fellows will spend roughly six weeks a year at the Salk Institute, will participate in forming our plans and programs, will vote on new Fellows, will attend Institute meetings at various times of the year, will nurture our relations with United States and foreign universities and research institutes.

15. I'll have to re-read and think over this last long reply of yours, for it isn't altogether easy.

Of course it isn't. But it outlines, we think, our exceedingly important and challenging set of tasks.

We want to thank you for the interest shown in your questions, and for your patience in listening to the answers.

Having read thus far, you will understand why it seems suitable to close with the following quotation:

"The history of the human race is a continuous struggle from darkness toward light. It is, therefore, of no purpose to discuss the use of knowledge: man wants to know, and when he ceases to do so he is no longer man."

4 March 1963

Memo to: Fellows
From: Warren Weaver
Subject: Comments on memo of February 11.

The memo of February 11 was eventually mailed to all of the Trustees of the Institute. Mr. O'Connor, who thought the document "excellent" has pointed out that the National Foundation has committed itself to furnish \$1,000,000 a year for ten years towards an endowment fund, and "\$1,000,000 a year towards operating expenses without limitation as to time".

Those of us here in La Jolla hope that if any of you have comments or questions, arising out of the memo in question, you will write.

Dr. Melvin COHN
Institut Pasteur
Service de Biochimie Cellulaire
25, Rue du Dr. Roux
PARIS 15^e
France

Round Robin Letter - From Melvin COHN

These are some general comments, ideas etc. plus an attempt to find out what plans each of us have in mind in this interim period and what the Institute can do to facilitate them.

A. In discussions with Jacques and Ed it became clear to me that I should start organising my group now. To do this, Jacques very generously extended to me (as well as to Ed) the necessary space. I am very enthusiastic about this as the intellectual as well as physical attraction of this laboratory will greatly facilitate getting the group I have in mind. Furthermore the move to La Jolla as a working group will involve a much lesser time loss in arriving at peak activity.

Greater love hath no man, for this offer is a real sacrifice on the part of Jacques who also needs the space for his broadening training program. In order that I can accept this offer with a clean conscience I must be certain that any group I form will participate actively in his training program and will not be a drain on the physical facilities of his laboratory. This is of course part of the initial interest and primary objectives of our institute and comes as a normal starting step.

My proposed plan then would be to build a group here which would move to La Jolla in Sept. 1964 when the buildings are ready.

In order to offer positions to junior people as well as technical people 1) It must be clear that I have (available July 1, 1963) the totality of my \$100,000 budget which I can spend as I feel reasonable to facilitate the work of my group here without burdening Jacques.

2) The institute must be immediately ready to handle grant requests.
3) Some scale of salaries must be clarified so that we dont have a large disparity between groups. Here I propose :

1 - Senior level person - greater than 3 years after doctorate
\$13 - 18,000

2 - Junior level person - less than 3 years after doctorate
\$12 - 15,000

3 - Technicians, secy, dishwashers, etc. preparatory, etc.
\$ 5 - 10,000

4) The fringe benefits program for these personal should be clear and established immediately.

5) Since scientific personnel have the eventual hope of becoming fellows there should be an immediate mechanism set up to get comments and approval

.../...

by all of us of those people we bring with us. I would like to offer junior positions to three out of following five as an example :

Steven ZIMMERMAN - Ph. D. with Kornberg 1961 Post Doctorate with Schellman - worked on phage induced proteins

Michael CHAMBERLAIN - Ph. D. with Berg 1963 - worked on RNA polymerase

William WOOD - Ph. D. with Berg 1963 - worked on protein synthesis in cell free extracts and properties of transfer RNA

Elliot ELSON - Ph. D. with Baldwin 1963 - theoretical physical chemist - worked on helix-coil transformation in DNA

David ZIPSER - Ph. D. with Watson 1963 - working on complementation in -galactosidase system

Cari WORSE - Ph. D. with Pollard Yale 1960 - at present with Bell telephone - working in the coding problems. Post Doctoral with Monod in whose lab he worked on the messenger RNA

Please tell me what information you would want to comment.

B. It must be clear that the Institute will arrange for funds for all initial equipment and installation so that our starting grants in Sept 1964 will involve only maintenance and running expenses. This must be outside of our institute budges.

C. Some concrete plan to approach Berg and Meselson should be made so that the basic group can be brought to its critical mass. Other follows should be considered, as soon as a clear program is ahead of us, so that they can contribute to the organization.

D. The Institute should consider buying land now in the area to serve in several capacities. 1) Special or unforeseen experimental programs i.e. farms for large animals for botanical work or pilot plant work etc. 2) Housing for institute members at all levels. One model is the Stanford plan where the land is leased for 90 years for home building. This will greatly facilitate the recruiting of personnel at all levels, establish a good working spirit between all of personnel levels, and create a mixed community. Furthermore in what is obviously a socially backward area, the Institute will have taken a stand, by example, on an important principle.

E. Design of laboratories - Earl Walls might visit us here soon to discuss the laboratories and later Jean Peabody can come to organize ordering.

F. I am not happy with the publicity campaign which is hurting us in the scientific community. I am just going to quote from a letter I got after the Life article from a reporter friend of mine. "If I might offer some free public relations counsel to the Salk Institute it would be to watch out for too much publicity on all the material spender of the buildings etc. A romantic and 'materialistic' view of science can pay off in a certain limited areas of fund raising and opinion swaying, but it has been my experience that very much of that backfires - sometimes seriously. Lets have less of Salk in the sunset and more of him in the lab with that not - so-fresh white coat". James Van Sant, St. Louis.

.../...

Lets hire him as the public relations man.

