



**Mount  
Sinai**

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[msarchives@mssm.edu](mailto:msarchives@mssm.edu)

EVE 0005

Dedication of the Dr. Lucy G. Moses Cardiothoracic Center, Mount Sinai Medical Center, New York, New York,  
October 23, 1974

GUSTAVE LEVY: Ladies and gentlemen, I want to welcome you all here very, very much for this delightful occasion. In recent months, we've had a number of very special events in this auditorium. We've had the dedication of the Annenberg Building, which President Ford graced with his presence, the inaugural of Dr. Chalmers as President of the Medical Center, the dedication of the Samuel Bronfman Department of Medicine, and the investiture of Dr. Gorlin as the second Murray M. Rosenberg Professor of Medicine. But there's nothing, absolutely nothing that gives me more personal pleasure than to participate in this dedication of the Cardiothoracic Center, donated by that great lady and friend, Dr. Lucy Moses. [Applause] This center on the eighth floor [of Annenberg], and its special facilities, will enable Mount Sinai to provide more comprehensive service to the community. For this, we're very deeply grateful to Dr. Moses, but more about her in a few moments.

Before we hear from our noted speaker from Stanford University, I think a few brief greetings are in order. For many years, Mount Sinai's enjoyed a happy - and I might say a productive - marriage with the Federation of Jewish Philanthropies of New York. Mount Sinai Hospital is a charter member of Federation, and our School of Medicine has been endorsed by Federation as part of its current building drive. The warm kinship between us is symbolized by Frederick P. Rose, who has served with great distinction as a Mount Sinai Trustee, just as he is serving with exceptional leadership as the President of the Federation. It's my privilege and pleasure to call upon our good friend, Frederick Rose. Fred? [Applause]

FREDERICK ROSE: Thank you very much, Gus, and ladies and gentlemen. I'm delighted to come here on these very, very happy occasions. I would hope that all of us would be coming here only on such occasions. But if we should ever need the services that are available at this remarkable institution, it's nice to know that they exist! [Laughs] I'm also particularly grateful for the opportunity to speak with you, as we are brought together to dedicate the new Dr. Lucy G. Moses Cardiothoracic Center of Mount Sinai's Annenberg Building, and to honor our community's leading lady of philanthropy, Dr. Moses. [Applause]

As President of the Federation, as one who admires and stands very much in awe of Lucy Moses, it is my pleasure to pay tribute to this remarkable, this teeny giant of a woman. Carl Schurz said, "Ideals are like stars. You will not succeed in touching them with your hands, but like seafaring men on the desert of waters, you choose them as your guides, and following them, you'll reach your destiny."

No words could more appropriately illuminate the life of Lucy Moses and her benefactions. She has the capacity not only to observe human need here at home and throughout the world, but the vision to look beyond today, to tomorrow, towards a better world for all of mankind. And to this vision she brings a unique and a very personal warmth, and understanding, and concern. And these are qualities which have moved her, time and time again, to recognize the power for good that money can be when it is wisely used and

responsibly administered. It is a trust, and this is a trustee, and a trusteeship, in the best sense of the word.

This Center, which is equipped with the best that modern technology can provide and administered and staffed with dedicated men and women, will represent to our generation, and for many generations to come, the great medical tradition of Mount Sinai. It will represent as well the enormous influence that Lucy Moses and her generosity has provided for human well-being.

The Federation family knows her well, and esteems her deeply. She has been long active in Federation's women's organization, and a number of its agencies have been greatly aided through her benefactions to Federation and to the institutions she generally supported with her late husband, Henry Moses, whose sterling example of human kindness will always be an inspiration to us.

I spent most of last week in New Haven, and at Yale the name of Moses carries an awful lot of weight and has done remarkable good in other fields: in music and in law. I mean, these are many-dimensional people! I have in mind particularly this Center, as the beacon that I referred to earlier, because in naming it for Lucy Moses, Mount Sinai shows its very high regard for her, and she in turn has chosen to demonstrate, in a very warm and personal way, what Mount Sinai means to her.

