Mount Sinai

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THOMAS CHALMERS, MD: It gives me great pleasure to welcome you all to the investiture of Dr. Irving L. Schwartz as the first Dr. Harold and Golden Lamport Distinguished Service Professor, Physiology and Biophysics, at the Mount Sinai School of Medicine. This is unlike any investiture we have had before, from the medical standpoint, in that we are actually honoring two physicians today. In the past, we have honored a donor who has been generous and kind to Mount Sinai in donating funds for a named chair. This time the donor and his family are themselves distinguished in the medical field, and that makes this a double event. In fact, the chair is named after the late Dr. Harold Lamport, who was a distinguished professor at Mount Sinai for ten years, and after his death, was honored with an appointment as Distinguished Service Professor of Physiology and Biophysics; so that, in effect, Dr. Schwartz today is being invested as the second Distinguished Service Professor in Physiology and Biophysics with the title of Dr. Harold and Golden Lamport Distinguished Service Professor.

To begin the proceedings, it gives me great pleasure to introduce to you Mr. Alfred R. Stern, Chairman of our Board of Trustees.

ALFRED R. STERN: Thank you, Dr. Chalmers. It's a great pleasure to be here this afternoon to participate in this occasion. I am delighted to convey the felicitations of our entire Board to you, Dr. Schwartz, as we recognize your valuable contributions to Mount Sinai. Dr. Schwartz, as most of you are aware, has served Mount Sinai with distinction as Chairman of our Department of Physiology and Biophysics, as well as Dean of the Graduate School of Biological Sciences; and it is indeed fitting that he be honored for his role in the growth and development of our School of Medicine.

It is also fitting that, in honoring Irving Schwartz, we will be paying tribute to another brilliant scientist who graced our institution, Dr. Harold Lamport, who served Mount Sinai as a research professor in the Department of Physiology in the Graduate School of Biological Sciences, and as Dr. Chalmers just mentioned, was posthumously designated a Distinguished Service Professor of the Mount Sinai School of Medicine.

But I would like to limit my remarks today to a few thoughts about Mrs. Harold Lamport, Golden Lamport. So imbued with the importance of her late husband's work is Golden Lamport that, as many of you know, she served the Department of Physiology, Biophysics, and the Graduate School as a valued adjunct, for which her compensation is the gratification which comes from seeing the important work of that department go forward. Golden is a volunteer in the highest sense of the word. Not only does she give of her time, effort, and material worth, but she is involved. A believer in the upgrading of medical education, she has established the Harold Lamport Prize for medical students at many schools of medicine. Mount Sinai is also one of the number of schools of medicine which each year present the Harold Lamport Visiting Lecture and Visiting Professorship.

But it is in the establishment of this magnificent memorial to her husband that she has made her greatest contribution, for it was Golden Lamport's financial support and hard work that led her family and her many friends to the creation of the Dr. Harold and Golden Lamport Distinguished Service Professorship. Golden, all of us at Mount Sinai--the Board, the faculty, and students--say thank you. (Applause)

The Chairman of our Development Committee, Mr. Robert E. Rubin, had planned to be with us today, but at the last minute he found it impossible to join us, so he asked me to say a few brief words on his behalf. In our determination to build a school of medicine that would continue the tradition of excellence established by the clinicians at our Hospital, we have recruited a faculty consisting of distinguished scientists, men and women noted for their experience and ability to transmit their knowledge and skills to new generations of medical students. In this endeavor, generous benefactors who have endowed professorial chairs have played a pivotal role. Since our School of Medicine was opened in 1968, twenty-three professorial chairs have been endowed and occupied by such men of international reputation as Dr. Irving L. Schwartz, and other colleagues. Private sector giving is crucial for us as we strive to meet the basic needs of our School and Hospital, now and in the immediate future. With new, broad-based support, we can help Mount Sinai enter the decade of the eighties with the ability to maintain those standards of excellence which have been the touchstone of Mount Sinai for over the past century and a quarter.

Bob Rubin particularly wanted me to report to you that Dr. Schwartz is not only a distinguished scientist and academician, whose efforts in these areas have brought great strength to Mount Sinai, but he is also an individual whose personal generosity has made it possible for me to report to you that Dr. and Mrs. Schwartz have been named Sponsors of the School of Medicine. Thank you very much. (Applause)

CHALMERS: Thank you, Al.