G. My recent appendicitis has made me think about the fringe program which I would like to see formulated soon.

The progress in organization, fund raising and building is phenomenal and I would like to express my appreciation to Jonas, Warren, Bill and others who have been working on these aspects leaving the rest of us free to do science. Soon we will do our turn.

Best,

Mel

Mel,

c.c. : S. SALK, W. GLAZIER, S. BENEER, W. WEAVER, G. PIEL, F. CRICK,
J. MONOD, L. SILLARD, J. BRONOWSKI, R. DULBECCO, E.S. LENNON

095-2000

Weaver

New Milford Conn
Elgin 44177

June - 2 0450

~~Miss~~ Miss Jason

Mr Green Ext 3469

Ext 2321

Pat Donovan

STATEMENT BY DR. JONAS E. SALK
ON NEW BASIC RESEARCH INSTITUTE

San Diego, Calif.

Purpose: An institute devoted to advancement of knowledge relevant to the health and well-being of man, primarily through research in fundamental biology, and in the cause, prevention and cure of disease, and in the factors and circumstances conducive to the fulfillment of man's biological potential.

The Concept and Its Development: For some time there has been under consideration the establishment of an institute broadly oriented and concerned with the problems of man as these can be approached by the methods of the natural sciences. The time seemed opportune to consider establishing such a facility for persons from different disciplines and backgrounds who are interested in the organization and processes of life. The recent significant advances in knowledge in some of the fundamental aspects of biology have created a basis on which to build significant new understandings through the bringing together at this time of a selected group of scientists and scholars.

The favorable response to these thoughts by many who have made significant contributions in diverse fields provides encouragement to pursue such an undertaking. It is evident that its character and its success will be determined by the men associated with it. It seems that such an institute can be best initiated by a group engaged in studies upon fundamental biology. This would provide the basis for deeper understanding of such biological phenomena as growth, development, and adaptation of the living organism. From this would flow ideas for developing solutions to the many unsolved problems of disease and to a clearer understanding of health.

To fulfill these purposes The Institute will consist of a nucleus of permanent members, with different but overlapping interests, and a group of visiting members having diverse interests and drawn from all parts of the world. An important part would be formed by young people who will spend a period of time at the start of their careers as fellows of The Institute. It is hoped that in these various ways freshness of spirit and vitality will be maintained and new ideas generated and exchanged.

Mr. Basil O'Connor, president of The National Foundation, strongly supported these ideas. The National Foundation has agreed to provide operational support in the amount of a minimum of one million dollars annually and to contribute additionally toward an endowment fund, at least one million dollars per year until The National Foundation's contribution to this fund reaches ten million dollars. The Institute may receive additional support from other sources, either for its annual activities, or for its capital or an endowment fund.

It is clear that The Institute, although self-governing, would thrive best in the vicinity of, and with strong intellectual affiliation with, a major university. The possibility that the University of California might establish a major campus in the La Jolla vicinity of San Diego, where there now exists the University's Graduate School of Science and Engineering and its Scripps Institute of Oceanography, therefore weighed heavily in the favorable consideration of this area as a site for this Institute.

Encouragement from the various institutions in the area gave further incentive for exploring the possibility that a desirable site in close proximity to the projected university campus could be found. When this became known to the officials of the city of San Diego, they expressed their interest in the establishment of The Institute on Torrey Pines Mesa, and the matter is to be considered by the City Council.

In the event of a favorable response on the part of the City Council and the electorate, detailed plans will be announced. This will include the names of the trustees, the initial members and visiting members, along with contemplated land use and architectural plans.

The problems and areas of interest of The Institute will be determined by its members and will not be limited except by the limits of their imagination and ingenuity. The establishment of such an institute upon a sufficiently extensive land area and with adequate support will permit undertakings that would not otherwise be possible.

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3/15/60

FROM:
Public Information Department
The National Foundation
300 Second Avenue
New York 17, New York

STATEMENT BY BASIL O'CONNOR, PRESIDENT, THE NATIONAL
FOUNDATION, CONCERNING NEW BASIC RESEARCH INSTITUTE
TO BE HEADED BY DR. JONAS E. SALK

San Diego, Calif., March 15, 1960

The National Foundation announced in July 1958 that it was moving beyond polio to become a flexible force in the field of scientific medical research, accepting new challenges as they occurred without confining itself to any particular disease or group of diseases. Therefore, it is logical and natural that The National Foundation, in further fulfillment of its mission, be interested in the creation and support of this scientific institute.

With larger amounts of money becoming available for medical scientific research, particularly from government, and with the knowledge that money alone cannot solve scientific problems, the time has arrived when a re-survey of the methods of making such funds available for scientific research should be made. The flexibility in the field of scientific research which The National Foundation has decided upon requires this.

What might be called the usual method of supporting scientists, namely by "grants-in-aid" will, of course, be continued, but with the hope that generally such grants will be more for basic rather than categorical research. More than this, however, must be done, if we are to put to work all the disciplines of the natural sciences for man's physical and mental betterment. This requires more than grants in aid or endowment of professional chairs, or institutional grants which have value in themselves.

It requires the creation of a locus and an atmosphere where, free from the necessity of other academic activities, outstanding scientists in various of the fundamental disciplines of the natural sciences can carry on their own work in an atmosphere of intellectual imagination, heightened by the presence and the interests of their fellow workers.

This is an approach to the furtherance of scientific research in which the trend of the times indicates the public can and should be interested. This is an area that should not be left to creation and support solely by government or large family fortunes, the number of which will become increasingly fewer. The time is appropriate, therefore, for the creation by the public of such an institute under the direction of Dr. Jonas E. Salk.

The promise of scientific advances in all of the natural sciences may, in the long run, prove far more important than the spectacular developments which have occurred recently in the field of nuclear physics. The new knowledge already developed and that which appears on the horizon in terms of fundamental biology, chemistry, the transmission of hereditary traits and the course of disease will signal the second half of the Twentieth Century as the time of great advance in human development. This Institute will deal with all of these.

