

William "Gerry" Shepherd

Youth and education 1

raised near University of Minnesota campus 1

attended Marshall High School, 1927 2

enrolled at the University of Minnesota, Electrical Engineering, 1932 2

Nier, Al - U-235 5

Ph.D., 1937 6

Shepherd - Bell Telephone Laboratories 7

Shepherd returns to the University of Minnesota, 1947 10-

research grants 11

quantum electronics 12

Spilhaus, Athelstan 13-14

sciences leave SLA for Institute of Technology 15

Council on Liberal Education 16

Wilson, Meredith - his initiative 16

Shepherd on Faculty Consultative Committee and Graduate School Research Committee 16-17

Shepherd becomes vice-president, 1963 19

Wenberg, Stan 19

London, Larry 19

Smith, Don 19

Odegard, Robert 21

Lofquist, Lloyd 22

Lukermann, Fred 22

Haug, James 23

Sciences leave SLA 24

Merger of Extensions 25

CURA 26-27

Wilson, Meredith - his procedures 24, 27-28

Budget 29

Relations with colleges and Graduate School 30

Legislative relations 32

Faculty retirement program 33-34

Minority programs 34-35

Health Sciences 36

University College 37

Shepherd's resignation 39-40

Retrenchment, 1971 40

Shepherd's electrical engineering career 41-

Interview with William G. Shepherd

**Interviewed by Professor Clarke A. Chambers
University of Minnesota**

**Interviewed on September 13, 1984
at the William G. Shepherd Home, St. Paul, Minnesota**

Gerry Shepherd - GS
Clarke A. Chambers - CAC

CAC: I am interviewing, this morning, William G. Shepherd, affectionately known as Gerry Shepherd, who was vice-president for Academic Administration, 1963-1973, and had many other important positions in the university in research, and teaching, and administration. It is September 13, 1984, a lovely early autumn day. The interview is being conducted in his home in University Grove near the St. Paul campus of the university.

Gerry, I've usually started with—I have no real rigid outline—is just a sense of where people came from, how they got into their own chosen field—in your case, electrical engineering—then, how they got to the university. Once, we get to the university, we're off and running. I know you were born in Canada.

GS: Right. I was born in Fort William, Ontario, which no longer exists by that name; it's now Thunder Bay. Fort William and Port Arthur were merged. My parents immigrated to Canada. They were there until I was about three years old, at which time they moved to the Twin Cities. When I was five years old, they moved to 410 Harvard Street.

CAC: Right near the university.

GS: Right near the university; so, I always claim to be a native of the campus.

CAC: [laughter] There's a whole nursing complex, dormitory, over there on Harvard or near there.

GS: That's farther down. Some of the hospitals are there now; but, it was an area where there were lots of faculty members. While my parents had nothing to do with the university, I grew up with faculty children and knew lots of faculty, some very distinguished people, like Guy Stanton Ford, for example . . .

CAC: Heavens.

GS: . . . and Dean [Elias Potter] Lyon, one of the early deans of the Medical School, and Henry Erickson, who was head of the Physics Department later. This really had a major influence on me. A boyhood friend was Tom Ford, Dean Ford's son, and we've been lifelong friends. It certainly imbued in me early a feeling for the university. I, also, had a newspaper route in that area and I used to deliver newspapers to lots of faculty members; so, there was a real academic aura in my early life. I went to University High School for one year and, then, transferred to what became Marshall University High School and graduated from there in 1927. I started at the university—I was out for about a year—in 1928. I guess I had decided early that I had an interest in things electrical; so, I enrolled in Electrical Engineering. I didn't do very well at the beginning. I flunked my first math class.

CAC: [laughter]

GS: And that set me back a bit; so, it actually took me five years to complete my undergraduate degree. The turn around for me came as a result of the contact with a Mathematics professor that I had for something like three successive quarters . . . a Professor Lindsay who was one of the greatest teachers I ever had. I really began to love mathematics in spite of my difficulties at the beginning. The second most influential person at the undergraduate level was Henry Harding.

CAC: Heavens. I knew him myself when I came here in the 1950s.

GS: He was a very distinguished university citizen, was probably the best faculty member in Electrical Engineering. He had been a Mathematics teacher. He and Professor [Hans] Dalaker wrote a calculus text, which was one of the best math texts I ever used. It was largely because of his interest in me that I began to think about doing graduate work. I must say these were not very good times. I finished my undergraduate work in 1933 and there were practically no jobs.

CAC: Sure. You might as well be in school if there are no jobs.

GS: I was one of the more successful ones, I got a teaching assistantship at \$600 a year. [laughter] I guess, the other thing that influenced me was, at Henry Harding's urging, I took quite a lot of extra mathematics and physics as an undergraduate. I graded papers in the Physics Department for a couple of my undergraduate years. All this led me to the decision to do my graduate work in physics. There really wasn't much of a graduate program in Electrical Engineering at that time.

CAC: To make a conversation very briefly . . . It won't surprise you that in the number of interviews I've had so far that what you're saying is said in every instance . . . that there were two or three persons that really turned around a young person, and grabbed them, and moved them along.

GS: Yes.

CAC: Which says something about our teaching profession and how really important and often unrecognized that is.

GS: Yes. Another person like that, of course, was Jack Tate, John Tate.

CAC: His name has come up frequently.

GS: He was a very distinguished faculty member.

CAC: I gather a man more formal in his appearance and relationships?

GS: Yes, but not overly so. One of my fondest memories, however, is of Al Nier who was a teaching assistant in Electrical Engineering and keeps reminding me he used to grade my papers.

CAC: [laughter] You were contemporaries as graduate students in the 1930s?

GS: Yes. Al had done some of his graduate work in electrical engineering. He took a master's there first; but he, then, moved over to Physics at the same time that I became a graduate student there. We shared an office together for a year and, then, had laboratories across the hall from each other.

CAC: That would be a rare privilege for both of you.

GS: It was. I've always been very fond of Al and I'm really very proud of him. I think he's one of the greatest citizens the university's ever had. During the time when I was a graduate student, Tate [unclear] that the university office move into Nuclear Physics and to start that program, he brought John Williams here as a post-doc[torate]. I had started out to do some research in the field that was more along the lines that Tate was interested in, the sort of thing that Al Nier was doing, but I hadn't gone very far with that; although, I learned a lot of techniques preparing the equipment for that. John Williams and Tate encouraged me to think of doing my thesis work in nuclear physics.

CAC: Now, would that have been a rare thing for the university at that time, to get into the nuclear field consciously and deliberately in that fashion?

GS: Well, I don't know that it was so rare. It was developing all over the country but it . . .

CAC: But very quickly, I'm guessing?

GS: I don't think this was particularly unusual. One can decide consciously to start up a field.

CAC: But John Williams was the first person Nuclear Physics brought here?

GS: That's right and he had not been a nuclear physicist before that.

CAC: He wasn't much older than you and Al Nier?

GS: That's true . . . maybe four years. In any case, we started from scratch. We had to build up our own accelerator. These were very modest things compared to the enormous expenditures made now. We put together the apparatus, literally, with sealing wax. You built the accelerator tube and the sections were joined together with wax. [laughter]

CAC: [laughter]

GS: We had some old rectifier units, a so-called Cockroft/Walton [Sir John Cockroft and Ernest Thomas Walton] high-voltage generator, which had been originally intended for use for X-ray research in the department; but, it was the high-voltage that we needed to accelerate the particles that we were using to bombard targets. We built everything. You didn't buy any off the shelf components. It was done in the machine shop and the glass blowing shop and we hung it all together. We built the detector apparatus and the like.

CAC: You had skilled workmen there who were trained to work with you in this?

GS: The machinists and the glass blowers served the whole university.

CAC: I see, okay. Everybody had access but the Physics Department had a special need for them?

GS: Right. They were located there in the basement. When one talks about high energy physics, nuclear physics, this was an extremely modest set. We could accelerate particles up to about 200,000 electron volts, instead of the billions of electron volts they now talk about.

CAC: But it was enough to abstract U-235 by when or . . . ?

GS: That had nothing to do with this.

CAC: I see.

GS: That was done by Al Nier.

CAC: On similar equipment?

GS: He used a mass spectroscopic technique to separate the two isotopes. I, also, was doing some other nuclear physics research using radium C, prime alpha particles which you got from the break down of radon—but that's another story. I guess the most exciting thing that we did, and one which has had great significance later which we didn't really appreciate at the time, was the discovery that helium 5 is unstable. It doesn't exist in nature except very temporarily. We were bombarding lithium targets with the heavy hydrogen, deuterium, to be exact. When we did that bombardment, we got a very unusual spectrum of the disintegration particles. We found two different kinds of groups of alpha particles and also discovered we had a neutron background. I should back up and say I guess, the thing that I contributed most there was that when they were first doing this, some of that work with this accelerator, the way in which they would keep track of the number of protons, or whatever particle, was to measure the current that hit the target. Well, the source was very variable; so, it would fluctuate up and down, and would read the current about every ten seconds, and note it down, and then average it. It was horrendously inexact. It occurred to me to use the analogy if you were trying to measure water, you wouldn't guess at the velocity of flow every ten seconds and, then, knowing the diameter of the water stream, try to calculate how much water you had poured out of a hose. A much more sensible way would be to pour the water into a vessel.

CAC: I see.