Now, Gus always warns me, "Short, short!" We have a lot of speakers on the program, and I'd be inclined to speak with you for a long, long time. But I suppose you have all heard that the municipal authorities in the town of Pisa have decided to install a clock on their famous tower, because they said, "What good is the inclination, if you don't have the time?" [Laughter] And I don't have the time, but I'm inclined.

I have in mind also her gift to Mount Sinai to dedicate a lecture and conference room in the names of Dr. Maurice Hexter, and Joseph Willen, that Daemon and Pythias team—they're even sitting together over there—with whom she and her beloved husband worked so long and so closely for the good of our community. Truly, this Center, and its thoughtful tribute to Maurice and Joe, typifies the boundless spirit of a truly unusual human being. The Lucy G. Moses Cardiothoracic Center will stand as a beacon for her generosity for many, many generations to come, and I'm proud and grateful to play a part in this dedication. [Applause]

GL: Thank you, Fred. Thank you very much. Thank you very much, Fred. I know that our relations with Federation will continue to be close and very friendly, as well as productive. As you all, I'm sure, know, we've waged a vigorous campaign these past years for funds to launch our medical school and to expand our facilities. We've been fortunate, very fortunate, in having an energetic and imaginative leadership in this hundred and fifty-two million dollar effort. I'm very happy to introduce a Vice Chairman of our Medical Center, and Chairman of our Development Committee, a guy who has borne the brunt of the fundraising, Mr. Alfred Stern. Alfred? [Applause]

ALFRED STERN: Thank you very much, Gus. Dr. Moses, honored guests, ladies and gentlemen: it was almost ten years ago that the Trustees of Mount Sinai decided that a new school of

medicine was an idea whose time had come. With a great deal of courage and vision, and a deep breath, they plunged into the formidable task. Today, we are seeing part of the harvest of those bold seeds, the dedication of a major center for the study and management of cardiac disease. This Center is part of the ongoing growth of our hospital and school of medicine. In the months to come, other major and vitally needed facilities will be made operative in the Annenberg Building. As Chairman of the Medical Center's Development Committee, I would like to share a few brief considerations with you. I reveal no secrets I am sure, when I point out that this is not the best of all possible times in which to raise funds. We all know too painfully the economic facts of life. We have lived with governmental cutbacks for research and education for a little while now. But in recent weeks, we were startled to read that the Ford and Carnegie Foundations, and others, are retrenching in their grants to medicine and education.

It is in this context that the contribution of Lucy Moses to the life of Mount Sinai assumes greater magnitude and meaning. Her help has been a double blessing. She has enriched our endowment program by her substantial contribution to establish the Henry P. and Georgette Goldschmidt Chair in Neurology, occupied first by Dr. Morris B. Bender and now by Dr. Melvin Yahr, adding strength and luster to our faculty. Her contribution to the building program has added this new Cardiothoracic Center. With the help of Founding Sponsors like Lucy Moses, we have now raised one hundred and forty-two million dollars, and need only ten million dollars more to reach our objective, plus another four million dollars for equipment. The Cardiothoracic Center helps Mount Sinai continue in the forefront of the development of medicine, and the practice of bringing it to the community. That is where Mount Sinai has always been. With your continued help and involvement, that is the leadership position we shall always maintain. Thank you very much. [Applause]

GL: Thank you very much, Alfred. Dr. Tom Chalmers has been with us a relatively short while, but in that short time we've learned to value his dedication, his skill, his wisdom, and very occasionally, his witticisms. I'm very happy to present the President of our Medical Center, and President and Dean of our School of Medicine. He just came back from vacation, so he should be in good form. [Laughter] Dr. Chalmers? [Applause]