The purpose of this scientific unit is to meet the need for a broader concept of research into the cause, prevention and cure of disease and their relation to the other problems of man's well-being.

It is easy to recall that only a few short years ago the advanced studies in nuclear physics were considered by most to be nearly "useless." Everyone knows better now. Because of this, it is easier for the layman to appreciate how the discoveries of the past years have led to the commonplace things of today -- and how much can be done by intensive effort to affect the rate of discovery.

Industry long ago proved that once a discovery is made, we can accelerate the process of making practical applications. The possibility of accelerating the rate of discovery in medical science, for example, is relatively new and its potentialities are not fully realized. This, too, is part of the concept of that which we are discussing here today.

Most of the research financed by The National Foundation since 1938 has been of such a basic nature as to lead inevitably toward investigation of the life process itself. It has supported both fundamental research and practical application. It will continue, both here and other places to finance work on specific projects as well as the broad basic research.

Dr. Salk is particularly fitted to head this Institute. His previous discoveries were blended with the knowledge uncovered by other scientists. His work on the polio vaccine set him on research pathways which led him to areas unrelated to that disease.

Scientists and scholars in this Institute, both from here and abroad, will be men of great excellence. These men, young in spirit, will be joined by still other young men of promise and ability early in their careers, from many diverse fields. Most will work here in apparently independent areas, pursuing their various regions of special interest. But as a whole they will represent a combined force, with the opportunity to weave together their thoughts, aspirations and achievements.

At The Institute, these investigators will not be restricted to any one field of disease. But from their research will flow achievements relevant to the health and specific disease problems of man, their studies can be expected to provide information which may have a bearing on such problems as cancer, virus diseases, immunologic disorders, genetics and environmental factors relating to disease.

The Board of Trustees of The National Foundation has approved an expenditure of one million dollars a year for ten years toward an endowment fund, and one million dollars annually to support the operating activities of The Institute. Though The National Foundation will found and continue to support The Institute, it will be an independent unit governed by its own Board of Trustees.

The American people, through the March of Dimes, have made it possible for The National Foundation to take the part it is taking in creating and supporting this Institute.

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Institute for Biological Studies
San Diego, California

BOARD OF TRUSTEES

Name and Address

Principal Occupation

Leo H. Bartemeier, M. D.
The Seton Psychiatric Institute
Reisterstown Road
Baltimore, Maryland

Medical Director, The Seton
Psychiatric Institute

Honorable David L. Bazelon
U. S. Court House
Washington, D. C.

Judge, U. S. Court of
Appeals

Dr. J. Bronowski
1, The Hexagon
Fitzroy Park
Highgate
London, N.6, England

Mathematician, Philosopher;
Director General of Process
Development, National Coal
Board

Horace W. Brower
Occidental Life Insurance Company
of California
Los Angeles, California

President, Occidental Life
Insurance Company of
California; Trustee, The
National Foundation

Coy G. Eklund
Equitable Life Assurance Society
New York, New York

Vice President, Equitable
Life Assurance Society; Trustee,
The National Foundation

Ferdinand T. Fletcher
2250 3rd Avenue
San Diego 12, California

Lawyer; Partner Higgs,
Fletcher and Mack

Melvin A. Glasser
Brandeis University
Waltham 54, Massachusetts

Dean of University
Resources, Brandeis University;
Trustee, The National Foundation

Harlow J. Heneman
342 Madison Avenue
New York 17, New York

Partner, Cresap, McCormick
& Paget, Management
Consultants

Kenneth Hoffman
120 Broadway
New York, New York

Lawyer; O'Connor and
Farber

David D. Lloyd
13th Street and Pennsylvania Avenue, N.W.
Washington 4, D. C.

Lawyer; Morison, Murphy
Clapp & Abrams

Edward R. Murrow
1776 Pennsylvania Avenue
Washington, D. C.

Director, United States
Information Agency,
Department of State

Basil O'Connor
35 East 76th Street
New York 21, New York

President, The National
Foundation

Gerard Piel
320 Central Park West
New York 25, New York

Publisher, The Scientific
American

Jonas E. Salk, M. D.
University of Pittsburgh
Virus Research Laboratory
Terrace and Darragh Streets
Pittsburgh 13, Pennsylvania

Commonwealth Professor of
Experimental Medicine,
University of Pittsburgh;
Director, Institute for
Biological Studies, San
Diego, California

Sir Charles Snow, C.B.E.
199 Cromwell Road
London S.W. 5, England

Scientist, Author, Former
Technical Director of
Ministry of Labour

Dr. Warren Weaver
630 Fifth Avenue
New York 20, New York

Vice President, Alfred P.
Sloan Foundation, Inc.;
formerly Vice President,
the Rockefeller Foundation

requested by an application for a facilities grant from the National Institutes of Health.

c) \$1 million for scientific research equipment and common use equipment incidental to moving into the new quarters.

2) \$5 million is required in 1965 to provide for completion and occupancy of the South Wing of the laboratory complex and to allow for the completion of site improvements which were postponed in the current construction program. More specifically, this sum includes:

a) Partitions, laboratory benches, and other furniture in the amount of \$2 million, of which it is expected that \$1 million can be secured by an application for facilities grant from the National Institutes of Health.

b) \$2 million for the primary distribution of utility services in the South Wing.

c) \$1 million for the completion of site work and for the purchase of scientific and common use equipment incidental to the occupancy of the building.

- 3) \$3 million required in 1966 to provide funds for the construction of the Meeting House area and housing for visiting scientists.