GS: Now, there's an equivalent to that in the case of electricity. If you have a condenser, a capacitor, the charge can be stored in that. If you then measure the voltage that's developed across that, you know exactly how much charge went in. It doesn't matter how unevenly it flows, you now know exactly how much current you've got. That occurred to me and we developed an apparatus so that we could collect the current for some desired time or rather until we had a given number of particles as a given amount of charge and, then, shut it off; so, we would charge it up and, then, trigger a vacuum tube, which would stop the beam. That made it possible for me to make quite accurate results. It was that that made it possible for us to do this work I was starting to tell you about with lithium targets. What we, finally, decided was going on there was that . . . I should say first of all, there are two isotopes of lithium. One is lithium 6 and the other is lithium 7. We were able to get some separated lithium 6 and 7 isotopes so we could bombard them and discover which of those isotopes was responsible for the nuclear reaction we were observing and discovered it was the lithium 7. If you take lithium 7 and bombard it with heavy hydrogen, which is H_2 , you end up with something that has a total mass of 9. We had seen two groups of alpha particles: one a very discreet group and the other had a long spectrum of energies lower down. On top of that, we had observed the neutron. What we concluded—it was verified later—is that the lithium 7 plus the H_2 makes a combined mass of 9 and that was breaking down into helium 5 and helium 4 but the helium 5 had only a very brief lifetime; so, it broke up in turn to give an alpha particle another He_4 and is a neutron. If you carry out the analysis on this, you'd discover that what you should get is one sharp peak and, then, a wash down to another energy. It turns out the fact that helium 5 is unstable is very

important in terms of what keeps the sun going, stars in general, and it's also very important for fusion [unclear] process.

CAC: That's way down the line . . . I mean fusion is.

GS: Of course, we didn't realize this then.

CAC: I understand that. That was years down the line.

GS: Right.

CAC: Was that picked up later then when people do begin to play with fusion . . . that it goes back to some of these early experiments in the late 1930s?

GS: They didn't know what things they had to do to produce fusion.

CAC: Right.

GS: One of them is if you can produce the helium 5, it will break up and give you a lot of energy.

CAC: Now, this was in the late 1930s. When you say *we*, it is Nier, and Williams, and you?

GS: No, it was Williams, [Robert O.] Haxby, and me. Al Nier was really off in a different field.

CAC: All right.

GS: He was working with Tate as his adviser and a lot of his subsequent work all depended on mass spectroscopy. That has implications for nuclear physics in terms of knowing accurately what the masses of the various atoms were but Al was not doing nuclear physics in terms of studying the structure of the nucleus. You see, if you bombard these targets and observe various reactions, you begin to start getting a feeling for how these things are put together, when they're stable, and they're not stable. It was really the three of us that were in on that. Not too draw too long on my graduate education . . . I should say that I got married as a graduate student, married Fran in 1936. She typed my thesis in 1937. [laughter]

CAC: That was a style that you were precocious about also then.

GS: Well, she's a wonderful person. In 1937, there really weren't very many academic jobs. I would have loved to have stayed in an academic environment but those were not good times. Through Jack Tate, I guess, I was invited to visit the Bell Telephone Laboratories and was

offered a position there. That was pretty rare, incidentally. I think I was one out of a total of five Ph.D.s that had been taken on at Bell Labs post-Depression.

To give you some feel for how bad the times were . . . when I went to the Bell Telephone Laboratories, I went at \$2400 a year, that's not quite \$50 a week and I punched a time clock. I guess because of my background in electrical engineering, they put me into a group that worked on non-linear circuit research, not something I would have chosen myself but it was a job.

CAC: And a job with good facilities, I'm guessing?

GS: Fairly good.

CAC: As corporations went in those days with research and development?

GS: The Bell Laboratories are really a remarkable organization. It was really a great privilege to be there as long as I was; but, I really didn't like the non-linear circuit research. I did some things which I thought were important and published a number of papers; but, it was really not what I liked. While I was there, I became a part of a study group which included William Shockley, one of the later inventors of the transistor, and Walter Brattain, who was the co-inventor of it. We used to have once a week study sessions. Through Walter Brattain, I became aware of some other research activities that were more to my liking and, finally, I asked for a transfer and was transferred to what was then called the Electronics Research Department. That really meant working on vacuum tubes and I joined a group which included John Pierce, who became a very famous scientist at Bell Labs and later at Cal-Tech. I shared a laboratory with him. He was a very brilliant man, a real Renaissance man, an artist as well as a brilliant theoretical researcher.

This began to move into the war period and long before the entry of the U.S. into the war, we started doing research on tubes for radar, which is a pretty primitive stage at that point. There were two key, I suppose you could say three, vacuum tubes for radar. One was the magnetron, which was a British invention. They sent over to the U.S. some of their magnetrons and a group was set up in Bell Laboratories in this Electronic Research Department.

CAC: Was this done through the government?

GS: It was done through the government, right.

CAC: There was a sense of the military uses at once? This wasn't abstract, pure research?

GS: No, no, no. Their very practical objective was to produce these vacuums, that is, the magnetron, as a transmitter which would send out also electromagnetic radiation, which would be reflected from a target to come back. Then, you had to detect that. In order to do that you needed what is called a beating oscillator, which would change the frequency of the

electromagnetic radiation which you would send out to a lower frequency which you could amplify. That's commonly done in radios; it's called [unclear]. There was a real problem with the beating oscillators. They did not have anything that was very suitable for the purpose. Out on the West Coast, there were some people called the [Russell H. and Sigurd F.] Varian brothers who had invented the klystron. We started making some of these klystrons. I wasn't in on that at the beginning. John Pierce was working on that. They were trying to make amplifiers but in the process of doing that discovered that in trying to enhance the amplification of the signals, these radar signals, that under certain circumstances with just one of the two cavities that were normally used, you would get an oscillation; and this became known as a reflex oscillator. The first reflex oscillator there was done by John Pierce working with a man by the name of J. O. McNally, who was our supervisor. Somewhat unfairly, it came to be called the McNally tube; although, it was John Pierce who had really done it. The first of these was done to generate frequencies of about 3,000 megacycles, 3 billion cycles per second; but it's desirable to go to shorter and shorter wave lengths. Your ability to detect detail on a target depends on the wave length relative to the size of it; so, if you want to see detail you want to go to shorter and shorter wave lengths. There was a desire to build an oscillator that would generate three centimeters—that's ten thousand megacycles or ten billion cycles per second. You could not use the same techniques that had been done to make the first reflex oscillator. By this time, I was becoming involved with the reflex klystron development; so, John and I cooked up the idea of using metal tube technology rather than glass technology. In doing that, we made a three centimeter reflex klystron which, in the end, became the prototype for all of the reflex oscillators that we used during World War II.

CAC: One imagines, they were tougher also for field work?

GS: Yes. Here's one of them.

CAC: Oh, good heavens.

GS: That's something that my colleagues gave me.

CAC: Gerry Shepherd has an artifact in his hand right off the table.

GS: [laughter] One of the problems that began to be apparent was the possibility of your enemy jamming your radar by sending a very noisy signal, which can completely mask the thing you were trying to see. One way of getting around that is to be able to switch your transmitter frequency rapidly. If you're going to do that, then, the reflex klystron has got to tune along with it. To do that, we, finally, developed a thermally tuned klystron which would track by . . . well, it's too complicated to . . .

CAC: Describe without pictures?

GS: Right. In any event, we developed that.

CAC: This is an original one?

GS: Yes.

CAC: It's about the size of a cigarette lighter.

GS: Yes.

CAC: It looks transportable, also. I was in a position where they were used in the field where I was during the war, the western Pacific—in fact, all around the world—of course, having no idea what the background was that you're describing. [laughter]

GS: That was an exciting period . . .

CAC: Ohhh.

GS: . . . when we had the feeling of really accomplishing something worthwhile. After the war, of course, we switched away from that sort of thing . . .

[End of Tape 1, Side 1]

[Tape 1, Side 2]

GS: This also marked a turning point in engineering education because one of the things that became obvious in World War II and the invasion of radar is it was not done by electrical engineers; it was done by physicists. Electrical engineers, at the time I was an undergraduate, were not taught anything about the most basic part of electrical engineering, namely electromagnetic theory. There were some electrical engineers who knew that but not generally. It was clear that with the great advances in electrical science during World War II, which had been accomplished, I say, primarily by physicists, that there needed to be a real reorientation in electrical engineering.

Henry Harding got in touch with me. He'd known or had heard what I'd been doing during the war and came to try to entice me back to the university. There were other institutions but the one that really attracted me the most was the University of Minnesota. The great problem was the enormous cut in pay I would have to take to come back. I had three children by then and it was not at all clear that we could live on the kind of salary the university was offering. The other problem was that after we, finally said, "Well, yes, we will come," I didn't hear anything from the university for months, no formal offer. I had a verbal offer but you don't like to pull up your stakes and move under those circumstances; and we were under great pressure from the Bell Laboratories not to leave and had a lot of friends there at that point. This got to be awfully hard on Fran; so, finally, I had to decline and said, "No." About that time, I had a detachment

of the retina in my right eye and that was touch and go for awhile. I had it operated on at the eye hospital [unclear] Columbia . . .

CAC: And they had no laser technique in those days?

GS: No. It was a long drawn out process, ten days with your head sandbagged and your eyes bandaged so you didn't know whether it was a success or not. I'll tell you that's pretty traumatic. One of the things that it made me think about was what my real objectives were in life and they were not to stay at the Bell Telephone Laboratories. Fran began to realize how much that meant to me and, fortunately, Henry Harding came back later and asked me again.

CAC: You never knew why he didn't make a formal recommendation?

GS: I didn't understand the university procedures at the time.

CAC: Boy! I'll tell you by the time I got here, there were procedures that were written.

GS: Yes. I just didn't have anything in writing that confirmed an offer; although, Henry Harding by this time knew what one of the problems had been and I got assurance from President [James Lewis] Morrill that I had a firm offer; so, we came back. That was when I first got to know Walter Heller because we came back and were trying to find a place to live. Housing was very difficult. We had just about given up and were going to buy a house we didn't really want in an area we didn't want to live in when I learned about an Economics professor who was going off to Germany to serve as the adviser to General [Lucius D.] Clay. I called up and made an appointment with Mrs. Heller, and she interviewed me, and I apparently passed, and so, we lived in their house for the first year after we came back.

