Presidential Address: The Endocrine Society

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Last July when I assumed office I fully expected that my term as president of the Endocrine Society would be tranquil. Those serious internal problems of the Society that existed a few years ago had been effectively dealt with by my two predecessors, Dr. Liddle—and before him—Dr. Engel, and I was confident that there was so little that the president would be required to do during the year, that I would leave this office on June 30 forever after having been known as the Calvin Coolidge of the Endocrine Society. But, as you may know, tranquility does not describe the state of affairs of the Society over the past twelve months. During this interval, it has become evident that the needs of the science require something more than passivity, for the future development of endocrinology depends to a large extent upon that human enterprise called politics. Thus, a discussion of how the Endocrine Society should address itself to those political factors, which in no small way influence the course of the science of endocrinology, is an appropriate subject for this occasion. I would have preferred to speak on a more scholarly, intellectual topic, since our members are all scholars and should be addressed in a manner befitting them. But I shall have to rely upon the hundreds of talks that are to be presented at this meeting to satisfy your intellectual hunger.

The reality of our present situation is that the scholarship and scientific productivity of every member of our Society is, to a large extent, determined by political considerations. If the Society is to serve the discipline and its practitioners, it must take note of this reality and organize itself so as to respond effectively to it. To be effective will require a serious, continuing effort by members of the Society in a realm for which few, if any, of us have training or preference. Nevertheless, the science to which we devote our professional lives will suffer grievously unless the Endocrine Society, together with other scientific societies, energetically pursues programs that seek to attend pitiously to the myriad extra-scientific factors that influence the development of the science.

It is probably unnecessary to prove the statements I have just made. But to provide some facts to support them, I intend to begin with several figures to give you a very superficial overview of some of the funding trends of the National Institutes of Health from 1969 to 1974. I apologize to those in the audience who are not citizens of the United States for focusing my attention on this American agency. But since it is probably true that the possibilities for research support in other countries, particularly Canada, parallel those in our country, the picture that emerges by examining the funding patterns of the NIH can serve as a common example. Obviously, it is not possible in the short time available to me to present to you the enormous amount of data available, so I have selected only some highlights of what I thought would interest endocrinologists. I would like to acknowledge with much gratitude the help of Dr. Carl Douglass, Deputy Director of the Division of Research Grants of the NIH, who gathered with considerable effort the data used to make the figures, and Dr. William Rosner of Columbia University and

Presented before the Annual Meeting of the Endocrine Society, New York City, June 18, 1975.
Dr. Marjorie Koblinsky of the Ford Foundation, who helped analyze and arrange the data.

The support of research in endocrinology in the United States comes principally from five institutes of the NIH. Because of the shortage of time, the patterns of only two institutes, the National Institute of Arthritis, Metabolism, and Digestive Diseases (NIAMDD) and the National Institute of Child Health and Human Development (NICHD) will be considered. Between them, these two institutes support about two-thirds of all endocrine research in this country. In any case it is probable that the funding patterns of these two institutes are mimicked by the other three, and the lessons to be learned by examining them can be generalized for all of endocrinology and, in fact, for most of biomedical science.

Figure 1 shows some trends that apply to all of NIH, the so-called NIH overall. Depicted are the trends of funding for projects and contracts. In general we have concentrated on projects, i.e., investigator-initiated projects, since the bulk of research in endocrinology is supported through this mechanism. The top line shows the total dollars allocated to projects for each year from 1969 to 1974. When the direct costs, i.e., the amount of money given directly to the investigator for research purposes, are isolated, and when these numbers are corrected for inflation, the middle line results. The deflators used for these calculations are the Biomedical R&D price deflators employed by NIH. The overall value for this deflator from 1967 to 1974 is estimated to be between 35% and 40%. The bottom line shows the trend in contracts, corrected for inflation over the six-year period. The data in this figure show that the total dollars (uncorrected for inflation) allocated to projects rose between 1969 and 1974 about 70% ($375 million to $625 million). But when corrected for inflation, the funds awarded for all research projects increased over the same period only about 15%. Allocations for contracts, corrected for inflation, rose during this period about 300% and in 1974 almost equaled those of funding research projects. Closer examination shows that the rise in the 1974 figure for projects was due to the release of funds impounded by the Executive Branch. If the 1973–1974 values are averaged, the value obtained determines the dotted line, which better describes the trend, i.e., there was little growth (5%) over the 1969 figure. Notice how the gap between total costs (top line) and corrected direct costs (middle line) widens between 1969–74.

