INTERVIEW WITH D. RANSOM WHITNEY

Q. Tape 1, side 1. This is an interview of D. Ransom Whitney on first tape May 8, 2003. Interviewee is Tom Willke.

A. I was born November 27, 1915 in East Cleveland, Ohio. After high school, I went to Oberlin College, majored in mathematics ending with a Bachelor of Arts Degree in 1936. I went to Princeton University from 1936 to 1939, with a major in mathematics and a Master's Degree (all but dissertation). I married Marian Whitney, took a job at Mary Washington College in Fredericksburg, Virginia. In the early part of 1942, I received a letter from the Navy asking me if I were interested in a position in the Naval reserve, where I would be teaching Celestial Navigation. I was well aware that this offer was subject to change depending on the course of the war. I resigned from Mary Washington College on March 1939. I was approved. First of all I was appointed as an ensign, provided that I fill all of the requirements after that. And the first thing was to go to an indoctrination school for officers in the Navy. This was in Chicago. It was accommodations for me separately and for my wife and child. They lived in a hotel while I was there. Following the indoctrination part, I was assigned to a similar station, that is in teaching people at a beginning school for newly appointed ensigns. These were ensigns. There I taught celestial navigation to these people. They were not exactly interested in celestial navigation, and after a little bit I found out why. These were lawyers who had joined the Navy. They were reserve I should say. And they found out that they were destined to be on a small ship that carried

soldiers, marines to an island, and since the only distances from one place to another was a very short one, they saw no reason for celestial navigation. When the Navy wanted recruits, new recruits to come in who knows something about the sea. They like to send them out so they can get a taste of sea water if you will. And while it was in between times that I was teaching celestial navigation, I was put on a yacht that was obtained. The Navy needed small vessels and they confiscated yachts from all over and this one happened to come from the Great Lakes. I had heard that it was the largest yacht there. This particular cruise went down the coast, down from New York to essentially the islands down at the end, the keys, and then turned around the came back. The impression that I had from this particular cruise, the people that were running it didn't really know much more then I did. And it was very fine that the Germans had been very successful in their knocking out the small ships that went up and down the coast. After a while they decided they had gotten all they needed to and the Germans disappeared from that. So on this cruise there was nothing to worry about. In fact, I was more worried that if they did shoot off something, something would go wrong anyway. Eventually the Navy decided that they didn't really need anymore schools for new officers, so the one that I was in, located in Princeton, New Jersey, not on campus but very close to it. So this school was given up and they decided I ought to go in a school that was still in Princeton but a little different subject, namely radar. In the beginning of the war or prior to that, the Navy knew about radar but there weren't many people who knew anything about it. To get people to fix something that goes wrong they thought their best source,

in terms of enlisted men, were in people who had worked on radios. So they urged a number of these to join the service. One difference between radio and the radar, and incidentally, radar and TV's can be put in the same category. With a radio you could go in with a wire and if you missed the place where you ought to put it or do something wrong, you'll get a shock. But if you do the same thing in radar, you might kill yourself because the voltage is so high. Well, at any rate, my supposition is that they thought that in addition to the people they already had working on the radars, they ought to have one or two people at any rate, at least one, who knew something about the innards of the radar and could help these enlisted people who were doing the usual things. And this occasioned them to have this school for new officers, who needed something to do. The school in Princeton had done all it could for one. So they sent me around to a variety of places. These included MIT and Bell Lab, and I spent quite a bit of time at each of those places. Much of it was very theoretical and some was a simple enough problem, namely the instructor would take a radar and do something to it that made it not working, and then give it to you and say, "You fix it." It was similar to some of the things they did in chemistry as I recall, but this constituted the part. I had been to these places. Then it was time they thought I ought to be on a ship. And they were building the USS Atlanta at the time and it was pretty close to being done. So I was actually assigned as a member of that ship. That was the place you call home but I couldn't really sit there or even work there until we were through. So I was assigned to this light cruiser, the Atlanta. There had been a number of Atlanta's. In fact, one at the beginning of this war was sunk, and this

was a replacement. Once they got aboard and the ship was ready to go, we had a break down cruise going down south, presumably to get the things out. Don't see any work in the business. And parenthetically, in all the time that it was on this ship, nothing went wrong that needed my presumed expertise. Then the enlisted men seemed to take care of everything. Now whether that meant they simply brought out a new set and put it in, rather than repairing it, I don't know. And again, sort of beside the point, but if you've been teaching in school at whatever level, it's true the teacher is in a sense a step ahead in some way over the students. In the Navy, if you're an officer, whether you know anything or not, you're over an enlisted man. And in this case, I was very happy that nothing seemed to occur that required me to say anything to the enlisted man, that he was wrong. That would be okay as far as the Navy was concerned. But I also had the feeling that maybe if I said something, the enlisted man would know more about it than I do. It was not a very nice teaching situation if you will. Well, once on the Atlanta, we finally got to sea and went through the Panama Canal and stopped at Floyee for a few hours, maybe a day, not long, and then went out to the South Pacific. Our destination was one of the atolls there. I don't remember the name. We got there and everything was fine. Incidentally, I should have mentioned this before, with this specialty there was really nothing for me to do on the ship. We were just going along. So where I was to be stationed during the day would be in what they call the CIC, where they had all the radars things in this one building in this one room. And this was filled with people. Each machine had a person at it, an enlisted man. And I would be assigned to sit there while things were going on.

The Navy had in a sense had one very large fleet, and they would call this the first one or the second one as the case may be. They were the same ships but when they changed the number, it was a different commanding officer. And when I got there, the one that we were connected with to begin with, the fleet was under Halsey. And we hadn't been there very long before the orders came in that we should get up to the northern part of the place, in other words towards Tokyo as soon as possible. So we took off, again in a very peculiar way. This fleet I think was the largest fleet ever assembled and probably it was larger then the Spanish Armada that ran into trouble a long time ago. At any rate, the general theory prior to radar, etc., prior to this World War, the ships would be fixed, the big battle ships would be in the middle. They would be surrounded by cruisers and the one on the outer side was a small fast ship that could go around in a hurry. And that was the way the speeds were. The battle ship was the slowest one. By the time they were putting in new battleships, the battleship in this particular fleet, could go much faster than we could as a cruiser. So we were no longer helping. We were no longer keeping that battleship from trouble. We couldn't keep up with it unless they slowed down. A lot of little things like that but they managed. With one rather large exception we didn't have any trouble going north, except we ran through a typhoon. Fortunately we weren't hurt by that. By the time we got up near Tokyo, the Japanese had already surrendered and everything was okay from then on. Prior to going up, our own airplanes would be going over us all the time and in some sense they really smothered Tokyo with bombs. They avoided the Emperor's Palace but everything else was in bad condition. After they

surrendered, we were able to go ashore and pick up whatever we could. When you first arrived on the shore, there was a decided smell that was not very pleasant. Some of the stores were wide open and you could get most anything there. And that ended that. So at the end of the fighting part of the war, there were a lot of Marines, Army men, Navy men, who had long since fulfilled their business and were ready for exit. Well there were more people that wanted seats to get back home then there were places for them to sit on. The Navy decided that while there was a battleship, at any rate this battleship was hit in the vital parts, the steering and the mechanism for going fast. This was an old ship and I think they could make about five knots, maybe a little more. And that was all. And the Navy wanted to send this ship back to celebrate things on Navy Day up in the northwestern part of the United States.

Q. Seattle?

A. Seattle, yes. So they were going back willy nilly. While that battleship was loaded with people who were going back, having fulfilled their time of duty, and the Navy said they ought to have an escort going out there and back. And our ship was chosen as the escort. So we crossed the Pacific at five or six knots, and eventually we got there. But everybody was happy because they were going home. There was no great problem with that. So we went to Seattle. Once that was over with, then we went back to San Diego. At San Diego, I got off the ship and got all my papers done, and I was essentially out of the Naval Reserve. They kept track of you hoping you would stay in the Naval Reserve after this was all over. I didn't chose that, and as a matter of fact, in taking the train back east, they

wanted somebody to be somewhat in charge of the people of some group under an officer, and so I had four or five, I don't know what branch of the service they were in, but I was responsible that they behaved correctly, which was almost impossible. There were dice games going on all the time. As a matter of fact, they slept out on the deck. There wasn't any room anywhere else. With my departure from San Diego, I was considered really out of the Navy and I worried about what was coming next.

Q. Okay. What came next? You didn't have a job at that time.

A. That's true, that's true.

Q. How many kids did you have?

A. Just one. My stay at Mary Washington College was not very stimulating, to say the least. And even if the Navy had not come along, I think I would have been looking for another place to go to have a little more interest in mathematics or anything else for that matter. So the Navy in a sense gave me a good excuse to leave, and I was only too happy to do that. Well I wanted to go back to graduate school and the first one that came in mind was the University of Michigan. It's close to Cleveland, I mean reasonably so. And my brother had gone there and my wife's two brothers had gone there. So I thought I would give them a whirl. Well, in the correspondence that I had with them, well it was very clear, the first time I could go would be sort of the end of the year as far as I was concerned.

Q. Wait a minute, time out. When were you discharged from the Navy?

A. I should have written it down but I didn't.

Q. Well we can add it later.

A. I certainly had that. Let me think about it here for a minute. We got back. She was living in Trenton at that time. And then I don't know whether I would have called Michigan or wrote them a letter. I could have done either one. I might have called them just to find out that there's no hope at this particular time.

Q. You had to wait a long time to get in there.

A. If I really wanted to go there it wouldn't have seemed long. My other thought was Ohio State. And since Michigan didn't open up then …

Q. Ohio State simply because you were from Ohio?

A. I guess that's the reason.

Q. Did you know much about the department?

A. I didn't know anything about it. So we drove out there. It might have been Christmas. Just the two of us. And went into the department later after we got there sometime, when it was open obviously. Now this is the name. Synge [John Lighton], he came from Ireland.

Q. He was the chair at the time.

A. At the time. And he had been in Ireland. That's where he came from. And at this time he was at a large Canadian University, and I'm not sure which one it was. But whatever it was, it was considerably different then Ohio State. Not as many students. And he decided to come to Ohio State. I don't know whether it was money or what. But at any rate, I think after he was there after a little bit, he decided this stuff was too much for him. At any rate, I went to see him and asked him if there was a chance of getting a teaching assistantship for next week or two weeks from then or whenever it was. And he said, "Well come back then and I'll

tell you." Well, within (make up a number) five days, Ohio State would have hired anybody under the sun. Anybody. It wouldn't have made a particle of difference. And I got this sort of, it wasn't a runaround, he just didn't know. And you didn't know about the war, there were a lot of people coming back. A lot of people have gone. So I got the answer and so I got the job, okay? I taught on the basis of my ineptness at Princeton. At least my being sort of in a place where I shouldn't have been in the first place. At any rate, I thought, "When I get here the first thing I want to do is to latch on to an advisor." And as a matter of fact, Synge fit the bill. He was doing that, sort of interesting things that I felt.

Q. Let me back up a little bit. At Princeton you were basically doing pure mathematics.

A. That's true, that's very true.

Q. You had not thought about statistics.

A. What was the statistician's name?

Q. At Princeton?

A. Yes.

Q. Tukey, John?

A. This was way before Tukey.

Q. The big name there is Sam Wilkes.

A. And I think his nickname was Steamship or something like that. I don't know.

Q. He wasn't much older than you, was he? Five, ten years at best.

A. Oh at best. But I didn't know anything about statistics one way or the other.

Q. Did you ever take a course with him?

A. No. That was the trouble. I should have taken a course with him if I had known. At any rate, and it's quite possible that he might not have been burdened with graduate students. Because of these other areas, oh I've got to do something with Einstein and all these things. But I don't know. That's just my guess. At any rate, I didn't do that. Nobody even suggested that I should, which is my fault. At any rate, that was it. So when I got to Ohio State, I thought to myself, "Well, I want an advisor as soon as I can get one." And Synge seemed to be the one.

Q. What was his area?

A. I wish I could say what it was. But it was this kind of thing. See it's one thing, you have a hill and you roll a ball down it and it goes a certain speed, does this sort of thing. Another thing, what if you're rolling it down a set of stairs. That kind of thing. And he had his own textbook and a lot of his problems were that kind. Do something peculiar you see. Well now, what happens here. It was interesting and seemed to be a little different. Well at any rate, I can't think of his name, what his field would have been called.