CAC: You had time to look around?

GS: Yes. We, then, bought a house over in St. Paul and, ultimately, moved here into the University Grove, next door to Walter Heller. [laughter]

CAC: Right.

GS: That was not consciously done. Now, what would you like me to talk about next? I guess, I've covered my career shift to academia.

CAC: Right. The Physics Department must have been a different place? You say there was a revolution in the teaching of physics and electrical engineering during this ten-year period that you'd been away?

GS: No, there wasn't much of a revolution in the teaching of physics and electrical engineering during that period. A lot of the faculty were away.

CAC: Okay. But it had to come at that time?

GS: It came afterwards. It came after the war. There was a considerable move into . . .

CAC: You were part of that shift in the . . . ?

GS: That's right.

CAC: Does this mean the gathering of a different kind of staff? Very quickly, you were into administration in the Institute of Technology which would have involved gathering research funds, and new staff, and new positions?

GS: I came back in 1947 and I came back as a professor. I never went through all the ranks. I came back as a full professor. Henry Harding had wanted me to come back specifically to try to get graduate research going in the department. There hadn't been very much. There were practically no facilities. That was not easy. I got some small internal grants but the breakthrough on that came because of some earlier work I'd done at the Bell Laboratories on vacuum tubes, and applied what is called secondary emission; it's another way of amplifying signals. You can have targets in which if you bombard them with electrons, more electrons will come out than went in; so, if you, say, got ten electrons out for every one you put in, you've immediately amplified your signal by a factor of ten. There were vacuum tubes that used that phenomenon. The problem that they were having was that the targets that you bombarded to get this amplification didn't last. The reason for it wasn't understood. There were a lot of military applications for this sort of thing. The military supported a lot of the postwar research, realizing how important it had been during the war. I got a research contract with the Signal Corps of the army to study that phenomenon and that started what I call the Physical Electronics Laboratory [unclear] on. I was the founder of that.

CAC: These grants were sufficient to build the kind of equipment that you needed?

GS: Right. We developed . . .

CAC: And staff, too?

GS: Right. In fact, I recruited one of my protégés at the Bell Laboratories who had gone into the army, and served his time during the war, and, afterwards, had gone out to the University of Illinois—this was before I left Bell Labs. He'd finished his undergraduate work and I enticed him back because he knew all of these techniques. I couldn't possibly have done it all by myself. With him and with students that we began to involve, we gradually built up an expertise that was . . .

CAC: By this time, I'm sure, that your research had gone tangential [unclear] but Al Nier is back on the faculty now and Johnny Williams?

GS: He was back before I came back.

CAC: And Johnny Williams is back?

GS: Right. As another thing, I got involved when they got a grant to build a linear accelerator. That involved a lot of radar techniques; so, they asked me if I would assist in the development of the linear accelerator and, with some of the students in Electrical Engineering, did that. Simultaneously, I was doing this other work.

CAC: Does this mean that in the areas you're talking about there was a substantial expansion of staff in the postwar era, 1945, 1950, 1955?

GS: Right. When I first came back, they were, figuratively, pulling people in off the streets to teach because they were so short of faculty. Most of those were temporary people. For the longer term, Henry Harding and I began to recruit high level people. [Aldert] Van der Ziel was one of the first ones that I recruited. He had been in Holland but he had quite a reputation. I was at a conference—I think it was at Princeton—in a dark auditorium for the slide show when somehow I heard his name and introduced myself to him, suggested that he might come and visit. He was out at the University of British Columbia at the time. I had to leave before that particular talk was over. He sent me some of his papers. I got Henry Harding to extend him an invitation to come and visit and offered him a job. I wasn't there when he came for that visit and it was later, when he, finally, joined the faculty that we first saw each other in the daylight.

CAC: [laughter] Not in the dark. This is interesting from an academic point of view because a lot of the social sciences—just to take that as an illustration—expand really beginning in the mid 1950s and doing the same kind of thing that you're talking about . . . staff, but senior staff and research oriented staff. Geography, I think, had two people in 1951 and in ten years, they're a distinguished department. You're talking about a decade really before that, 1945 to 1955?

GS: Yes.

CAC: That's interesting.

GS: If you bring in one Dutchman on your faculty, you're likely to get more.

CAC: [laughter]

GS: As a matter of fact, we got some extraordinarily good people, some of whom are no longer here; but, that group really began to move us towards what we might call quantum electronics, the understanding of the use of semi-conductor materials and the basis for all kinds of semi-conducting devices. Students had to learn more about the basic properties of materials than they'd ever had to know before.

CAC: Who was the dean of the institute then?

GS: It was really [Athelstan] Spilhaus most of that time. I've forgotten just when he came.

CAC: He was promoting and encouraging this, obviously, and not only in your field but in different fields as well?

GS: That's right. [Samuel C.] Lind, I think, was dean when I came.

CAC: It was you and Harding that did primarily the actual recruitment and building in these areas?

GS: Right.

CAC: It was Spilhaus's task then to get the resources through the university and beyond that or not?

GS: He helped with, say, getting additional staff and some modest things for the building but he really wasn't much of a factor in attracting the research support. That really can best be done by individual faculty.

CAC: The people who are doing it?

GS: Right.

CAC: When you became an associate dean, it was an associate dean to Spilhaus?

GS: That's right, yes. [laughter] Spilhaus was a great wanderer. He asked me to become associate dean and I, then, discovered I was really going to have to serve essentially as dean because he was gone so much. I hadn't counted on anything more than one-third time. I was trying to carry on all this research activity and life, so that I would have resigned after one year but I agreed to stay for two and that was it. At which time Henry Harding was stepping down as head of the department, I, then, became head of the department.

CAC: Spilhaus stayed on for a long time?

GS: That's right.

CAC: As you would know better than I, he became kind of a legendary presence and figure in the university.

GS: Yes.

CAC: Historically, he's remembered as a dynamic, [unclear].

GS: Right.

CAC: But you're suggesting that a lot of that he was doing far beyond the environment of the University of Minnesota?

GS: That's right. He had a great sense of public relations and there were some problems with him, which became more and more apparent as time went on.

CAC: What you're saying is, someone else had to keep the shop?

GS: That's right. It got to the point where it was necessary to ask for his resignation—this was after I was academic vice-president—because he was [unclear] and you can't have that. Where shall we go from here?

CAC: Well, you know your life better than I but you did have a long term as chairman of Electrical Engineering and that's really what you have been describing is the ability of that staff and also of the director of the team that designed the linear accelerator. What years was that, Gerry?

GS: I guess I can't put my finger on that right off . . . it was in the 1950s, but I couldn't tell you . . . we can always find that out.

CAC: Sure. I imagine the record you'd set as chairman of Electric Engineering, the building of the staff and the research program that made you one candidate, among others, to become academic vice-president in 1963 when Mr. [Malcom] Willey was through?

GS: I guess it wasn't just my activities in Electrical Engineering . . . I don't quite recall how I got involved in all university affairs but I was on the Faculty Consultative Committee. Let me go back, however, to something prior to that and, I guess maybe this leads into that. If you recall, there was a great push on the part of some of the science departments to leave what used to be the College of Science, Literature, and Arts [SLA]?

CAC: Yes.

GS: I had been elected to the University Senate; so, I was involved in some of these discussions. Physics, I guess, was the first unit to transfer. I don't know whether you were here at that time . . . ?

CAC: Indeed, I was.

GS: . . . but there was a great deal of unhappiness on the part of the people in Physics . . .

CAC: You bet.

GS: . . . because they felt that their needs were not understood by the people in the Humanities and Social Sciences.

CAC: Their needs were another order of support.

GS: Right. They petitioned to transfer to the Institute of Technology [IT], where, incidentally, Chemistry already was, under the basic sciences. That transfer did occur and it's been, I think, one of the things that's made the Institute of Technology very strong. It was a symbiotic relationship. They had a favored role of influence on the Engineering Departments. Mathematics, also, transferred.

CAC: I think that was more traumatic even.

GS: Yes. The university had a very strange situation. At one point in time, the university had three math departments. One of those disappeared but the College of Engineering had a very strong Mathematics Department, which was always thought of as being the applied mathematics group. They did some of the best pure mathematics to be found in the university. Conversely, the mathematicians in SLA, to show that they understood the uses of mathematics, taught some of the best applied mathematics. [laughter] It was folly to have two separate math departments; so, finally, they merged and asked to join IT.

CAC: These are mergers before you became academic vice-president?

GS: That's right.

CAC: As a member of the University Senate and its committees, you were active in . . . ?

GS: Yes. Let me continue on this for a minute and you'll see the relevance of what I'm talking about. Met Wilson came when?

CAC: In 1960, in the summer.

GS: Okay. Through some of my involvement in the Senate and Senate committees, I had been elected to the Faculty Consultative Committee. You'll recall that the Faculty Consultative Committee was the body that worked with the regents in a search for a successor to Morrill?

CAC: Okay.

GS: That's how I got to know Met Wilson. After he came, there was a petition on the part of the people in Biological Sciences, Botany and Zoology, to move. They wanted to join IT, at that point in time. Met Wilson, at that point, said, "Before we make any further changes in this

university, we had better try to understand our mission better.” He was particularly concerned about . . . there was a worry that if all these things moved over into the Institute of Technology that the students would become too narrowly oriented toward the sciences. I should say, by the way, that that was belied in the face of the Engineering College because Minnesota went to a five-year program and they went to it specifically so that the engineering students would get a better background in the Humanities and the Social Sciences. It didn’t last, unfortunately, because we were pioneers in this. There were two or three institutions, in addition to Minnesota, that went that route, and they all abandoned it because the other institutions didn’t follow, and we were losing our students to other institutions. However, the concern is understandable enough and a proper one. Met Wilson initiated some discussions on this problem and I was in on those group discussions. I can remember an evening at Neal Amundson’s house where a number of us from IT, who’d been involved in this discussion, got together. We came up with the idea that, yes, liberal education ought to be an important component for every student of the university and that it ought to be a responsibility of the faculty of the university and not solely that of the liberal arts. That led to the proposal for the Council on Liberal Education. Part of the recommendation that was made is that that council be chaired by someone who had significant position in Central Administration; so, Don Smith was appointed as the assistant vice-president with that specific charge.