The fund-raising program of the Institute must provide for the establishment of a minimum endowment capital fund in order to provide the Institute with the financial flexibility necessary to meet its changing programs. For this reason, the Institute is seeking an endowment fund of \$10 million. It should be noted that the suggested endowment will not yield sufficient income of and by itself to meet the probable expanded operational needs of the Institute. There will be required in addition to any endowment income, operational funds for research from federal agencies and from large foundations.

The combined need of building, equipment and endowment funds over the next three years is estimated as follows:

1964

Laboratory equipment and interiors	\$4.0	
Endowment	<u>3.0</u>	
		\$7.0

1965

Laboratory equipment, interiors, and site work	\$5.0	
Endowment	<u>3.0</u>	
		\$8.0

1966

Meeting Area complex, and visitors		
housing	\$3.0	
Endowment	<u>4.0</u>	
		<u>\$7.0</u>
		\$22.0 million

It is to be noted that the \$22 million outlined above is in addition to approximately \$18 million already advanced or granted by the National Foundation to the Institute. The \$18 million consists of the \$5 million cash grant made to the Institute in 1963 and the grants contained in the revised grant agreement of January 6 between the National Foundation and the Institute, whereby the National Foundation granted 10 installments of \$1,326,677 for ten years beginning May 1, 1966, plus any accrued interest due on the long term note up to May 1, 1965.

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BY-LAWS

Adopted on 7 March 1962

THE INSTITUTE FOR BIOLOGICAL STUDIES,

SAN DIEGO, CALIFORNIA

(a California nonprofit corporation)

ARTICLE I

NAME, SEAL AND OFFICES

Section 1. Name. The name of this Corporation in law is

The Salk Institute for Biological Studies,
San Diego, California

Section 2. Seal. The seal of the Corporation shall be circular in form and bear the inscription of its name on its outer edge and in the center "Corporate Seal --1960-- California." The Board of Trustees may change the form of the seal or the inscription thereon at pleasure.

Section 3. Offices. The principal office of the corporation shall be in the City and County of San Diego, State of California. The Corporation may also have offices at such other places within or without the State of California as the Board of Trustees may from time to time determine.

ARTICLE II

MEMBERS OF THE CORPORATION

Section 1. Membership. The Membership of the Corporation shall consist of the persons elected to the Board of Trustees of the Corporation, the Director of the Corporation ex officio, and three (3) Members from the Resident and Non-Resident Fellows chosen by and elected annually by the Committee of Fellows. Each Trustee shall automatically become a Member upon qualifying as a Trustee and shall cease to be a Member upon ceasing to be a Trustee of the Corporation. Each Fellow shall cease to be a Member upon ceasing to be a Fellow.

Section 2. Rights of Members. The right of a Member to vote and all his right, title and interest in or to the Corporation or its property shall cease on his death or other termination of his membership.

ARTICLE III

BOARD OF TRUSTEES

Section 1. Number. The Board of Trustees shall consist of the Director of the Corporation ex officio and not less than three (3) nor more than twenty-seven (27) elected members, as such number is determined from time to time by the Members.

Section 2. Terms of Office. The elected Trustees shall be at all times divided into three classes equal numerically as nearly as may be, and they shall be so arranged that the memberships of the respective classes shall expire in succeeding years. The Trustees named in the Articles of Incorporation shall serve for the terms of three years, two years, and one year in the order of the priority so named. Initially Trustees shall be chosen for the period (one, two or three years) of the class to which the Trustee is elected. Thereafter Trustees shall be chosen for a term of three years. Elected Trustees shall serve for the terms to which elected and until their successors respectively shall have been chosen and shall have qualified.

Section 3. Election. Trustees shall be elected at the annual meeting of the Members of the Corporation, at which a quorum is present in person or by proxy, or any adjournment thereof, except as otherwise provided herein, by a majority vote of the Members present thereat and voting, either in person or by proxy.

Section 4. Vacancies. Any vacancy in the Board of Trustees may be filled for the unexpired portion of the term by the vote of a majority of the remaining Trustees, although less than a quorum, and any Trustees so appointed shall hold office until the next succeeding annual meeting of the Members of the Corporation and the election and qualification of his successor. If the number of Trustees be increased by the Members, such increased membership shall be deemed to create vacancies in the Board to the extent of the number of the increase therein. Such vacancies may then be filled on a staggered term basis by a majority of the Members present in person or by proxy. If said vacancies are not so filled by the Members at the meeting at which said increase was voted, they may be filled by the Board of Trustees in the manner herein provided, the new Trustee or Trustees so chosen by the Board of Trustees to serve until the next annual meeting of the Members of the Corporation and the election and qualification of his or their respective successors.

Section 5. Compensation. Trustees, as such, shall not receive any stated salary for their services, but by resolution of the Board of Trustees a fixed sum and expenses of attendance, if any, may be allowed for attendance at each regular or special meeting of the Board, provided, that the Board shall have the power in its discretion to contract for and to pay to Trustees rendering unusual or exceptional services to the Corporation special compensation appropriate to the value of such services.

ARTICLE IV

POWERS OF THE BOARD OF TRUSTEES

Section 1. General Powers. All the corporate powers, shall be and hereby are vested in and shall be exercised by the Board of Trustees which shall control the property and manage the affairs of the Corporation. The Trustees may, by general resolution, delegate to committees of their own number or to officers of the Corporation, such powers as they may see fit.

Section 2. Agents and Representatives. The Board of Trustees may appoint such agents and representatives of the Corporation with such powers and to perform such acts or duties on behalf of the Corporation as the Board may see fit, in so far as may be consistent with these By-Laws and to the extent authorized or permitted by law. This authority extends to the removal of such agents and representatives at the pleasure of the Board.