Q. Doesn't matter.

A. I would say that he would have more connection with the engineering people than anybody else there. That I think is true. So at any rate, I took this course with him. He gave lectures. There were three, at most four in that class. And we'd come in and sit down. He would come in and say, "Good morning," or something. Then he would turn around and start talking. Very formal, very formal. But after class he was not that way. But in class he was. But that was allright. Well then he decided that Ohio State was too much for him. This happened fairly rapidly. And

I thought, “Oh well, there it goes again.” So I looked around and well, the people that were sort of running things, and I don’t know this for a fact. How many of them got a degree from Tibor Rado.

Q. Reichelderfer, Mickle [Earl John], Helsel.

A. That’s what I thought. I know some of them did but whether all of them did or not, I don’t know. And these were the people that were running it. And except for Reichelderfer, Helsel and …

Q. Maybe you ought to spell those names. Helsel, Mickle, Reichelderfer.

A. Reichelderfer, they couldn’t have gotten all these ideas as fact. Well, I was in that class with him, with Synge. And somewhere through that class I found out he was going to leave at the end of the year or something.

Q. That was your first year there.

A. Yes, that was my first year there. So when it started getting toward the end I thought I should really try to get somebody else. So I looked. I don’t think Helsel and …

Q. He probably wasn’t a graduate advisor at that time.

A. I think Rado became chairman after Synge.

Q. Let’s check that. The time Ransom was talking about, when he entered Ohio State was probably late 1945. So now he’s been talking about classes with Reichelderfer and Synge, spring of ’46.

A. The early part of ’46.

Q. Yes, the early part of ’46. At that time Synge left and Rado assumed the chairmanship at the bottom of ’46. Go back to Reichelderfer. You were taking a class with Reichelderfer.

A. No, I never had one with him.

Q. Talk about formal!

A. But the other two would have been Helsel or Mickle. And somehow, I wonder if I had a class with either one of them. Who was the … [Henry] Bloomburg. You know that name?

Q. Oh yes. Must have been a character.

Q. Well he was. One of the things, up in University Hall looking out the windows, you can see the path going across the campus. And this happened more than once but maybe only twice. At any rate, Blumberg was going along with a student, and Blumberg kept moving over and pretty soon, instead of going this way they went this way. He was right in it you know. So that was one way. But then the other one, and I never saw him do this, but some of the students told me this, that he gave this course in something. And he wanted to emphasize something about, he used the phrase “the march of the something.”

A. Oh [Frederic Richard] Bamforth. The only story I knew about him was, I was here, the stairs were here. And Bamforth was going down the stairs. The student over here says, “I’d like to see you, Professor Bamforth.” This was lunch time. And he said, “I’m going to lunch.” I think that’s all he said. He gave them the brush-off. If there ever was a brush-off he gave it to them. And it just irritated me when I heard that. But at any rate …

Q. Back to Blumberg.

A. Yes. Blumberg, in his course, I had a course with him but he never did this in the course that I was in. He had something called "the march of the _____." That wasn't it but something along those lines. And he made just a big do about it. He would get up on his chair and on the desk and then down and this is the march of these soldiers. That was something different you know. And he had a life to him. He made some kind of a joke and I made the mistake of answering it in a different way. He didn't like that. I wish I could remember what that was. Oh well. Well the thing was that, except for Synge, I can't remember who else, it must have been somebody else's classes, but who could it have been? It certainly was not these. I had one, something with Bloomburg. I had a course with Rado.

Q. I'm anxious for you to get to how you came across Henry Mann.

A. That's exactly where we're coming to. Okay. So I kind of ran out of gas here. And well, a little history on Henry. When he immigrated, he stopped in New York. At that time, incidentally, in Austria his major interest was algebraic number theory. But apparently when he was in school, or even maybe assistant professor or something, he needed a little more money. And he would have students on the side who wanted some help. And he'd get a little bit out of that. And somebody was sitting at a table and this fellow was saying, "Did you write the dissertation for these students?" And he said, "Oh more or less." He just took it as a big "who cares?" And the person who had raised this question thought it was terrible. You would do that? He looked at things from a practical point of view. He needed the money. And it may not have been as bad as it sounds but he

said, “Don’t worry about that.” Where am I now? Well he was there in New York, and there was a fairly big contingent of statisticians. Don’t ask me all their names but they were big names.

Q. New York University or what?

A. I think so. NYU. At any rate he was in there. Now whether he made any money being there or just it was a good place to be. But he might have made money on the side. And he thought, now I’m just making up now what he must have thought, “I don’t want to stay here forever. I want to go where I’m part of the group, so to speak.” He absorbed a lot from these people. And over in engineering or rather the Research Foundation had some money. And they told somebody in engineering, “Is there someone you want to bring in for a little bit? We’ll pay for it.” Now most of this is make-up. I don’t know the real thing. But I know these two things got together. Now how they happened to ask him to come, I do not know. But he came. And mathematics furnished him an office and he was in that office, but not in mathematics. He was working for them, industrial engineering, those people. And at the end of the time, when somebody over there evaluated whether they got their money’s worth or not, they all sort of said, as I understood it, they he really didn't help them a bit. Now knowing Henry, if they had asked him to work on something particular, he would have done it. He didn’t have to do anything else. But what he did was work on some problems in statistics. There were changes here and there. I don’t know how many papers there were but there were a number. And these were published. But

nevertheless, engineering thought they didn't get their money's worth. So that was the end of it. And then the math department hired him, which was very good.

Q. Had he won the big prize by then?

A. No, no. I shouldn't be so definite. It was considerably later when that was made public. So I don't think it was at that time.

Q. Do you think he had done the work by then?

A. I have no idea. It could have been. And somebody there would have been interested in that. May have known something about that. That's true. And I really don't know. He may have applied and he would have a pretty good cheek to apply on. So whether he applied or they found out about it or what, I don't know. But at any rate, the time that he was working for the engineers in theory, he sat in that office. I shouldn't say this strongly but I'd be surprised if anybody in the mathematics department ever talked to him. He was just there. But then they hired him later.

Q. That must have been '46, your first year there, '45, '46.

A. Yes, right in there. Well, I thought, "Well, I don't really see who I'd like for an advisor in this group. I'll just try him." And I went down to the office. And the reception I got was such that I don't think anybody had ever knocked on the door before. "Why on earth are you here?" And I told him, "I'm interested in some things." And he said, "Well, how about this problem?" And he'd bring something out and say, "Well, why don't you try this?" I've forgotten what that was. It must have been really trivial. And I came back the next day and it was all

done or something. Then I think he looked at me as a friend. Whether I was any good or not was beside the point.

Q. Was he lonely?

A. Yes, that's right. And he was not a lonely man. He liked to play bridge. And later on, as we got a little more familiar, my wife and I played with them. And that was fun. Very good bridge players you see. He was a stamp collector. And when he was in Europe he had several people who knew what he wanted and they would collect. People were trying to sell the stuff, they would go to, what's the name, a person dies and leaves an estate. And the people who are left with that estate don't know a damn thing about stamps.

A. Tape 2, side 2. And he was an avid swimmer. And he had a cottage up in Wisconsin, at the lake. He had a cottage there and he went up there every summer. And he loved to swim. He would swim across that lake. And there was some sort of rule or whatever you want to call it, that you shouldn't swim across it by yourself; you should always have somebody in the boat. So his wife would get in the canoe and she would paddle a little bit, but then he would grab the boat and pull her across. He could get around. If people didn't know him or didn't speak to him, they wouldn't get any idea of this at all. Then he gave me another problem.

Q. Can I just interject this? As a student in his class I was afraid of him.

A. You were a student in Henry's class?

Q. Yes. We were all afraid of him. He wasn't a very good teacher until he decided not to teach, and start to talk about why things were going on. Then he was magnificent. But then he'd decide to lecture again. Very interesting man.

A. He was.

Q. He was.

A. Where were we?

Q. So you did some more problems for him.

A. Somebody from somewhere would bring in a problem, a statistical problem, and he would work on it and give them the answer.

Q. The beginnings of the stat lab.

A. Yes, in a way, and I think he gave me one of those through this you see. But it wasn't any big deal. He didn't really want to do it himself. So he gave it to me. Then he wrote this book.

Q. I know it well.

A. And well I've looked at that more now in the last few years then I did when I was there.

Q. Very difficult book.

A. In a way each little step is okay. But there are a lot of little steps.

Q. So you didn't study out of that book? Or was that after you were taking classes?

A. I wasn't in the class with that book. I proofread it.

Q. Okay.

A. That was the only connection there. He wrote something else. I've forgotten what it was. It's mathematical stuff. And he wanted somebody to type that. I said,

"Well my wife can type." So she did it. And it would have all these formulas you know, uppercase, lowercase and all that stuff. And my wife noticed something, here everything went like that this, and then all of a sudden it changes. And it clearly impressed her that it should have been the same. Just because of the way it looked. She made a note of that. That really surprised him. Oh well.

Q. An intelligent typist.

A. That's right.

Q. Now we're talking '46-'47. You were starting to get closer to him?

A. Yes. And then he got the idea, it became a test.

Q. This is now the Mann-Whitney test, incidentally which became world famous.

A. And you see it's really _____. There's no question about it. Really _____. I keep telling people that. But it didn't phase him a bit. He never made any remark about that. And in fact, I can't remember. I think I was surprised when my name was there.

Q. Was that your dissertation?

A. No, no, it wasn't the dissertation. I think my first contact with that, he had some data from somebody and he wanted me to count up the number of times something happened there. But it was a very long thing. So he didn't want to bother doing it, so he said, "Why don't you do that?" And I did that. It's easy enough following directions.

Q. Well, you must have worked out some of the details.

A. There were some. There's no question in my mind he could have done everything himself. But it also might be that maybe rather than doing that, he preferred to talk about number theory.

Q. He might never have done it.

A. That's true. You're right, he might never have done it . And I think some of those things, was sort of like what we did for engineering. And the thing there was, I don't think they ever asked him about this. He would have been glad to have told them something about it. Or as I said initially, if they'd come to him and said, "We'd like you to work on this sort of problem," I really think it could have been any problem at all. He would have said, "Well I'll give it a whirl."

Q. He was smart.

A. Yes, that's right. But they never really gave him a chance.

Q. When did you hook up with him as an advisor for dissertation? Did that follow pretty quickly?

A. It seems to.

Q. You must have had most of the classwork done.

A. I took a class again, probably the same one you're talking about. What's the name of it?

Q. Analysis of Variance.

A. Analysis of Variance. That was it. I took that class. That may have been the first one I ever took as far as the formal presentation.

Q. Didn't you have a basic probability and statistics course somewhere along the line? Like a 672, remember?

A. Well, I'm trying to think.

Q. Or you just picked that up.

A. Who was the instructor? Can't say anything about him.

Q. I can't say anything about Morris.

A. No.

Q. Did you take a course from him?

A. No.

Q. You're fishing now for the course?

A. For the name. Well, let's see when this happened. In industrial engineering, the man who made that department.

Q. Before Bill Morris?

A. Yes. Bill Morris was your age?

Q. Yes.

A. This was way before that. He was the head man. And his area of expertise was, he was good at …

Q. They were doing time and motion studies at that time, weren't they?

A. I think he is outside work, was really illegal, in connection with what those people do. And for some reason or other he was made the chairman of that. And he had a son who went to the University of Pittsburgh and was a statistician. What's the fellow's name? I'm thinking of McCutson, this head man.

Q. Someone would be my age about? Younger?

A. Oh yes. I don't know about younger.

Q. Within my era?

A. That's true. I can't think of the professor's name. At any rate, I got a telephone call and he said who he was. And I went over to see him.

Q. This is a telephone call from the chairman that you're fishing for his name?

A. Yes. And get in there and he said, "We need more statistics here." And now the name of this fellow I was looking for here, who was in there. And his nickname was "Tut Tut something." What he said to me was, "I can't get anything out of Tut Tut so and so. And maybe you can do something." He wanted a course, a beginning course. That was the beginning. That was the first one. And it came from him. I ought to have his name.

Q. We can research it. So you taught that course?

A. Yes, yes.

Q. Would this be at what level?

A. The people who were in it, name a few. One of them is still around. I see him at the club every so often.

Q. Undergraduate?

A. He was an undergraduate then but not anymore. In fact, he's probably retired.

Q. Well '46, yes.

A. What was his name? I can find it somewhere.

Q. Anyhow you taught this course and it was an undergraduate course.

A. Yes.

Q. Calculus for the engineers.

A. That's right. The building that they're in now, it was a new one at one time, what's the name of it? It's the name of a person. I had this fellow in class, and

the reason they named the building after him, he had gone on something to do with business, he was a student.