CAC: I sense that this was one of Met Wilson’s priorities very early after he came here and it must have been—I’m using a straight sentence but it really is a question—that he had a number of conversations with persons like yourself and the committees that then confirmed this?

GS: That’s right.

CAC: One of the questions I have, increasingly, as I interview different persons, is that at level why are these ideas initiated, and how are they grabbed on, and to what degree does a president or vice-president initiate, not de novo on his own but from on top, and in what ways of taking suggestions and running with them?

GS: In the case of the Council on Liberal Education, the trigger for that was Met Wilson’s question to the faculty, What is it that this university stands for? What should be the hallmark of a degree from the University of Minnesota? It sort of led into the notion that one ought to prepare the citizen as a whole not just as an economic individual, but an intelligent understanding citizen.

CAC: That’s interesting but to me not surprising that a major initiative would come from the scientists, this community you’re talking about of very distinguished people. Amundson is a chemist of great note.

GS: Yes. I guess, another involvement that I found important that led into some of these other things that I’m talking about was that the Graduate School and its General Research Advisory Committee. That was a really wonderful experience. [Theodore] Blegen was dean at the time.

That committee was supposed to advise him on the allotment of some of the general research funds of the university. Proposals were sent in and then screened by this committee drawn from several of the faculty. It gave one a great deal of insight into the university and the attitudes of people in various fields. One of the things that I remember distinctly is the problem that came when people from the creative fields submitted proposals. We found that the people from the same fields were really very harsh in their judgments of each other . . . sort of on personal grounds. In fact, it led me to say, at one point in time, that some of the least humane people I've ever known were the humanists.

CAC: [laughter]

GS: The people in the sciences, on the other hand, were very sympathetic to these valid proposals and would frequently overrule the [unclear] people in the same area . . .

CAC: [laughter]

GS: . . . because they felt they were just too harsh with each other. I think we did some good things as a consequence of that. I guess, what I'm trying to tell you is that it's a composite of the experiences I had on that committee, on various Senate committees, particularly the Faculty Consultative Committee, that began to give me a feel for the university as a whole and gave me an interest in trying to be a part of that.

CAC: Leaping fifteen years ahead, a committee I chaired for the Arts College to revise the undergraduate curriculum in the late 1970s . . . It was the adjunct science members of the faculty who weren't budgeted in the Arts College who were the best supporters of the Humanities when it came to structuring what expectations we might have; so, what you're saying doesn't surprise me but it does amuse me in a kind of ironic way.

GS: This brings us up to the time when . . .

CAC: You had a very wide university experience through the Graduate, through the Senate?

GS: Yes. I'll give you another example. I can remember that when the Economics Department wanted to leave the Business School, there was a committee set up to make a recommendation on that, most of them from within the school and people from CLA [College of Liberal Arts], as it was by that time. I was asked to serve on that committee and I was told, "You're going to be the honest man." [laughter] It was interesting to see the kind of problems that you have.

CAC: You, personally, found this kind of university-wide engagement exhilarating and significant?

GS: Right. It came the time when Willey was about to retire and the Faculty Consultative Committee was asked to serve as the Search Committee for that. Maybe, I should go back for

one moment and tell you that at the time that the search was on for a successor to Morrill, I was a candidate, nominated for both the presidency and, also, as a successor to Dean Blegen . . .

CAC: Heavens.

GS: . . . neither of which I was offered.

CAC: I understand

GS: When Willey was retiring, I discovered that I was one of the nominees to be his successor, which . . .

[End of Tape 1, Side 2]

[Tape 2, Side 1]

GS: No, he did not. [laughter] He said, "There's no need." I went to the meeting where he, finally, made the announcement that he was going to ask me to serve. He had already asked me if I would if he asked and I had said, "Yes." I should make it clear to you that he made it quite clear that he wanted the academic vice-president to be first [unclear] university. You know, Morrill had pretty much been his own provost working with [Theodore] Blegen, and Met Wilson felt that the office needed to be strengthened. If that hadn't been the case, I would not have been interested in the position.

CAC: I think there's a general perception—just to comment on it briefly—that it was Mr. [Bill] Middlebrook as vice-president in the finance field who was the senior vice-president . . .

GS: That's right. That's exactly right.

CAC: But also what you're saying is that Mr. Blegen was really a person upon whom Mr. Morrill relied for a great deal of his advice in all university matters?

GS: Right. That's appropriate even now.

CAC: Sure.

GS: Although, I think that ought to be done working with the academic vice-president. I must say that that was a great surprise. It wasn't until about four days before Fran, and Nancy, my elder daughter, and my younger daughter, Sally, and I were going off to Japan for a scientific congress of which I was an officer. Having gone that far, it seemed to me, we ought to go on around the world; so, we had planned to go to Japan for this conference and then continue on around the world. As I say, four days before we were departing on this was when I learned that

I was going to be academic vice-president; so, I talked to Met about this and he said, "Well, you ought to have some rest before you take out the check book." [laughter]

CAC: [laughter]

GS: So, it was agreed that I would curtail the trip somewhat. We did go on around the world . . . a wonderful experience.

CAC: Heavens!

GS: My younger daughter had to come back; she was still in college. My older, Nancy, had graduated by that time, just graduated. We went to Japan to Hong Kong, to Cambodia, India, Iran—that's where I left them. They went on to Istanbul, Egypt, and, finally, home, a month after I got back. I came back on a continuous trip from India to the U.S., about forty-two hours of travel. I was a little bushed when I got back to find myself thrust into Central Administration in which I had a secretary and a clerk; that was the extent of the staff.

CAC: There were no assistant vice-presidents?

GS: There was an assistant vice-president, Don Smith, but his specific responsibilities were the Council on Liberal Education.

CAC: But he was there for continuity and advice, at least?

GS: That's right and he was very helpful. All I'm saying is that we really were structuring from the ground up.

CAC: Met Wilson said then and he said again in his interview with me how under administered the University of Minnesota was.

GS: That's exactly right. Of course, he expected me to start building this up. One thing I had not known when I accepted the position is that Met Wilson was going to take a quarter leave in that first year when I was academic vice-president; so, in that fall quarter when I first took over, very green—not even knowing where the men's room was—we were rushed into preparing the budget for the following year. Trying to get all that accomplished before Met Wilson left in December was a real undertaking. It was a real baptism of fire and I learned the ropes quickly. It was rather exhausting.

CAC: For the creation of the budget, Stan Wenberg was there on Wilson's staff at that point, as far as the legislative things . . . ?

GS: Both he and Larry London were there. They weren't all too eager to have me academic vice-president, I should interject; but I survived with Wilson's support.

CAC: Because they recognized you as a person who would strengthen the office?

GS: Yes. I think that was what their concern was, that it had not been the academic vice-president who had the most influential voice in the past.

CAC: I have a sense that London, at that time, didn't have the political skills Mr. Middlebrook had always had.

GS: That's correct; so, Wenberg had lots of influence.

CAC: Yes.

GS: Wilson did go off for a quarter leave and you may remember the [Mulford] Sibley incident?

CAC: That was an item I wanted to . . . I was trying to remember . . . it comes in the fall, right away, in the fall of 1963 when you come in or is it fall/winter?

GS: I'm a little vague about that. It really got to a crescendo after Met Wilson left.

CAC: The freedom in the university statement come in late 1963.

GS: That's right. Oh! you're quite right. I recall that now.

CAC: That was linked with the Sibley affair?

GS: That's right . . . where Met Wilson was talking about what the university is all about and what freedom means in a university.

CAC: That must have been part of that first hectic fall quarter that you're speaking of?

GS: It was. Actually, the great problem was . . . There was nothing wrong with what Sibley was saying, it was just too sophisticated for most of the public. They assumed that he was advocating some of these things where he really meant that they ought to be subjects you would discuss and examine them on their merits, which is true of everything that one teaches about in a university. But the public, a lot of the public, assumed that he felt that the university ought to advocate these things, encourage them.

CAC: As I recall it was socialism, and free love, and all kinds of things.

GS: Yes, right. I can remember while Met Wilson was gone . . . I think that's when the Sibley/[Milton] Rosen debate . . .

CAC: That's right, that comes later.

GS: Then, it began to be a great hurrah all over the state. You could trace some of the conservatism within the state by looking at some of the newspaper editorials and if you'd look at them in towns along the Minnesota River Valley, you could see where the very conservative part of the population was. [laughter]

CAC: How interesting.

GS: It was a harrowing time and the thing I can remember very distinctly is that I had a call from two people . . . a lieutenant governor at the time who later ran against [Karl] Rolvaag and lost . . .

CAC: The chap from Rochester. Yes.

GS: I'm blocking on his name.

CAC: I am, too.

GS: In any event, he came to see me and make supportive remarks about trying to be helpful. The other one was a young legislator, Robert Odegaard by name, who came and said, "I'd like to help."

CAC: Now, at that time, you didn't know him? He, later, is our director of foundation business.

GS: That's when I got to know him.

CAC: Do you know how to account for his interest in the university and in the issue of academic freedom at the time?

GS: He had very deep feelings about the university.

CAC: Where did that come from with Bob Odegaard?