Section 3. Execution of Instruments. The Board of Trustees may authorize the execution of instruments as follows:

All checks, drafts and orders for payment of money shall be signed in the name of the Corporation and countersigned by such officer or officers, agent or agents, or employee or employees as the Board shall from time to time determine;

The Board may authorize any officer or officers, agent or agents, or employee or employees to enter into any contract or execute and deliver any instrument in the name of and on behalf of the Corporation, and such authority may be general or confined to specific instances; and unless so authorized by the Board, no officer, agent or employee shall have any power or authority to bind the Corporation by any contract or agreement or to pledge its credit or render it liable pecuniarily for any purpose or to any amount;

Unless otherwise ordered by the Board, the President or Treasurer shall be empowered on behalf of the Corporation to vote, either in person or by proxy, at any meetings of stockholders of any corporation in which the Corporation may hold stock, and at any such meeting may possess and exercise any and all of the rights and powers incident to the ownership of such stock which, as the owner thereof, the Corporation might have possessed and exercised if present; and

The Board may from time to time require such persons whose duties require them to receive or disburse funds of the Corporation to furnish bonds for the faithful discharge of their duties, in such sums and with such surety and on such conditions as the Board shall determine. The expense of such bonds shall be borne by the Corporation.

ARTICLE V

COMMITTEES OF THE BOARD OF TRUSTEES

Section 1. Executive Committee. The Board of Trustees may elect from their number an Executive Committee consisting of the President, who shall be Chairman of the Committee, not less than three (3) additional Trustees and the Director of the Corporation ex officio. In the absence of the President the Members of said Committee shall choose one of its members to act as Chairman pro tem of the meeting.

The executive Committee shall advise with and aid the officers of the Corporation in all matters concerning its interests, and shall possess and may exercise, during the intervals between the

meetings of the Board of Trustees, all the powers and authority of the Board of Trustees in the management of the business and affairs of the Corporation, including the power to authorize the corporate seal to be affixed to any and all documents which may require the same to be affixed thereto, in so far as such seems to the Executive Committee for the best interests of the Corporation, in all cases in which specific directions shall not have been given by the Board of Trustees, except that the Executive Committee shall have no power to adopt, amend or repeal the By-Laws.

Section 2. Finance Committee. The Board of Trustees may elect from their number a Finance Committee consisting of not less than three (3) Trustees and the Director of the Corporation ex officio. The Chairman of the Finance Committee shall be elected annually by its members.

The Finance Committee shall exercise supervision over the general financial affairs of the Corporation, including the formulation of policies relating to financial management, investments, budgeting and expenditure control and accounting for approval by the Board of Trustees.

Section 3. Nominating Committee. The Board of Trustees may elect from their number a Nominating Committee of three (3) Trustees who shall recommend candidates for election as Trustees. The Nominating Committee, prior to making such recommendations, shall confer with the Director of the Corporation who shall, thereafter, as soon as organized furnish the Committee of Fellows with a list of additional persons that may be recommended for Trustees by the Nominating Committee. Unless within ten (10) days after receipt of such list a majority of the Committee of Fellows shall convey in writing to the Director its disapproval of any such nominees, the Committee of Fellows shall be deemed to have approved them. If, after receipt of such list, a majority of the Committee of Fellows shall disapprove of any such nominee said majority shall within ten (10) days after said receipt convey to the Director, in writing, the reasons for the disapproval by said majority. In the latter case, said views will be reported by the Director to the Nominating Committee and will be considered by it in making recommendations for candidates for election as Trustee.

Section 4. Meetings; Notice. Any Committee may from time to time, subject to the approval of the Board of Trustees, prescribe rules and regulations for the calling and conducting of meetings of the Committee and other matters relating to its procedure and the exercise of its powers. Except as herein otherwise provided, any Committee may meet within or without the State of California; meetings of any Committee may be called by the Chairman or by a majority of the members thereof and notice of any Committee meeting shall be served either personally or by mail at least five (5) days before the meeting.

Section 5. Quorum. A majority of the members of any Committee shall constitute a quorum thereof. When a quorum is present in person, the action of a majority of those present shall constitute an action of the Committee provided such action is taken by not less than two (2) members.

Section 6. Term. The members of all Committees shall serve at the pleasure of the Board of Trustees.

Section 7. Vacancies. Vacancies occurring for any reason in the membership of any Committee may be filled by appointment by the President of any member of the Board of Trustees, and the Trustee so appointed to fill any such vacancy shall serve until the next meeting of the Board of Trustees.

Section 8. Reports. All proceedings of all Committees shall be reported to the Board of Trustees at its next succeeding meeting, and shall be subject to revision or alteration by the Board, provided that no rights of third persons shall be adversely affected by such revision or alteration.

Section 9. Power to Act Without Meeting. Any Committee of the Board of Trustees may act without a meeting by a writing signed by all members thereof.

ARTICLE VI

MEETINGS OF MEMBERS/TRUSTEES

Section 1. Place of Meetings. All meetings of the Members and of the Board of Trustees may be held within or without the State of California at the time and place specified in the notice thereof.

Section 2. Annual Meeting. The annual meeting of the Members of the Corporation shall be held at such time and place as may be fixed by the Board of Trustees and specified in the notice thereof. If such place and time be not so fixed by the Board of Trustees, the annual meeting of the Members shall be held at the principal office of the Corporation in the City of San Diego, State of California, at two o'clock in the afternoon on the second Thursday of March in each year, commencing with the year 1961, if not a legal holiday, and if a legal holiday, then on the next succeeding day not a legal holiday.

The annual meeting of Members shall be for the purposes of fixing the number of Trustees, electing Trustees and for the transaction of such other business as may properly be brought before the meeting. At the annual meeting of Members any business may be transacted, irrespective of whether the notice calling such meeting shall have contained reference thereto, except as otherwise specifically provided by law.

Section 3. Special Meetings. Special meetings of the Members and of the Board of Trustees other than those regulated by statute may be called at any time by the President or by three or more Members or Trustees and shall be called by the President upon receipt of the written request therefor of not less than three (3) of the Members or Trustees.