Q. Baker, that's the name of the building.

A. That's the name of the building? You sure about that? It could be. Well if that's it, I'll believe you, if that's it.

Q. I'm not absolutely sure.

A. At any rate, he went on a trip, it was some eastern place, up there north. He was up there and his plane went down.

Q. I'm pretty sure Baker.

A. Baker Hall. And he died. And I had him in class and he was one of the better students in my own mind. There's no question about it.

Q. So he was an undergraduate. I see. Okay.

A. So it was an undergraduate course. And whether there were more than that, I don't know. Young at that time. Young alright but he was older than some that were there. What is that chairman's name over there? But at any rate, he apparently had tried to get this "Tut Tut," whatever his name was, to do something. And he apparently had no interest in that at all. Over in the business school they had several people who were interested in statistics, just collecting the data period. And they had friends, and some of them had probably been students there, who had gone downtown and were in comparable positions down there. And they had a meeting once a month or something like that, and this was a group centered around this type of statistics. And the fellow over there who was the

head one of that, and that name eludes me too, but remember Earl Green at all? Does that name mean anything to you? He was a geneticist.

Q. You did a lot of work for him. I know the name.

A. I bought our lot from him too. So I'd see him at the club and that sort of thing. And I told Marian, if we find somebody who wants to sell us an acre, we'll go for it. Well, we were at the club and she heard either Earl or his wife saying, "We just bought land and it's more than we want, so we have an acre for sale." She said, "I'll get my husband." And that was it. It was a hot lot next to us and he didn't want the whole thing. So we bought that from him. When he left here he went up to Bar Harbor as the head man. At any rate, he understood statistics, what we were trying to do. Earl Green, yes. He's nobody's fool. One of the funny, well it wasn't funny. After this World War he went over to Japan as part of a group that was studying the effects of the bomb. I think he was over there a couple of years doing that. Very interesting project. I really don't know what they found but he was there. He came back here and eventually went up to Bar Harbor has the head man up there. Well be that as it may. He went to the meeting of these so-called statisticians, essentially from business, and after a meeting, he made some remark to somebody sitting next to him, some derogatory remark, whatever it was. And this other fellow said in so many words, "I'll have to talk to the head man about that. It depends on what he says." In other words, if he doesn't think much of what you said, you forget about it. That sort of thing. And Earl used to laugh about that. That so and so over there sort of made of rules.

Q. While all this is going on you're still a graduate student here? Or when you taught that course you had finished up?

A. Yes, I must have finished up.

Q. '47?

A. I've got to look things up. I'm pretty sure of that. I don't think if I had been a graduate student, Earl would have ever called me. He was interested that I was in that department where Tut Tut was. And maybe I could do something.

Q. Okay, we're going to have to go back here. Not now, but sometime, as to why you joined the faculty here. But go ahead with your story now because that's interesting.

A. Which one?

Q. Well you were talking about teaching the class and how that all came about and what transpired from there, where that went, what Earl Green did.

A. Earl Green, he never did anything with us. Occasionally he might have asked me questions, but I never had to do any work for him. He was capable of that, once he got the idea of what was going on. No question. His wife was in that area too. They never had any children.

Q. I'm sorry, I interrupted your train of thought there.

A. That's all right. Where was I? Your question was, a couple of them, one was why I stayed at Ohio State.

Q. We were talking about your connection with Henry Mann, and your famous paper, and somehow we got onto your statistics background. I asked you whether

or not you ever had a real course in probability and statistics. And then you started talking about …

A. I guess I never did.

Q. You never did. Okay. But you taught one.

A. Well, wait a minute. I took this course that you were talking about. I had that course.

Q. But I mean prior to that. The usual course.

A. Prior to that I had no … I'm thinking of Feller's book on probability. Is that the name of it?

Q. Yes.

A. I never had that in a course.

Q. That's discrete stuff.

A. Yes, that's true.

Q. You never had anything like the text by Alexander Mood that you taught me from.

A. No.

Q. In fact, was there anything? Cramer was the only one I know of.

A. I have that book. Still have it I guess. I also had the one by Cramer. That disappeared. Somebody must have borrowed it and never brought it back. And I thought that was a very well written thing.

Q. So you went right into the analysis of variance class, just with filling in the background. That must have been interesting.

A. I don't recall any other things.

Q. Okay. But that was ’46 you probably took that class. You said the paper wasn’t your dissertation but you must have started your dissertation.

A. Now that, I can’t remember that, if I use the right words. A lot of the procedures you apply, analysis and variance and so on. You use some probability function. Suppose you use the wrong one.

Q. Robustness is what that area is called.

A. And essentially my dissertation was on what happens to something else.

Q. Well that was early on. Because robustness became very popular starting in the 60’s if I remember right. John Tukey was on that kick. I mean I’m sure it was around before then but that must have been … there wasn’t that much activity at that time in that area.

A. It may have been simply just something like this. How far off is the answer if the assumption is wrong. There exists a question of calculating that.

Q. Even so, I don’t think that term came into existence at the time you were doing it. You probably didn’t use the term.

A. That’s probably true. Back to why I stayed at Ohio State. I think Case Reserve up in Cleveland, they had a group. Who was the fellow that was heading that? There are two stories here. One, when I was looking around for a place to go, having come from that area, matter of fact the Case Observatory was right down the street from where I grew up. And they were interested in getting somebody in statistics. And I went up and talked to them and so on. Why did I get off on this part? And that looked like a pretty nice place to go. Now somewhere you say, “Well, do I stay here or not?”

Q. Before you jumped ahead there, go back to the dissertation.

A. Okay. Before I was interested in possibly going to Case, I gave a paper up there to the people in that area, whatever group that was. But Alexander Mood was in that group. He was there, let's put it that way. And he could have been the only person who asked me any questions. And that was it as far as I was concerned. See that kind of dissertation, I can't say, I don't see anything wrong with it. On the other hand, it isn't the greatest piece of work. It's a question of just, "We'll see what happens to this." Period. And there's no big grandfather in that that's going to grow to something big. Each one is a little different. Well at any rate, that was the dissertation. So it had nothing to do with the other one.

Q. So it turns out you must have graduated in '47, cause you know for the '47-'48 year you were on the faculty. You're listed here. This is '47-'48. You were an instructor '47-'48.

A. An instructor by itself doesn't mean much.

Q. No. We're back on now to get the dates straight. In the year '47-'48 Ransom was an instructor. That was probably dissertation year, because your graduation date is 1948. Starting the school year 1948, you became assistant professor. You're on the faculty. Okay. So we got that straight. Anyhow, dissertation worked for you anyway, which is what it is all about. So then you were looking for a job.

A. Yes, thinking about it.

Q. So this must have been sometime in the '47-'48 year.

A. Yes. I don't think I called Case or wrote them first. I think it may have been because I had been there for that talk. May have been, I don't know. The person

that called me was the chairman and I doubt if he would have known any statistics. But just the idea that they ought to have somebody. They made an offer and I turned it down. And the person they got was a real goer. He was very good. Well that doesn't matter. I think prior to Case, I think I got a letter from somebody out near Omaha or someplace like that. And that I didn't visit or anything on that one. I just turned it down. Then of course, when I decided to stay at Ohio State, in some sense I went against everything I had been encouraging people to not do. And that is, stay at the place where you got your degree. The way I looked at it at that time, good or bad, was there are a lot of problems in statistics that they don't know too much about at the Ohio State University campus. And if you're going to do anything of that nature, I found it hard to think of a better place. Now this has nothing to do with what you might call, well at that time it may be ever after. Doing that sort of thing doesn't necessary put you at the top of the heap. But at any rate, it was the fact that all of those people out there could use some help, was something that made it attractive. That's it. The family was interested enough in staying. I think that's it in a nutshell.

Q. It's worth noting here that the department hired its own graduates before, Helsel, Mickel, Reichelderfer.

A. That's exactly what I was trying to say there. I didn't like that and I think they are an illustration somehow that I'm right in saying I don't like it. Then I went ahead and joined the fort, so to speak.

Q. I'm glad you said that cause I'm not one to talk.

A. Yea, but you went away. You went away and then came back. That's a different matter.

Q. Okay.

A. At least I think it's a different matter.

Q. I'm glad you did. Okay. We're through the first thing and Marian is waiting outside.

A. Okay.

Q. This is a re-do of tape 2. This is May 21, 2003. D. Ransom Whitney interview. It's voice activated, so let's go. Tell me more about Rado's students.

A. Yes. Once I'd finished my Ph.D., the thoughts that kind of cross one's mind is what you're going to do next. And it would be a question of where should I look for a job, or should I make some effort to stay here. One of the paramount things in choice was, if I'm interested in a topic that's considerably different than the major professors in mathematics, I would feel a little fear as to what I could do and what I couldn't. Whereas three of the current members, three of the major professors in mathematics, were students of Rado and continued here. And my impression was that the three, one of them was very much interested in continuing his mathematics, as he started under Rado. And that the other two had no particular desire to continue work along their dissertation. I think that coupled with the fact that I would be hopefully in a different area of mathematics led me to believe staying at Ohio State University would be a good idea. And the next result was, I became, I can't think of the rank.

Q. Assistant Professor.

A. Became Assistant Professor in the department. Now that's enough of that.

Q. How much did your opportunity to work with Henry Mann figure in your decision?

A. Well, I enjoyed working with Henry Mann. And he had been a very good advisor as far as the dissertation was concerned. And I felt that if he had problems or I had problems in statistics, that we could sit down and talk about them in a very easy sort of way. So that was the plus in staying at Ohio State.

Q. Well that developed into your famous paper with him. Do you want to talk about that?

A. If time allows more or less.

Q. Yes, I think so.

A. Henry had an idea, one problem in statistics. In talking with me, the end result was a paper.

Q. We're talking about the Mann-Whitney U test, which is a non-parametric or distribution free alternative to the standard two sample test.

A. He obviously was the biggest contributor to this paper. I was able to do that but I'm not sure.

Q. It's a very good test. In the end it's a seminal test too. I think the parameter you were chasing turned out to be a seminal with all sorts of generalizations.

A. Yes. You said it better than I.

Q. Alright. Let's see. Synge was the chairman then, right? He hired you.

A. He hired me but he left very shortly. So he wasn't around then.

Q. Oh, he was gone by then. So Rado took over.

A. In fact, did I say something about that before?

Q. Yes.

A. That he disappeared and I thought I had to do something about getting an advisor.

Q. Oh yes. We did that on the first tape. Okay, so now Rado was chairman. Were those interesting years? Anything in particular? What kind of chairman was he?

A. I would say as chairman Rado had very definite views as to what should happen. And he preferred to tell some of these to different people and expected them to carry them out. He could be at staff meetings, didn't mince words, and said exactly what he wanted to say. Which were not taken with much grace by some people on the faculty.

Q. That's an interesting point. Did you have much dealings with him at all?

A. No.

Q. Okay, say that again.

A. Of the senior staff, three professors, Rado, Synge, Reichelderfer and Henry Mann were the only ones that were certainly well known in mathematical circles worldwide.

Q. When did Marshall Hall come on the scene?

A. It was _____.

Q. Alright. Let's ask first about Herb Ryser. He came in '49 and was destined to become a very well known professor.

A. Where did he come from?

Q. He was pretty junior when he came, wasn't he?

A. Wasn't the same as Hall I'm sure.

Q. No. ’49. He came in as an Assistant Professor in 1949.

A. Right, yes.

Q. So he was relatively junior then. Must have moved through the ranks rather quickly.

A. Yes.

Q. Okay. There he is. Yes. In those days that’s pretty quick. So he finally made full professor in ’56. Did you have much to do with him? Know him well?

A. There were a lot of times that we ate together at the Faculty Club.

Q. His main area was Combinatorics.

A. This is a sideline. We have Hall and Ryser in there. And then Calderon. He was a visitor for three years and then left. I got the impression that he was well known but then he didn’t stay.

Q. We should talk about Reeves too at some time.

A. Yes, that’s right.

Q. But let’s finish up with this.

A. Yes, that’s a different category.

Q. Talk about Marshall Hall. Did you have much to do with him?

A. Had a class with him. What did you say as far as I had the same feeling.

Q. Not very organized.

A. That’s right. And I think I mentioned to you before, he was in the process of writing a book. He found my notes. They all came out of his mouth. But it goes along with what you were saying.