It is customary in these proceedings, and it gives me great pleasure, to introduce the members of the families of those on the podium who are honored today. The first, Felice N. Schwartz--Dr. Schwartz's wife--but I'm going to introduce her as "Ducky," would she please stand? Dr. Schwartz's daughter, Cornelia Ann Schwartz. (Applause) Dr. Schwartz's son and daughter-in-law, Tony and Debra Schwartz. (Applause) Dr. Schwartz's mother-in-law, Rose K. Nierenberg. (Applause) I think she's way in the back. Dr. Schwartz's brother and sister-in-law, William and Emma Schwartz. (Applause) Mrs. Schwartz's uncle and aunt, Jack and Alice Kaplan. (Applause) And again, Mrs. Schwartz's uncle and aunt, Colonel Henry and Sally Kaplan. Mrs. Lamport's daughter and son-in-law, Professor James and Stephanie Lamport Nohrnberg, and their children, Gabrielle and Peter. (Applause) Mrs. Lamport's daughter-in-law, Cynthia, and their children. (Applause) Mrs. Lamport's nieces, Stacy and Jamie Gammell. (Applause)

And now I'd like to introduce Anthony M. Lamport, the son of Dr. and Mrs. Lamport and father of Sara and Aaron Lamport. Mr. Lamport! (Applause)

ANTHONY M. LAMPORT: I was asked to say a few words about my mother, because Dr. Schwartz will be speaking about my father, as he would particularly want to be remembered for his scientific endeavors.

My mother did many things, and continues to do many things. She has been a fabric designer and art director, an editor, a foundation president and director. During her career she has been very much concerned with education, particularly medical education. She has reported on medical teaching in hospital installations abroad. She has been concerned with the teaching of history and American history in schools, and is part of the committee in

Connecticut that is working on that. She is a Life Member, Board of Associates, of a university. And then, as Mr. Stern mentioned, she very energetically pursued a project that my father and she had developed, and that was giving awards to major medicals schools, these awards to be given for excellence in research on the part of medical students, because my father was particularly concerned with young people and with the development of the research effort. There are many awards, often, for clinical excellence, but he was concerned with research as well.

And finally, as was mentioned, my mother is an ex-officio, if you will, member of the department here. I think, in summary of her background--and it's a compliment to my father--that I would categorize her as a Renaissance woman, who is at the same time very much of this world. Thank you. (Applause)

CHALMERS: I also would like to say a few words about Dr. Lamport, though I think Iry will say them much more eloquently than I. Nevertheless, I want to add just one or two personal notes.

I was reviewing Harold Lamport's curriculum vitae again today, and discovered that he and I worked in the same department at the [Columbia University] College of Physicians and Surgeons, and I think I remember those days. In 1939, he was working in Neurology at Columbia Presbyterian, where I was a first-year medical student with the National Youth Administration doing some odd jobs for Tracy Putman, and I think that our paths must have crossed during that year.

The next time we were together was here at Mount Sinai. I felt especially warm towards him, because I came to Mount Sinai with the idea that one of the difficulties of medical education was not enough postgraduate education, and not enough emphasis on research and preparing of a thesis, as in other graduate schools. I knew that Yale, where Dr. Lamport spent so many years, required a thesis of its medical students before they could obtain the M.D. degree. He and I discussed this on several occasions, and he, along, I think, with Dr. Jack Green, were strong advocates of that requirement at Mount Sinai. We were shot down. But, I haven't given up. Various polls of students--and those were the days when polls of students were important in medical school policy--demonstrated a dearth of interest in the requirement of a research project and an erudite thesis for receiving the M.D. degree.

We have not yet accomplished the goal that Harold Lamport and I both held so important, but we may some day. We did do one thing, which he was entirely responsible for: he introduced--I think, the year before he died--the Harold Lamport Prize for research accomplishments. And each year a prize is given to the medical student in the fourth-year class who has accomplished the best research during his career at Mount Sinai. We think it's extremely important that physicians recognize there is an abysmal ignorance about the practice of medicine in the world, and that no matter how much they may be devoting themselves to caring for patients as their primary career, they still have a responsibility to learn how to do research and learn to distinguish between good and bad research. I think that is a characteristic of both of the men we are honoring today, and also of our principal speaker.