GS: I think that's something you'd have to ask Bob.

CAC: I have him on my list.

GS: He was a graduate of the university and had a great love for the place and, I might say, was one of the most understanding people I've met about what a university stands for. That's why he was so effective, I think, as the director of the University of Minnesota Foundation. I mention that to tell you how quickly I got indoctrinated with what the university was all about. [laughter]

CAC: You had good allies in any case.

GS: Oh, yes, yes, but, nonetheless, as a neophyte vice-president . . .

CAC: And without a staff.

GS: . . . and without a staff. [laughter]

CAC: And with Wilson going away.

GS: Yes. He did not designate an acting vice-president. He said he'd leave it to his three tigers in the tank, which may or may not have been a good idea. [laughter]

CAC: [laughter] There are a whole lot of things that happened in those ten years and I had kind of outlined them in thematic ways but they did have a chronology, each of them. It's kind of difficult now to start the conversation. We have talked about liberal arts and the Council of Liberal Studies. After that, I think, it becomes kind of arbitrary which way we might go in our conversation. Why don't we jump to your colleagues however, that is the building of the vice-president's office, the taking on of [Lloyd] Lofquist, and [Fred] Lukermann, and I'm sure there were others?

GS: The first thing that happened in that direction was to broaden Don Smith's responsibility. Ultimately, he became associate vice-president for Academic Administration. The next person that came in was Fred Lukermann.

CAC: I think Lofquist came first.

GS: No.

CAC: No?

GS: It's the other way around.

CAC: Okay.

GS: Fred came in as an assistant vice-president. I think, maybe, Don was still assistant vice-president at that time but I don't recall.

CAC: Was the expectation that Fred would carry certain portfolios or was it a general kind of assistant?

GS: It was a mix. Don had major contacts in CLA but, of course, so did Fred. Fred had a great deal of interest in the university's community involvement . . .

CAC: We'll come to that.

GS: . . . and we'll come back to that. We tended to operate as alter egos. We would keep each other informed of what was going on. I don't think we had any arbitrary divisions; it would depend on the nature of the problems that came up. We worked very much as a team. Don continued to carry on the responsibilities of the Council on Liberal Education but also now working with me on the broader problems. We began to do a lot more academic planning than had been done previously. There was a lot of talk about this as being something brand new. One thing I discovered when I became academic vice-president is that most of the allocations that went out to the colleges were just done on formula, that you got a percentage of your base. That, obviously, meant that there wasn't a great deal of understanding of the problems of the individual colleges. Just interviewing the deans to find out what their objectives were and, then, trying to adjust the floor resources to meet these things . . . Obviously, it meant a lot of decision making on the side of, What are the university's priorities? We didn't have the structure at that time to deal with it as is done now; so, to a certain extent, the decisions about where the resources ought to go to meet what we perceived as a goal were our own decisions, the president's and . . .

CAC: Mr.. Wilson engaged himself actively in those conversations and priorities?

GS: Oh, sure.

CAC: I'm thinking that in this case, you came from the Institute of Technology, and Lukermann, and Lofquist, and Smith all came from the Arts College, and there's no one from St. Paul, there's no one from the Health Sciences, etcetera.

GS: Yes. So . . . [laughter] As I say, they were pretty much personal decisions. We began to formalize that later, particularly, when we had to come to retrenchment, then, we developed a committee consultant . . .

CAC: We'll come to retrenchment, too.

GS: That was a gradual process which evolved over time. Lofquist came in to succeed . . .

CAC: The chap in the Law School?

GS: This was after [Malcolm] Moos had come in.

CAC: Yes, post 1967.

GS: I had this chap from the Law School . . .

CAC: Jim Haug?

GS: . . . Jim Haug. He became secretary for the Board of Regents. One aspect of Moos's style was that he made that decision without any consultation. Earlier than that, by the way, he had

recruited Don Smith to be vice-president for administration and that was a distressing in two ways. He never talked to me about it. He had asked Don, and Don had agreed; and it was three weeks from the time that he first talked to Don before I had any inkling of it. I had no objections to that . . . in fact, I was pleased for Don. It was also distressing that he did not delineate the changes in responsibility, leaving the academic vice-president somewhat in limbo as to what his authority was and providing a situation in which many of the people who should have reported to the academic vice-president would feel, well, I better and go see the vice-president for administration. It was a very messy arrangement.

CAC: I would guess made lighter because Don Smith was who he was.

GS: Because of Don Smith . . . absolutely right. I'm not faulting Don in the least on this but again when Jim Haug, who succeeded Don as an assistant vice-president, not as associate vice-president, the president didn't even inform Don Smith that he was going to ask Jim to be secretary to the Board of Regents. He just called Don and me into his office and said, "I've asked Jim Haug to be secretary to the board," a very cavalier way.

CAC: That's a different administrative style certainly. Could we back up? One of the most difficult things for an historian to piece together out of the documents—I've done a good deal of research, as you can see—is the relationship of those offices, which has to be informal, a lot of spoken, going across the hall, and so forth. Could you say something more about your relationship with Met Wilson in those four years and what things Wilson involved himself in? When did conversations take place? When does the initiative come from the president's office on substantive issues, etcetera?

GS: Okay. I had a very warm working relationship with Met, supportive. However, let me make clear one thing. I told you he said he wanted me to be the principal academic officer. That meant that I had to sell my own ideas to the regents without his necessarily indicating how strongly he felt one way or the other. The College of Biological Sciences [CBS], for example, is one of the things that developed out of the desire of them to move. In fact, that was one of the first tasks I had after I became academic vice-president was to deal with the problem of, Where are we going to put the College of Biological Sciences?

CAC: Or [unclear] there would be one. They were wanting to go into the IT, originally, you said.

GS: They wanted to go into IT.

CAC: So, a decision has to be made to set them up, what's so often called [unclear]?

GS: That evolved out of a lot of discussions with people in the Health Sciences, Agriculture, and, of course, the people in CLA, and particularly the people in Botany and Zoology. It was fairly apparent at the time that there was about to be a revolution in the biological sciences

. . . just signs on the horizon and that there needed to be some structure in the university in which the Biological Sciences as a basic discipline, rather than applied, could encourage some of these new directions. See, the Health Sciences while they do quite a lot of basic biology, have as their primary thrust human health and in the case of Agriculture, you have food and fiber production as their major objective, so that there's a hazard that you don't have the equivalent of, say, Physics and Chemistry, which are the basic sciences standing on their own. Out of these discussions, it seemed that one could move in a variety of directions. I think we were one of the first one or two universities to make a landmark decision to establish a College of Biological Sciences, not to duplicate any of the things that were being done in the other institutions but to be the place where all of the university would depend for instruction on the basic biological sciences, per se. Met was very supportive on that but I had to make the pitch to the regents and they agreed to it.

CAC: So, Met did not engage himself in any detailed conversations on this?

GS: No, no.

CAC: This was delegated to you?

GS: Yes.

CAC: But you kept him informed?

GS: Oh, of course. He knew what was going on all the time.

CAC: You say he knew all the time . . . was this formalized?

GS: We have regular meetings and the vice-presidents . . .

CAC: With all the vice-presidents?

GS: And with the president. Let me give you another example. This is one where I fell on my face. You, perhaps, recall that there were discussions in the Senate about Extension, which led ultimately to a proposal that the Cooperative Extension of Agriculture and our general Extension Division sort of be merged in one sense. Cooperative Extension has always, primarily, served the agricultural community through its network of country agents and the like. The university has much more to offer than that but we didn't have any mechanism to disseminate through the counties some of the other things that the university could contribute; so, the suggestion was made that was essentially merging so that the county agents would also provide for the dissemination of some of the things that the university does to other communities or other constituencies. There was a great deal of discussion of this and the people in the Institute of Agriculture . . . First of all, Sherwood Berg, who was the dean, agreed that this was a good idea and, then, some of the other people like Bill Hueg were very much against it because they felt

that the county agents were their political constituency or provided them a way of getting support and they were afraid that it would be diluted. This came up for the board and I just got shot down. Now, Met did not provide any statement one way or the other on that. I say this with no sense of resentment. You know, if he says to me, "You are going to be the chief academic officer," then, you've got to accept your successes as well as your failures. That was a personal failure.

CAC: So, this never came off, the melding of those two?

GS: However, something did come out of that and that's CURA because there were people in the legislature, one man in particular—I can see his face but I can't remember his name now—a very significant person in the legislature from the northwestern part of the state.

CAC: For our listeners, it's the Center for Urban and Regional Affairs . . . you said CURA.

GS: Oh, yes, the Center for Urban and Regional Affairs. He was sympathetic to this. I guess I should back up and say a little bit about the Center for Urban and Regional Affairs. There had been discussions of how to manage some of these community relationships and studies.

CAC: I'm going to interpose here. This is before Mr. Moos came in . . .

GS: That is correct.

CAC: . . . communiversity; this is late Wilson.

GS: Right. I'm sorry . . .

CAC: That's a common misconception, that CURA came with communiversity and, clearly, it's origins are earlier.

GS: That's right. This study committee, which was chaired by Warren Cheston, came up with the proposal we establish a Center for Urban and Regional Affairs. My memory is a little hazy here . . . I don't know quite how that came up in terms of the proposal to consolidate the extension activities of the university. However, this legislator I'm telling you about made the following remark, which I think was a very astute one. He said, "Those of us in agriculture ignore the needs of the cities. There's going to come a day of reckoning for us. I think we ought to provide some support for that." That really led to a legislative special for CURA, which exists now and I think it's been very successful.

CAC: I gather that that was one of the things that Lukermann in your office was engaged in, perhaps, more than other . . .

GS: Correct, yes. He had a lot to do with the minority programs.

CAC: And we'll come to those but also with this?

GS: Yes, right.