Q. You organized.

A. That's true. I don't know whether it had any effect on him or not. Well he wanted it, that's all I can say. But there are a number of names in there that would indicate that things were going on, whether Helsel was chairman or not. But I have a feeling that somebody was behind Ryser coming here. Maybe Bloomburg

Q. He left right there in 1950, after Helsel took over.

A. What does the RP mean? Retired?

Q. No, that's research professor.

A. You say Rado was a Research Professor?

Q. Yes. Bloomburg left. Rado was the big gun more or less.

A. Yes, this is the place where he did. But Bloomburg must have retired.

Q. Was his field analysis in measure theory like Rado's or was it different?

A. I often wondered about that.

Q. This is the beginning of tape 2, side A. We're on the interview of D. Ransom Whitney, done May 21, 2003. We were talking about Blumberg and deciding his field was analysis. Anybody else of interest as you go down the list?

A. This is a visitor. As a general statement, in this period of years in there, they had a number of good people come but didn't stay very long. I think Bloomburg just retired. But if you go back a few years from his retirement, he had I would say every graduate student would be taking a course from him.

Q. Really?

A. Yes, yes. Maybe I mentioned this to you once.

Q. Tell me about numbers.

A. He called it some progression. He had a word like, “This was the march of the something.” And he would get up in his chair, walk up on his chair and over the desk top jus to amplify. Again, I think I mentioned this to you. But I looked at my window at people out in the campus. He might have a student with him walking across the campus. And they started out going this way. The student is here, this is Bloomburg, and pretty soon they’re going like this.

Q. Veering off to one side.

A. Because he’s pushing them over going this way.

Q. And the student didn’t dare push back.

A. That’s right.

Q. He was interesting. And somebody was saying, you wondered if you had any characters on the campus, who were good people with peculiar things that they would do. Many of those. I’ve forgotten names. At this Faculty Club, this one fellow, I don’t know what department, history or English I think. At any rate, there was a seat up there and he always sat in that seat period. And the people that would come around there knew this, so it was always open. Well, one fine day a new professor comes in and that seat was open, so he sits down in it. My candidate for peculiarity came in and he stood behind that chair. Just stood there. Didn’t say a word, just stood there. Finally some of the other people, the fellow that was in the chair didn’t know he was there, the people at the table said, “Why are you standing there for.” They knew damn well why he was standing there. So he had to say, “Well he’s in my chair.” Just like that. I wasn’t there but I heard this all the time. So the guy got up and went on. But there aren’t very many

characters like that around these days. There's some I guess. I think some remark about the fact that a number of people did come to Ohio State. Visitor for a few years or something of that nature. But very few of them ever stayed, which says something. I don't know about giving names but Calderon was one. What he was famous for I have no idea but he was well known. Kleinfeld came.

Q. Norman Levine came and left and then came back. He was Rado's student too?

A. I wonder if he was Mickle's.

Q. That could be. But he was in line, so he might have been Rado's grandchild.

A. Yes, that's very true.

Q. But then he left and came back and that was a good addition to the department.

A. Which one?

Q. When he came back here as an Associate Professor in 1960. I don't know where he came from but he was a great teacher. He was good.

A. Yes, that was his strength. I had the idea in the back of my head that he didn't do much as far as mathematics was concerned.

Q. That was the reputation.

A. He was well known.

Q. I never got to take a course with him in person, but certainly that was the scuttlebutt amongst the graduate students.

A. If a person asked him a question he would give a sensible answer.

Q. You want to save Reeves for later when we talk about that?

A. Whenever that seems to come in.

Q. Let's go through this line first.

A. Okay. Kreyszig was an important figure for a while but his heart was out of Columbus. He would take off anytime he could get a leave and go somewhere else. Invariably right back and say he'd like to stay for another quarter or something.

Q. I remember he had an office up on the fourth floor of University Hall. And my next year there I was in the office across the hall from him. That was the fourth floor that later caved in. And there was a fire escape right in the back there. But he put an extra door on his door. I don't know if you were ever up there to see it. He put an extra door with all sorts of insulation on it. Any noise in the hallway, he couldn't hear it. He was a scholar. Let's do the numerical computation lab.

A. Okay.

Q. Cause that's kind of important.

A. Okay. Now let's see, before I say anything in public here.

Q. We're talking about the beginnings of the numerical computation lab.

A. That's right. Let's see, what year was this?

Q. Well roughly I know that in 1955, the summer of 1955, part of my assistantship I think was the work in the Quonset hut. It was a Quonset hut over on the north side a little bit. It was on main campus yet.

A. Yes, it was close to a park car place.

Q. Up closer to Neil Avenue, wasn't it?

A. No. No. It was closer to High Street.

Q. Closer to High Street. I was thinking of Woodruff.

A. The place where undergraduates are supposed to get together. Very big building they had there.

Q. Jones Tower?

A. No, no.

Q. It was there at the time.

A. Yes. You've got me now. There was another Quonset hut. And this is east. And over here eventually there was a parking ramp, great big one.

Q. Oh, Arps Hall over there.

A. It had nothing to do with Arps Hall. Way away from it. And the other side of this ramp was. Well over here was the building for business. The business school, whatever they called it then. And then kind of back here, over in this direction, eventually they built the undergraduate, what do you call it?

Q. Down by the student union?

A. Yes. Student union. Eventually they had a big one there. Okay?

Q. Yes. It was down that direction.

A. So here we are. I had a nice joke parenthetically. Over here, Woodruff Avenue, at the corner of Woodruff and High, there was a bank. And that bank, I guess in time it will workout. At any rate, when we first came to Columbus, we wanted a place to bank. It may not have been the first place but eventually we went there. And they were having a lot of trouble because it was new and all these freshmen and so on were streaming in. And they made a mistake and my account had an extra something in it that it shouldn't had in it. Once they pointed this out, it was clear to me that they were correct. And they said, "Would you come over to the

bank and give it to us?" Well I thought, "Why should I go over there?" So I told them I was over here and if they wanted that money they could send somebody over to get it.

Q. In the Quonset hut?

A. And they did. It's nice when you can tell something to a bank. At any rate, that's where it was. And we had the sorter computer and stuff there. Now let's see. How long was that there?

Q. Talk about the stuff that was there. The kind of equipment.

A. Well, the place to type in stuff. Keypunch. Then, where the cards come out. The card sorter.

Q. Was that the same card sorter that the lab inherited?

A. I think so.

Q. The big old black thing?

A. That's right. It's been the same one all the way.

Q. Okay.

A. And that was there. And then the part of the machine that did the work. Now the way you got the machine to do something, you'd put wires together, depending on what you wanted it to do. And it worked very well.

Q. So it was pre-programmed?

A. That's right.

Q. It would do one thing. You would wire it and then it would do that.

A. Do that, that's right. Wonderful thing.

Q. What kind of computations did you do on that?

A. Well you could sort things like mad. What you'd have to wire?

Q. Yes.

A. Okay. Compute the mean. Standard deviation.

Q. From the cards?

A. Yes. Get that stuff in there.

Q. It could do more complicated stuff than that, couldn't it?

A. Yes, it depended on how agile you were with these wires.

Q. I was thinking Roy was calculating Bessell functions or something like that. Could it do that much?

A. Well, Roy had nothing to do with it.

Q. Okay. Then somebody. There was an engineer. Who was in charge at that time?

A. I guess I was.

Q. The whole first year?

A. I would guess that we were there two or three years. And then all that equipment got moved over.

Q. To the Research Foundation across the river.

A. No, not yet. I'm not sure that that particular equipment ever got to the Research Foundation. Because that was ours.

Q. Okay. That must have started before '55, if you said it was there for three years, because I think by '56 you had a card program calculator.

A. When you say a card program calculator what do you mean?

Q. Internally stored memory. It was electronic. It was no longer electromechanical.

A. Let's see. There was another step in between. We got moved to someplace else. And in that place, _____. You wired it to do certain things but you had to do more than that. It seems to me you had to do something in stages but I can't remember. At any rate, shortly after that somebody developed a way of getting the program inside the machine. We could get the square root, if my memory is correct, we could get a square root by just putting in this, you didn't have to wire anything, we just put something into the machine and let it work from there.

Q. That was still the electromechanical?

A. Yes. I think I'm right on this. As far as I'm concerned that was the first time I had ever heard of going into _____. Of course, that got to the other stuff. Okay, we've moved over wherever it was. I'm trying to think of whether that was in University Hall or not. It may have been.

Q. Still with the electromechanical stuff?

A. Yes. The punch card.

Q. Well it was all punch card.

A. That's true.

Q. Click and clack.

A. That's right. We were someplace on the first or second floor. That part never got to the basement. At any rate, we needed more room and I've forgotten why. At any rate, the fourth floor of University Hall had psychology up there. And the powers that be said that place shouldn't have students and stuff up there.

Q. Which proved to be right.

A. That's right but we needed more space for the machine. This great big heavy weight thing, we got it up on that first floor. Seemed to violate everything under the sun.

Q. There were no elevators in University Hall.

A. That's true. We got them up there. And then after that, the next place it went was across the street, somewhere in there we got a building, a new building. The street that goes north and south through the campus.

Q. Neil?

A. Neil. Cockins Hall was there and occupied by, I think, psychology and some other things.

Q. Biology was in there. Cause we inherited the bugs, remember?

A. That's right. I'm losing track of the way this fits together.

Q. We were talking about the electromechanical machine.

A. Yes. And it seems to me the last place that it was, it was taken out of the fourth floor and into a room that was essentially on the north side of the street that goes by the post office. There was a street there.

Q. The old Communications building?

A. Yes, that's it. And we got space in there I think.

Q. That was a little old building, not the journalism building. That has been since torn down.

A. Now somewhere along the line, the Research Foundation felt that something ought to be done. What they were willing to do was send some people to Bell Labs.

Q. Now you're saying up to now it was all math department stuff?

A. Yes. They wanted to get it developed. And so they were willing to do that. Roy Reeves and myself and Leslie Miller. Seems to me there might have been another one in that group. But at any rate, we got leave to go to Bell Labs for a week or two, something of that nature, to find out what was going on, that sort of thing. Of course in the meantime there had been some developments in the machinery. That's really what you're looking at now. Okay. So we went there and came back. And the Research Foundation wanted to get things started. And what they wanted was one of the three of us or four, whatever it was, to take that over. And I had no particular desire to do that. And they chose Roy Reeves. So he got it started and that was across the street from Cockins.

Q. And this was probably about 1956.

A. Oh gosh.

Q. Had the electronic machines entered yet?

A. I don't think so. I think they came only after they moved across the river to, what's the name of that street?

Q. Kinnear Road.

A. Yes. And in there, the, I can't remember what they called that machine.

Q. The first one was the card program calculator. Twenty-four internally stored memory slots. And you programmed them with cards but it could remember a few numbers for you. It wasn't internally stored. The program wasn't.

A. I've lost track of that.

Q. Then came the IBM650.

A. Yes. That number sounds right. Now that was across the river, but then eventually they put something on Neil Avenue, across from Cockins. It was a little bit north of that. A little building there.

Q. Not the Baker Building?

A. It may have been.

Q. A little later than that.

A. I thought the Baker Building was where Roy had his first office.

Q. His office. Might have been.

A. The machinery for doing things for people was there.

Q. On Kenny Road.

A. No, no.

Q. This much I remember. In the year 1955-56, I was your graduate assistant in the stat lab. And I was programming for the IBM 650 across the river.

A. Okay.

Q. And I remember that because in the summer of ’56 I got that job with Battelle, because I could program a 650.

A. Yes, okay. I had forgotten about this.

Q. They were across the river in ‘55-’56.

A. Okay, okay. So that Baker Building might not have been built then.

Q. No, I don’t think it was.

A. In fact, you know where the name Baker came from?

Q. The chairman who got killed.

A. Yes. Well for me it’s a little more personal.

Q. Oh okay.

A. We were in Cockins Hall and I got a telephone call. The head of the department, it was in the College of Engineering. He was an engineer, but a particular department there.

Q. Industrial engineering?

A. Industrial engineering.

Q. Okay.

A. And the head man of that was, Luhoksy was chairman of that. I got this telephone call. He didn't know me from Adam and I didn't know him. He wanted to talk to me. So I went over and talked. He said, "We need some courses in statistics." And he made some snide remark about, "The only person that's been over there for some time doesn't know anything about what's going on." This fellow was in _____. And he was teaching. Essentially what he was teaching, in all honesty, it was part of the actuarial program, that kind of stuff. And as far as I know he's perfectly capable as far as that's concerned. But this is not what it was. Luhoksy was his name. And he said, "We want a statistics course." I said, "Okay, we'll do that." So we did it. And some of the beginning students there, one was Baker, one was, I know these names. But at any rate, the ones in that first class, I swear they stayed in that department for a number of years and went up the ladder so to speak. And Baker was on this trip down east some place and his plane went down. But that was the first breakthrough as far as another department actually asking for the course. And eventually they had quite a department. They had a lot of people over there that were pretty smart.