I should like to say a few words about Dr. Schwartz, before bringing Mr. Stern back to the

podium for the formalities of the investiture. Irv, as I think most of you know, has had a distinguished career in research and teaching. He's a graduate of New York University School of Medicine, and had his clinical training and first research training at New York University, with some slight interruption by the Army. Then he had a distinguished eight years at the Rockefeller Institute, from 1950 to 1958, and at that time made a number of distinguished friends, many of whom are here today to honor him.

After that, he had three years at Brookhaven Laboratories, continuing a full-time research career, and then became Professor and Chairman of the Department of Physiology at the University of Cincinnati. It was during that period that the founders of Mount Sinai School of Medicine brought him to New York to become Chairman of the Department of Physiology and Biophysics, and Dean of the Graduate School of Biological Sciences.

He continued in that position for ten years; and now he's making a change, and he and I--and, I think, the world--will be very enthusiastic about that change, because as you know, the department chairman is saddled with administrative chores. I think it's unfortunate our system is such that great investigators and teachers work hard to achieve the ultimate recognition in their skills to become a department chairman, which then necessitates discontinuing the research and teaching they have learned to do so well. Iry is the unusual chairman who continued his research throughout, recognizing that if his ideas were to reach fruition, he must relinquish the administrative load and become a full-time biological investigator.

We are all grateful to the Lamport family and their friends for creating this chair, which allows Iry to be a Distinguished Service Professor, and develop his enormous research potential.

Mr. Stern, it is my pleasure, as Dean of the School of Medicine, on behalf of the faculty, to present to you Dr. Irving L. Schwartz as the first Dr. Harold and Golden Lamport Distinguished Service Professor.

STERN: Thank you, Dr. Chalmers.

Dr. Irving L. Schwartz, Dean of the Graduate School of Biological Sciences, it is with a great deal of pleasure that I present to you this Certificate of Appointment which reads as follows:

The Board of Trustees and the Dean of Mount Sinai School of Medicine of The City University of New York, to all to whom these presents may come—greetings. Know ye that, reposing special trust and confidence in the leadership, experience, wisdom, competence and steadfast dedication to the highest standards of his profession of Irving L. Schwartz, M.D., we do hereby invest him as the first Dr. Harold and Golden Lamport Distinguished Service Professor, to be so known and so designated, so long as he shall continue a member of the faculty.

In testimony whereof, we have caused these letters to be made patent and the seals of Mount Sinai School of Medicine and The City University of New York to be hereunto affixed. Done in the City of New York this 26th day of June, in the year 1979.

Irving. (Applause)

IRVING L. SCHWARTZ: Mr. Stern, Dr. Chalmers, distinguished members of the dais, friends on the dais, members of the immediate and the extended Lamport family, my own immediate and extended family, members of the Mount Sinai family, long-standing friends, new friends, friends to be, and guests: I am deeply moved by the presence of each and every one of you here on this beautiful summer afternoon, when there are, perhaps, better things to do in the park.

I am very grateful indeed to all those who made this event possible: Golden, Tony, Cynthia, Jim, Stephanie and the many others who loved and admired Harold Lamport and contributed to this particular way of perpetuating his memory.

To Harold himself, whose exquisite scientific taste, lofty academic ideals, and great intellectual companionship made the years of his and my scientific and educational collaboration so vastly stimulating that I am no less than thrilled at the linkage of his name with mine.

To Al Stern for being here to preside over this linkage and make it official, authoritative, and enduring.
To Tom Chalmers, for first thinking up the idea of this linkage and then facilitating its implementation.

To Mr. Bachrach and Mrs. Spear and their staff and associates [in the Development Office].

To Mrs. Leake, Mrs. Hoffman, of my own office, for their total involvement in arranging this afternoon's formalities and festivities.

To Vince Dole, for welcoming me in 1950 into his fledgling department at the Rockefeller Institute, now The Rockefeller University, and for his long mentorship and collaboration, and for being the one who first introduced me to Harold Lamport in the early fifties.