CAC: It was a colleague of his who becomes really the first director, Mr [John] Borchert?

GS: I'd forgotten who the first director was but you're right, yes. Fred certainly was deeply involved in this because of the general responsibility for outreach programs; and I didn't mean to in any way minimize his contributions to the thing that I was talking about earlier where we were trying to drum up support for this but I had to, in the end, take the responsibility for it.

CAC: Right.

GS: Where should we go next?

CAC: This line started with my question regarding the relationship of your office with Mr. Wilson and you're describing a situation in which you kept each other informed all the time but sometimes Mr. Wilson did not commit himself. He did delegate that and then watch it?

GS: That's right. I should make it quite clear, incidentally, that when we were working on some of these programs and we were discussing it in the meetings with the president and the other vice-presidents that our directions were influenced by things that Met Wilson would say. What I'm saying, I think mainly, is that he felt the responsibility should be vested in the office of the academic vice-president and that he was not going to go out and lead the charge on these things, otherwise, it would undermine the academic vice-president. He was very thoughtful about that.

CAC: Did he keep some portfolios for himself? For example, I'm thinking of the library. This comes formerly within the office of academic administration. I have a sense that Met kept closer touch on the library than on some other things, perhaps?

GS: I think one of the most important things he did . . .

[End of Tape 2, Side 1]

[Tape 2, Side 2]

GS: . . . was to fight very hard to get a new library building. That was why I felt that it was so appropriate to have it named for him when he left.

CAC: Oh, yes.

GS: He did not intervene in the operations. I should make it quite clear that when we came up with our final budget recommendations, which were developed in my office, they were then

reviewed with the president and, obviously, he had an impact on what we did; but, he worked through us. If academic officers feel that they can go around the academic vice-president, pretty soon the academic vice-president doesn't have any trust; so, he was very careful about that sort of thing.

CAC: I was chairman of the Senate Library Committee in those mid-1960 years and I remember meeting on Wilson's initiative with him but, also on a certain number of occasions, with you and [Ned] Sanford.

GS: Yes. Don't misunderstand what I am saying, Wilson had a lot of influence. He was very conscious about the importance of maintaining the lines of communication because if you get them tangled, you get yourself into a mess. Obviously, he had conversations with lots of people. One of the great things about Met Wilson is he insisted on eating at the Campus Club. I'd walk over with him on occasion and he'd say, "You go wherever you want to go, I'm going to sit down here." He'd sit down informally and that way he got a feel for the pulse of the university. Some of the things he heard would suggest directions which he'd propose to me; so, I wasn't operating without any influence on the part of the president; but, the important thing was that he saw to it that these things were done through channels and not by-passed.

CAC: Sure. Did the other vice-presidents . . . what role did they play in these weekly meetings of all the vice-presidents?

GS: We'd discuss all kinds of topics.

CAC: And they would feel free to contribute on matters that bore on academic administration?

GS: Sure. I can remember the first budget that I developed in that first quarter where, in particular dealing with CLA, I was rather horrified at their dependence on soft monies for a lot of their important activities. There had been a rather unfortunate practice of funding things that had to be ongoing with monies from leaves and the like. I suppose, in expanding times that's all right because of continuous growth but I thought they were in a horrendously dangerous situation if there was any reduction in resources.

CAC: They were vulnerable.

GS: They were very vulnerable. I think in that first budget, I gave quite a lot of money to CLA and I got a lot of complaints from the college . . .

CAC: Primarily, to regularize the soft money?

GS: Yes. Some of the complaints that came back were, You haven't done anything for us. Then you could point to that . . . but you didn't do anything new.

CAC: [laughter]

GS: Of course, having solidified these things . . . from then on, when you gave them new resources, they could do things with confidence.

CAC: On an issue of that sort, did Mr. London play . . .

GS: I was coming back to that. I remember taking that budget in where, for the first time apparently, somebody came in and allocated funds on a programmatic base and on correctional planning rather than just on a . . .

CAC: An incremental basis, perhaps?

GS: Exactly. I can still remember Stan Wenberg saying with a certain amount of horror, "You can't do that. We've always done it on a proportionate basis." The president backed me up. In fact, he called me into office to congratulate me. [laughter]

CAC: [laughter]

GS: That gave me a very good feeling. It seemed to me to be what one ought to be doing. I didn't think it was anything extraordinary at the time.

CAC: While we're talking about this . . . one of the mysteries that the documents don't help much on is the—you're talking about it now; that's why I want to continue a bit more—allocation resources to different collegiate units of the university. Because this is a time, beginning a little bit before you became vice-president, that is the early 1960s, expansion of staff everywhere, expansion of student numbers . . . You had to have more staff; so there were programmatic implications of addition of staff. It happens very fast, as I see it, from statistics from 1961 to 1971; it's a decade. You're saying that in 1964, 1965, perhaps, you begin to get a sense of programmatic planning in that sense. In the Arts College—which I happen to know best, and, therefore, there's a certain distortion in the questioning—was there any sense of how those funds were going to be used, what areas within the Arts College would be strengthened?

GS: Oh, sure. We would meet with the dean who'd outline . . .

CAC: It's "Easy" [E.W. Ziebarth] by 1963?

GS: Sure.

CAC: Did he bring [John] Turnbull with him?

GS: Yes.

CAC: Some of the other people I've talked with get a sense that within the Arts College in 1963, 1965, 1968 that the award of positions to departments, to move it down into that level, was—I was going to say haphazard; that's a bit strong—that there wasn't a clear planning sense of what departments should be strengthened within the Arts College. I didn't know how much of that your office would be aware of or engaged in.

GS: We were. You get a request list that's way beyond what you can do. In the end, you've got to have confidence in the dean of the college . . . you know, the same situation I was talking about in terms of Met Wilson. I couldn't by-pass the dean without pulling the rug out from under him so that, in the end, when we gave them the allocations, I would say, "Now, I'm standing here . . . give me some priorities; but since I haven't met all of your requirements, you're going to have to make some judgments here." I'd have to let him live with those.

CAC: Say [unclear] CBS, or IT or so forth?

GS: Sure. If you discover that the dean of a college is making bad use of the resources you give him, the only answer, ultimately, is to get rid of the dean and get somebody in who has the confidence of the faculty; but you cannot try to impose yourself as a super dean. You've got to respect the channels of communication—that doesn't mean that you don't listen to the complaints of the faculty members. I always felt any faculty member should be able to come to me but I was not allowed to make commitments to them without . . .

CAC: How much of that was there? How many end runs, so to speak, did you have?

GS: Oh, I don't know that I'd regard them as end runs. A lot of these people wouldn't necessarily come to me in my office but they would talk to me at the Campus Club or in social affairs and the like; and I would listen to their story and if it seemed to me it had merit—I wouldn't make any commitments to them then—I would, then, talk with the dean and work through channels. A failure to do that is just catastrophic.

CAC: Your office is so central that it has relationships with up, down, and sideways. The relationship of the Graduate School to your office of academic administration is sometimes difficult for the scholar like myself on the outside to untangle. Maybe, you'd like to say a few things about that?

GS: Yes. Historically, the Graduate School had a great impact on the university as a whole because just as the vice-president for academic administration has across the board responsibilities so does the Graduate School.

CAC: University-wide?

GS: University-wide . . . less impact, for example, on some of the coordinate campuses like Morris, and Crookston, and Waseca because they don't really have graduate programs. The Graduate School through Morrill's time, at least, had a sort of semi-provost role; that is, the dean of the Graduate School did.

CAC: Is that because Blegen occupied that office or do you think it went beyond the person?

GS: Blegen was the only graduate dean I ever knew before [Bryce] Crawford, so I can't tell you about what it was like before that.

CAC: Guy Stanton Ford must have had the same role?

GS: He's the one who really established the Graduate School, that's right.

CAC: He would have elevated the position to a provost kind of authority, right?

GS: Exactly. One of the reasons for it is that the graduate dean necessarily has to know what the research interests of the faculty are . . . in many respects, in greater detail than the academic vice-president. If you are concerned about the quality of the faculty, you, obviously, look to people who know the faculty well, know of their scholarly productivity and the like. It always seemed to me to be perfectly natural for the dean of the Graduate School to be in the line of decision making about academic promotions and the like, not about salary adjustments and things like that but, certainly, when you're talking about academic promotion and tenure, the dean of the Graduate School should be involved . . . advisory to be sure. I didn't very often find myself in disagreement with Bryce but I did on occasion . . . not only with Bryce but with the dean of the college. That was to a considerable extent on procedural grounds on which I thought they were absolutely wrong and where I thought that the decision that had been made by the faculty, which had been overruled by the dean of the college and the dean of the Graduate School, was correct; so, I reversed them. I only did that once or twice. That's not a bad record for them.

CAC: Bryce was a scientist as you were and that meant that there were two persons who really must have been able to speak to each other without a lot of explanation in those areas at least?

GS: Oh, sure. The only problem I had with Bryce is that the influence of the Graduate School, to put it bluntly, was diminished with Bryce. That's in part because he operated under the principle, I don't ever want to take the faculty by surprise. I attended some of the meetings of . . . I forget what the group was . . . I was invited and there would be a lot of discussion and, then, it would be laid on the table for the next time; so, things just didn't get done. I think the Graduate School lost a lot of its respect because of this stately dance.

CAC: Could it have been any structural issue, if it is at this time that Mr. Wilson wishes that the office of academic administration be the first office? Maybe, that kind of weighting

diminished the provostian role of the dean of the Graduate School . . . as Ford and Blegen had developed it?

GS: That could be. I didn't perceive it that way.

CAC: It isn't speculation on my part. I'm not saying that that is the case.