Q. All these things I know because they were in your class with me.

A. I think they're still around.

Q. Tom Rockwell, he was a tall guy. I see him and his wife every so often. The one former chairman, Al Bishop, got Alzheimer's and died. The thing that Davis was going to do was head up, was the apparatus and so on that would take care of students by the hundreds.

Q. A registration system?

A. No, doing statistical work on the machine.

Q. Oh, I'm sorry.

A. Not necessarily statistical but whatever it was that the machines could do, that's where the students went, as opposed to going across the river You had to do that to begin with. But once you got this big thing going, that's what Roy was really in charge of.

Q. And that happened very quickly, from a 650 to a powerful 650 to the 701, 704, then the 7090 to, the Lord knows, 360.

A. It seems to me to begin with over there, they still had to get the data on cards.

Q. Certainly, oh for a long time.

A. Yes. That's true.

Q. That computer is another story. But anyhow Roy started from where you said.

A. From scratch.

Q. And built that thing up to a real outfit. Okay, enough about the numerical computation lab. Let's get to your time when Helsel left and you became Chair, Acting Chair for a while. Prior to you taking over, Ryser left and Paul left.

A. Let's see. Where am I? Helsel's here.

Q. Is that when you went somewhere?

A. That's probably summer or something, I don't know.

Q. We're trying to find the dates here. Let's look on the next page. That's not the next page. Here we go. Oh well. Was that the year you were Acting Chair, '61-'62? Ross took over in '63. Okay. So that was the year '62-'63 and maybe part of '61-'62, when you were Chair. That was the interim, after Helsel stepped down and before Arnold Ross came.

A. Yes.

Q. What about that year? You were not the most senior person in the department at that time. There was Reichelderfer, Mickle.

A. Reichelderfer didn't want to do that. And my guess is that they didn't want to do it either. They probably wouldn't have thought of Henry because he just really was new. As far as Helsel, he stepped down. He's still there. And Rado took over. No, no, he's still there. And Paul Reichelderfer was new. Mickle didn't want to do it. So there wasn't anybody else. The lack of any competition.

Q. Besides, I suspect you were a good acting person because you were sort of removed, neutral.

A. That's true.

Q. So everybody would be happy with you there. Because almost anybody else would have some sort of baggage.

A. That's right.

Q. Were you on the search committee for Arnold Ross?

A. There was a search committee. I was not on it and my version of what happened there is, that if there was a search committee they weren't very enthusiastic and the dean, [James Osborn] Oz Fuller, sort of took it upon himself to see that something got done. Now how long it took him to get into the machinery I don't know, but we could very well. In fact, I'm just making this up, I don't know. But he would certainly know they needed a chairman. And in a sense the obvious thing to do is to get somebody who is big with a name, etc., etc. Okay. And I can believe that he didn't get much help from anybody in the department. He could ask them opinions or something but will you do this or that. That's it. And I didn't even have anything to do with it. I know he went over and interviewed more than once, Arnold Ross.

Q. Arnold Ross was at Notre Dame at the time. Was he a chairman there

A. I don't know. He may not have been. I don't know. But I remember talking, and one time, I think he came back from Notre Dame and he said, "Well he's going to come." And he put his arm around me and said, "I hope you feel alright about this." It was funny. It was almost as if, "Well we'll take care of you."

Q. Did he think you had aspersions?

A. He may have.

Q. Strange.

A. It was. And I assured him that I really had no desire to be chairman of that department. At any rate, so, well, Arnold came over a couple of times to get things settled up. And had to get a place. We took him around the town. And

they turned down a few places and eventually got one out on, I know where it is, but I can't think of it. There's a golf course on the east west road.

Q. 161? North?

A. Yes, I guess it would be 161, yes. There was a big development back in there.

Q. Bill Davis lived up there too.

A. Yes, that's right. Arnold had a pretty nice house there. As soon as it was, whenever the autumn courses would start, maybe this was a week or so before that, he wanted to see people like Riner and the other fellow, Fisher. Anyway there was somebody else in on the act. And we got in this room and well, let's see, how did things go? And these two people would sort of tell them how the courses were arranged and so on.

Q. Now you're talking about the undergraduate program?

A. Yes, the undergraduate program. That's right. And finally Arnold would say, "Well how many people attend that course." And they might say, "Oh 500." Then the next course, "Oh, that's maybe 400-600," whatever it was. (Unintelligible).

Q. What did he expect?

A. Yes, that's true. Well that was when he found out. Those two, there may have been somebody else but I can't think of them.

Q. Ziebur. Was Ziebur part of that yet?

A. He was there I'm sure.

Q. All I know was that he was a co-author of that book. But whether he was there I don't know.

A. He may have gotten into the act. I remember the first meeting he wasn't there. Just those two I think. I was acting chairman simply because nobody wanted to do it.

Q. Those were different times.

A. That's true.

Q. Different times. So Ross immediately then started to hire people.

A. Oh yes. Over the summer before he had even gotten over here. He had Zassenhaus lined up and what was the other one?

Q. Zassenhaus was a big name.

A. Big name and oh goodness.

Q. Hans, was it?

A. Yes. Drobot was another one I was thinking of. Alan Woods. Bambah was a visitor. This was later on. Visitor from India.

Q. He stayed a while, didn't he?

A. Yes. He didn't stay forever. Wasn't _____ in the department? The department got criticized for having these non-Americans teaching lower courses. Part of the problem was that you would get applications from India and a fellow would seem to have a wonderful reputation, very wonderful prospect. We were looking for people to teach. So, they would get a graduate assistantship and some of them, they could speak English but it would be English that they learned in India. And of course they didn't have, the slang and those things. It was really pathetic because there would be complaints about it and you'd know full well that it was

that way. Well, at any rate, Bambah came somewhere in there. And he was wonderful.

Q. He spoke very good English.

A. That's right, that's right. And on top of that, he knew all the mathematicians in India that are worth their salt. And here would come some recommendation for student "X" and there would be descriptions of how good he was and so on. And Bambah would look at this and he'd say, "This professor doesn't know a damn thing." So you don't take him. He would go through all of these things and give you inside information. He's no great mathematician but he gives a good course. And that fellow can speak English. But this didn't happen the first year. It took a couple of years for this to really come about. And the other thing that got me, was, in retrospect, all these undergraduates that in some sense are not getting a good deal.

Q. This is side 2 of tape 2, Ransom Whitney interview, May 21, 2003.

A. Where are we?

Q. You were talking about Bambah.

A. Well Bambah helped us in that direction. But the thing that seemed to me was that, well the parents that were disappointed in what was going on, eventually they wouldn't just come to the University for help, but to the legislature. And we didn't have many friends in the legislative as far as I could see for this sort of thing. And in retrospect it seemed that the University should have realized that we ought to keep those people downtown happy. And the thing they might be happy about were undergraduates. They're not too interested in the graduate

students, even though they might be getting the shaft. But we ought to have something for the people say we're doing a lousy job to the legislature. We ought to have that covered. Cause that's where our money comes from. It just seemed that we hadn't told them what's necessary or the University itself hasn't told them. Of course, the Department of Mathematics wouldn't necessary have too much weight down there but the President of the University would. The Trustees and all that should be able to do something. And another thing that complicates the situation is that some of these Indians spoke very good English but it's the English you hear here. It's different. And that's not an excuse. Another place we ought to go here now. Were there any other people here? Oh, Drobot.

Q. Stephen Drobot.

A. He was a professor, a very distinguished professor that Arnold Ross persuaded to come to Ohio State. And the Department of Mathematics serves a lot of engineering students. And prior to that time several of the lesser-lights in the department was the chief communication between mathematics and the engineers. Henry Colson is one. And in terms of the connection between mathematics and the College of Education, Leslie Miller was the one who taught most of the courses by and large that were given over there. And in my opinion he did a very good job of it. But his rewards were open to question, simply because the people evaluating this didn't realize what he was up against. Since that time, the College of Education has said our students who have to do mathematics should take mathematics courses along with everybody else, and not have special courses for them. Special courses, I think Leslie did a wonderful job. Now as far as the

connection with engineering, Stephen Drobot was really not overly concerned with the courses that the mathematics department offered in the engineering place. So that if they had any complaints, he was not a good person to go to. And Henry Colson really did that as well as he could and it was unfortunate that Arnold put Stephen in that position of where he really couldn't be of much assistance to either the engineers or to the mathematics department as far as teaching was concerned.

Q. Applied in mathematics the kind of engineer's like was always a stepchild, wasn't it? In those days?

A. Yes, that's right.

Q. The math department and Henry. Wasn't there another person who taught the engineers?

A. Alden was way back. I don't think he was, when I was a member of the department I don't think he was still there. Something we can look up.

Q. Yes. Well never mind, not that important. But I know there was not a large group in applied work at all and that kind of service work except in statistics when you were there, but I think the educators and the engineers, the people who serviced them were probably not well recognized in the department. Was that true?

A. That's true. Along the line of trying to cooperate with other departments, the College of Business wanted to get a program that goes under the name of …

Q. Logistics?

A. No.

Q. Operations research?

A. Well, it's all that but there's another name for it. They give a Master's degree in this subject and this subject has a fair amount of mathematics in it. And the dean was interested in getting a little more connection between mathematics and business. The only connection prior to this was teaching some of the trivial courses in mathematics that the people in business took. But the dean over there was trying to build it up in a different way and wanted some advice. I'm overdoing it. But in talking with him, he wanted to see what the department could do for them. In looking at what they wanted …

Q. Management science?

A. No, no. What is the name of that program? Harvard has started that program.

Q. We'll pick it up later.

A. Two different things. Now I'm not sure if what I'm going to say here is of general interest. Forgetting all the preceding part. The dean over there thought they should have more of a mathematical course for the students and wondered what we could do for them. I think he talked with me simply because he knew I was interested in statistics and they were interested in that too. But there might have been other things. The result of that conversation, looking at what had been done in years before, the actuarial, people interested in actuarials had a course just designed for that purpose. In that course, mathematical analysis as we think of it had no role. The problems were of a discrete problem. There's no infinity and all that. This would be the kind of thing that they would do with the actuarial courses. But a lot of that, the formulas and so on and you use look very similar to what you see in analysis.

Q. Recurrent relations.

A. Recurrent relations and this sort of thing. And in view of the computer entering into the problem, things of that nature, it seemed to be the thing that they ought to have. So Jesse Shapiro wrote a book which contained a lot of things. But it did emphasize this part of mathematics. We thought it was a little bit different. Maybe we didn't emphasize this as much as we should have but the book was not a roaring success. They used it for a number of years but strangely enough, part of the objection came from the mathematics department. A graduate student would be teaching the course and if they're doing something that involves something like the actuarial work, you tried to develop something that works in general, and they could easily see well, "I can do it a different way," and that's the way you usually do it. Well, parenthetically I'll say what it amounts to. You want a formula that will, I haven't thought about this in so long …

Q. Discrete type stuff?

A. Well, the discrete problems. You want the sum of the integers from one to twenty or something of this nature. Or problems of that nature. Let's see a particular example. You want the sum of the numbers from one to ten. You simply turn them around and add, something of this nature you see. It's very neat. You get the answer right away. Well if you're trying to put it into a more sophisticated way of looking at it, then the people who were teaching the course would say, "Don't do it that way. Just do it this way and you'll get the answer." But it works as far as the sum. But if want the sum of squares or if you want the sum of something else, particularly things, then these formulas look just like what you

have in calculus. Except they're discrete. The thing that a few of us thought was that, after all when you're using a machine to do your work, it is discrete. But calculus is, you get answers but in the wrong sort of way. I don't know that that should be in here.

Q. I'm thinking of the math sequence, 131, 132, 133. Is that what you were talking about or was that a different one?

A. That's different.

Q. Introductory calculus.

A. Yes, that was calculus.

Q. What you're talking about came before.

A. In my own mind, what I was just talking about would come before that.

Q. Okay.

A. Well put it this way. People who say mathematics is exact. Okay. What's the square root of five. Can you tell me? Give me the decimal which forms that. You're just not going to get it. And the very fact that you bring that in is, it's not a concrete thing. It's abstract. And we write down a simple square root of five and we think that's the answer. It's just a symbol for the stupid thing. And what you want to do is compute what it is approximately. How many decimal points you see. And you just do this all the time. It never seems to get emphasized. When I was in high school, bought a mathematics book, what was at the back of it? There was a table of square roots. Well, I took those numbers. They're it, period. It's fine.