Section 4. Regular Meetings of Trustees. Immediately after each annual election of Trustees the Trustees may meet at the place where the meeting of the Members was held for the purpose of organization and the transaction of other business, and if a quorum of the Trustees be then present no prior notice of such meeting shall be required to be given. The time and place of such meeting may be fixed by written consent of all the Trustees. Where a quorum of such Trustees was present at the annual meeting of Members, the latter may be regarded as a regular meeting of the Board of Trustees. Other meetings of the Board of Trustees may be held at such time and place as may be determined by resolution of the Board.

Section 5. Quorum. At any meeting of the Members one-fourth of the Members present in person or by proxy, and at any meeting of the Trustees one-fourth of the Trustees, but in no event less than three (3), present in person, shall be sufficient to constitute a quorum for the transaction of business; and the act of a majority of the Members/Trustees present at any meeting at which there is a quorum shall be the act of the Members/Trustees except as may be otherwise specifically provided by statute or these By-Laws. However, in the case of meetings of Trustees not more than six (6) Trustees shall be necessary to constitute a quorum.

Section 6. Adjournment. In the absence of a quorum, or when a quorum is present, any meeting may be adjourned from time to time and at such place as may be specified by vote of a majority present, without any notice other than by announcement at the meeting and without further notice to any absent member, except when a meeting is adjourned for thirty (30) days or more notice of the adjourned meeting shall be given as in the case of an original meeting. At any adjourned meeting convened within twenty-nine (29) days at which a quorum shall be present, any business may be transacted which might have been transacted at the meeting as originally noticed.

Section 7. Notice of Meetings. Notice of the time and place of all meetings of the Members and of the Board of Trustees shall be served, either personally or by mail, not less than ten (10) nor more than forty (40) days before the meeting upon each person whose name appears upon the books of the Corporation as a Member/Trustee. At any meeting at which every Member/Trustee shall be present, even though without any notice or waiver thereof, any business may be transacted.

Section 8. Voting. At every meeting of Members each Member shall be entitled to vote, in person or by proxy, duly appointed by instrument in writing subscribed by such Member and bearing a date not more than eleven (11) months prior to said meeting, unless said instrument provides for a longer period not exceeding seven (7) years from the execution thereof. At every meeting of Members or of the Board of Trustees each Member or Trustee shall be entitled to one vote. Upon the demand of any Member/Trustee before the voting begins, the vote upon any question before the meeting shall be by ballot.

ARTICLE VII

OFFICERS

Section 1. Designation. The officers of the Corporation shall be a Chairman of the Board, a President, one or more Vice Presidents, a Secretary, one or more Assistant Secretaries, a Treasurer, one or more Assistant Treasurers, and such other officers with such powers and duties not inconsistent with these By-Laws as from time to time may be elected and determined by the Board of Trustees, except as hereinafter otherwise provided for filling vacancies. Any two offices, except those of President and Secretary, may be held by the same person.

Section 2. Election and Qualification. The Chairman of the Board, the President and at least one Vice President shall be elected annually by the Board of Trustees from among their number, and all other officers shall be elected annually by the Board of Trustees from among such persons as the Board of Trustees may see fit, at the first meeting of the Board of Trustees after the annual meeting of the Members of the Corporation.

Section 3. Removal of Officers. Any officer may be removed at any time, with or without cause and with or without notice, by a vote of the majority of the Board of Trustees, passed at any meeting of the Board of Trustees.

Section 4. Vacancies. If any office of the Corporation becomes vacant, the Trustees then in office, although less than a quorum, or the Executive Committee of the Board of Trustees during the intervals between the meetings of the Board, may elect an officer to fill such vacancy. The Chairman of the Board may also appoint an officer to fill a vacancy in any office except that of Chairman of the Board. Any officer so elected or appointed shall serve until the next meeting of the Board of Trustees after the annual meeting of Members next succeeding and until the election and qualification of his successor.

Section 5. Chairman of the Board. The Chairman of the Board of Trustees shall have an advisory relation to the work and policies of the Corporation. He shall preside at all meetings of the Members of the Corporation and of the Board of Trustees at which he is present. He shall be given notice of, and shall have the right to attend and vote at all meetings of Committees of the Board of Trustees, but, unless he has been designated as a regular member of a Committee, he shall be under no obligation to attend its meetings and shall not be counted to determine the number necessary to make a quorum or to determine whether or not a quorum is present.

Section 6. The President. The President shall see that the policies and resolutions approved or adopted by the Board of Trustees are carried into effect. Subject to the control and direction of the Board of Trustees, he shall have power, in the name and on behalf of the Corporation, to execute and deliver documents, contracts, instruments and writings of any nature. In the absence of the Chairman of the Board, the President shall preside at all meetings of the Members of the Corporation and of the Board of Trustees at which he is present. He shall have such other powers and duties as from time to time may be assigned to him by the Board.

Section 7. The Vice President(s). The Vice President(s) shall discharge such functions as may be assigned to them by the President or by resolution adopted at any meeting of the Board of Trustees.

Section 8. The Secretary. The Secretary shall attend and keep the minutes of all meetings of Members and of the Board of Trustees of the Corporation. He shall attend to the giving and serving of all notices of such meetings. He may affix and attest the seal of the Corporation to any and all contracts, agreements or instruments authorized by the Board of Trustees. He shall have charge of such books, documents and papers as the Board of Trustees may determine, and shall have custody of the corporate seal. He shall keep at the principal

office of the Corporation the original or a copy of its By-Laws, as amended, open to inspection by Members at all reasonable times during office hours. He shall keep a membership book containing the names and addresses of all persons who are Members of the Corporation and showing the termination of any membership and the date thereof. In general, he shall perform all the duties incident to the office of Secretary, subject to the control of the Board of Trustees, and shall do and perform such other duties as may be assigned to him by the President or by resolution adopted at any meeting of the Board of Trustees. In the absence or disability of the Secretary, his duties shall be performed by an Assistant Secretary designated by the President.

