University of Illinois Student Life, 1928-38
Oral History Project
Gilbert Pierce Haight
Seattle, Washington
January 9, 2002

Sharon McGrayne: And I'm talking with Gilbert Pierce Haight Junior and his home 720 Seneca Street in Seattle, January 9, 2002 at 2:30. And this tape and a transcript of it are going to the University of Illinois Archives for use by researchers there. Now you were on the Chemistry Faculty at Illinois from 1966 to 87.

Gilbert Haight: Right, right.

SM: But I think we should start back a little bit and talk about your general educational background and some of your early career before we get you to Illinois. Maybe you could talk something about that.

GH: I went to Bainbridge High School on Pudgent Sound. I'm the class of 1939. Then enrolled at Stanford having failed college board exams in 1939. Decided to major in Chemistry rather then mathematics, so I wouldn't have to teach. There are some irony in that of course. In 1941 there was something called Pearl Harbor, that was my junior year, and I was engaged by the faculty to teach freshman laboratories, because all of the graduate students went off to war after Pearl Harbor. It took, I was doing so well at the teaching the professors complained that I wasn't doing my own work enough. Then in 1943 I was on my way to a Masters degree as I finished early, but the war. I was offered a position on the Manhattan Project at Princeton University by doing Chemical analysis, and the materials going into the main vector of the bomb. I was offered a position at $2250 per year, if I had a Bachelor's degree then $2500 if I had a Masters. I said, "I will come in August, so I can have $2500." And they said, "Come right away and we'll give you $2500." [*laughter*] I spent 3 years at Princeton enrolled in graduate school, but not doing anything formally towards my degree, but working 100 hours a week and often devising my own system for doing the analysis that it required for the project. I had one encounter with General Growes, who was the one running the project and I found Cadmium and some uranium tetraflouride one day after cadmium problem had be solved, and the whole assembly line had to stop. I don't know they found this little bit of Cadmium, so part or two per million. I learned later that the Cadmium was not in the Uranium Tetraflouride was used to sample the ( ). I was quite excited to know that I could find what would rub off ( ). In 1945 Hiroshima happened, and we all felt as though we really had done something useful for the war effort. Being civilians and 20 years old during the wartime was not a comfortable situation. So, at the end of the war I was walking down the street on night, one afternoon, and a lady stopped me on the way to church and asked me what I was going to do now that the war was over. And I said, "Well all my contemporaries have been abroad," and I thought I'd like to get a fellowship for teaching at ( ) and doing something abroad. And she smiled and said, "Why don't you get a Rhodes Scholarship?" And I'd only heard of one Rhodes Scholar at the time, he was an all-American football player and an all-Pro Football player. And I was 120 pound weakling in

college so I gave this fact to the lady and she said, "Oh but we have other kinds." This lady was the wife of Frank Adlelock who was the President of Schwartzmore college, and trustee for the Rhodes Scholarship in the United States of America. I applied for the scholarship, and this was in May when I made the application. Then began to trying to sort out what I could do with my 3 years of hard work at Princeton, and Princeton allowed me to take my prelims three years late, the first week in June. I had an agreement with my present wife, Shirley, that if I passed my prelims, we could be married on the 30th of June. Her mother sent out invitations the month before, of course. I thought I failed one, but the fact is I didn't. So I passed the prelims and got married on the 30th of June and came to Seattle for 6 weeks for an interview. Then went back to Princeton and I pieced together 5 project reports, with stamped "Top Secret" with my thesis, and it's never been seen since. Then in a month later, I was allowed to present my ideas for further research to a faculty committee. And it was a hot September day, and they chose to give me my degree and go home quite early. Then I took this supplementary transcript to my Rhodes interview in December. The first question I was asked was I had all the requirements for the doctorate done in the summer, "What else did you do Mr. Haight?" "I got married and took 6 weeks off to run to Miami for my honeymoon." It was a very interesting time, because I was one of 19 candidates for the final spot, in the Pacific Northwest. And all the other 18 were war heroes, and I was a civilian. So I didn't think I really had a chance at this thing. I enjoyed myself and that turned out to be the way to get a Rhodes Scholar in that day. And I was successful, and we spent the year at Ohio State University, where I was a post-doctoral fellow. Then a year at Oxford as a Rhodes Scholar, where Linus Pauley happened to be the visiting professor that year. We got to know him very well, although I didn't work for him at all. I stayed only one year at Oxford because I had my doctorate already. I was offered a job at the University of Hawaii on a very cold, rainy day, in England. By then we had a small baby, and we moved to Honolulu. My first born child in her first year of life visited Oxford, London, Paris, New York , Boston, Seattle, and Honolulu [*laughter*].