THOMAS CHALMERS: Thank you, Mr. Levy. Mrs. Moses, ladies and gentlemen: I'm sure I can't overstate the importance of this great Cardiothoracic Center to both the teaching and patient care functions at Mount Sinai. As some of you may know, I'm not a cardiologist; my training was in liver disease. We had a saying when I was active in the liver field that went as follows: 'Is life worth living? It depends on the liver.' [Laughter] And I suppose it would be well to rephrase that, and admit that the liver's not as important as the heart, and to ask: 'Is life enjoyable? It depends on whether or not you have a heart for it.' I'm refraining, however, from making any more comments [laughter] about the importance of the heart in our language, except to emphasize, as you probably know, that it's continuously—it means courage, it means love, it means many other things in which the heart is used as a symbol. And I think all of this is a reflection of the fact that as human beings, our heart is really our most important organ. So it is really wonderful to recognize that Mount Sinai has got such a fabulous physical facility for taking care of patients with heart disease.

But even more important is the fact that one must have good people to work in that facility, and I think we've made a great step in that direction—I say we—in the last hundred

years. Mount Sinai is famous for its cardiologists; even its pathologists who are most famous, up until quite recently, have been primarily associated with heart disease. And it's clear that we now have a team - with our new Chairman of Medicine, Dr. [Richard] Gorlin, with Dr. [Michael] Herman, who's going to be our Chief of Cardiology, who is our Chief of Cardiology, and our surgeons, Dr. [Robert] Litwak and Dr. [Eoin] Aberdeen - we have a team of cardiologists that is second to none. I better not say this with Dr. Shumway here, but it's a great team [laughter] of cardiovascular internists and surgeons. And we're looking forward to performing our task with great success, of giving the best possible of care to patients with cardiovascular disease, and to teaching our medical students how to take care of heart disease for the rest of their lives.

One further point: I think we all should remember that when we dedicate a center for cardiovascular disease, we should remember that our real aim in life is to prevent cardiovascular disease, and that we have to work equally hard towards that goal, although I admit, it is way off. One thing which I hope you will recognize about this Center, from the physical standpoint, is that it is a good example of the fact that the cardiologists who are responsible for treating patients medically, and the surgeons who are responsible for curing them, are working very closely together. And this is the sort of spirit which we hope to engender throughout the Medical Center, of bringing much closer integration between the medical and the surgical specialists. Thank you very much. [Applause]

GL: Thank you very much, Tom. I'm delighted to present now a man who has been giving exceptional leadership in helping put together our cardiothoracic center, and leadership in the affairs of the Hospital as our Director, and to the growth of the Medical Center as its Executive Vice President. I'm pleased to present a great guy, Dr. S. David Pomrinse. Dave? [Applause]

DAVID POMRINSE: Thank you, Gus. Dr. Moses, ladies and gentlemen: I've been trying to analyze for myself just why this dedication, of the Dr. Lucy Moses Cardiothoracic Center, is such a special source of pleasure to me. And I've come to the conclusion that there is something quite unique and far-reaching implicit here. It seems to me that the something new that's being added is more than the fantastically sophisticated and most modern equipment that the physicians and staff will be working with on the eighth floor of this building. Equally as important as this superb technology—no, I think really much more important—is that the concept and approach and method of work represent the future of Mount Sinai in microcosm. I'm referring particularly to the unprecedented fusion of the various professional disciplines and the concerted and interrelated dedication to study and treat heart disease. Transcending traditional barriers, our departments of Surgery and Medicine and Nursing and Social Work, and technicians of all varieties, and computer engineers, and many other specialties, are here mobilizing united forces to combat the common enemy, disease. And I'm convinced that this interdisciplinary union is the wave of Mount Sinai's future.

Together with the Gaisman Surgical Pavilion, which we've just opened on the sixth and seventh floors, this new Cardiothoracic Center, so generously donated by Dr. Lucy Moses, gives us added strength and cohesion in our service to the broad community, which looks to Mount Sinai for treatment and for hope. That's why I feel so good about this new Cardiothoracic Center, and why our entire Mount Sinai family joins me in thanking Dr.