Section 9. The Treasurer. The Treasurer shall have the custody of all the funds and securities of the Corporation, subject to such regulations as may be imposed by the Board of Trustees. When necessary or proper he may endorse on behalf of the Corporation for collection checks, notes and other obligations, and shall deposit the same to the credit of the Corporation at such bank or banks or depository as the Board of Trustees may designate. He shall sign all receipts and vouchers, and, together with such other officer or officers, if any, as shall be designated by the Board of Trustees, he shall sign all checks of the Corporation and all bills of exchange and promissory notes issued by the Corporation, except in cases where the signing and execution thereof shall be expressly designated by the Board of Trustees or by these By-Laws to some other officer(s) or agent of the Corporation. He shall make such payments as may be necessary or proper to be made on behalf of the Corporation, subject to the control of the Board of Trustees. He shall enter regularly on the books of the Corporation to be kept by him for the purpose full and accurate account of all moneys and obligations received and paid or incurred by him on account of the Corporation, and shall exhibit such books at all reasonable times to any Trustee on application at the office of the Corporation. He shall, in general, perform all the duties incident to the office of Treasurer, subject to the control of the Board of Trustees. In the absence or disability of the Treasurer, his duties shall be performed by an Assistant Treasurer designated by the President.

Section 10. Common Officers. The offices of Chairman of the Board and of President may be held by different persons or by the same person; and the offices of President and Director of the Corporation may likewise be held by the same person or different persons.

Section 11. Compensation. The officers of the Corporation, or any of them, may receive compensation from the Corporation. The compensation of all officers shall be fixed or approved by the Board of Trustees at any meeting at which a quorum is present, or by the Executive Committee of the Board of Trustees during the intervals between the meetings of the

Board, and the fact that any officer is a Member/Trustee shall not preclude him from receiving any compensation or from voting upon the resolution providing for the same.

ARTICLE VIII

DIRECTOR OF THE CORPORATION

The Board of Trustees shall have power to appoint and employ, from time to time, a Director of the Corporation for such period of time as it shall seem to it for the best interest of the Corporation.

The Director shall be responsible, under the supervision of the Board of Trustees, for the administration and academic work of the Corporation in accordance with its purposes as stated in its Articles of Incorporation.

The Director shall be ex officio a member of all Committees. He shall be the official channel of communication with the Board of Trustees and Standing Committees.

With the advice of the Committee of Fellows of the Corporation and such other consultants as he may deem desirable, the Director shall formulate and recommend to the Board of Trustees such plans and programs as will implement the concept and purposes of the scientific, scholarly and educational objectives of the Corporation, means for their accomplishment, and such rules and regulations as may be appropriate with respect thereto.

The Director shall submit reports to the Board of Trustees from time to time and an annual report to the annual meeting of Members of the Corporation.

The Director may appoint at any time and from time to time and fix the compensation of such assistants as he may deem necessary or advisable to carry out the duties of his office.

The Director may receive compensation from the Corporation in such amount as may be fixed from time to time by the Board of Trustees.

In case of a vacancy in the Directorship, the Board of Trustees shall appoint a special committee of not less than three (3) Trustees to recommend to the Board the appointment of a successor to fill such vacancy. Such special committee shall confer with the Committee of Fellows of the Corporation and may confer with any other persons, concerning the qualifications of any prospective successor to the Directorship. Within ten (10)

days after it has been requested so to do by the special committee of the Board of Trustees, the Committee of Fellows shall, through its Representative, submit to the special committee its written report on the qualifications of the candidate(s) to be proposed for the Directorship, which report if not unanimous shall contain the dissenting opinions of the members of the Committee of Fellows opposing said candidate. The special committee of the Board of Trustees shall consider such report in making its recommendations to the Board.

ARTICLE IX

FELLOWS OF THE CORPORATION

Section 1. Categories. The Fellows of the Corporation shall consist of persons appointed as provided in these By-Laws and shall include categories of Resident Fellows, Non-Resident Fellows and Visiting Fellows. The Director of the Corporation shall from time to time formulate and recommend to the Board of Trustees provisions pertaining to the categories, number, qualification, terms and conditions of appointment, privileges and duties of Fellows.

Section 2. Resident Fellows shall consist of the Director of the Corporation and full time academic appointees without term.

Section 3. Non-Resident Fellows shall be part time academic appointees for a fixed term not to exceed six (6) years, who are academically qualified to become Resident Fellows.

Section 4. Visiting Fellows shall be appointed for such terms, not to exceed two (2) years, as shall be determined by the Director.

Section 5. Appointment of Resident and Non-Resident Fellows. Resident and Non-Resident Fellows shall be appointed by the Board of Trustees. Nominations for the appointment of Resident Fellows and Non-Resident Fellows shall be initiated only by the Director of the Corporation, a Resident Fellow, or a Non-Resident Fellow. Such nominations, with a statement of qualifications, shall be submitted in writing by the Director to all members of the Committee of Fellows, together with written notice of the time and place of the meeting of such Committee to consider and vote on said nomination(s). A written statement regarding each candidate will be submitted by each of the Non-Resident Fellows and by each of the Resident Fellows who do not attend the meeting in person. Such written statement shall also contain a vote. Nominations shall not be submitted to the Board of Trustees for appointment if disapproved by a majority vote of the Committee of Fellows, or by the Director acting as such.

Section 6. Appointment of Visiting Fellows. Visiting Fellows shall be appointed by the Director.