GS: I did nothing to diminish the role of the dean of the Graduate School. I still depended on the recommendations that came forward. As I say, the dean of the Graduate School best knows the faculty as a whole but you, also, after ten years, get a pretty good sense of where the strengths are.

CAC: Sure. Could you say something more about the role of your office in . . . we've been talking about planning and budget but I'm thinking now of the presentation to the legislature. Were you and your staff actively engaged in that or, occasionally, on call? What was that role?

GS: We were actively involved. We'd make presentations on the needs of various colleges.

CAC: This was orchestrated by Mr. Wilson's office?

GS: Mr. Wenberg's office . . . and, of course, working with the president. Of course, the president was involved a great deal. In the presentations to the legislature, the most common format would be that Wenberg would have set up the agenda and tried to brief the legislators on the various aspects of the presentation in advance. Then, Wilson would get up and make the general pitch. Then, if there were details, important details obviously, he would, then, turn to me or members of my staff or, in other instances, he'd call on the deans of the college to make the presentation.

CAC: The dean of the Graduate School also?

GS: Yes. The dean of the Graduate School's presentations were primarily aimed at getting support for the general research of the university and the specials.

CAC: This was another burden in every other year. In those days, they didn't have annual sessions of the legislature. You had to take out January to March for a lot of work in that regard, being off campus?

GS: Right. Right up until the end of the session . . . then, the frantic allocation of resources.

CAC: Right. While we're on budget, could you say something about the origins and the way in which the program was implemented to inaugurate an expanded and much improved faculty retirement system in the mid-1960s? Where did that come from?

GS: The credit for that belongs entirely to Larry London.

CAC: Okay. I'd like to hear more about that.

GS: The retirement system prior to Mr. London's time . . . I forget when we first got onto Social Security—that was a major step forward.

CAC: That was earlier.

GS: That may have been during Middlebrook's time.

CAC: Yes.

GS: Even with that, the faculty retirement plan was just miserable. I don't remember when the idea of supplementing the retirement through annual allocations of resources occurred. It may have been in Mr. London's time but that was a very good thing. It was a little touchy with the legislature because they didn't make any appropriation for that purpose. It had to be taken out of the salary monies that were made available generally for the university. That was always done in consultation with the appropriate faculty committee, one of the senate committees, who agreed on behalf of the faculty that X amount ought to go to try to relieve the hardships of some of the earlier retirees. Larry London, obviously, was doing this in concert with Met Wilson but the credit is his. Obviously, I was in support of it but I would take no credit for that at all. Bless his heart! that's one great thing he did.

CAC: This may have been his domain so that we can leave it at that, that it must have been with the relevant university senate committees, welfare, or whatever?

GS: Yes, that's what I had reference to a moment ago that we did not arbitrarily . . . oh, you mean the improvement in the retirement?

CAC: Yes, the retirement.

GS: Yes, of course.

CAC: Do have any sense having been there, was Mr. Wilson's role initiating, supportive, active, passive?

GS: It was very supportive, very supportive.

CAC: It was said by some people that Mr. Wilson as a Mormon—I'm quoting almost directly—had a ideological set that all citizens should learn how to plan for their own retirement and for the university to do this would intrude upon that personal responsibility that all human beings had.

GS: I guess I recall something like that; although, I didn't think it was quite that overt. There were hints of it.

CAC: But it didn't keep him from, then, coming around to support it?

GS: No, no, no.

CAC: Okay. Let's talk about the programs for minorities and disadvantaged students which comes in the late 1960s. It's very difficult, again—in my conversations I'm trying to draw out affairs that are not clearly in the documents for scholars later; that's really the purpose of these interviews—it's not clear where the pressures were brought in the Black movement first to establish Afro-American . . . on Morrill Hall, on Johnston Hall, on the president directly, on your office. Perhaps, it was on all and that's where the confusion comes from. What is your perception of where these pressures came from and, then, how the university as an institution responded to them?

GS: I think there had been a fair amount of push for help to disadvantaged minorities well before the occupation of Morrill Hall. I think there had been some commitment in the College of Liberal Arts in that direction but it hadn't moved very fast. There seemed to be quite a lot of foot dragging. Then, the occupation occurred, and that is quite a kick in the pants, and we got down to serious discussions.

CAC: You say *we*. Mr. Moos is now president by then and when you say *we*, this includes Smith, Moos, you, Lukermann, Lofquist . . . what happened? Morrill Hall is so undifferentiated when one is trying to untangle how those pressures were brought specifically to bear, whom these community people and students met with, etcetera.

GS: Actually, they met with all of the central officers, with Lofquist and Lukermann both there. I think we were quite sympathetic to the idea. We were worried about the direction that this would take and the implications. Let me make clear what I have in mind there. I can distinctly remember one meeting in which there was a lot of pressure for these studies and I expressed this reservation. I said, "I am concerned that if you set up these African Studies programs that a lot of the Black students will choose them, and major in them, get a degree in Afro-American Studies, emphasis in that direction, and that it will lure them out of the main stream. I would not want to see them diverted from an interest in engineering, medicine, any other field; so, I want to be sure that we keep this a broadly based program in which they learn about their own culture but it isn't a major field—it might be for a few. It's just as important for the white students to know that history; but, let us not forget that our primary responsibility is to educate these people to be useful citizens in general and not lure them into something which is a dead end for them."

CAC: This was received by those who were bringing the pressures in what fashion?

GS: I think they understood it and it had an impact. Whether in the end, because of the rather disturbed history of that program, it is the case, I don't know because I was too far away from it.

CAC: Were the same kind of pressures brought soon thereafter with Chicano studies or is that another level of . . . ?

GS: That wasn't quite as intense. There were Indian Studies programs and Chicano Studies. you, perhaps, remember the store front idea? I think that preceded a lot of these things. That was an area where Fred Lukermann was very active. I think one of the great assets that the university had in those difficult times was the fact that these minority people knew they had a truly interested person in Central Administration in Fred Lukermann.

CAC: And Women's Studies . . . was that during your time? That would have even, perhaps, been less a matter of pressure and [unclear]?

GS: That's right. That was a lot easier to deal with. In fact, the history of that goes back to something considerably earlier. I don't know whether you recall the Rusty Ladies Group?

CAC: Oh, indeed.

GS: I think maybe the idea of women's studies—which can be carried too far too, incidentally—really was an outgrowth of that. I thought that was one of the greatest things the university did. I always enjoyed the women, such marvelous lively people, good minds.

CAC: And a very high quality program from the university side in serving it, too.

GS: Right.

CAC: I have a long interview with the Edith Mucke that tells part of the story. She was not there at the founding but she was a student in the program and, then, moved on.

GS: I see.

CAC: I'll pick it up in other places as well. We're kind of jumping now but I find this as interviews draw near the end that that happens . . . there are things that we haven't covered. Could you say something about the relationship of your office to the Health Sciences?

GS: Yes. That, I think, was one of the most traumatic of my experiences. It was quite clear that something needed to be done about the Health Sciences. I'm not sure that the needs were as great as they were made out to be but there seemed to be general acceptance of the idea we need to produce more health professionals, which included doctors. The idea that small towns were losing their doctors . . . I don't think the program has solved that problem at all. However,

on approaching this, you have to keep in mind that the Health Sciences have a certain degree of uniqueness in the university in that they operate a hospital, which is a great big financial affair. Our institution, in common with many other institutions, has always had a problem with, How do you compensate the teaching doctor? How do you keep him abreast of the clinical aspects . . .

CAC: And still reward him.

GS: . . . and still reward him. It isn't just the Medical School . . . it's the Dental School, Nursing, etcetera. A committee was set up to review this, and we went and talked to the people around the country, and, finally, convened a group here to come up with some final recommendations to the regents and the president. It was chaired by the man who was president of Vanderbilt University.

CAC: You brought someone in from the outside to do this?

GS: He chaired it. I testified before it and worked with them in drafting their report. They recognized the need to provide some overall administration of the Health Sciences. I suggested to them that they not designate the title, for instance, they could just call him the chief executive officer and they accepted that. The report came in and, then, I had to present it to the president and the Board of Regents—I presented it to the president and the other officers before. I, finally, met with the president and Elmer Andersen, who was chairman of the board, at that point in time, and had to go through this. Elmer Andersen got impatient and said, "This is an awful lot of detail." I said, "You really can't know how to make this decision unless you're willing to listen to this." He, finally, agreed and I made the presentation. I urged them not to appoint a vice-president for the Health Sciences. I said, "If you do, you're going to really warp university structure because there's as much reason to name a vice-president for CLA, which has far more students . . .

CAC: Or for Agriculture?

GS: . . . or for Agriculture." And I said, "In particular . . ."

[End of Tape 2, Side 2]

[Tape 3, Side 1]

CAC: . . . against your advice and in the president's office and, then, the pressure came very quickly from Mr. Hueg, I would guess, to have vice-presidents for the St. Paul campus?

GS: Right . . . which was resolved after my time when . . . Who was the History professor—I'm blocking—who took my place for a year? Oh, Political Science.

CAC: Political Science . . . Hal Chase.

GS: Hal Chase conceived the idea of a deputy vice-president. One great problem is that it divides the university into a unit that has no line through the academic vice-president to the president. You've got two people now making decisions on the criteria for promotion and advancement, etcetera. I think it's to the detriment of the Health Sciences and it, certainly, has distorted the university in general.

CAC: Our conversation is tending toward an accumulating crisis in administration, which I would see gathering in 1971, really 1972, 1973, and we've commented on the Health Science and Agriculture. It would seem that there was also, perhaps, a more minor matter but the University College situation was another one in which the lines became blurred.

GS: I'm not quite sure what you mean by that.

CAC: There was some issue involved in the selection of a new dean for University College and the selection of that dean ran into static between the president's office and the vice-president's.

GS: Okay, I'll be straightforward about this, Clarke. You chaired that committee . . .