I was very fortunate in my choice of first jobs because there were two visiting professors at the University of Hawaii, and as it turned out every year and the two that they year that I took my job there were Hubert Allay from Princeton, who is the world's premier lecture, demonstrator, by the time he finished. And he was just getting started on being famous that year. Then Ross Baker, who is the department chairman at CCNY was a very fine scholar, spoke very careful words that were always meaningful and you know, had a real heart. So Allay was such a showman, that was the year I was the sorcerers apprentice. And Hubert Allay had a book that were demonstrations that were for students to handle while he did it. And I still have a copy of that old book. He wanted all of my students to see all of his demonstrations, so he got a student assistant to set out all of his stuff on my lecture table just before I went in there of course. He didn't do anything about telling me what I should do, or anything, and most of my first attempts of demonstrating were pretty painful. But, in fact, a lot of my students were GIs back from World War II. One who was probably old enough to my father stopped on his way out one day and patted me on the should. He said, "Don't be upset when your demonstrations don't work, we all appreciate your trying" [*laughter*]. So the student was consoling the professor. But I did learn to do these things, and I got very fond of doing them. This was sort of a benchmark of how I became a teacher and how it's very interesting that one meeting Hubert Allay talked about doing graduate work at Princeton at a corporation, or maybe doing it at a University of Hawaii.

He told all about the things they do at Princeton, and I was just 2 years away from that place, and I had never done any of these things. So I asked him if you he could explain this. And he said, "Oh yes, you were there during the war, and there were about a dozen of us in this category of being graduate students but not having any time to work at it." And he said, "We decided that if a man's supervisor could guarantee the giving a degree of Princeton's reputation no real harm we would get him out of here fast." That's how I got my doctorate without going to graduate school. I only stayed in Hawaii one year. I had severe asthma and I didn't like swimming in the water. But, the Rhodes Scholarship did make it possible for me to find jobs, and I know to George Washington University in Washington DC for 3 years. And in the middle of that time I was almost summoned to Illinois to look into an analytical Chemistry job, because supervisor at Princeton was one of the 3 primary workers in that field. I was then so fond of teaching the freshman that I asked someone at Illinois when I arrived at Illinois that, "If I get this job can I teach the freshman." And that turned out to be an exciting pronouncement for the people then at Illinois trying to, in my meeting with the chairman Roger Adams, who is a very fine and very rough character in a way. He sat me down and said, "Well Haight I hear you're interested in teaching? And there's something you should know. If we hire you, you're by definition a great teacher, and you'll never be promoted for it." I had a feeling that I didn't really fit in at Illinois at that point, and I was a little worried that they might give me the job, but I needed a better one then I had. But they came over and I went over to George Washington and a year or two later I was offered a job in Analytical Chemistry at the University of Kansas, where they were happy to have me teach the freshman. I had two really wonderful years at KU, and then out of the blue the department of Chemistry and Southmore College, where two of my interviewers for the Rhodes Scholarship were ensconced as President and Pro-Vost.

SM: That is Ed Lot and?

GH: No it was Courtney Smith and Gill Stop. I went for an interview and there seemed to be a little tension about everything, but the Chairman of the Chemistry Department didn't get along with the Chairmen of the Biology, and was unhappy that the Biologist were nice to me. But, I took the job and I was very excited by the job. Schwartzmore students had college board exam scores twice what I had. And I resolved I was never going to get in my students way. They were all twice as smart as I was. I was later sort of vindicated at a this graduation Physics major who had taken two courses in Chemistry. He came up to me and said that he wanted to tell me that his greatest academic thrill at Schwartzmore had been my second course, my inorganic Chemistry course. I said, "Well come on France, Physicists don't like inorganic Chemistry that much." "Well it wasn't quite that way," he says, "I discovered that in your course that I could go beyond my professor's knowledge of the subject." [*laughter*] I've never let the young man off the hook. I think we were both pleased at how it turned out, he's a Professor of Physics and is about to retire. It was that way, I had students that I couldn't touch in their abilities. Paul Munskie in Mathematics asked me to wait a minute before I kicked him out of the lab one day, and he multiplied to 5-digit numbers by stroking his chin, singing a song and writing down the answers. But I never could seem to shake a problem that the department chairman had with the way I was approached. He felt that because the President had gone over head, so he was disappointed. Things were never quite right, and my wife surely predicted that we would be great friends when we retired, and it worked out that way. We played tennis and we got along fine as soon as he

didn't have to view that person inflicted upon him. And I was given tenure after 5 years, such a professor when I was hired as an associate professor. There was never any sign of me being promoted to full professor. I had a conversation in 1965, well 64 sorry, about promotion and I just resigned. I went off for 9 months and 2 days to Texas A&M University, which had other interesting problems. There was very interesting to go from this very elite, small college to place that regarded itself as the best military school in the country. They bragged about having more generals in the army in both World Wars then the military academies. They all belonged to a core, an army core which was a student organization and wore uniforms. Until the second semester of the year I was there when they were given permission to either join or not to join the core, and half of them resigned. Quite interesting. I didn't not get along too well ( ). In the middle of that year Illinois asked me if I would come and advise them on a problem they had. They wanted to name professor Ted Brown as head of the inorganic division, succeeding John Baylar, and Ted said he would take the job if they would take the freshman courses out of the inorganic ( ). So I was invited and by then I had become quite well known, I gave lectures with visiting scientists at many small colleges and high schools for the American Chemical Society. Hubert Allay had sort of teamed up with me and made me well known this year. So I was actually invited by Ted Brown to visit the department and discuss how they should handle their freshman courses. After 3 days where I was asked to give a seminar and all the usual things that candidate was asked to do, I was saying good-bye to Ted Brown in the airport and I said, "This wasn't a job interview wasn't it Ted?" And he said, "Oh no, we're talking to lots of people." And I said, "Could you tell me any one of them," because they weren't people ( ). Well he said, "We talked to Bob Flynn." And Bob Flynn had just taken presidency requirements. So I said, "He said no, didn't he?" [*laughter*]. And I had an offer on my desk when I got back to Texas. It was really a high point of my life. Well, both the fact that I got to go there after doing what I couldn't be promoted for, and they were never really quite sure what I was there for. I had a meeting with Herb Carter who was chairman of the department at a Scientific meeting to discuss, and he made a flat out offer, and I gritted my teeth and said, "I can that much if I stay in Texas," and he gave me $1000 more. It was still only $19,000.