Moses for what she's done. I'm particularly happy to acknowledge the vital contribution made by our old and good friend, Dr. Arthur Fishberg, without whose help and guidance this great undertaking would have been impossible. Let's all wish our new colleagues, Doctors Gorlin and Herman, and our old friends Dr. Litwak and [Arthur] Aufses, Dr. Aberdeen and their colleagues, a happy coming together in this bright and promising medical journey. Thank you. [Applause]

GL: Thank you very much, David, for your very meaningful remarks. And now I'd like to pay special tribute to the lady who has made all this possible. She's indeed one of the foremost 'Chair' ladies in America. She's endowed the Henry P. and Georgette Goldschmidt Chair in Neurology, now occupied by Dr. Melvin D. Yahr, as well as the Chair of International Legal Institutions at Columbia University, and the Chair of Music at Yale University. In the field of health and medicine, her generous benefactions have made possible the Henry L. Moses Research Institute at Montefiore Hospital, two laboratories at NYU Institute for Rehabilitation, a building at the Children's Medical Center in South Korea, among others—among many others. She early allied herself with and supported such medical giants as Dr. Howard Rusk, Madame Curie, and Dr. Gordon Seagrave, the noted "Burma Surgeon." As part of her effort to rehabilitate Central Park, she subsidized the reconstruction of the Bow Bridge. When our School of Medicine conferred upon her the honorary degree of Doctor of Humane Letters, a fitting summation was that she is, and I quote, an "Inspired and inspiring woman, whose life has been one long affair with the human race." Dr. Lucy, I want you to know how grateful all of us at Mount Sinai are for what you've done, and for just being yourself. I'd like to make a little presentation to you, which is a replica of the floor, and I'd like you to say a few words, if you'd care to.

LUCY MOSES: Thank you very much. [Applause]

Dr. [Norman] Shumway, Dean Chalmers, President Levy, honored guests: thank you, dear Gus, for your much-appreciated introduction. It is gratifying for me to be associated with this fine hospital. To aid and comfort the sick was always my dear husband's aim in life. If I can, in some way, follow his example, it would make me very happy. How fortunate we all are to be on the giving side, and I, for one, am grateful to Mount Sinai for carrying out the ideals near to my heart. Gus, you are the spark plug of this noble institution, and I thank you for being what you are: a dedicated humanitarian, in trying to mitigate the woes and ills of your fellow man. The world owes so much to Dr. Shumway, and it's a great honor to have him with us today on the occasion of this inauguration of the Cardiothoracic Center. His presence here makes this dedication all the more auspicious. I feel sure that this great facility, with all its new and living-saving equipment, will bring solace and better health to those who come here in travail, to be cared for and helped. Thank you. [Applause]

GL: Thank you very much, Dr. Lucy, for those lovely words. And everything we said about you is certainly well-deserved here. A great person, and we all love you, and we wish you well, and God bless you!

LM: I love you all.

GL: Okay! [Laughs, laughter] Well, we said it's a constant love affair with life that you have, and that's what you do. Now, for the scientific part of this afternoon's session, I'd like to

introduce Dr. Robert S. Litwak, who's Chief of the Department [Division] of Cardiothoracic Surgery, who will introduce Dr. Shumway. Dr. Litwak? [Applause]

ROBERT LITWAK: Dr. Moses, Mr. Levy, Mr. Stern, Mr. Rose, Dean Chalmers, Members of the Board, distinguished guests, fellow colleagues, and ladies and gentlemen: I'm particularly pleased to have the opportunity to introduce a friend, and without doubt, one of the most distinguished cardiac surgical colleagues in the world, Dr. Shumway, because rarely has there been a particular individual who, in his relatively young life, has contributed more to the field of cardiology, cardiovascular surgery, and the saving of lives.