One of the most important lessons to be learned from this figure comes from a consideration of the apparent rises that occurred in 1974. In the spring of 1974, $231,000,000 became available for extramural activities from funds that had been impounded by the President. This release of funds was due entirely to the legal action instituted against the Executive Branch by the Association of American Medical Colleges. Appropriate action by these con-
cerned citizens forced the Executive to release the impounded funds. The rises that are indicated for the year 1974 on this and subsequent figures are illusory, in that they reflect merely the released impounded funds. More recently, comparable action by the private sector also helped cause the defeat of President Ford's attempt to cut or "to rescind" the NIH budget for 1975 by some $360,000,000.

In Fig. 2 are shown some trends for NIAMDD. The top line indicates that the total direct costs of projects in this institute, corrected for inflation, have leveled off since 1970, and have never reached the 1969 level (even with the impounded funds). The 1974 figure is 14% below the 1967 allocation (in constant dollars). This institute has ten programs, three of which are Endocrinology, Metabolism, and Diabetes. If the projects of these three programs are considered together, the sum of their funds follows the same course as the overall. As before, the dotted line attempts to correct for the apparent rise due to the release of impounded funds. The bottom line refers to contracts, corrected for inflation.

If the lines on this graph are compared with the top line on the graph shown in Fig. 1, the total NIH projects, it is evident that in spite of what appears to be an explosive growth from $375 in 1969 to $625 million in 1974, the funding for NIAMDD, either for overall projects or for Endocrinology, Metabolism, and Diabetes, has decreased during the six years.

The other Institute that supports a large fraction of research in endocrinology in the United States is the NICHD. The data in Fig. 3 show the trends since 1971. Correcting the top line for impoundment, as before, the total overall projects rose about...
25% during this period. Funds for endocrinology rose by about $1.2 million over the four-year period. Notice that little money is allocated for endocrinology contracts, but four to five times (note change in ordinate) as many dollars are assigned to all contracts as are given to the sum of endocrinology projects and contracts.

Figure 4 shows the decline in the allotment for NIAMDD overall, projects, contracts, etc., as a percentage of total NIH direct costs, corrected. The percentage decreased from 11.4% to 8.5% during the period 1969 to 1974. The comparable decline for Endocrinology, Metabolism, and Diabetes was between 4.5% and 2.8%.

Another way of considering the data shown in Fig. 4 is to examine the percentage of change of the Diabetes, Endocrinology, and Metabolism cluster of this Institute as it relates to the changes that occurred overall in this Institute. Figure 5 shows the decline of the NIAMDD overall as a fraction of the percentage of the NIH overall assigned to that Institute. In 1974, NIAMDD received 73% of the fraction of the total NIH overall it had received in 1969. The programs identified as Endocrinology, Metabolism, and Diabetes of the NIAMDD, in 1974 were assigned 62% of the fraction they were allotted in 1969. The difference between 73% and 62% does not seem to be enormous, but, when expressed in dollar amounts, this means that Endocrinology, Metabolism, and Diabetes projects received in 1974 $6,000,000 less than they would have if both percentages had declined at the slower rate. This is about 20% of the funds provided to these three programs in 1974.

When the patterns for NICHD are analyzed in the same way, it becomes evi-
dent that endocrinology did better there, for relative to the whole program of that Institute, the Endocrine Program received about $3 million more than it would have had both percentages declined at the slower rate.

Finally, the next two figures show the fates for competing applications (i.e., new and renewals) from 1969 to 1974 in these two Institutes. The percentage of approved grants funded in NIAMDD is shown in Fig. 6. From a high of 65% in 1969 it drops to about 50% in 1974 (corrected for impoundment); i.e., only one out of every two approved projects could be funded. For the first two-thirds of 1975 (not shown), the funded over approved for all programs is also about 50%, but for Endocrinology, Metabolism, and Diabetes, the value is about 60%.