To my wife and children, who have without excessive complaint tolerated decades of absurd working schedules and dead-line panic.

To George Vineyard, Vic Bond, Maurice Goldhaber, present and emeritus Directors of the Brookhaven National Laboratory, who are here with us today and who have been marvelously supportive of Mount Sinai/Brookhaven collaborations.

To Professor Karl Ulbrich, the Director of the Max Planck Institute for Biophysics and his associate, Dr. Irene Schultz, who are here from Frankfurt, Germany.

To Sunny and Abe Rosenberg for their very special friendship.

To Terry Krulwich, for the magnificent job she does in running our Biomedical Sciences Doctoral Program.

To Mina Rees, first President of The City University of New York, Graduate School and University Center, who is here today, and who in 1968 made it possible for me to launch this program which Terry now runs; and to Harold Proshansky, Mina's successor as President of the CUNY Graduate School, also here today, who helps us maintain and improve this program.

To Mimi Berson and to Ros Yalow, our first Nobel Laureate whose presence here represent both themselves and the late Sol Berson, a treasured friend and Mount Sinai's first Samuel Bronfman Chairman of Medicine.

To my colleagues in the Department of Physiology and elsewhere throughout our School, who have given time, thought, and cooperation to our joint educational and scientific enterprises.

To many treasured friends, some of whom have come great distances and/or braved long gas lines to be here; and finally, again, to all those of you who have graciously arranged to be with us today to share this special moment with me, and to join me in honoring Harold and Golden Lamport.

This occasion is enormously meaningful to me on a number of levels, and for reasons that I have just alluded to and for several other reasons which I would like to share with you briefly. In the first place, it has already provoked a myriad of personal memories that carry me back to my first suggestion to Harold Lamport that he exchange the academic ivy of New Haven for the steel and cement of 100th Street and Fifth Avenue. At that first meeting, I never thought he would really leave New Haven to join me in what was then a microscopic educational enterprise in comparison to what he was enjoying at Yale.

But he did, and I'll never forget one of our early conversations, in which I told him that I thought we would be pressed for budget and space, because the building program for our new school would in all likelihood cost many times the amount that we had originally projected. At that point he stopped me, and he told me that he understood these matters, and that what attracted him was the new and exciting philosophy that was coming off the ground with the Mount Sinai School of Medicine, and that salary and space was no consideration whatsoever in this light. In fact, he told me that for long as it might be really helpful to Mount Sinai, he would forego his salary or return it as a contribution. And he also reminded me that his interest then was primarily in biomathematics, so that he didn't need any space or equipment other than a pencil, some paper, and a place to sit.

Finally, he posed the question--and I recall this verbatim. He asked me: "As the first basic science Chairman at Mount Sinai, do you see your way clear to recommend me for a full professorship?" I remember being astonished by the modesty in tone and words with which this request was made. And I remember thinking to myself: This is incredible. This man, who has contributed more than anyone else in his era to the understanding of the circulation of the blood through the kidney, who had recognized that ultrasound could be used to break up kidney stones, and thereby saved many patients from agony and/or surgery, this man, who had designed the G-suit, without which much of modern aviation and space flight would have been impossible--this man was telling me that for his current work he doesn't need money or space, and then asking me, modestly: Do I see my way clear to making him a

full professor?

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I remember a kaleidoscope of impressions that preceded my answer, recollections of still more of Harold's accomplishments, of the fiscal plight of our school, the "no need for money or space" kept reverberating. I remember half-rephrasing his question, "Do I see my way clear?" And then, like a bullet, I remember answering with one word: "Luminously."

Not long after that conversation, Harold moved into our department in the Basic Sciences Building on 102nd Street and he plunged headlong with me into the development of our graduate school programs. Together, we had become deeply interested in the ideas (1) that medical students should be provided more than the then conventional amount of time allotted for independent study and reflection; (2) that the requirements for factual information and memorization be reduced; and (3) that in general terms, the student should be cultivated in the atmosphere of a graduate school rather than a trade school.

He told me often that the long record of inertia in leading academic institutions suggested to him that innovation by renovation was less expeditious than building totally new foundations; and we decided that the best way to develop the atmosphere of a graduate school within a medical school was by creating and bringing together two such schools, geographically, operationally, and philosophically.