CAC: [laughter]

GS: . . . and, I, to this day, don't understand why your committee would recommend as a candidate for dean a man who had not yet achieved tenure in his own department. I found that an impossible thing to live with.

CAC: The reference here is to Earl Craig.

GS: Right, to Earl Craig, for whom I have great admiration and would agree would have had the qualities for that but just in terms of the structure of the institution, it seems to me you can't put a man in a position which nominally has the responsibility for recommending people for tenure who doesn't himself have tenure. We talked about that in my office and we decided that we couldn't live with that one. I don't remember whether you put those names in rank order. It didn't matter. We had a Black regent at the time, Josie Johnson. We brought this matter up in the vice-president's meetings on three separate occasions and Moos was there every time. Finally, at the time of the board meeting, the regents meeting—these were the days in which the regents would have a private luncheon with the central officers—Josie Johnson got up and made an impassioned speech about the emasculation of the Black male by white women. Remember we nominated . . .

CAC: Barbara Knudson.

GS: . . . Barbara Knudson who was very good. The president got up and said, "I have been betrayed."

CAC: I don't understand that . . . meaning what?

GS: That he had been misled on this by the vice-president for academic administration. I was sort of appalled. I didn't want to put him on the spot but he had certainly got us into a jam. Elmer Andersen said, "Who made this decision?" I said, "It was made in my office." Fred Lukermann wasn't there; so, they said, "Let's get Fred Lukermann over here." Fred arrived and the president got the meeting adjourned before anything more was said. I got hold of Elmer Andersen and said, "I think this is absolutely wrong." There were hints for asking for Fred's resignation. I said, "If anything like that is done, you'll have my resignation, too. There's absolutely no basis for Moos's statement. He was in three meetings where it was discussed and the decision was made and he has no right to say he was betrayed." Elmer Andersen said, "He doesn't feel that way about it." I, then, went to see two other regents who chaired committees that were important on this thing, explained the situation to them and I said, "If anything happens to Fred Lukermann, I'm going to resign." Nothing further was said about it. Elmer Andersen, to this day, says, "I don't understand what happened in that situation," and I've told him several times. Moos was just afraid to face the wrath of Josie Johnson. That was the beginning of the end, by the way, because . . .

CAC: As chair of that committee, these things were unknown to me. [laughter]

GS: Which?

CAC: I mean, what happens after a recommendation goes forward from the committee.

GS: For that reason, I think that whenever search committees submit a slate, they should be unranked, that anyone of them should be acceptable. There are reasons why, at the dean level in particular, the central officers may feel there are special characteristics about an individual which may be more important.

CAC: Or a given post?

GS: Yes, exactly. The only reason I'm faulting the committee here . . .

CAC: I understand.

GS: . . . is on the grounds of not recognizing the implications.

CAC: One of the methodical prickliness of some of these interviews is that I am involved, as we have just discussed. In some of the things that I am asking about, I'm a participant as well

as an outside scholar. I've been thinking after I do fifty or eighty of these, who is going to get to interview me?

GS: [laughter]

CAC: I've been thinking about getting a whole lot of questions that I would say, "Mr. Chambers, what do you think about . . . ? [spoken in a very high-pitched voice] Then, I would answer the question, you see.

GS: [laughter]

CAC: So, we will see. There's an accumulation of these differences and these are incidents really and occasions for differences.

GS: Yes. I guess the thing that ultimately led to my resignation came about . . . I guess I have to say it straight out. I think that Mr. Moos was afraid of any strong person in his administration and would deal with it on a political basis by not keeping people informed, by [unclear] undermining decisions, in the sense that you would arrive at a decision about something, and, then, discover the next time you talked to him that he reversed it; so, you were on shifting sands, which made it extremely difficult to [unclear] and administer. He also tried to eliminate Fred Lukermann and Lloyd Lofquist from the central officer's meetings so that the presence of my office would be diminished, brought other people in who should not have had any say in some of these things, and, in general, sort of connived. . . conniving, amongst other things, with the cooperation of Stan Wenberg, who ultimately persuaded the president that I should not appear before the legislature.

CAC: This was the spring of 1973?

GS: Yes. That was sprung on us, on me. By this time, Stan Kegler was vice-president for administration . . . Don having left.

CAC: Yes.

GS: We were having a V.P. [vice-president] meeting at which the president excuses himself, and calls Wenberg out in the hall, and, then, Kegler announces that I'm not going to attend the legislative sessions that year. Well, you know, that is the last straw in terms of undermining the authority of the office; so, Lloyd, and Fred, and I decided the only remedy was to resign. We did not resign with a blast, if you may recall, but I did write a letter which is in the university archives explaining why . . .

CAC: To Mr. Moos?

GS: To Mr. Moos . . .

CAC: With copies?

GS: . . . well, accompanied by letters of resignation by Fred and Lloyd to the president and copies to Elmer Andersen, to Neil Sherburne, and to John Ingve. The latter two chaired committees with whom we had particular responsibilities. I made it clear in the letter that we were not going to announce this, that our first concern was for the university but that we felt that circumstances had reached a point where, clearly, we no longer had the support of the president, and no vice-president can operate effectively under those circumstances, and that it would be better for the university for us to leave.

CAC: One would guess this much have been a major occasion for the regents to begin conversations with Mr. Moos about his departure.

GS: That's correct. We didn't leave office until September. The news had gotten out though by that time.

CAC: Was there any relationship sideways to the Regents Professors because they are taking a parallel kind of action at the same time?

GS: I think that their action was triggered by our resignation.

CAC: Yes. This is to back up a bit. We have you resigned but now I'm going to back up and pick up. We have several minutes still—if you have the time—to talk about that first retrenchment of 1971, and the response of your office, and your work with the deans, and so forth, at that time. I don't know to what degree that came as a surprise . . . bango! or how braced the university was for it.

GS: I think we had been braced for some retrenchment but not to the extent that occurred. The legislature reduced our appropriations for staff. Of course, they'd never met our requests to meet the formula requirements for staffing prior to that; but, when they did retrench us, they did use the formula to reduce our appropriation. To make matters worse, they directed by legislative intent. They can't really force the university to shift resources from one part to another . . . that would be a violation of the autonomy of the board; but they can always say what they want you to do and there's always the threat that if you don't do it, the next time you appear you're going to be dealt with more harshly. So, in addition to the cut in the base, they said, "You will transfer the equivalent of 100 positions to the Health Sciences." That's what we had to deal with and, in that sense, it was a surprise; so, it was a much harder task than we had anticipated. In order to deal with it, we had endless meetings with various faculty constituencies and collegiate constituencies, civil service personnel which were all involved, to try to see how we could make cuts. Out of that, we actually developed a process which . . . [laughter] I have to laugh when I think of it. We presented to the Board of Regents the process. This was so complex. It really isn't as difficult to do as it appears but if you show all of the consultative process down to how you develop the legislative request and, then, after the legislature, you, then, show the process

now, with whatever you got, how you consult and channel it. Out of this we came up with the following position: that on the allocation you simply don't have time to go through all of the consultative process you did before; so, the central officers in consultation with the deans have got to make decisions in terms of the intent expressed earlier and that you, then, have to be accountable. After the fact, you've got to go back and explain why you did it. I think that's the only way you can do it.

CAC: It becomes more regularized after this first crash program in 1971?

GS: Yes. It takes a long time to develop the process but that's where it began. I think it's basically the same now.

CAC: We have a couple minutes. I would really like to hear a bit about your work after you left the vice-presidency in 1973, particularly all those professional obligations you kept in the nation. I have them here: the Science and Industry Advisory Council; your presidency of Institute of Electrical and Electronic Engineers [IEEE]—that's why you were vice-president—
...

GS: Right.

CAC: . . . the National Academy of Engineering; various advisory groups to the Defense Department. Could you say something about that professional outreach really to the nation more than the university? It's long continuing but it goes on after you're vice-president and, then, after you're no longer vice-president?

GS: My consultancy to the Department of Defense really was an outcome of the work I did during the war on these reflex klystrons for radar. The Department of Defense had a committee, which, incidentally, got staff support through New York University, and we'd meet in New York, and what they did was to review proposals for various electron device research and development. I served on that for quite a few years. That terminated before I became academic vice-president—no it didn't either. I terminated it because Fran, by that time, had come down with cancer and I just didn't want to be away so much.

The National Academy of Engineering . . . you're elected to it. You can be as active in it as you like, as Bryce, for example, is one of the secretaries for the National Academy of Sciences. I've never been that active there. I was president of the IEEE, I think, the second or third year that I was academic vice-president. That was kind of a rough year because I was traveling around the country speaking to various groups. I had one interesting experience in which I went as an exchange delegation to Russia to the Russian equivalent of the IEEE. I was involved in the Pan-American Congress of Engineering. That came about because I was president of IEEE and, hence, became a delegate to that and, then, following that for two or three years was involved. I found all of these activities interesting as I did my own professional consulting. I did them

because they kept me aware of the issues in my own field, and the progress of research, and the like. I found that it stimulated ideas for my own research and for research of my . . .

CAC: Were you able to keep on directing research all this time you were holding all these administrative positions?

GS: I had to give up my personal research after I became academic vice-president. I just wouldn't have the time to work with the students; so, I passed the baton on to one of my fellow workers but I still kept up in the broader sense. I just didn't have the time for my personal direction of the research.

CAC: Gerry, this is an interesting story. It's taken a good deal of time. We could go on for another five hours, probably.

GS: [laughter]

CAC: As I've asked other people . . . if there are things that occur to you subsequently that you would like to have for the historical record, we can come back and pick it up again.

GS: Okay, fine.

CAC: I think we've had a good morning and I thank you very much.

GS: You're welcome.

[End of Tape 3, Side 1]

[End of the Interview]

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