The data for the Center for Population Research (CPR), which is that part of the NICHD that supports the bulk of endocrinology from this Institute, is shown in Fig. 7. In spite of the rise in both the number of applications reviewed and the number approved in the years 1972–1974, the percentage of approved applications funded has been dropping. Figure 8 shows the funded over approved. In 1974 the percentage of approved applications for biomedical research grants (contracts not included) funded was 37. That is, funds allocated to the CPR were sufficient to support only one out of every three projects that had been approved by both study sections and the council. In 1975 (not shown), 50% of approved projects were funded by the CPR.

It is not possible in the time available to extend this recitation of statistics. It is clear that since 1969 governmental decision-makers have seen fit to reduce the NIH funding levels for endocrine research and indeed for all of biomedical research significantly below what obviously would be adequate merely to satisfy the existing talent.

In order to consider how the Endocrine Society might react toward these realities, it may be useful to examine how decisions about funding patterns for biomedical research are made through federal mechanisms.

Two kinds of processes determine the amount of money appropriated by the Fed-
eral Government for biomedical research and the patterns by which this money is distributed. One is the political, and the other is the bureaucratic. Please note that I use neither word—political nor bureaucratic—in a pejorative sense.

Figure 9 presents an organizational chart which outlines the train of these processes as it relates to funding for Endocrinology, Metabolism, and Diabetes, through the mechanisms of the NIH. Viewing the decision-making train in its entirety has some advantages, for it reveals clearly the interrelationships and feedbacks, and serves to pinpoint those targets where the concerned public, i.e., the Endocrine Society and similar groups, can attempt to make their influence felt.

Beginning at the top with the Congress, it is unnecessary to emphasize the fact that the legislature ultimately has the greatest impact on funding patterns since it makes the final allocations. Congress is now more involved in Science than ever before, and members of Congress, almost to a person, have little understanding of this activity other than that it has social consequences and requires a substantial part of the budget. Many, if not most, are anxious to receive help in this area which for them is especially abstruse. It is at this level that our Society's efforts ought to be focused, for the greatest benefit can be obtained by action here.

Last winter about a dozen members of the Endocrine Society were asked to come to Washington to speak with a total of 80 Congressmen or their administrative aides to attempt to persuade them to vote against President Ford's request for a $360 million rescission from the NIH budget for 1975. In addition, the telephone cascade, established by the Society a year or so ago to sound the clarion for rapid action, was activated to encourage some of our members to express to their own congressmen their opposition to the rescissions. Had Congress acceded to the President's request, the funds available would have been cut back to the previous year's level, and no new grant applications would have been funded. The congressmen selected to be visited by the Endocrine Society mem-

**FIG. 9. DECISION STRUCTURE**

- CONGRESS
- PRESIDENT
- OMB
- SEC'Y DHEW
- ASST. SEC'Y for HEALTH and SCIENTIFIC AFFAIRS
- NIH
- NIAMDD
- NICHORD
- Metab. Endo. Diabetes
- CPR

...
bers came from more than ten states. They were considered to be “swing” votes, as it appeared that these congressmen were not committed irrevocably to one position or the other. It turned out that visits to Washington became unnecessary, although finally we sent telegrams to these same congressmen, urging them to vote against the rescission. Of the 80 contacted, 38 ultimately voted against the rescission, 34 voted for, and 8 did not cast ballots. It is not easy to assess the value of our efforts, or those of the AAMC or FASEB, both of whom also mobilized campaigns, but it is true, as you know, that the President’s request was soundly defeated by both Houses of Congress. I mention this incident to illustrate just one kind of political activity members of the Endocrine Society will probably be engaged in in the immediate future if they would play a role to ensure adequate and appropriate funding for biomedical science.

