

Dr. William D. McElroy to present testimony on "Federal Policy, Plans, and Organization for Science and Technology"

July 15, 1974

The following testimony on "Federal Policy, Plans, and Organization for Science and Technology" will be presented by Dr. William D. McElroy, Chancellor of the University of California, San Diego, before the House of Representatives Committee on Science and Astronautics at 10:00 a.m. Thursday, July 18, in Washington, D.C.

Dr. McElroy began his duties as Chancellor at UCSD on February 1, 1972 after serving for two and a half years as head of the National Science Foundation in Washington, D.C.

He received a Ph.D. in biology at Princeton University in 1943. After two years with the U.S. Office of Scientific Research and Development, Dr. McElroy joined the faculty of Johns Hopkins University in 1946. He was named Chairman of the Department of Biology and Director of the McCollum Pratt Institute ten years later, holding the post until 1969 when he was nominated by President Nixon to head the National Science Foundation.

Dr. McElroy has served as consultant for a number of governmental and private agencies including the President's Science Advisory Committee, the Atomic Energy Commission, and the Biochemistry Study Panel of the National Institutes of Health. He has been elected to membership in the National Academy of Sciences, the American Academy of Arts and Sciences, and Phi Beta Kappa, and is a member of several national scientific societies.

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TESTIMONY ON FEDERAL POLICY, PLANS, AND ORGANIZATION FOR SCIENCE AND TECHNOLOGY

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Presented to the Committee on Science and Astronautics U. S. House of Representatives Washington, D. C. July 18, 1974

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Mr. Chairman and distinguished members of the Committee on Science and Astronautics.

I appreciate the opportunity to appear before you today to give my personal views on certain aspects of science policy and organization. As you know, I have appeared before this Committee on several occasions as Director of the National Science Foundation, and I have great respect and high regard for what the Committee has done in the past and is trying to do for the future. Its understanding of the importance of science and technology to this country has been clearly revealed on many occasions, and I am pleased to do what I can to assist you in your consideration of recent organizational changes in the Executive Branch.

I should preface my remarks by stating that for a number of years I was fairly close to federal operations and science policy making, first as a member of President Kennedy's and then President Johnson's Science Advisory Committee, as a member of the COSPOP of the National Academy of Sciences, and finally as the Director of NSF in this Administration. However, for the past two and one-half years I have been out of government and away from Washington. Thus, what I have to say is based on my past experience only, and is not buttressed by timely, firsthand knowledge of the current situation.

I have read the testimony given by Dr. David and Mr. Carey, and will not repeat their fundamental arguments concerning the importance of science and technology to our society. I believe this Committee is well aware that the future of the Nation and, indeed, the world is closely linked to successful scientific and technological advances and their wise uses. I merely emphasize - as I did on many occasions when I was the Director of the Foundation - that a steady, non-crisis level of Federal support of science and technology is absolutely essential to the health of this country.

I should like, also, to underscore Dr. David's excellent emphasis upon the importance of coupling science and technology closely to the social, economic, and political process. I feel very strongly that this is a critical necessity, and it was for this reason that I earlier argued against a Department of Science. Because science cuts across almost every agency in the Federal Government, it is essential that all of these agencies have science capabilities.

With this background and these thoughts in mind, I would like to offer my brief and undoubtedly biased personal opinions concerning the present and possible future structure for advising the President and the Executive Branch about scientific and technological matters.

Under the Reorganization Plan No. 1 of 1973, the Director of the National Science Foundation would seem to be placed in a very difficult, if not, impossible position. I say this with all respect for the present Director, Dr. Stever. He is an outstanding individual and a seasoned administrator, one of the few people I know who could possibly make the present system work. In some respects I favor the present dual position of the Director, for it does elevate the importance of the National Science Foundation and the Director's role, in the Federal hierarchy. I have argued on previous occasions that the basic science budget at NSF should be raised considerably, not only to respond to greater opportunities in science but also to give the Foundation greater leverage in the coordination of intra-agency projects.