Q. And the sine and the re-osine.

A. And go on to those things, it's the same thing. It's wonderful to have those things and if you have a computer, you don't have to write them all out. The computer will just get them for you. But it's the same thing. The computer doesn't do it any better. It's just faster. And somehow the whole thing, if you want to talk about the computer and the way things are, you ought to concentrate on the kind of thing that you have. In a general way, when you teach a subject you somehow want the beginning of it to be sort of a natural thing to do. Nothing abstract to begin with. You worry about that later. I remember one of our neighbors, industrial man, and he found out I was teaching mathematics. He said, "I haven't used calculus since I graduated fifty years ago." He had done his work, gotten married. He said he had never used calculus. Well, it somehow, it seems rather obvious that you don't teach calculus unless you've done a lot of things before that. To start off by saying, "These are just approximations," is not a good way to begin.

Q. You had cooperated with the business school quite a bit. But later on, you got into that math 131, 132, 133 with the department. And that was a big seller for a long time. I don't know if it's still there or not.

A. It probably is.

Q. It's got to be in some form or another.

A. Yes. I don't find any fault with that sequence.

Q. It was pretty compressed and I often wonder whether probably too much in detail, again because these people are not going to use the technique of calculus.

A. That's right.

Q. And so you get the differentiating or integrating in particular all sorts of things, trigonometric functions, which they're never going to see. And it gets down to, what's the real purpose of teaching that. It's a discipline in the logical thinking I think that you learn from that kind of course. It's hard to convince the student of that. It's almost 4:00. Are we getting tired?

A. I wouldn't be surprised.

Q. Well let's end this session for today.

Q. Testing, testing. This is the beginning of our third session. Side 2 of tape 2 on May 28, 2003. Alright, you're going to finish up the Ross years.

A. We've talked about his coming.

Q. Yes. You talked about some of the early conversations with John Riner and Bob Fisher.

A. Yes, that was at the very beginning. Either before or at the beginning. Now what else?

Q. Well the growth over those years.

A. Well this is the place to say that at a certain time, well let's see. I don't have that. Well, if we started 10/01/67, he wasn't there yet, right? He wasn't there yet.

Q. '67. No, he was there.

A. Was he there?

Q. It started before '67.

A. It started before him.

Q. Because it was going certainly in '66.

A. Oh okay.

Q. Let me just explain here for the sake of the tape. We started talking about Math 1001. Math 1001. Math 10-01 was a, what do you call that, party in a way, open house, at the Whitney house every first Saturday was it? Anyhow, once a month. The Whitneys were the hosts. They provided the house. And on a rotating basis other people from the department would bring the drinks and the snacks and so on. And at that meeting the department people would just come and go, as they wanted, sometimes after a symphony they'd come in. Or sometimes they'd leave early. There were pool game in the basement and a bridge game upstairs. And just a lot of talk. And it started we were trying to figure out when. But somewhere in the 60's.

A. The number I have is, what did I say? 1967.

Q. That's after Ross. It started way before then

A. It's got to be. I don't know what that means there. But talking with Marian, she reminded me of something that, before we started it, we thought we ought to ask Helsel about it. To point out that this man had nothing to do with the real actions of the department. We wanted his, in a sense, consent that this was a good idea. And this was an oral talk with Helsel, and his answer was oral. He essentially said it didn't matter to him.

Q. That figures.

A. That date here is obviously crazy. I don't know why it's written there.

Q. I wonder if it wasn't born in 1961?

A. It could have been, it could have been.

Q. I'll have to check with my wife. She remembers that. But that was the year I was an instructor the year after my Ph.D. I stayed on. And it seems to me that I was invited to that at the time. So it was already going

A. It's not surprising because the number is not that great anyway.

Q. It certainly had started before that. Describe it. Say what you had in mind and the effects.

A. You're talking about the tape now, or not?

Q. Yes. Why you did it and the effects you think it had.

A. Well we felt that there was very little communication between members of the mathematics department in any way, either professionally or just for fun. And it was our idea that things might go a little smoother if everybody knew each other. How they reacted to ordinary things and so on. And this is an interpretation of how they're looking at it, etc. So we just suggested it and enough people came to begin with. We decided we ought to continue.

Q. There were numbers of faculty members at that time were probably in the order of 30.

A. If not less.

Q. It actually shrank after, in the early 60's, didn't it?

A. That would be in that other.

Q. If you want to look that up.

A. It must have been a solid year.

Q. We're talking about the number of faculty in the department in the year '61, '62, '63. And it was fairly stable. But '62 was a big hiring year. A lot of new people

in ’62. And that was the year that you were chairman. So chances are most of them were hired by Helsel the year before. A lot of good people in that crowd. Well, several good people.

A. Obviously, it doesn’t go below ’62.

Q. Let’s look at the senior stamp. In ’62 who left?

A. These people left in ’61.

Q. Ryser left. Paul stayed another year at least. Kleinfeld? He left then too.

A. Kleinfeld left shortly after Herb did.

Q. And who is this one?

A. Spector.

Q. He died.

A. He died, yes.

Q. Okay. So really Hall and Ryser who left about that time. And then things started to go up.

A. Yes.

Q. So faculty was pretty constant from ’66 to …

A. This are too, didn’t it?

Q. Senior staff.

A. Senior staff.

Q. Well, Drobot, Bambah,

A. Yes.

Q. Who’s that?

A. Sucheston.

Q. Okay. He was a probabilist and who else came on board then that you mentioned? Woods?

A. Well, let's see.

Q. Drobot? They were all in those years.

A. Zassenhaus and Drobot. I'm thinking of the ones who came from Notre Dame.

Q. Later on there's Shad right here.

A. I don't think he came from Notre Dame.

Q. No.

A. There was a group that came from there. Zassenhaus and Drobot would be considered as the upper level. And they came from there. I somehow had the impression there were much more but those two themselves made a big difference.

Q. Did they bring some young ones along with them?

A. They may have but I can't think of a name.

Q. Okay, let's look and see if there are some new ones here. Bill Davis.

A. No, I can't remember where he came from.

Q. He was probably a new Ph.D., wasn't he?

A. Yes, I think so. What university in Cleveland?

Q. Case.

A. Case Western, it might have been. If he went to either one of them it would have been Case.

Q. Anyhow, look at all the new hires year after year. There in '64, these are junior people, it looks like there's 1, 2, 3, 4, 5. In '65, again these are junior people,

there's 1, 2, 3, 4, 5, 6, 7, 8, 9, 10. In '66, about that many, 1,2,3,4, 5, 6, 7, 8, 9, 10 more. I know there were a few people leaving but not ten. So that department had gone up like crazy at the time.

A. What we want in here is some kind of a broad statement about this, don't we?

Q. Yes.

A. Let me just try something out. There are essentially, Mann and Hall were the only ones there of note. Then down here, Calderon would be considered and Herstein would probably be considered as good acquisitions but they didn't stay.

Q. Now you're talking about 1950.

A. Yes.

Q. That was early on.

A. Somehow the word senior staff by itself doesn't necessarily include or disclude, whatever it is, what I'm thinking of.

Q. Sometimes it means full professors and sometimes it means important people.

A. Yes, that's right.

Q. They're not always the same.

A. That's true. That's very true. I think Calderon, Herstein were regarded by a lot of people as being very good people. So we brought in a few. As a member of the department nobody thought very much of him.

Q. But he had a reputation.

A. He probably did. Can't deny that. Spector was good.

Q. Bill Davis became a senior member in the sense of the word.

A. Yes, that's right. Should we say something to the effect that in a certain time period, say something about …when you get down to the nitty gritty it almost seems like one of the things that I would like to say but I'm not sure I should say it.

Q. Go ahead.

A. Part of the fact that these people were hired and didn't stay very long and this sort of thing …

Q. This is in the Helsel years?

A. Yes, this is the result of the fact that the oldest, that a good chunk of the senior professors got their degree here. That's I think the main issue.

Q. You think that made it harder for new people to sort of, to become part of it.

A. I think the people who would be coming in, after they were here a year or so, they would get the idea that Rado and his students in a sense …

Q. Didn't this speak a little bit to the mathematical vitality of the department that was ingrown and inward looking?

A. That's the right word, yes.

Q. Inward looking so that an outsider coming in didn't see much, didn't see much happening.

A. Yes.

Q. And Ross turned that about for sure.

A. Oh yes. That's right. No question about that. It doesn't seem to mention Helsel by name.

Q. He wasn't probably the dominant character.

A. That's true. That's the trouble.

Q. That's exactly the trouble, yes.

A. Maybe the word ingrown.

Q. Well that's why you don't hire your own. That's universal.

A. Yes. Somehow you don't, find a way of saying it, but hiring your own people is sort of the reason you do that, whether maybe you're trying to help them out for a year or something like that, that's another matter. If it's the last resort. But if you need more people and here are your students, put them on.

Q. But they don't bring much new to the department.

A. Yes.

Q. I think there are departments who had to do that because of the stages of growth, like industrial engineering. We're only going to get people.

A. Yes. Oh they did.

Q. Been that way for a long, long time.

A. That's right.

Q. Ross hired a lot of people and the department grew like crazy.

A. That's right.

Q. I'm very thankful for that.

A. Well I remember when he first came, there was a _____ out there and _____. It wasn't long before that _____ wasn't big enough. I was very much aware of that fact. Needed a bigger _____.

Q. Is there anymore to say about the Ross years?

A. One thing, this is a big part of Ross, was this special program. And one interesting thing about it is that the ones he had that went through, not the locals. And I think he was proud of the fact that they were not all in mathematics. When they ended up they were not all in mathematics. In fact, I don't know how many were. But at any rate, he was proud of the fact that they were doing something else. And that was his, they learned how to think. As a personal matter, I liked the fact that that was true; that he always gave me the impression that this was absolutely the best way of doing it. Well I think there are a lot of good ways of doing it. I wouldn't want to say it's the best. If you take a young kid who doesn't know too much and give them some interesting things to do, you had the same effect I think.

Q. You've got to say that he got very bright students.

A. Yes.

Q. He had very, very bright students.

A. That's true.

Q. With that kind of student you can turn them on in lots of ways. Even with number theory and it worked. But he could have done just as well with …

A. Probability theory or something like that.

Q. But he had a spark to him. He had something. A personality and so on that caught these kids.

A. Yes.

Q. Interesting man.

A. I was just thinking. I was really going to try to write up something covering this area that we're talking about now.

Q. That would be good. Are you going to give this to Bill?

A. Who?

Q. Bill Studer, the archives, this document?

A. Oh this right here? I have no objection to it.

Q. They'd love it, I'm sure.

A. As a matter of fact, I'll put it a different way. If you hadn't brought that up, I would like to go the mathematics department and say, "Here, this is something that I put out some time ago. It's out of date now. But the old stuff is there. Do you want to take care of this?" I wouldn't want to do that, because I would have a feeling they wouldn't take care of it. And taking care of it, one way of doing that is to send it to the archives. In a way I think some people (end of tape).

Q. This is tape 3, side A of the Whitney interview, May 28, 2003. Where were we? You were just saying you were going to donate that copy.

A. That can go there.

Q. What we're talking about, just for the sake of the tape, we're talking about Ransom prepared some time ago a list of all the faculty from the beginning of time, 1904, of when they came and their rank and everything else, just a comprehensive listing. How far up does it go? '74? Up to 1985. And he's going to donate that to the archives, or a copy of it to the archives. You've got more to say on Ross or do you want to go back to 1001. I don't know if you finished that. You were talking about the growth of the department vis-à-vis 1001.

A. We haven't said anything in there about 1001.

Q. You gave reasons why you wanted it because of the communications within the department. And then we got sidetracked.

A. On the size.

Q. Yes, on the size.

A. Well that was necessary. 1001 couldn't go with 90 people in the department. It could but somehow, I think the reason it worked to begin with that the department wasn't very big.

Q. Back in the days when there were 30 some in the department, how many would show up at that?

A. Let's see. I've got some numbers here. These are the names. This is just an alphabetical listing. And I presume that the red marks, that means they were there. I think. Because I think this was just a list of department members.

Q. This is '67-'68. Just to give you some idea.

A. Well, '67, well let's see, is Ross here?

Q. Yes.

A. Okay. So it started before that. I don't know exactly why I had '67 there.

Q. Oh and you've got dates down here. Oh, numbers of something.

A. See we had the list and then what's that say? OSU animal or something like that. I don't know.

Q. Something's wrong here.

A. Well, the red marks certainly mean they were there.

Q. Alright, we're ready to go again. Anyhow it looks like a large portion of the department showed up at those things. Whatever the numbers mean, most of them are taken care of. What were the ground rules of 1001? Coming and going, drinks and whatever, what you did.