Dr. Shumway is a native of Kalamazoo, Michigan, had his medical training at Vanderbilt and then surgical training at the University of Minnesota, under a brilliant surgeon, Dr. Owen Wangensteen, who many of you know. At that point, he received a Ph.D. with Dr. Wangensteen, and together with a whole passel of distinguished men, Doctors [Richard L.] Varco, [C. Walton] Lillehei, and others, participated in the early developments of open heart surgery: the development of cardiopulmonary bypass, the heart-lung machine, protection of the heart muscle when the heart was being operated on. After finishing training at the University of Minnesota, Dr. Shumway was appointed to the academic staff at Stanford, where he presently is Professor and Chairman of the Department of Cardiovascular Surgery. He's conducted an absolutely superb research, clinical, and teaching program. His efforts have been extremely wide. He's published over two hundred meaningful contributions to the surgical and physiological literature: development of better cardiac valvular and coronary artery operations, and of course, I need not point out his work in cardiac transplantation is literally the hallmark of precise, scholarly work, for which he has received appropriate international acclaim.

In 1960, together with a group of fellow colleagues, Dr. Shumway reported his first successful efforts at heart transplantation, and I took the liberty of copying the last sentence of that very modest little paper. He wrote, "If the immunologic mechanisms of the host were prevented from destroying the graft," that is, the heart, "in all likelihood it would continue to function adequately for the normal life of the animal or patient." And from there, Dr. Shumway and his men, with eight long years of research, continued their work to the point where, in January of 1968, they documented the clinical efficacy of cardiac transplantation, an effort which electrified the medical world, as you know.

Dr. Shumway is a member of many distinguished societies, including the American Surgical Association, the Society of University Surgeons, a member of the honorary society Alpha Omega Alpha. He's been the recipient of many honors and awards, including being the first recipient of the Texas Heart Institute Medal, the René Leriche Prize of the International Society of Surgeons, and many others. And it's a pleasure, an honor, to present a world-renowned investigator, teacher, brilliant clinical surgeon and friend, Norm Shumway. [Applause]

NORMAN SHUMWAY: Thank you very much, Bob. It's a most glowing introduction, and I'm sure we can't live up to it at all here, in this memorable occasion.

But Dr. Moses, it's a great pleasure to be here and have this chance to participate in the dedication of the Dr. Lucy G. Moses Cardiothoracic Unit, in this beautiful Annenberg

Building of The Mount Sinai Medical Center. We are here to salute the fulfillment of a new concept in teaching, research, and patient care, weaving together the several traditional disciplines--cardiology, out of medicine, of course; pediatric cardiology out of pediatrics; diagnostic cardiology from radiology; and cardiac surgery, a legitimate offspring of general and thoracic surgery—[which] represents a tremendous advance, both for the patient and also for his physicians. Strict departmental boundaries in most institutions would preclude this happy union of similar interests, irrespective of the good sense exhibited by the amalgamation. We must offer a special vote of gratitude to the department chairmen who were willing to relinquish a little power here, a little space there, to bring together the essentials of a true cardiac center.

The Mount Sinai cardiac center should establish a standard, not only in patient care and teaching, but also in administrative planning for medical schools and institutions nationwide. Again, let me congratulate this medical center and its staff for a much needed and most significant innovation. Times are changing, but medical schools, medical centers, and certainly even medical administrators are not entirely keeping up with what we prefer to call progress in medicine. The cardiac surgeon has much more in common with the pediatric or adult cardiologist, for example, than he has with a gastrointestinal surgeon, with whom he finds himself in the same administrative department. Communication, so important to patient care, is obstructed by usually inconclusive and protracted departmental meetings, where the cardiac surgeon breaks bread with an orthopedic surgeon or a urologist. Not that they're not perfectly fine guys, of course. [Laughter] It well may obtain that all knowledge is related, but certainly some more so than the other. Whether or not we admit it, personal resources or energy are just as finite as natural resources, so the clinical doctor must, or at least should be protected from unnecessary harangue and clatter, sometimes referred to as minor administrative crises. He should be close geographically, as well as spiritually, to those colleagues who are contemplating the same problems.