To some extent, these ideals were and are being achieved, initially with the help of Harold Burlington, and now under the leadership of Dr. Terry Krulwich. Harold Lamport's hope, and our ultimate goal, was and is to achieve vital interdisciplinary interactions amongst clinicians, basic scientists, medical students, and graduate students within one institution and within either a single building or a compact campus of adjoining buildings.

It has long been recognized that a professional school such as a medical school functions at its best when it is broadly and deeply involved with its non-pragmatic counterparts within the university. Nevertheless, effective ties between the professionals and the pure elements in modern universities have been limited. To be sure, many medical school departments make use of the administrative apparatus of their university's graduate schools for the formal processing of candidates for the M.A. or M.S. and Ph.D. degrees; but there is generally little substantive or inspiring academic interaction.

Nevertheless, Harold and I were convinced that cross-fertilizing and productive ties between a medical school and a graduate school could be achieved if the two units were developed contiguously with curricular, scholarly and laboratory interaction established from the outset. Indeed, it was Harold who first made me aware of Douglas Knight's elegant description of the fundamental responsibility of graduate schools. I should have known this from Douglas Knight himself, who was a close personal friend of my wife, but it was Harold who pointed this out to me. It's a small portion of this description that I would like to bring to your attention now, because this viewpoint was so strongly shared by Harold, and because I think we at Mount Sinai must keep these fundamental principles in mind as our graduate school and medical school move into the future:

> Graduate schools are not primarily obligated to a profession, but to a discipline, and they build their relationships of knowledge, wisdom and action in ways that seem

superficially more tangential to life than those of the professional schools. The vigor and significance of a great graduate school express themselves most clearly in a power of self-criticism, in a constant dialogue between what is known and what may be known.

To put it another way, the constant critical evaluation of knowledge is the major task of a graduate school. Only out of it can come the two formal achievements which justify having such schools as part of a university. The first formal achievement, of course, is the extension of knowledge, and knowledge is only extended effectively under a constant structure of criticism and reevaluation. The random extension of knowledge means nothing until it is caught up by a mind of creative power. It is not too much, indeed, to say that knowledge becomes real only at that point.

The second formal achievement of a graduate school is the education of future scholars, and here, too, we must realize that training which limits itself to the mere manipulation of facts has no real value. The scholars of the future must be even more critical and creative than the scholars of the present. They must be so, because they will have to be more learned, and their learning will bury them unless they have within their graduate discipline itself the means of ordering, selecting, controlling, and valuing what is known--valuing and selecting the knowledge.

If creative learning at its best involves this constant critical dialogue, it does not stop there. Often it may look as though distinguished scholars talked only to themselves and to one another. But they also carry on a conversation with their society. The thought of a Newton or an Einstein is, first of all, a conversation for two or three minds; but before it's finished, it has shaped national action and the inner lives of countless human beings.

In a hundred less publicized areas, the scholar changes our world. He may bring forty years of learning to bear on the Dead Sea Scrolls, or he may interpret for us the inner life of a Lee or a Lincoln. He may show how the obscure passages of Proust or Joyce represent some of the most penetrating and necessary insights of our century. In all these matters, the true scholar maintains a precarious balance. He fails if he tries to make his insight constantly useful to the society around him--because he inevitably falsifies it. And he fails equally if he adopts the position that the more esoteric and unavailable his learning is, the more glorious.

What the scholar has to offer his world is some calm sense of the relative importance of its various preoccupations. He effects its actions by the sharpness of his interpretation and by the courage with which he supports his insight. In this way, he is a profoundly active person himself, of a less spectacular, and yet often a more abiding sort than those whom we usually deify as our heroes of action.

Surprisingly, as the total number of scholars in society increases, fewer seem to fit this ideal. The burgeoning of information makes it difficult to achieve depth in a specialty and at the same time to develop and retain breadth throughout the full range of science, or even within the confines of a single discipline. A typical graduate student today is allowed, or even

encouraged, to limit his development as a generalist in favor of virtually exclusive concentration within a sub-discipline; and thus, Ph.D. notwithstanding, he emerges from school with a perspective of such narrowness as to rob him of the ability to make the important value judgments which should set the course of his career, ensure the development of his own students, and ultimately affect the nature of the society in which he lives.