As I have said, the greater part of our effort in the future will probably have to be directed at Congress. Therefore any device that will serve to educate our congressional representatives and their aides about the nature of endocrinology and how it interrelates with every branch of medicine and with most of the serious diseases that afflict our countrymen will advance the cause of endocrinology. Systematic efforts will be necessary to demonstrate to Senators and Congressmen and their aides how something called endocrinology and metabolism have contributed to and will contribute to the public welfare. Every mechanism that will demonstrate that fundamental research has enabled the biomedical research community to contribute to the common weal should be employed to convince congressmen and their staffs that funds they legislate for this precious activity are in the public interest. You will note that I have always included congressional staffs as amongst those who require our serious attention. Their role cannot be minimized. Our representatives depend heavily upon the advice of their administrative aides and if they are to understand our cause and provide adequately for it, their education on the nature and role of endocrinology is also vital. The proper education of 50–100 members of Congress or their aides could have a decisive effect on the immediate course of biomedical research.

The bureaucratic organization depicted here is also a political body. It functions through hierarchical arrangements, and important decisions can be made at many places, sometimes by unidentifiable people. The inhabitants of the bureaucracy may be divided into two kinds of people—one, the managers, who, for the most part, populate the OMB and the downtown office of the DHEW, and who, as Dr. James Shannon, the former director of the NIH, has pointed out, are “deficient in evident scientific and professional competence.” In the second category are the scientific administrators who make the decisions at the NIH level and beyond. Most frequently, these people closely resemble us in training and attitudes. Indeed, many are members of this or other professional societies. Ideally, their training, their values, and their objectives should make them behave as we would if we were in their positions. For the most part they do, but in the real world they are not quite like us. They are governmental officials, limited by hierarchical constraints and internal politics, and, although their motivations most frequently are praiseworthy, their decisions are sometimes determined by extra-scientific considerations. Their decisions about budget, for example, may be determined by, among other factors, explicit directives from higher levels. While the Congress is the final arbiter of funding levels, the President, the people at the OMB and at the DHEW often establish ceilings which officials at lower levels may not exceed. It is not generally recognized that officials at every level of this organizational chart below the Congress are employees of the Executive.
branch of the Government, and, as such, they are expected to behave in accord with the orders of their superiors. When they address the public, as well as when they testify before Congressional committees, they are required to adhere to and defend the desires and decisions of their superiors on the hierarchical ladder.

Decisions taken or positions advocated by people at each level are often determined by *implicit* directives from above. This corresponds to a feedback effect, in that at a lower level, the decision maker's perception of what he knows or imagines to be the intentions of those higher up on the organizational chart may determine his recommendations and actions. Thus, if OMB is known to oppose training grants, Institutes of the NIH may accommodate this opposition by reducing or eliminating their own requests for training monies. I invite you to speculate on the consequences that result from the fact that even the members of the study sections inadvertently play into this system. Supposedly concerned, in the main, with scientific merit, these peer review groups often adjust their priority scores on applications to adapt to what they perceive to be funding "realities" and thereby help, by their actions, to reinforce decisions made elsewhere.

Budgetary requests are also determined by other attributes of the science administrators. Besides their experience and wisdom as science administrators, their personalities, their preferences, their relationship to the power structure at the NIH, their willingness to accommodate to outside influences, and their responses to many other subtle factors influence their decisions. It is essential to understand that decisions made at the level of HEW or the National Institutes probably have at least as much effect upon the final size of appropriations as those made by Congress.

From this very superficial analysis of the political and bureaucratic decision-making processes, it is evident that there are a large number of places where professional societies like the Endocrine Society can, and ought, to direct their efforts if they expect to influence funding patterns. In the period between 1945 and 1969, political activities in support of biomedical science by scientists and their professional societies were not as vital as they now are. With the advent of a new administration in 1969, the disappearance from the Congress of Senator Hill and Congressman Fogarty and with the departure of Dr. James Shannon, who, as Director of NIH, had served as a dependable link and a buffer between biomedical scientists and the Federal Government, the intense and continuing participation of scientists in the political arena has become urgently needed. The necessity arises from the fact that neither the Administration nor Congress knows much about science. As Arthur Kornberg has recently pointed out, "the difficulty with research support in our society is the failure to understand the nature and importance of basic research. This is true of the lay public and most physicians, of legislators and political leaders. They do not realize the long-time scale of basic research, and that its utility is not immediately obvious."