SM: And that was 66?

GH: 65, to 6 I was doing that. Then we drove to Illinois from Texas. Had an interesting time with housing. We had bought a house in Southmore just before we had left, and that was being rented, and then we bought a house in Texas. And Shirly went to look at the house in Urbana, that was a period that we owned 3 houses, or they owned us. I don't know that that's too important a story. We had 6 children by then, and my daughter, second daughter went to high school in Schwartzmore for two year, Texas for one year and Urbana for one year, and she never quite forgave us for all this moving in her high school years. Illinois was very exciting and it was interesting. Having not had that previous experience with an attitude towards teaching, it just wasn't important to them to have someone on the faculty who was not producing significant research and making the department well known. There were rules for promotion were that after 2 years it's up or out if you're not known nationally for your research. And after 5 years you've got to be known internationally. They tried to bet on their choices and they turned certain people, they didn't go out hiring folk just to fill the tenure track. And so I had a little bit of a

feeling that when you joined Illinois you joined the Yankees baseball because you were expected to perform very well. I was fortunate at the time I joined, I was full professor, in the mid 40s in age, and I had just written a couple of textbooks, and that was sort of appropriate. It wasn't the sort of publication you can count, count as research. They liked the fact that I was known outside the department. One of my most interesting experiences regarding the teaching versus research problem was I think I had been the between 5 and 10 years when Professor Katofsky invited me to lunch. I could tell something was sort of needling him. About half way through lunch he sort of burst out with information that he had just been looking at the annual reports, the faculty. For the last 3 or 4 years, he had found that my name was first, second, or third in number of outside lectures given. And he said, "When you go to another school and give a talk, what do you say?" [*laughter*]

SM: What did you say?
GH: If he was so unhappy with the way he put the question that I almost felt sorry for him. I said, "Well, Herb, I went to Coe College over in Iowa last weekend, and I gave 2 talks, that I gave one on our teaching program which they were very much enjoyed, and then I told them about my research." "Research? Have you published any papers since you've been here?" I wasn't supposed to. I said, "Well maybe 50." "50 papers!" He wasn't aware of it and he was a little bit ashamed of himself I guess. Yes, I have a very interesting sort of little project going, which I can take a freshman into the lab and start on the project and opened it. So, it was a really a wonderful trial. I did get to do the thing that I do best. We had all kinds of innovative programs using televisions for teaching, turning most of the teaching over to the teaching assistants, who were far better than the professors.

SM: Maybe you could define what the position was, and what you did, and the size and so on?

GH: I asked what I should call myself and they hadn't the vaguest idea what they had done. Herb Carter said, "You just make up your own title." So I decided to call myself Professor of Chemistry and Director of the General Chemistry program. It turned out that this was totally unofficial. No one ever picked up on it and made it my official title. So that later one when I got an Associate Director of the General Chemistry program, and when I left this Associate Director had to remain Director, but he also had to be made a full professor. And the administration wouldn't allow for two promotions [*laughter*]. And so Steve Zumdal had to be director without being a full professor for a year, then he could be promoted to full professor. It was interesting, they ended up always doing the right thing, just not in their experience to know quite how to handle this.

SM: So what did, tell me how many courses did you supervise, what did you do with the TAs, students, and tell them.

GH: We had in our freshman Chemistry program, a majors course, which was always taught by one of the faculty. And it was a full time thing. There were usually 3 members, with about 250 students in that course. It was a better course then I used to teach at Schwartzmore, which had better students, but they weren't all chemists. Then we had several courses for the different

kinds of students who needed a year of Chemistry. We had Chemistry 101, which when I first got there it was for everyone other then the majors. 102 was the second semester of that course. We eventually ended up with separate course in agriculture for nurses, two semesters then. We divided the non-majors course into two parts. We had a section for biologically oriented people, like pre-meds, and science people. We had a physically oriented course for Engineers. A lot of people who were going into the other disciplines did take the majors course just for the experience of having what they called the better course, the stronger course. The probably most successful thing was the biologically oriented course which turned out to be different from anything they had before and we got the biochemistry people to organize the course creating materials for it. When I first started teaching there we had a program that was a university wide program where the students evaluated their teachers. These were very trying for most teachers who were all childhood prodigies and not used to being severely castigated for what to do. And freshman chemistry for non-majors was not a ( ) course. They sort of vied with first year English for the most popular course, simply because they were required whether you were interested or not. We noticed that these student evaluations were always thumbs down on the professors who taught the classes at 350 a crack. The TAs who had been in groups of 24 were always, almost always highly thought of. Students didn't like the course. Our ultimate solution to this problem was to literally turn all the teaching over to the TAs because as time went on we developed the use television for doing lecture demonstrations, so the teachers wouldn't have to spend time setting it up and working it. We found that by making TV tapes of what would be lectures, we could turn these, we could have the TAs show the tapes in four classes a week, instead of 2, 2 classes of lecture and 2 classes of assistance. It worked like a charm. It just, we had very good graduate students who were mostly flattered to be asked to teach. I had some excellent chemists tell me that the best part of their graduate experience was teaching, and that was, I didn't say that too loudly to my colleagues, who thought I worked them too hard.