A. Well, we had a starting date, I mean a starting time. And talking with Marian about this before, there were a couple of people who came very early, almost an hour ahead of time. Some of them didn't get the idea. On the days when this happened, we would go out for supper, take the kids and go out for supper. We didn't mind that. We ought to go out for supper every once in a while anyway. But we didn't go exceptionally early. We went so that we would be back a few minutes, maybe half an hour before this thing starts. And sometimes somebody would be waiting at the door. But at any rate, that's very minor. But then they would stay. When did we start? Did we start at 8:00? I've forgotten. But she was telling me yesterday something about this which I had forgotten about. She would furnish the first gallon of coffee. That was all done. She would do that. Then they would furnish any of the other drinks. Just a general remark would be, it's beer and soft drinks, would be what it would be. Okay. Now then she was saying they would disappear, a lot of people would leave earlier than the other. There would always be half a dozen, five or six people who would still be there. And she said she would make more coffee. The other was all gone. So she would make more coffee to take care of these people who were still there and she said we'd sit around the table and talk. And I don't know how long that lasted. I just

don't remember. But I can see that happening. Frank Carroll would be one. He would do that you see.

Q. I remember there was always a bridge game going on upstairs.

A. On the second floor. And there was stuff in the basement. As a matter of fact, I have a picture of Zassenhaus down in the basement. You don't expect that necessarily.

Q. The pool table and games, I remember you had all those neat games.

A. Yes, the pool table was down there.

Q. Skittles.

A. That's right. A couple of different ones. But there were some, like Frank Carroll, he would always be there. And I think Bill Davis, is his first name Bill?

Q. Uh-huh.

A. He was always there. Probably some others. Outside of that there were no rules. No rules at all. We never said there was a closing time. Maybe we should have. But we didn't at any rate. A lot of people would go home at 9:00. And a bunch would stay after that.

Q. I remember some would come in after a symphony.

A. Yes, that's true.

Q. That had a symphony and it might be 11:00 or so.

A. I'd forgotten that.

Q. They would come in and have a beer or two.

A. Yes.

Q. So that ended probably …

A. I know when we got up to 90 people it was gone. And it stopped and the people involved, and I don't know who was the ringleader of that. It may have been Frank Carroll. But he collected money from other people. And the two of us had a weekend in New York City. I say a weekend. We had a hotel. And we went to a show. And I think that the last day we were there we had a trip around Manhattan or something of that nature. And we didn't pay for it. I just have a feeling Frank Carroll collected.

Q. Well I know people were very grateful. It was a great thing to do. It had a tremendous impact on the department I think. After the split did you continue then?

A. No, no. See, it stopped as soon as the department got so big.

Q. So that was probably late 60's then probably.

A. Yes, when there were 90 or so people in there.

Q. That was a unique thing. The only other thing, I don't know if we talked about the math building.

A. When did that happen? The building, the addition to Cockins Hall.

Q. And this had to happen after '61. I don't think there were any visible plans that I know of when I left in '61. It was certainly built by '66. Were you chairman when you were doing the building?

A. No. The thing, well, who's the fellow? Next to the building to the east of the Faculty Club.

Q. Geology.

A. The recent person, well he's pretty old over there now, was he at breakfast the other day? He usually is.

Q. I didn't see him.

A. You know who I'm talking about?

Q. Yes.

A. Who?

Q. Charles Summerson.

A. Yes, okay. Later on I found out when that department did anything like remodeling of any kind, he was the one, Charles, he was sort of the department representative that would talk with the people who were planning the change, whatever it was. And I think he was very good at that, in relationships. And the result of that, the auditorium is named after him. I think it is. It must have been that. But at any rate, in retrospect you see, there was nothing like that in mathematics. And somehow, I think it was just ignored. In other words, they probably talked to the dean, etc., about getting more space. Eventually they get some allotted and try to build it you see. And I think that stopped there. And of course after we moved in, in fact before we moved in, it became apparent that there was not room for the library. See the library was over in …

Q. The main building.

A. Well, yes. But before it was in the main building, it was in physics building way over on the other side of campus. Not the new one but over there. And we occupied the top floor of that building. The library was on the top floor and that was a combination of mathematics and the other part was whatever physics

needed. Those rascals, the physicists, got a new building, a promise of a new building on the other side of the oval. Wonderful thing.

Q. The old building you're talking about Mendenhall [Laboratory] over there.

A. Yes, Mendenhall [Lab].

Q. That's where physics was?

A. That's right.

Q. That must have been back in the 40's and early 50's.

A. Oh yes, it must have been there forever.

Q. Okay. Then the new building is the one on Seventeenth?

A. That's right. The library was over there and whatever we had, whatever we got, it wasn't very much. Then, this new building was promised to the physicists. And they told us, they didn't swear on the Bible, but they told us that we would be taken care of, the library. The library would be. And when it finally came to the nitty gritty, there's no room. So, where were we put in the main library.

Q. By now we're talking late '50's, '55 so on. Because that's where it was when I was there.

A. Well okay, then that's it. So we were put in the main library. And that didn't go very well with us. Okay, but we're there. Okay. Now we get the plans for a new set-up in the old building. And down in the basement it was going to be a library and then a big room so you could hold, well if you had a visitor and giving a talk, he could give a talk down there. Enough room for all of us to get in there. Well, somewhere along in that line, somebody said, "The library won't be big enough for our books." And for some reason or other it had been planned that it was you

see, but the planning was done by somebody maybe who didn't care or whatever it was. Whatever it was. And we needed Chuck Summerson or somebody like him, who would have been there with the architects and point out a lot of things. And apparently this was never done. So, the end result of that, what they intended to be the library, was put into this bigger room down in the basement. Both were in the basement. They were on one side of the library and the other. And the library went in there and then considerably later they built another building on that same street to the east.

Q. The math tower or whatever.

A. The math tower. Yes, I guess that was it. The math tower. But then beyond the math tower, there was another building. You could go from all these things from one to the other. But nevertheless there was another building there. And they put a library in there for engineering. Chemistry, physics, all that was put in there. And we were in there.

Q. This was along Neil Avenue.

A. No, not on Neil. This was along the street that the post office was on. The post office was on what street? But at any rate, it goes east and west.

Q. Eighteenth.

A. And the math building is right across the street from that. And farther east, the next building is still there.

Q. Brown Hall?

A. Yes, Brown I guess is the name of it. And then beyond that is where the tower went. It's either the tower or it's the next building I'm going to talk about, which

was right next to the tower, and that housed the library for our college. And that irritated a lot of people. The chemists said our library should be right where we are. Later on physics department had their own anyway. I don't know why they're not out there. Our library is in that section now. And as far as I can see the only thing bad about it is it's not in the math building. Now where were we?

Q. We were talking about the building.

A. Oh okay. Now, the big thing was, we needed a person to see those architects. Gosh, this is beside the point but it's an interesting one. There was a fellow. He was in mathematics before my time. And decided mathematics was not for him. And he got a job in aeronautical engineering department. Now he may have had a Master's degree or something like that. And he got a job over there. And he had an office. I can't remember his name just like anybody else. But at any rate I had occasion to visit with him every once in a while. And I went in to his office and well, to make a long story short, I'm at the door over there with the writing board, old kind. Right underneath that was the electric switch for your desk which was over here. He just got a big joke out of that. He hated it but of course he got a big joke out of that. Well, when it comes back to this other building, one thing I remember where a little bit of information would have changed it. That little corner over there, you have sort of a square corner and you can't really put anything in it except if they put in shelves, it would have been a good bookcase. It was just right for that. But it never had that in it. So you had to fuss around where your books were and so on. And that little thing could have helped an awful lot. That's one of the things I remember. I can't think of one right now. I think

anybody sitting down with the architects, yes, we want a blackboard but don't put the thing underneath it. Now they didn't do that in that building but they might very well have and so on. I just felt we should have had somebody doing that.

Q. It's kind of the stories that are leading you that a little experience with that, put the things in the wrong place. You would think the architects had never been in the classroom.

A. That's right. Or they took somebody's word for it. That's right. I don't know if there is anything else about the construction. At any rate, that was underway. We get to the summer when it's effectively done and of course Helsel wasn't in town or anybody else. So I had to, well we had the fourth floor in the old building University Hall and we had a lot of stuff in that building. And the question was, where's it all going to go? And you have to tell the people, "We're going to move it." You take this and you put it over here. Somebody has to say that, but I had to do that for some reason or other.

Q. That must have been a job.

A. Well it was. Not physical. Well when it came to some of the particular offices, I think I moved some furniture around in there, because of the way they put them in or something. I don't know. So there was a little physical part in there. I didn't have to worry about it. They took the big stuff out. Now at that time, we were in there, I'm losing track here. Well, we're still in University Hall.

Q. We've got to go back and talk about University Hall too. But go ahead. We were on the third floor of University Hall?

A. Yes, the psychology department had the fourth floor. And apparently they had mice in there. Eventually, the order was, nothing of that stuff should be up there on the fourth floor. That was the University saying that. And somewhere by that time we had IBM equipment. Big iron stuff you know? And that just go on that fourth floor. And they let us put it up there.

Q. Fourth floor of the new building?

A. No. Old University Hall. That went up there for a little while.

Q. Is that right?

A. How they ever let that happen after they kicked psychology out of there.

Q. Well the floor collapsed. Part of it.

A. Yes, that's right. We had that stuff all up there.

Q. Really?

A. We didn't haul it up. The University did it for us.

Q. So this is when you're in the new building?

A. No, no. I'm just saying where it was.

Q. Where it was. Okay.

A. And then we had to find a place for that, and I'm not sure of the time period here. Did it go in the basement of that building?

Q. It was in that inner room. There's a bank of first floor offices on the north side towards Eighteenth. And there's a hallway there. And then there's an inner room bigger than this, where the stat lab was.

A. Yes, that's right. But did we have the equipment in there?

Q. I'm not sure. Where else? Cause we didn't get that Cockins Hall basement room until quite a bit later.

A. Oh okay. Well somewhere along the line it was over just east of the post office. There are some buildings.

Q. That old communications lab.

A. Communications lab. And I think we had it there for a while. And I think when it was put there that was sort of against the rules too.

Q. We'll have to trace that whole thing, if you can get that in mind before next time when we get there.

A. I'll try.

Q. Because that started way back. We were in University Hall, I remember that. And then down in the new building and then down in the communications lab, and then Cockins Hall.

A. I probably told you this but I'll tell you anyway. I had Clarence come up there to see me. And this one fellow came in. I think he was from psychology but I'm not sure of that. But several things. After we talked for two or three minutes he said, "You're from Cleveland, Ohio," because of my speech. That impressed me right away. Well then he started saying, "Do you know what's on the other side of that wall?" I said, "I don't know." He said, "Behind that wall is an elevator shaft. And it's now empty." Well I heard that and I said, "Just right through there?" He said, "Yes, that's right where it is." Well after that I go to thinking, what if there is a fire? That's a wonderful place for the flames to come up and here I am in this room. That was some way to get out. So I requisitioned a rope and I got the rope

through a requisition, a regular requisition I got the rope. As far as I know nobody questioned it. So I tied the rope on to a radiator. And put the rope right there beside it. And somebody said, "Well, did you ever try it out?" I said, "If there's a fire I don't need to try it out ahead of time. I can go down that." I always thought that was a pretty good joke.

Q. Well let's talk about University Hall if you're ready because that's part of the heritage too. So the math department was housed in University Hall from way back. And basically the third floor and some of the second floor. Helsel's office was on the third floor or the chairman's office was on the third floor. The third floor looking out over toward the library. And the stat lab was there too.

A. When did psychology get in there?

Q. Well I don't know.

A. I guess they were on the fourth floor only.

Q. They were on the fourth floor but there were classrooms on the fourth floor. Certainly in the 50's. And the two offices at the end, Kreyszig was in that one office. I know that because the year before I graduated. I and a few other fellows were in the little office across the hallway.

A. This is the third floor?

Q. Fourth floor, way at the end, near the theatre. Near the iron exterior fire escape. I'd be working there late and I'd go out that way instead of going through the whole building. So I know they were on the fourth floor. Now that's in the 50's. We were in the stat lab towards the south side and there were offices scattered about.

A. What floor?

Q. Third floor. And I think, who was it, Herb Ryser or Marshall Hall, one of the big ones at the end of the hall on the second floor they closed in the end of the hallway. And they had little offices there. This is a major full professor that had a desk and a chair and you couldn't get three people in there. Do you remember that? Those little desks?