In the laboratory, his activities tend to move toward greater purity within his elected discipline, and greater remoteness from other disciplines. He is, therefore, likely to address himself to the more readily soluble problems that arise within a single discipline, rather than to the less practical but more important problems which tend to bridge disciplines and require a breadth of background and experience which he has been denied. Thus, he may be forced into a sterile commitment to minutiae which he may rationalize in the name of art for art's sake.

Now, the medical student or physician may find himself in an equally unproductive intellectual abyss because of comparable narrowness of perspective at the pragmatic end of the spectrum. Thus, the responsible educator today is faced with the problem of deciding how best to respond to the pressing needs of modern society and yet to preserve a leisurely and urbane attitude toward scholarship; an exemption from the overriding obligation to use knowledge for practical ends; a sense of perspective which accompanies the broad horizon and the distant view; and an opportunity to give undivided loyalty to the kingdom of the mind.

The roots and ramifications of this problem reside in the incongruence of our mission-oriented society and our discipline-oriented universities, an issue to which Alvin Weinberg first drew attention. Harold Lamport believed that it is important to face the mission-discipline duality in medical and graduate education by attempting to develop scholars in both the clinical and basic sciences who can maintain the precarious balance between application and purity on the one hand and specialization and generalization on the other. Harold worked with me and on his own toward the realization of this goal by helping to lay the philosophic foundation for a broad interplay of graduate education and medical education in which faculty members and students might have close contact in a set of core courses, portions of which would be given to graduate and medical students together and portions of which would involve seminars on the relationships amongst physical science, biology, medicine, social science, and the humanities, and would be held jointly by the medical and graduate schools throughout the academic year for all classes of students and all members of the faculty.

Harold was also forever after me to make sure that opportunities be provided to medical students to explore experimental or theoretical problems in depth within the graduate school, and to encourage in selective cases research collaborations between one or more medical students and a graduate student who had reached an advanced phase of his or her thesis research.

I could go on, but I've already taken more time than I intended. Therefore, let me conclude by saying that, thanks to Golden Lamport, her family and friends, and to Tom Chalmers, I have been given a gift of time which will allow me to increase my activities in the laboratory. In addition, this gift of time should make it possible for me to pursue with vigor

Harold Lamport's dream of a close working association between our medical and graduate schools, in order to provide an intellectual and humanistic climate in which mission-oriented medical students and discipline-oriented graduate students bring about a salutary blending of the pragmatism of the activist and the purism of the theorist, so that both can relate their evolving interests and growing competencies to the pressing professional needs, as well as the loftiest intellectual ideals of our society. Thank you. (Applause)

CHALMERS: Irving, that was superb, and we all look forward to your productive activities in the future.

Dr. Schwartz has chosen for his speaker today Dr. Vincent P. Dole, who graduated from Stanford University and Harvard Medical School, and in 1941 joined the staff of the Rockefeller Institute. Since 1952 he has been a Professor at The Rockefeller University. Many of you have heard of him, because as a sort of part-time occupation, he introduced the concept and method of Methadone treatment for narcotic addicts, which has saved so many lives in our city. He is also well known as a scientist who has done much important work in his years at The Rockefeller, among them the demonstration that free fatty acids are actively involved in the metabolic processes, and the description of the physical principles that go on with the broadly used techniques of electrophoresis. It gives me great pleasure to introduce to you Dr. Vincent Dole.

VINCENT P. DOLE: Dr. Chalmers, members of the Board of Mount Sinai Medical Center, distinguished guests: This is a happy occasion. I am delighted to join in honoring two old friends for whom I feel affection and respect. I can also claim a share of the credit for this event since it was my privilege many years ago to introduce them to each other. It proved to be a compatible meeting of minds. Probably it was the most important thing I did in 1952.

Since the early 1940's I had known Harold Lamport as a pioneer in the field of biophysics, the application of mathematical and engineering principles to the analysis of physiological processes. In particular he was studying the microvascular system of the kidneys. At the time, I too was studying fluids in the kidney, but was inside the tubules. As Lamport observed, the tubes and capillaries are intimately twined together so our interests converged. Subsequently, among many other interests and contributions, he devised a pressure suit which became the essential prototype of protective suits for aviators and astronauts. Superficially, this might appear to be remote from his earlier work; in fact, the hydrodynamic principles were the same. The creative leap, typical of his thinking, came in applying the same physical analysis to problems in wholly different domains.