SM: How many TAs did you have?

GH: About 125. 3,000 in the various courses.

SM: Did you teach any of them?

GH: Yes. I tended to fill in where there was a missing hole, and the majors course was taught by the traditional ways of lecture or something. They generally liked teaching that course. I did find out however that when I was first there Steve Zumdal was a graduate students, and was one of our TAs. He came back in years later as the deputy director, and he took on the majors course, and he was the best teacher we've ever had. Kids who didn't like the subject, loved Steve and they called him Dr. Zumdal. He organized the student affiliate of the American Chemical Society, and got more out of the kids then anyone I've ever known. It's because he had a knack for telling the students at the beginning of a lecture of what he was going to tell them that was important. They believed it, bought it, and worked at it and were successful. It was quite an interesting thing. We learned quite a bit about teaching from the students, and the TAs. But I was very pleased with the program. Steve once told me that it was really disappointing to have students come in and complain about a TA that is not doing well, because most of them

seemed to do so very well. It seemed ashamed that a few students had to have a bad experience. For the program that size we really did very well.

SM: You won a number of awards for teaching Chemistry. There's a Chemistry Education by the Manufacturing Chemist Association?

GH: Right.

SM: And by the American Chemical Society there's on in 76 and 79 and then you were the President of the Association of Chemistry Teachers at one point?

GH: The Illinois Association of Chemistry Teachers.

SM: Illinois Association.

GH: That was a lot of high school teachers and first year college teacher belonged to that. Then they had annual meetings where they showed off their demonstrations. You know I went to one meeting the first year I was there to see what this association was all about and they made President [*laughter*]. So pleased to have someone from the big U.

SM: Yeah right. Would this be a good time to talk about your textbooks?

GH: Well yes that was before Illinois.

SM: Yeah.

GH: I don't know if that's what. . .

SM: Well you started writing them before Illinois?

GH: Yeah, yeah. I guess the Chemistry one was used first at Illinois, but well I started writing texts back around 1950 when I was asked to teach a course at George Washington in Physical Science for the non-Science majors. I had a lot of difficulty with it because it was going to contain elements of Physics, Chemistry, Geology and some mathematics to help you do these things. The Physics Department would have none of it. I was asked to teach the course, and they said, "No one who is Physicist can teach Physics course." And then they ran short of TAs one term and asked if I wouldn't come over. [*laughter*] I had to have a very humble and humorous perspective when these educational labels. I gave this course and, I remember making up an assignment that I thought would be interesting to the kids to, we had some lessons on the scientific method, and what constituted a scientist was the use of the scientific method. I asked them to go home and Christmas time and write and essay on applying the scientific method to something they wouldn't call scientific. It was quite a bit of fun, and I got an essay written by a would be poet on applying the scientific method to writing poetry. I started felt when I was reading this paper that this was something quite special. I went over to the English Department and showed it to the chairman of the English Department and he rolled his eyes back and said,

"Mr. Haight neither you nor I will see a better piece of undergraduate writing. My little assignment.

SM: Do you remember who the students was?

GH: Yeah, I knew who the student was and I asked him if I could keep a copy of the paper. And he demerited, he didn't really know how he was going to feel about that period of his life later on, but he finally let me have a copy of it. A week later we had a small discussion of Pascal and his work around the barometer in class, and the same students raised his hand and said, "I think that there some things about Mr. Pascal that the rest of you should know." And he got up and gave us a little lecture on Pascal's theologies [*laughter*]. Then a week later he dropped the course because he had gotten out of it all that he had wanted to.

INTERRUPTION.

GH: The only thing that I could get out of this profession is to maybe write a paper, and I did called, "Physical Science from an," "An Introduction to Physical Science from Atoms to Galaxies." That was probably somewhere about 1964.

SM: That was McMillen?

GH: Yeah, and it so happened that McMillen had another textbook exactly the same problem they were defending first off, against competition. So I think I sold enough copies to get $2500. It wasn't a bad book. I had some rather good people read it and enjoy it. I didn't make a lot of money, and then in 1961 I was still at Schwartzmore College, and had a sabbatical leave, and we went and we spent a year in Copenhagen. With our 6 children in or our Chevy station wagon. I met, the Danish language you need class for visiting people, a young fellow named Harry Grey who is now one of the—

SM: A professor?

GH: Really great professors who entered—

SM: CAL Tech?