And here at Mount Sinai, this juxtaposition has been ideally realized. Since this is an historic occasion, I thought a few words concerning the history of cardiac surgery might be both appropriate and interesting to you. Heart surgery of any kind is essentially only thirty years old, and open heart surgery barely spans the last two decades. Before 1938, surgery of the heart was limited to the repair of stab wounds and removal of foreign bodies. Some thought had been given to the problem of constrictive pericarditis, especially as it related then to tuberculosis. But the pathophysiology was far from understood, and debate raged between those who thought that the constriction was more severe on the right side of the heart, and those who correctly believed that left-sided encasement was the more important feature.

Then, perhaps as now, surgeons were very naïve, and Dr. Emile Holman, Chief of Surgery at Stanford for many years, had so much trouble with bleeding from the thin-walled right atrium and right ventricle, while dissecting the constrictive peel off the heart, that he concluded the essence of the procedure had to be just that—freeing areas of the vena cava, the right atrium, and the right ventricle. Holman's principal adversary in this debate was Dr. Edward Delos Churchill, Chief of Surgery at the Massachusetts General Hospital, also for a long period of time. Holman and Churchill later joined a great number of older thoracic surgeons who never made the transition into open heart surgery, but who contributed very



significantly to the training and inspiration of those who were to develop what Harvey Cushing called “the last frontier of surgery.”

Not even a brief history of heart surgery would be complete without mention of Robert Gross, and the patent ductus arteriosus. Here there was no confusion concerning the involved pathophysiology or the pathological anatomy. Many had earlier recommended surgical closure of the persistent ductus of Botalli, including George Farr, an internist from Minneapolis who helped Einthoven develop the electrocardiograph. [Ashton] Graybiel, a well-known cardiologist at the Massachusetts Memorial Hospital in Boston, urged John Strieder, certainly the forgotten man in patent ductus surgery, to consider attempting the operation. On March the 6<sup>th</sup>, 1937, such a case was submitted for surgery, a young girl with subacute bacterial endocarditis, complicating the patent ductus arteriosus. Strieder found the aorta and pulmonary artery in tangential array, without any length at all to the ductus. A ligature could not be passed around the ductus, so suture plication was attempted, with substantial diminution of the ductus thrill. For three days, the patient did well, and no murmur could be detected. On the fourth post-operative day, though, the patient died suddenly of acute gastric dilatation. In August of the following year, which was 1938, Gross, at Boston Children’s Hospital, was completely successful in ligating the patent ductus, and a new field, which some called heart surgery, began rapidly to develop, but not without many problems and even disasters. For example, one of the first attempts to ligate a patent ductus arteriosus in San Francisco resulted in ligation instead of the aortic arch and death of the patient.

The next major event in heart surgery had to do with correction of another congenital defect of the juxta-cardiac apparatus, coarctation of the aorta. Clarence Crafoord, at the Karolinska Institute in Stockholm, extrapolating from a near-disaster during a patent ductus operation, found that the descending thoracic aorta could be occluded for perhaps twenty minutes without untoward effect. He reasoned that if this were the case, a coarctation might be excised, and the aorta re-sutured. Furthermore, a vast collateral circulation would be additional protection against serious damage to vital organ systems receiving their blood supply from the aorta, below the coarcted segment. On October 19, 1944, Crafoord performed the first operative repair for coarctation. By New Year’s Day of 1946, six more cases had been operated upon by Crafoord and his associates.

Surgeons and physicians, however, were not yet finished with their education derived from the patent ductus arteriosus. A young chest surgeon in Nashville, Tennessee had been experimenting in dogs, with an operation for coarctation of the aorta, which amounted to dividing the left subclavian artery and swinging it down to the side of the dilated aortic segment, just below the coarctation. Before clinical use of this idea could be attempted, Crafoord had shown that the direct repair was feasible, and our Nashville surgeon moved to the Johns Hopkins Hospital in Baltimore, where his colleague, Dr. Helen Taussig, saved the experiment from obscurity. Alfred, Lord Blalock, of course, was a surgeon, and Dr. Taussig suggested the subclavian artery be sutured into the pulmonary artery of babies and children with pulmonary stenosis, to provide a greater blood flow to the lungs. In other words, to create a patent ductus arteriosus. So the Blalock-Taussig operation was born, and the first procedure was done November 29, 1944, on a fifteen month old baby.