The Endocrine Society, in my view, has the responsibility of making its voice heard, in concert with like-minded groups, in those places where the interests of endocrinology can best be served. Our Society has one principal objective—to do all that it can to facilitate progress in the science of endocrinology. Now, in order to further this goal, it is necessary, like it or not, to organize ourselves in ways that will ensure our productive participation in the political and public process.

This effort will take many forms and will, I would estimate, continue unabatedly for the better part of the next decade.

For some time now, the Society, obviously, has been giving serious attention to this realm, particularly through its Public Affairs Committee and its active member-
ship in the AAMC and the Council of Academic Societies and now in the Coalition for Health Funding which we have joined this year.

One of the more important accomplishments of this past year has been the employment by the Society of a consultant on governmental affairs. Dr. John Grupenhoff, former Deputy Assistant Secretary of HEW during the Kennedy and Johnson administrations, has been engaged to keep the Society abreast of political developments that affect endocrinology.

Another effort the Society is making to disseminate the essence of endocrinology to the real world is to sponsor a pressroom at this meeting. This attempt to communicate through the news media what it is that endocrinologists do, and how their scholarly activities are related to important human problems, has become a part of our commitment to education. The Council of the Endocrine Society has just approved the creation of a standing Committee on Education which is authorized to identify and implement means through which the Society can discharge its educational functions.

Those intimately concerned with the public policy process in Washington strongly encourage us to get involved in political activities. But science cannot prosper if scientists abandon their science to become political activists. In my view, the bulk of the members of the Endocrine Society, that is to say 99.5% of them, should continue to devote themselves to the fascinating and useful study of endocrinology. If these members were to contribute only a fraction of one per cent of their time to such activities as writing to their representatives or, better, visiting their congressmen at home, or comparable civic efforts, the net effect on funding patterns could be dramatic. Because members of the Society reside in each of the fifty states and because they often hold influential positions, their opinions, when well directed, can possibly make a big difference. As far as the other 0.5% of the membership is concerned, i.e., those ten to twenty persons who are officers of the Society, if they were to devote 5% or 10% of their professional time to activities that are aimed at bringing to the public and its governmental representatives and officials our thoughts on funding and administrative patterns, then the responsibility of the Endocrine Society to do what is necessary at the political level will probably be fulfilled.

There is one hazard in relying on a few officers of a society to carry the load for the remainder of the membership that is noteworthy. There is a likelihood that officers of a scientific society, because they have already achieved some degree of recognition (how else could they become officers?), suffer from the “fat cat” syndrome, or one of its variants, the “old cat” syndrome, maladies which are, as you are aware, characterized by complacency, self-centeredness, and lethargy. Obviously, the present officers and officers-elect of the Society are not afflicted by this disease, but the membership would do well to choose future officers who do not suffer from it.

I am aware that underlying everything I have said this morning is the assumption that the public’s interest will be greatly benefitted by appropriate federal expenditures for biomedical research in general, and for endocrinology in particular. Before this audience, it is certainly unnecessary to defend this assumption or even to be embarrassed by advocating our cause. But there are many influential people in the country who will question this assumption. They will lose no opportunity to proclaim that basic research or research that is not disease-oriented is a luxury the country can hardly afford in these difficult times. Many of these individuals will assert, with great certitude, that they know what the priorities should be and that the rule of public accountability requires that the biomedical community shape up and address itself to problems they know to be important. To accommodate these influential persons, some
of our friends are quick to point out the realities of politics and of economics. Often their admonition is to roll with the punch, accept the wave of the future, compromise, be content to achieve that which is possible now. Their advice is both practical and realistic, but I wonder whether it is always the best strategy to accept, without debate, the other’s arguments, merely because the reality is that his view is likely to prevail for the moment. It is our responsibility to present our case as forcefully and effectively as we can. Taking the high road toward long-term objectives will entail wisdom, fortitude, and patience, but it may have a better overall effect on science than resignation and acceptance of easily attainable, but less than satisfactory, goals. In a recent speech Senator Edward Kennedy, Chairman of the Senate-Health Subcommittee, declared “. . . we need men and women of expertise and goodwill who will work with us in Congress towards the solution of health manpower problems and the establishment of informed priorities in the area of biomedical research.” The Endocrine Society must, alone and in concert with other like groups, do everything it can to respond effectively to this challenge.