But let me divorce the current Director from this discussion and consider the long range situation. First, the Director is, of course, the chief administrator of the National Science Foundation, probably the most important federal agency concerned with the health of science in the broadest sense. Thus, the Director of the National Science Foundation has the obvious and primary role of major agency leadership and administration. He cannot delegate that responsibility and I can assure you that it can be a full-time job. Now, in addition to this responsibility, the Director is required to perform the additional task of advising the President and other individuals and entities within the Executive Office of the President on scientific and technological matters. Although in this role the Director has the new Science Policy Council and the NSF Science and Technology Policy Office staff to advise him on these matters, I suspect he cannot help but be influenced by his other key and highly qualified advisors in the National Science Foundation. It is only right that they believe in their programs and argue for their budgets. And, of course, the Director of the National Science Foundation, if he is to be effective, must take an aggressive position in supporting his Foundation staff if he believes their recommendations to be correct. With this situation, I can foresee inevitable and, perhaps, counterproductive conflicts when, for example, another agency head appears before the OMB to argue for a budget item that is opposed by NSF staff. It should be noted that so many of the day to day policy matters depend upon good staff and not on the NSF Director as an individual. What will a future director- science advisor do when his Foundation staff recommends one course, his science advisor staff another position? Frankly, I also see grave difficulties in maintaining these two different staffs (all NSF employees) as really independent groups. And when I stretch my imagination, a number of other questions come to mind about the possible future effects of Reorganization Plan No. 1 of 1973: Would there be a tendency toward an unfavorable politicalization of the Foundation? Would NSF's prime function of basic science support be compromised for the sake of a higher mission? Would there be adequate coverage of DOD, agricultural,

corporate, and medical research? Would ad hoc advice tend to come solely from scientific organizational heads rather than also from the "bench leaders"? Would the advisor, one foot in NSF, one foot in the Executive Office of the President, be adequately sensitized to broader social, economic, and political problems?

I am sure that Dr. Stever is capable of complete objectivity in his two roles; as an individual he can do that with integrity, with honesty, and with great competency. For another person, however, these situations might produce an unmanageable strain which might not produce reasonably objective advice. The science advisor, for example, has been thought of as a political appointment, but the Director of NSF, with a term office, is generally considered a non-political appointment.

Because consideration of the questions just posed lead - for me - to awkward and somewhat uncomfortable answers, I feel that in the long run the federal structure should include an advisor who is counselor to the President and quite independent of any existing agency. This position should have the political status in the hierarchy to influence the policy, budgetary, and program decision-making process in an effective way. I cannot see how that situation can occur using essentially an ad hoc advisory structure, an NSF based staff, and a part-time science advisor at least two steps removed from the Oval Office. I admit, readily, that if a president desires this latter type of advisory structure, it is his prerogative and it may be unwise to force another system upon him. However, Mr. Chairman, I understand the Committee's purpose is to get ideas and opinions out on the table so it can have some reasoned recommendations on this important subject in the future.

Let me expand briefly on my point of a presidential science advisor. At a time when we must mount major intra-agency R&D programs, when science and technology should be an essential element of most major social and political judgments, when science and technology loom as a major instrument in our foreign policy - I believe it is essential that there be appropriate scientific and technological advice at the highest level in the White House decision-making apparatus. I believe.. as suggested earlier, that the presidential science advisor should be a separate entity, without any ties to an operating agency. The appointee should probably have cabinet-level status, giving the national and federal stature necessary to influence the technical programs cutting across agency boundaries and the institutions of the President's Office. How the science advisor would obtain the help he needs to counsel the President could take on many forms. I've always felt that there was a useful role for the Federal Council on Science and Technology and PSAC, but that the interface between the two was inadequate to bring about a pragmatic consideration of the societal, economic, and political aspects of many problems. Perhaps a combination of the two - that is, both federal science administrators and non-federal scientists and engineers - to form a President's Council on Science and Technology would be one possibility. This Council should be chaired by the President's science advisor, who as Director of the Council would be subject to appointment with advice and consent of the Senate. A Council of this type would be able to interact directly with the science oriented agencies. Certainly a small, highly select staff would be required to assist the chairman and to mount specific studies, either of their own or through such agencies as the National Academy of Sciences, the National Academy of Engineers, and others. Close collaboration with the Domestic Council, the National Security Council, and the OMB as well as a strong voice in the budget-making process is absolutely essential if this advisor to the President is to have a major policy influence. I'm sure there are other equally feasible organizations and mechanisms, but this is one I believe could work with the right personnel.

Before I conclude let me add one final critically important point. Despite my views about the science advisor and his position in the federal bureaucracy, I firmly believe NSF's new science policy role, a role originally assigned to the Foundation and only recently reinstated, should be continued and strengthened. NSF is the proper place for science policy efforts and through its Science and Technology Policy Office, the Foundation can increase its service and stature as the lead agency for federal science activities. And a final, cautionary note: NSF is a great institution, built over several decades by many individuals of varying persuasion. It is a national resource in the true sense of the term, both for its work and for its integrity. No matter what the upshot of these hearings, the vitality of NSF must be maintained and strengthened.

Mr. Chairman, it has always been a great privilege for me to appear before this Committee. I respect it for its close examinations of Federal science policy, plans, organizations, and budgets have been responsible, fair, and

extremely useful. If the Committee continues to effectively advance science and technology - as I think it will - we have a better than reasonable chance to meet the future's extraordinarily complex and inter-related challenges.

Thank you. I would be happy to try to answer any questions you might have.

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