GH: CAL Tech, where actually David Baltimore is also. I heard they're a little odd. Harry was on Post-doc in Copenhagen, and we met in this language class. Both irritated each other because Harry wouldn't let anyone else recite. I always mentioned my six children when I said anything Danish. We've decided that in just getting to know each other that we should write a textbook. He visited me in Schwartzmore a year later and we started in. The year before I left Schwartzmore, I took sabbatical leave and just stayed in town and worked on the book in 1964, and we published in 1967. It turned out to dramatically change the way we taught Physics and Chemistry, but it was too hard for the students. We sold a lot of copies the first year, but it was just too hard.

SM: When you say it changed the way we taught Chemistry, who did you mean by we?

GH: The profession.

SM: From what to what?

GH: Well Harry was, Harry was a star and he had actually written a little small volume on Quantum Mechanics for beginners and we incorporated that in our text, and a lot of the criticism was from people who hadn't taken up Quantum Mechanics.

SM: There's a lot about molecular particles rather then valence molecules.

GH: Right, that's right. The book was revised three of four times, and we were with Dickerson from UCLA joined up after the first edition. Then they dropped—

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GH: It's not up to date enough ( ).

SM: So the first edition it was basic Chemical principles of Chemistry and then it became Chemical principles.

GH: Chemical principles yeah.

SM: And they were both with Rick Nolan? No, with Benjamin?

GH: Benjamin. Benjamin gave a wonderful party at an ACS meeting to launch the book down in Florida. And, he held a party where they had the gambling, play money, with Harry's and mine picture on the money [*laughter*]. People still thank me for the party. And then a lot of visitors of that party found there's in the book to tell us about it.

SM: Now you sold over 50,000 copies the first year?

GH: Yeah.

SM: And 2,000 the second?

GH: Yeah.

SM: And yet it still went on three editions? Explain that.

GH: Well it was revised.

SM: And simplified.

GH: And Dickerson took over the writing workbook. Neither they nor I were very keen on revising what we wrote. And it did pretty well, and then the second one, well the first and second edition ( ). And the last edition took the payroll of them all. But I sort of feel I got ( ) and tuition.

SM: For your children?

GH: Financial.

SM: There were freshman Chemistry books published during the 60s.

GH: Yeah, yeah.

SM: What was going on?

GH: It just, well the suggest matter was changing very rapidly and there was a lot of disagreement on over what should be included. And one of the better books said, I am really a first class treatment of some of the dynamics. And the first text, and then people who liked that sort of thing they invested well. Ted Brown is still publishing editions at this point. It's a little disappointing, not make it big [*laughter*]. All of the this is experience.

SM: Can you talk about any about what life was like in Champaign – Urbana during that period? It was a very tumultuous period.

GH: Well there were other things they had a gift for being asked to be on committees no one else wanted to be on. And especially if they dealt with undergraduates and their problems. And in 1968 I think it was on successive days I was polled by Gary Prolerson to ask me if I wouldn't chairman of the student affairs committee, which dealt with all the unrest activity that was going on. And I was on the committee, but I wasn't chairman at the time. And then the next day, the campus leading Communist called me and asked me the same question, and I was a little disturbed [*laughter*], what sort of a face I was presenting at home. And so I became chairman of the committee. And for a period of a very restless time is when Kent State occurrence, I was on the front page of the *DI* everyday. And if there was something that went unanimously in the student's direction why my colleagues were all gentle ( ). And we had some very interesting things happen. I went out on the campus on the day that a monster rally, several thousand students were giving, awarding tenure to the two communist political sides. And in the midst of all this uproar somebody turned, torched a flag. I had to run down the pole.

SM: An American flag?

GH: Yeah, kids didn't like, they all packed up and went home. Which was very interesting. Then one night I was told 11 ( ) cocktails was throwing on the campus. And not one of them ( ).

SM: Good Chemistry students?

GH: That's right, Dr. Haight's Chemistry course didn't teach anything someone could do ( ). Well it was very tense, and everyone was just exhausted by the end of the spring semester. Then I was ( ) badly. And when they came back in the fall, they were still tired, and all the student leaders were no longer relevant. And that was a terrible for them. We just sort of gradually got back to business. But it was very, very tense time, and it was interesting to sort of—

SM: Now that was the Vietnam war? What about Civil rights, that came along very quickly afterwards.

GH: One of the biggest shocks I had at Illinois was to discover in 1967, when I first wen there, that it was more so then in the South. I had black teaching assistant from Fisk University who was the best teaching assistant that I had at the time. Every term he would, students would just get up in his class when he walked in the door and asked, "Where do I go to change sections?"

SM: Into his section?

GH: Yeah, and I developed a method for talking to these students. I sympathized with them because they were giving up the biggest TA I had.

SM: Oh, they wanted to get out of his class?

GH: They wanted to get out of his class because he was black. And I said, it's really unfortunate you have to change because you got the best TA I've got. I don't know that that had any effect, but that boy is, in 1967, could not go over to avenue with his colleagues and have a cup of coffee.

SM: Because the restaurants wouldn't let him in?