Irving Schwartz also had been interested in fluids, but from another perspective. His ingenious work gave us some of the earliest methods for estimating the quantity of fluid in the body and, more importantly, its distribution in different parts of the body. This interest led him to basic studies of the cells that produce various solutions, either for excretion or internal use. Following each discovery with a new question, he has been led over the years from secretions to the hormones that control the secretory cells, and from the function of the hormones to their structural organic chemistry. While pursuing this work, he has been an inspiring teacher and an academic innovator, playing a major role in the formation of this Medical Center.

It is most appropriate that he be recognized as a Distinguished Professor by the institution that he has cherished. But there is more to this occasion than simply honoring two old friends. Let me try to explain the general importance of this privileged appointment as I think Harold Lamport would see it.

The theme is discovery. Creative minds have always been rare, but for better or worse their insights have shaped history. Indeed, we can date the beginning of the human species from the time that a few innovative creatures discovered new uses for sticks and fig leaves. The sticks led to tools and then to science; the fig leaves gave us religion. Considering the problems that have followed, one might regret these discoveries, but it is too late to go back. Anyway, the species has managed to survive and fill the earth. So far, each generation has found ways to deal with the problems it inherited, while producing new discoveries and new problems for its descendents. Whether or not our luck will hold is not entirely clear. The population of the world continues to rise exponentially, with staggering projections for doubling and re-doubling in the next century. No obvious ways can be seen to escape depletion of resources, serious pollution of the environment, shortages of food, fresh water and energy. Perhaps these fears are exaggerated. The public might be right in assuming that these technical problems can be solved with new discoveries, but the future is not assured. All that can be said at this time is that the problems of the immediate future are too serious for pessimism.

Medical science must be seen in this broad perspective. Diseases result from interactions between man and his environment, which can change faster than he can adapt. Starvation, environmental toxins, psychological stresses demand major adjustments; sometimes survival is possible only in a crippled state. To understand the complex interactions between stress and physiological resistance, which we call disease, diverse facts must be assembled. Almost surely many of the pieces of these puzzles already exist in technical reports. The difficulty lies in seeing the relevance of technical detail to the cure of a chronic disease when the phenomenon has appeared in another context.

The conventional response to a problem such as this is a call for more money. I disagree. The limiting factors in medical discovery today seem more structural than financial. Medical research may already be over-funded. Further increases in expenditures under present conditions of funding could reduce the prospects for integrative thought while increasing the flow of trivia. If this seems hard to believe, read the abstracts of the big, expensive, national scientific meetings. Look critically at the long bibliographies of persons who are rated as "productive". How much of this work can be honestly rated as discovery, and how much is small, derivative busywork which is required by the system? How else can ambitious scientists obtain grants to fund their laboratories? How can they support a large staff and buy expensive equipment? How can they achieve professional status, win election to societies and be rewarded with tenure? And could their institutions survive without the overhead income provided by their grants? To put the issue bluntly, medical science has become big business. Infusing more money surely would expand the establishment, but it would not necessarily make it more effective in solving the major problems of society. At its worst, the present system of financing research diverts creative talent to busy work.

Pursuing this thought, let us see what we need. A discovery may be defined as an unexpected finding with large consequences; a development, conversely, is a predictable

finding with limited outcome. Penicillin and the identification of DNA as the transforming factor on pneumococci were discoveries; a host of antibiotics and an enormous number of papers on molecular biology developed these observations. Much of the derivative work has been of great value - the importance of a discovery is measured by the impact of subsequent developments - but the point to be made here is that a discovery, like an ore vein, is a limited resource. Continued mining around the original shaft leads to lower yields at increasing expense. Discovery is the limiting factor in medical advance.

How can we encourage it? Unfortunately, the university-governmental complex utilizes its talent for more immediate needs. When an investigator shows imagination in research and has demonstrated his ability to obtain grants, he becomes a grant writing professor. If he proves to be a good administrator, he advances to chairman of a department with an increased load of paperwork. The best and the brightest become deans, in which post their main responsibilities are balancing the institutional budget and resisting the demands of the faculty. Discoveries, if they appear in this system, are incidental to the serious work of paying the bills.