New instruments and materials were under development all through this period, of course, and in November of 1946, just two years later, Willis Potts in Chicago more closely simulated the patent ductus arteriosus for blue babies by suturing the descending thoracic aorta side to side to the left pulmonary artery. Blalock's operation did sacrifice a major artery to the arm, but collateral flow rendered this deficit relatively unimportant. But the shunt had a built-in governor, whereas the Potts operation, and later modifications of it such as the Waterston shunt, can produce torrential and potentially lethal blood flow from the aorta into the pulmonary circuit of the patient.

After World War II, cardiac surgery received tremendous impetus. The dream of open heart surgery was becoming almost an obsession in several medical clinics. Working with Crafoord was an ambitious young thoracic surgeon named Viking Olov Björk, who was developing a rotating disk oxygenator for use with a roller pump as a heart-lung apparatus. John Gibbon in Philadelphia had already reported several experiments with cardiopulmonary bypass, or extracorporeal circulation now. Even physiologists were thinking of applying a bubble-type oxygenator, which they had used for isolated organ perfusions, to the problem of total body perfusion. Meanwhile, [Charles P.] Bailey and [Dwight E.] Harken in this country, and [Russell C.] Brock and [Thomas H.] Sellers in England, had perfected the closed heart surgery of mitral stenosis, pulmonary stenosis, and to a lesser degree, aortic stenosis.

As a matter of fact, my introduction to your Chairman of Cardiothoracic Surgery, Dr. Robert Litwak, was during a visit to the Bailey Thoracic Clinic in 1955. The American Surgical Association met in Philadelphia that year, and although Dr. Charles Philamore Bailey was never admitted to its membership, he attracted more visitors during the meetings into his operating room on the eighth floor of the Hahnemann Hospital than were present at the scientific sessions. [Laughter] I joined this flow of traffic and had a chance to observe the great man in action. His first assistant and chief resident at that time was Bob Litwak. Bailey was advocating the right-sided approach to mitral commissurotomy in those days, and he was one of the few people in the world operating on aortic stenosis. Patients were coming to his clinic from the four corners of the earth.

I recall that at one point in the operative procedure, a young resident ran into the operating room and asked if he could borrow the aortic valvulotome, because a patient had suddenly gone very sour on the floor. With considerable flourish, Bailey wrapped the blood-drenched valvulotome in a sterile towel, handed it off to the resident, then indicated to the audience that this was the type of desperate case which was being sent to him, Bailey, for any possible surgical relief. Now while Bailey certainly did contribute significantly to surgery of the heart, to my knowledge he has never been admitted to any of the so-called elite American surgical societies.

A younger, more physiologically-oriented group of cardiac surgeons in the early 1950's was pushing hard to open the heart for more precise corrective operations. On September 2, 1952, the first successful open heart operation of any kind was performed by Dr. F. John Lewis at the University of Minnesota. An atrial-septal defect was sutured under direct vision during approximately ten minutes of circulatory occlusion, permitted by the induction of general hypothermia. In May 6, 1953, Jack Gibbon succeeded, finally, in the application of cardiopulmonary bypass for the closure, again, of an atrial-septal defect. This

was done at the Jefferson Hospital in Philadelphia, and long years of animal research, of course, had paved the way for this monumental achievement.