GH: Because the restaurants wouldn't let him in. Then in 1969 Illinois got leaned on for having such a small number of black students. The population was normal, or 11% of the population of black students and it's only 3 or 4% at the University of black. And they organized what they call the 500 Program, and just scouredd the country for 500 black students, which they showed, they even brought in some gang leaders, because they showed promise for doing good things. I was at, let's see where was I? I was out of the country when these black students came early for orientation. They put them up in the best dormitory facilities that they had and then came to school and kicked them out. ( ) dormitories to black students at the beginning of the summer.

SM: Where were they housed?

GH: Well wherever they could. Some of them were staying in halls and in the dormitories and they had a protest. They occupied the Illini Union for several days, and it was a terrible impasse because the Chancellor wanted to go into talk to him and his advisors were ( ) because they

were afraid for his life. The kids were afraid to come out because they heard there were cops with dogs and things. It finally got resolved with maybe a chandelier got swung on a little too hard. I just read accounts of it because I was in Israel. Got back after things had settled down and the term started. It was quite interesting, I met a black student from Philadelphia who lived in the neighborhood where I went and gave lectures. When he discovered I knew his neighborhood he sort of patterned after me and followed me all over the place, because somebody on campus that he could identify with. Very curious sort of thing, but I think we ended up handling this very well, almost all the 500 got degrees. Took them a little longer then some of them. They were actually teaching freshman in high school Algebra, because they students had ( ). They had a similar problem at George Washington, back in the 60s when they integrated the schools in Washington DC. Kids came to George Washington, they should have never had a black student. They did badly because they just weren't prepared for the George Washington. They didn't get help properly because they were so embarrassed of doing badly. Those who stuck it out caught on and did very well their second year. But you can imagine a kid who is on top of his class, and coming in and failing out of George Washington just because he was black. Saw a lot of changes in my 45, 50 years of teaching. All kinds of expense. Women. Sophomore year in college, the Dean of Women would not let her girls take Math, Physics, and Chemistry all at once, it's not lady like.

SM: In the 60s?
GH: In the 50s and 60s.

SM: 50s and early 60s.

GH: I had girls under that handicap become chairmen of Genetics at Yale, first graduate student in Bio-Chemistry at CAL Tech, had a directorate of the National Science Foundation and that was for Chemistry.

SM: So maybe they could handled all three.

GH: Yeah.

SM: You had some activities with the American Chemical Society and some other professional organizations, do you want to say anything about those?

GH: Almost from the beginning, even at George Washington University, we're two in the same town as the head of the Chemical Society, had offices, well I became a teller when they found out that I could give interesting lectures to beginning students. So for about 10 years I just ran around the country giving lectures to high schools and then advising the teachers. I was—

SM: On behalf of the ACS?

GH: Yeah. And I've got a couple diplomas and thanks for that. I enjoyed that a lot. But I've never, once I was asked to visit Brambling College in Louisiana, which is an all black school. I

had a demonstration on conductivity of things and I showed them that pure water would not conduct electricity. And then I wanted to show them tap water, which would conduct just a little bit to make my light glow, and didn't get any glow at all with their tap water. And I said, "This has to be the purest water I've seen." And 500 smiles came over their faces because they were very proud of their deep wells and their water [*laughter*]. I was able to get perspective on how the black professors and students related, being the white ACS. Educational both places. I visited a lot of Catholic schools. Got the feeling that the nuns were really on the ball with their teaching. I suppose maybe I shouldn't talk about this publicly. But most of the time they, the brothers were just not quite so sure themselves that the sisters should really be into what they were doing and proud of what they were doing. Well I got to mix with the professional in probably a greater degree then most people can find themselves in confining themselves into teaching freshman; I did not really confine myself, I was always a member of the graduate college, and I had 4 or 5 Ph.D. students. That's not a lot, but that's some. I always had some research going, and papers.

SM: Maybe you should say something about some of the fields, so of the areas that you've published. Papers and things.

GH: I was on the Manhattan Project, I was introduced to a new technique of analysis, called polarography, which was really involved electrolysis running electric current through solutions, and making measurements with it. Sort of got in on the ground floor with the new technique, to the point where I was able to just see what happened when you tried this technique on elements that hadn't been tested yet. One of my first results was that I found I could do something electrically, that I then sought to do was Chemical in agents. I was not being very successful, I wanted to do a reduction of chlorate ions which are very difficult to reduce normally, and I had a catalyst which would enable me to reduce it electrically. And I tried to find a chemical agent that would use this catalysts, and I wasn't having any luck at all when a student walked in and asked me what I was doing one day. I told him and showed him some things. He said, "Why don't you try ( ) chloride for the chemical agent?" It's probably the only reducing agent he'd heard of. I showed him my electrical data and showed him why it wouldn't work. Then the next day when I came into the lab, there was the same. He said, "I want to show you something Dr. Haight." He poured together the two things that I knew would work and then I added a very concentrated solution of stimus chloride, and the solution got hot, gave off chlorine gas and bubbled furiously. He said, "I think it reacts." [*laughter*]. Well that system turned out to be very complicated, and I probably worked on it for 40 or 50 years off and on, and learned a lot. It was exciting to find something that was novel, that people knew was hard to do and no one could do it. And I got lots of requests to ( ) this publication. This led to a general interest in what we call oxidation-reduction Chemistry. I found I could study reactions where I take a colored substance and have it gradually change color while reacting and we can just monitor this machine and do some mathematics on the rate at which the chemical mechanisms were ( ). I did get one reviewer of one of my papers, saying, "Oh not another chromate oxidation ( )" [*laughter*]. I really got so I enjoyed being put down more then . . .