Nor is the government more sympathetic to discovery. Funding agencies, sensitive to political pressure, require elaborate applications in which each proposal is justified by assurance of success. Traces of wonder or uncertainty must be expunged to pass the review committees, which are largely composed of experienced grant writers. The most devastating criticism of a proposal is for a reviewer to call it a "fishing expedition." How indeed, does one catch fish without fishing; how does one find something unexpected? Ultimately the massive pyramid of committees and agencies must answer to committees in Congress, which are composed of persons needing to be re-elected. Prudence governs at every stage.

The temperament of investigators adds to the problem. More often than not, the creative person is a maverick. His impertinence disturbs the status quo, embarrasses authorities and threatens the existence of agencies. Bureaucracy does not like the unexpected.

In the past, the need for flexible support has been met by private endowments. Although the quantity of money available for this purpose has always been small in relation to governmental expenditure, it was venture capital and generally effective. Poets and creative scientists bother the establishments, but these essential persons must be kept alive. I am reminded of a story told about Augustus Busch, the beer magnate. Pointing to the research building on his brewery grounds, he is alleged to have remarked, "I always keep a few of those fellows at work. You never can tell when they might stumble into something." Years ago, this remark seemed crude and insensitive. Against the background of bureaucracy, Mr. Busch sounds like Lorenzo de Medici, boldly investing in people.

But can government, which today controls most of the money, stimulate discovery? Can it afford to finance stumblers? The politically safe decisions are time limited fellowships and grants on developmental projects. So far I can see long-term, risk-taking support is possible only if the risk of failure is distributed in the actuarial sense. Essentially this means old fashioned institutional authority for funding. At best, the frequency of significant discovery is low. Institutions, unlike governmental agencies and peer review panels, can average their decisions over time and faculty, with the luxury of surviving mistakes because the good results can justify the whole enterprise. Is it too late to restore substantial authority for

allocation of research funds to the universities? Or must discovery under governmental support remain a furtive activity of investigators who pay for their fishing by diversion of funds from project grants?

One more hurdle stands before justifying this privileged professorship. Elitism became a bad word in the 1960's when the liberal crusade was concerned more with elimination of privilege than relief of poverty. Today we can examine the objectives more calmly. Society needs talented individuals like Harold Lamport and Irving Schwartz to ask critical questions. The issue in the present appointment therefore is not privilege but service. Freeing a creative individual from administrative routines, we give him the hardest of all assignments, that of making a useful discovery.

And so, speaking as a member of the scientific community, I welcome Irving Schwartz to the special privilege and great responsibility of the Harold and Golden Lamport Distinguished Service Professor of the Mount Sinai School of Medicine. In my opinion, the trustees have chosen well. Thank you. (Applause)

CHALMERS: Thank you, Dr. Dole, for giving us much food for thought. It's impolite to disagree with a distinguished speaker at an event such as this, but I would like to point out that, at least in my limited experience, deans do not arrive at their positions by an orderly selection process that leads through professorships and department chairmanship, but as all biologists know, there are alternate pathways, (laughter) or metabolic shunts, (laughter) by which some people get selected for that position. And whether or not the selection is right depends on whether you talk to the man whose budget was increased or decreased. (Laughter)

Today, not by design but by coincidence, we are celebrating Dr. Schwartz's investiture by closing Fifth Avenue (laughter) at 7:00 p.m. You've all heard of the "Museum Mile," and I would remind you that it is a spectacular event beginning this evening and it includes Mount Sinai, where the photographs of Mr. Marvin Newman are on exhibit, with notes written by Brendan Gill of *The New Yorker*, and all of this in celebration of our investiture. (Laughter) If you were planning to be picked up on Fifth Avenue, you have to leave before 7:00, so I suggest you leave by way of Madison Avenue and then you won't have to worry about it.

There will be a reception downstairs following these proceedings. We're delighted to have had all of you with us on this memorable afternoon, and we all wish you the best of luck, Irv, in your new activities. Thank you. (Applause)