The first successful heart-lung machine, by the way, was developed through the auspices of International Business Machines, IBM. Despite Gibbon's initial success, or case, the mechanical heart-lung device was not immediately adopted by, or available to, other workers in the field. At Minnesota, once again, Lillehei, Varco, and their associates introduced controlled cross-circulation for the repair of various and complicated congenital cardiac anomalies. In this system, a living donor, usually the mother or father, was taken into the operating room, anesthetized, and used as the oxygenator for the patient, a baby or young child. The first open surgical correction of a ventricular septal defect was accomplished in March of 1954, using controlled cross-circulation. In all, about fifty such cases were done, but the procedure remained extremely controversial and was only rarely duplicated at other clinics. Sharp criticism of the living donor method came from many surgeons, whose dedication to the pursuit of open heart surgery was less avid.

Lillehei abandoned cross circulation as soon as his colleagues perfected a bubble oxygenator, whose success was predicated on the use of low flow rates and total plastic composition, rather than glass, metal, or rubber surfaces. The concept of low flow rates came directly out of the physiology laboratory, and so did the idea of an all-plastic oxygenator, to minimize blood trauma and its subsequent bleeding problems. Later in that same year, 1954, John Kirkland at the Mayo Clinic, adopted and improved the IBM-Gibbon oxygenator. Minneapolis and Rochester, Minnesota, only seventy miles apart, for a brief period were the only places in the world doing any real volume of open heart surgery. There was keen competition in those days between the two groups, and it is interesting, perhaps, to note that when John Kirkland left Rochester for the University of Alabama, Lillehei very soon thereafter left Minneapolis for Cornell. Their friendly competition was perhaps an important element in the total progress of open heart surgery. For example, there was no way Lillehei could continue with cross-circulation once the Mayo Clinic had a successful heart-lung machine. There were many other mutual advantages to this curious geographic proximity in the early days of the open heart.

The development of extracorporeal circulation and its application to surgical correction of congenital heart disease, rather well characterizes heart surgery of the 1950's. To go into any detail concerning heart valve replacement, which was the open heart surgery of the 1960's, would take us much too long. Suffice it to say that if a patient lives long enough, there is no such thing, probably, as a single definitive valve replacement; another procedure will almost certainly be indicated at some later time. Stated otherwise, the perfect heart valve replacement has not yet been devised, and likely never will be. So the valve replacement story of the 1960's is really open-ended and continues on today.

Finally, in the 1970's, we are at last in the era of direct coronary artery surgery, and surgery, too, for the complications of myocardial infarction, thanks, I think, mainly to the efforts of the coronary arteriographers and their new technology. F. Mason Sones and Melvin Judkins have essentially insisted, by their beautiful studies of the coronary arterial anatomy, that something be done for coronary artery obstructions. They have been heard at last, and literally thousands of patients are undergoing coronary bypass grafting each week in medical centers all over the nation. This is not the time or place to look into the abuses of

coronary artery surgery, which are unfortunately rampant, but let us be grateful instead that this surgical approach to coronary disease is at least on a better medical and scientific footing than any of its predecessors.

In conclusion, much has been done, and certainly more lies ahead. The totally implantable heart substitute is no more than a dream away, whether it be by a mechanical device or transplantation. It seems, really, that the prevention of coronary artery disease and its cure by total replacement may become simultaneously available. Perhaps the citizen, then, will have his choice of two wildly divergent lifestyles. At any rate, no one threw his hands up in despair in 1628, when Harvey discovered the one and only circulation. There are always new worlds to conquer, and these fantastic facilities at Mount Sinai will no doubt stimulate a succession of brilliant advances in the research and treatment of cardiac diseases. Thank you very much. [Applause]

GL: Thank you very much, Dr. Shumway, for your most informative remarks. I'm happy to hear that we've all got a chance to live forever. [Laughter] There's really one person I want to live forever, and that's Dr. Lucy Moses. And Lucy, thank you for everything, and thank you for making this day possible. You're a magnificent person, and God bless you.

LM: Thank you.

GL: Now, ladies and gentlemen, we're going to have collations in the next room. [Laughter] That means food and drink! Thank you all very much for coming. [Applause]

[End of Recording]