INTERRUPTION.

SM: Tell us about Roger Ader. That's where you say it's Roger Ader. Yes you did.

GH: I don't think so.

SM: About teaching versus research.

GH: Sure.

SM: At the university.

GH: He was very instructive.

SM: Well he was honest.

GH: Yeah. He was the straightest bit of talk I ever got from a department chair. So, Speed Marble had gone Arizona to work by the time I came. But he came back a lot, and I got to know him quite well. I ran into him at an international meeting in Sharazz, Iran. That's the middle 70s, and he was quite old then, and he was large and he was having a little trouble getting around. I walked up to him in a lull in the proceedings and said hello. He remembered me, and I said, "How are you doing here in Sharazz." And he said, "You know, if I knew it was so far, I don't think I would have come." [*laughter*]. He never gave up his farm boy accent.

SM: Wisconsin farm right?

GH: He dropped the nickname Speed, because when he came to Illinois he felt he was so far behind the others that he had to work very fast to catch up, and did. There was a period there, and I say in the Adams and Marble, and a few on where individuals really stood out worldwide, probably more than they do now. We always thought that 95% of all the Chemists that had been productive were still alive. And I don't think that's changed. I think the numbers have just increased so much that it's hard to know where you are.

SM: Thank you.

GH: I've been very fortunate.

START TAPE 2 SIDE A.

SM: Dr. Haight in his apartment in Seattle and the date is, we think it's the 16th. And we thought we would talk a bit more about Mr. Haight's involvement in the Manhattan Project and it's aftermath.

GH: Well in 1943 I was offered a job doing Chemical Analyses at Princeton University for the Manhattan Project. Usually the analyses were on materials involved with the mining of uranium and the conversion of the ore to uranium metal. We would analyze by strictly wet Chemical means, these materials largely for elements that might inhibit the nuclear reaction that was

desired at the end of the process. We had standards of purity that were at least ten times the standards ever used in large scale work before. So we had to largely work out our own method for doing these analyses. Then our results were compared with the results with spectroscopic techniques, which use very small samples and are often not representative. I spent about 100 hours a week for 3 years doing these analyses and I was able to invent enough of my own to get a doctoral thesis out of this work. So I learned after the fact that the staff at Princeton had a meeting and decided how to treat about a dozen of us who were working on the project at the right time to being in Graduate School. They came to an agreement that if a man's supervisor would guarantee that giving him a degree would do Princeton's reputation no real harm it would get him out of here fast at the end of the war. That's how I got my doctorate without going to graduate school [*laughter*]. After the Hiroshima explosion, the House of Representatives passed a bill with no dissent, to put all the atomic energy under the control of the military. There were about 10,000 of us doing scientific work on the project. We wanted to have civilian control of this new source of energy. We each contributed $10 to a fund to start a lobby in Washington DC. The Senate appointed a committee to look into this matter without going full speed ahead as to how. It took about 6 months to persuade Senate that this shouldn't be entirely under military control. We got an Atomic Energy Commission with two civilian members, and one military member. It was a very important lesson in how to behave in a democracy if you have a cause and knowledge. It took a whole lifetime, most of the senators were much for the House point of view at the start. Most all of them came around to our point of view by the time it was over. The ( ) were the atom bomb, it was a really important point in my teaching because I could sort of add a social information and to the discussion, and it was always an interesting point. The students were very fascinated by this new development. I think that the matter of public opinion changed in dramatic ways in 20 years or so, before I came to Illinois. Such that when students were protesting the Vietnam war at the end of the 60s at Illinois, they found out that we were making TV tapes with atomic explosion pictured as part of our Chemistry program. They were just outraged. A delegation of students came to one of our taping sessions where I was going to show pictures of the underwater tests that sort of became NATO. Where some ships of the line and US Navy were sunk. There was one bombed on the whole fleet. The students came to protest the screening of this even, and were sitting there watching the shock wave go through the Bikini Lagoon from the underwater explosion. Their reaction was how beautiful. And their reaction to the reaction was quite interesting, they were upset of course that they saw beauty in what they thought was a devilish situation. I was just very interested in that reaction, I used it to of course fix in the minds of the students how much energy was involved in the process as compared with a simple thing like a fire bomb. The factor was about 20 million. But, this never ceased to be a topic both with an interest scientifically and a great interest socially. It was stimulating to both teacher and student.

SM: How had you felt about the bomb?