ARTICLE X

STANDING COMMITTEES

Section 1. There shall be the following standing committees of the Corporation: The Conference Committee and the Committee of Fellows.

Section 2. Conference Committee. The Conference Committee shall be the normal channel for discussion between the Board of Trustees and the Fellows of any matter or matters relating to the objectives of the Corporation. This Committee shall be composed of three representatives of the Corporation, the Chairman of the Board, the President and the Treasurer, provided that if any one of them is not available for any reason for any meeting of the Committee, the Chairman may appoint another Trustee or Trustees or officer or officers to act in his or their stead, and the three Resident Fellows elected to the Committee of Fellows.

Section 2.1. Meetings; Notice. The Conference Committee may meet within or without the State of California, and may be called by the Chairman of the Board, the Director of the Corporation, or by the Representative of the Committee of Fellows. Notice of such meetings shall set forth the subjects to be considered at the meeting. Meetings may be called on ten (10) days' notice in writing at the time and place specified in the notice.

Section 2.2. Quorum. To constitute a quorum of the Conference Committee there shall be required the presence in person of at least two (2) of the representatives of the Corporation and at least two (2) of the Resident Fellows who are members of the Committee of Fellows.

Section 2.3. Reports. All proceedings of the Conference Committee shall be reported in writing to the Board of Trustees at its next succeeding meeting.

Section 3. Committee of Fellows. The Committee of Fellows shall be the normal channel through which the Fellows and the Director of the Corporation shall communicate on matters of their respective general interest including, but not limited to, programs, and recommendations

for the appointment of Resident and Non-Resident Fellows. This Committee shall be composed of three (3) Resident Fellows and three (3) Non-Resident Fellows.

Section 3.1. Election of Resident Fellows. The three Resident Fellows of the Committee of Fellows shall be elected by all the Resident Fellows to serve for a term of three (3) years, except that the terms of the first Resident Fellows elected shall be determined by lot for terms of one, two and three years, respectively. Resident Fellows serving a full term of three years shall not be eligible for re-election until the lapse of one year. The Resident Fellows so elected shall appoint one of their number as Representative of the Committee of Fellows who will act on behalf of the Committee in convening meetings. Any Resident Fellow member of the Committee may be removed by the majority vote of the Resident Fellows.

Section 3.2. Election of Non-Resident Fellows. The three Non-Resident Fellows of the Committee of Fellows shall be elected by all the Non-Resident Fellows to serve for a term of three (3) year, except that the terms of the first Non-Resident Fellows elected shall be determined by lot for terms of one, two and three years, respectively. Non-Resident Fellows serving a full term of three years shall not be eligible for re-election until the lapse of one year. Any Non-Resident Fellow member of the Committee may be removed by the majority vote of the Non-Resident Fellows.

Section 3.3. Meetings; Notice. The Committee of Fellows may meet within or without the State of California, and may be called by the Director of the Corporation or by the Representative of the Committee. Notice of such meetings shall set forth the subjects to be considered at the meeting. Meetings may be called on ten (10) days' notice in writing at the time and place specified in the notice.

Section 3.4. Quorum. To constitute a quorum of the Committee of Fellows there shall be required the presence in person of at least two (2) of the Resident Fellows and the presence in person or by proxy of at least two (2) of the Non-Resident Fellows; provided, however, that in case a Non-Resident Fellow decides to vote by proxy, the proxy shall run in the name of the Director of the Corporation and it shall instruct the Director how the vote of said Non-Resident Fellow shall be cast, giving in writing reasons therefor.

Section 3.5. Voting. Members of the Committee of Fellows may vote in person at any meeting of the Committee or in writing on or before the date specified therefor.

Section 4. Vacancies. Vacancies in the membership of the Standing Committees occurring for any reason shall be filled in the

manner employed for the original election or appointment of the person whose death, retirement or removal causes the vacancy.

ARTICLE XI

MISCELLANEOUS

Section 1. Notices. Whenever under the provisions of these By-Laws notice is required to be given to any Member or Trustee, it shall not be construed to mean personal notice, but such notice may be given personally, or in writing by mail, by depositing the same in a post office or letter box or mail chute in a postpaid sealed wrapper, or by telegram. Every such notice shall be addressed to such Member or Trustee at such address as appears on the books of the Corporation, or in default of other address, to such Member or Trustee at his last known residence address, and such notice shall be deemed to be given at the time when the same shall be thus delivered or mailed or dispatched. Notice of meeting by telegram shall be given at least five (5) days before the meeting.

Section 2. Waiver of Notice. Whenever under the provisions of any corporate law or under the provisions of the Articles of Incorporation or By-Laws of this Corporation, the Corporation or the Members or the Board of Trustees or any committee thereof is authorized to take any action after notice or after the lapse of a prescribed period of time, such action may be taken without notice and without the lapse of any period of time if, at any time before or after such action be completed, such requirements be waived in writing by the person or persons entitled to said notice or entitled to participate in the action to be taken or by his attorney thereunto authorized.

Section 3. Fiscal Year. The fiscal year of the Corporation shall begin on January first and end on December thirty-first.

ARTICLE XII

AMENDMENTS

The By-Laws of the Corporation may be altered, amended or repealed at any meeting of Members of the Corporation by a majority vote of the Members present either in person or by proxy, provided that the proposed action is inserted in the notice of such meeting. The Board of Trustees shall have the power to make, alter, amend and repeal the By-Laws by affirmative vote of a majority of the Board, but all By-Laws made by the Board of Trustees may be altered, amended or repealed by the Members.

Article II, Section 3 of Article V, and Articles VIII, IX and X shall be altered, amended or repealed only by the Members of the Corporation and only by a two-thirds vote of said Members, which vote must include the affirmative vote of at least two (2) of the three Members who are elected by the Committee of Fellows.