GH: The reactions we had to the bomb as young people, not at the front, was thank goodness we actually did something for the war effort. We'd been rather badgered by housewives whose sons were at the front, and for being young and being at Princeton during those years. But, we were very glad at first to have done something. Then over the second bomb and casualty figures, 100,000 per bomb came in and we began to sort of you know, make up stories that there were

10,000 of us, that was 10 people killed for number in the project. We were a bit sick, but I think it's something quite normal, a reaction. Friends in town found out that we had been working on this and started giving us a wide birth, frightened people, it was terrible. It was generally a very frightening experience having the atom bomb. And I think probably as frightening as anything I've ever experienced, since the World Trade Center this year. So then we became rather idealistic I think. We thought what a wonderful new source of energy this can be. And we really hoped that this would solve most of the world's energy problems. It did solve some, but then there were problems of course with disposal of the used materials, and then there was the Cold War, which I think our having the atom bomb kept it from being used. Both the Russians and the Americans were afraid to risk what might come back at them. But, that doesn't make you awfully comfortable. So it's been one series of emotions really, and intellectual reactions to the same thing. I've been a member of the Federation of Atomic Scientists since 1945. Tried to be supportive of their work, which was key.

SM: Then you were chairman of Campus Committee during the Vietnam War Era demonstrations. You talked a little bit about that last time, but maybe you could tell us some more about that. That was also a time of political upheaval.

GH: I was hired at Illinois in 1966, specifically to take over the program for teaching freshman Chemistry, which had about 3000 students a semester. I was supposed to just teach, which was not the usual place for the faculty appointment was granted tenure only from the beginning, well known Chemist with particular field of research. So, they made me a member of the Graduate school, and I could have graduate students, and I did have 4 or 5 doctoral students in my time there. But, since I had been brought in to mainly educate and teach it seemed that people thought of me when something social came up and the administrative problems in students. So, when the troubles began with strikes and protests, I was called one day by the Chancellor. Well first I was made member of the committee that was called the Students Affairs Committee with the Illinois Faculty. I was just one of ten committee members to try and deal with the problems students were having. Most, part way through the first year on that committee I had a phone call from the Chancellor one day asking me if I would consider being chairmen of the committee. The next day I had a phone call from the leading student protester on campus asking me if I would chairman of this committee. I was just a little disturbed about what sort of a face I was showing, but I accepted the appointment. I had a very interesting time. I was not big on legislation and politics. It occurred to me that it might be a useful thing if the committee had a meeting with the administrators and just got acquainted. So I called such a meeting, and right away the students picked up on this being an illegal meeting because meetings, official meetings were supposed to be public. I was exstoriated on the front page of the *DI*. People were wondering they thought I had been quite a nice person and I had done this. The voices of protest were very strident, and they would pick up on things and worry perhaps more then they should have. But, after that we got down to business and there were a series of hard events. It ended at one point with the campus being surrounded with National Guardsmen who were mainly 18, 19 year old boys with rifles. There never was once approaching a line so I could go home, and I heard a young boy say to another young boy, "Is that a student?" [*laughter*] Because they were only anticipating shooting students, and by in large these things were sort of disruptive of just general peace and

quiet around the campus. They did have a lot of evening meetings, protest meetings. I remember one in particular where there were several thousand students on the Quad. Speakers awarding tenure to two of the more radical Political Science professors. One point in that rally someone lowered a burning American flag from the flagstaff, and the students didn't like that. They just packed up and went home, and I thought that was a very interesting educational experience for the faculty as well as the students. I never saw any comment about it in the press. But, that's what happened and it showed that there was some things the protesters could over do in terms of their ( ).

Another sobering incident occurred when 11 Molotoff cocktails were thrown the campus in the evening, and not one of them went off. This time the press did blame it on me.

SM: [*laughter*] As a Chemistry instruction?

GH: Because my Chemistry course didn't even teach them to make a decent Molotoff cocktail. The end result was that final exams came and people did badly at them, and everyone went home for the summer. I think that the most characteristic thing one could say about the next term were that the people were just exhausted. The momentum had gone out of the movement, and the young campus leaders were no longer as relevant as they had been, and that's a hard thing when you're only 18 or 19 to become irrelevant. I don't think that we had any really definitive results that relate to legislation. I know that the reputation of being a protester hit my family. One of my son's teachers at the high school went out to California and was asked by someone who knew us, if he knew the Haight family in Urbana, and he said, "Yes they're a bunch of radicals protesters." [*laughter*].

SM: Pride rush

GH: Yeah it was largely because my son had long hair. But, it was an interesting assignment, and I did have to tread my way lightly when the *Daily Illini* had my name and the committees actions on the front page of almost every issue for a while. If there was a unanimous vote for something the students would like my colleagues and the faculty would get on my case. I would explain that the chairmen doesn't vote on any events.

SM: Did it have an effect on your career?

GH: I don't think so. I think the big effects on my career on putting the teaching first happened before I got to Illinois. Did I tell you about my interview early on?

SM: With Roger Adams?

GH: Yeah.

SM: Yes.

GH: Because they had of course not hired me when I asked if I could teach the freshman, and then later hired me because I had done it so well. There always was a bit of puzzlement on the

part of the researchers, and sometimes irritation because I made the graduate students work to hard at teaching. Took time off from the research. But I was very pleased that several of the very best graduate students we had, and who were TAs told me after the fact that the teaching was the best part of their graduate program for them. I think we did have an extraordinary group of TAs, and a very good program for teaching freshman Chemistry. I now call myself the oldest living freshman chemist [*laughter*].

SM: Thank you.