A. I can't picture that. But Marshall Hall was there, I think the following I was told about. For one reason or another, who was president of the University?

Q. Fawcett?

A. Probably was. Okay. Well at any rate, he was either asked to come over and look at University Hall or they wanted to do it anyway. At any rate, he came over and Bob Fisher took him around and showed him things. And I remember him saying that, well, one of the things he had to show him was this room where Marshall Hall was. And he took him back there and said, "Well, we have a full professor in this room. There's a little light bulb up there." He laid it out pretty well. Well that did any good or not I don't know. It certainly pointed out a lot of things that could be done at that time.

Q. When I came to OSU in '54 , there was only one room for graduate assistants..

A. I can't picture that yet. What floor?

Q. Third floor, in the corner beyond the stat lab, the southeast corner. And there was room to hang our coats down at that end. If we had to meet a student we'd meet them out in the hallway. There was right next to Helsel's office the math department office, there was a little access door about this big on the floor, to

access a valve or something, with a miniature door frame and door. Couldn't have been eight inches high.

A. I think there were several of them in the building.

Q. I made up a label and put on there. It said, "Graduate Assistant's Offices."

A. I probably saw that. I must have seen it.

Q. I think the reason I did it is because I knew Fawcett was going to come around. I don't know if he ever saw it.

A. If Bob Fisher were aware of it I'm sure he would have shown it to him.

Q. So if a fire had occurred in that building it would have been very bad. Then they cut out classes on the fourth floor because of that. And then psychology went up there.

A. I swear that's where B.W. Griffin went.

Q. Could have been. After psychology went out.

A. Yes, they went out.

Q. Up the down staircase. Remember the staircase in front, when the front door was supposed to be up. We were supposed to go down that. As you came in the main door, to the left there was a staircase. And I think it was up only because it was only about three feet wide.

A. Okay.

Q. You had to go down other staircases somewhere else.

A. Okay.

Q. But that staircase if there would have been a fire, it would have been awful.

A. One summer day I was down there. Classes were not in session, I'm pretty sure of that. At any rate, the fire departments from around the state were having a conference or something in the hall. They were there for that. But there was always an intermission to these things. When there was an intermission, these firemen and people that take care of it. Why do I forget names like, who arrests you?

Q. The policemen.

A. The policemen were there and the firemen were there. And they came out on this intermission time. And there were a lot of them smoking, right in the main hallway. Signs were there, "No Smoking." That really got me. Oh well. Where was, we were talking about a little bit ago, the one that left here, he left after … little short fellow. His name started with "E" I think. You mentioned his name here not too long ago. He left I think when Ryser left.

Q. Kleinfeld?

A. Kleinfeld. Where was his office?

Q. I don't know.

A. The way I had it, he must have had an office that looked out to the south.

Q. Okay

A. And on this particular day he was looking out. And his car was parked out there. And the students were jumping on it up and down. You know what happened?

Q. Yes.

A. That was when they didn't get to go to the Rose Bowl. Remember that?

Q. Oh, yes.

A. And he was seeing it looking out there, seeing them jumping on his car. On the others too. Oh, was he mad. Oh well. Now let's see. Let me just come back here. The increase in faculty, etc. and all that.

Q. Something on the Ross years.

A. What was the next thing we were talking about? 1001. I don't know. It won't be anymore than what we've talked about. Should I do that anyway?

Q. Well, on 1001. If you recall. You can add things. Why don't you write it down. We're going to start now on the history of the statistics. So you've got to start with the early days in mathematics. It was you and Henry Mann. We can move the stat lab aside. That will be a different line. There was you and Henry and whatever happened from there on?

A. Did we say anything, I talked about it, it was part of Bob Henry coming and so on.

Q. Yes, we've got all that.

A. Okay.

Q. We've got through your dissertation and on with the faculty. But you were the only one; there wasn't anybody else at that time, right?

A. Right. Nobody else at all. I think I talked to you about it. Whether I should stay here or go somewhere else.

Q. Yes, we did that.

A. We did that, okay.

Q. We talked about the potential here.

A. Potential was the thing. Well to begin with, I'm trying to think whether some people came over to me right away or not. I would doubt that very much. But some of them would know some of their pals had gone to see Henry. And then he would send them to go see me. Conceivably it could have been some interesting program or some interesting problem. He wouldn't have said but nevertheless on the routine stuff I'm sure that's what happened. So they would trickle in from time to time. And occasionally one of the departments in that area, in that area I mean.

Q. Mostly agriculture.

A. Agriculture completely. They might get the idea they'd like to hear somebody talk about statistics. So I did that. Not a lot but some of that went on. Yes. Or take a particular problem and say what to do with that sort of thing. And then I think that probably as much as anything would have sent other people to me when they had a problem. And some of these people I had seen at the Faculty Club and they might say something to the effect, "Are they sending a student over to me?" At some stage, what kind of equipment was available at that moment? Must have been something.

Q. Card sorter.

A. Card sorter, yes.

Q. Probably accounting machine.

A. Okay. Now I think certainly as far as preparing the cards or punching them in, I never do any of that. I told them, I think this is right, that there were some students who would be willing to do it. Give them some idea of what that is. And

you better check what they do. If you want somebody to do it. So that started that. I just can't picture the …(end of tape 3, side A).

Tape 4, side A

Q. And this is the beginning of stat lab.

A. Yes. Did we talk about the University sending some of us to Bell Labs?

Q. I don't remember, no.

A. We didn't talk about that.

Q. No.

A. Let's see. What's the place, it's got a name here, that somehow if there was outside money coming in for something.

Q. Research?

A. Research Foundation. They had the idea that computation was something that would get better and better. So they thought they ought to send some people to Bell Labs. Did I mention this to you?

Q. I think it's on tape.

A. Oh okay. They wanted somebody, they felt later they ought to send somebody from the University to Bell Labs to find out what's going on.

Q. Okay, we're talking around 1950 now probably. Pretty early on. Soon after you became a faculty member.

A. Oh yes, certainly a faculty member. I don't know how to pin a date on it. Maybe I can look that up.

Q. Were computers in the picture yet?

A. Well, it was in the offing. Not the IBM. Prior to going though, one of the things, well, when you use the IBM equipment you had to wire the thing you wanted done. Okay? And right in there somebody had devised a way of putting on punch cards what the machine ought to do to get it squared up. And this in a sense, in my own mind, it's the first time I know of that an internal mechanism or program. When I talk to some people about this it goes in one ear and out the other. Somehow they thought that the punch card system was there and they never did anything new or anything else. But the very fact that they did that, it short of showed it could be done.

Q. We had a card program calculator it was called.

A. Yes. Without cards.

Q. On cards. The program was on cards.

A. For doing what?

Q. The program. Not wires but on cards.

A. Yes, that's right. But was for a square root? I don't know.

Q. Yes, you could do whatever.

A. Okay.

Q. There were only 24 storage locations, so you couldn't do a whole lot. But that was when I was a graduate student, 1956 about.

A. Well then forget that for the moment.

Q. But at any rate, when you visited IBM they were probably ahead.

A. Yes.

Q. So this was earlier.

A. I was sort of thinking of the thing that had been done. That would eliminate some of that. You're right about that. At any rate, they wanted to send some and I, Roy Reeves and Leslie Miller. I think the three of us. I don't think there was anybody else. But they sent us down there to see what was going on. Well that happened. Then I guess when we came back, they wanted to get something going. And they wanted somebody to head that. I have no idea what would have happened if I had said, "Well, I would like to be them." I can't tell. In a sense I feel as if I was on the ground floor more than Roy, but maybe not. It doesn't matter. But at any rate I didn't want to do it anyway. I was happy to see him do it. When he took over that was that. Now, we had, as time goes on, somewhere in there we got the IBM equipment in the basement of Cockins Hall I think.

Q. Well we were in the math building first. In the new math building. First in was in University Hall. You said they were on the fourth floor there.

A. Yes, it was up there. But then that's considerably before when I'm talking about, I think.

Q. But were you in the math building, the new math building?

A. No, when you say new math building, you mean the tower?

Q. No, no, the new one attached to Cockins Hall.

A. The new one attached to Cockins Hall. We hired a person who worked up at the agriculture thing up north.

Q. Wooster?

A. Wooster. And his name was, I'll have to look it up. I'm sure I can find it. I'll just put down Wooster man. He was up there and he did the IBM stuff for the stuff up

there. And he was pretty capable, but he was interested in coming down to the University. And he wanted to know if I could give him a job, if he could get a job with us. And it seems to me, when he did come, we had all sorts of punch cards down in the basement of some building. It must have been the one attached to Cockins. We were down there. Piles of cards. Old cards you know. And I guess when this person I'm thinking of came, they already had the stuff for Roy Reeves over in that other building across the street. He would go over there to do things. I guess we stored what we had.

Q. Are you thinking of Fred?

A. Fred? Sounds right.

Q. Okay, now that's later. This is 1970's.

A. Could very well be.

Q. Ruland.

A. Ruland. And he was mighty good at that. This is toward the end of it but at any rate somehow or other, we had a professor in mathematics who came from Poland. I'll have to find out what his name was. But at any rate, I think he had a connection with this. But at any rate, Ruland saw something someplace about the possibility of doing some work over in Poland. And he got involved in that and he went over there. And did a lot of stuff and then came back and so on. And strangely enough, I didn't realize this until it was all over, he got a Ph.D. over there.

Q. Fred did?

A. Yes. By the time I left, he had already, so he was around.

Q. He was still around.

A. He was still around, that's right.

Q. He was over in the computer center by then.

A. Fulltime?

Q. Yes.

A. Okay. That's right. He had an office over there and I remember going over there. That's right. In fact, it wasn't all that long ago. Only five or ten years maybe. He had that office over there. But prior to having that office, that's where he got the work done cause he was still working in a sense for us. Boy it's hard to put a date on those things.

Q. Let's go back and think of Fred's predecessors. Price? The tall guy? And then Bob Dudgeon worked for him. They were just graduate assistants.

A. They were just graduate assistants.

Q. They weren't hired but were in a sense predecessors cause they worked the level of the job increased to the point where you were able to get a fulltime hire person to do that. And there was a woman in there too. I forget.

A. Oh yes.

Q. She wasn't there long but I remember her.

A. No, the two you mentioned got Ph.D.'s.

Q. Yes.

A. There was a woman, several women.

Q. She might have been the predecessor of Fred hired to do that. Not a graduate assistant.

A. The woman I'm thinking of came from where? What's the big country east of us. Well known. East across the Pacific. Big one.

Q. China?

A. China, yes. China. And off the Chinese coast is Taiwan. We had a student from there who got a Ph.D. She went back there as a matter of fact. I don't know if she did any work in that or not. It's hard for me to believe that she wouldn't have. And I've been trying to think of her name for a long time.

Q. But anyway, let's review the succession. The succession of stat lab that became formally recognized I think the first year you were a faculty member. It's in the directory. I think you said that you did it. You didn't get official permission.

A. That could be.

Q. And at some point you had offices in University Hall and graduate assistants. I was one of them. And Lydia Kinzer.

A. This was University Hall?

Q. I'm going way back now.

A. Okay.

Q. When you were on the third floor of University Hall.

A. Okay.

Q. And you had Lydia Kinzer there. She was the woman who knew how to do everything.

A. That's true.

Q. She tutored graduate assistants like myself.

A. Oh really? Okay.

Q. Kept things straight. And I don't remember where the equipment was then but I'm sure the card punch was right there.

A. Yes, okay.

Q. And the sorter probably was in there too.

A. That would be in the same place.

Q. And then from University Hall, you moved into the first floor of the new math building. By the new math building I mean the one attached to Cockins. And I'm pretty sure the equipment was there for a while. The equipment that we're talking about. The card punch.

A. The IBM stuff.

Q. The card punch, sorter and probably an accounting machine.

A. Do you think that was on the first floor?

Q. I'm pretty sure. That was when Bob Dudgeon was …

A. Well that's definitely where you say.

Q. Yes. Because that was 1966 when I came back '67. And Dudgeon and Bert Price. And then the move to Cockins. In the basement of Cockins you've got that room down there, much bigger room.

A. In the building attached to Cockins …

Q. Let's call it the old new building.

A. Okay. The computer equipment, is this right, never got into the old new math, the new old math building?

Q. Computer themselves?

A. Yes. They never got there?

Q. I don't think so.

A. Okay. So the only place they could have gone would have been over across the street.

Q. Kinnear, yes. Then Baker building.

A. Well, I don't think the computer …

Q. Talking about Roy Reeves' outfit?

A. Yes. He went over there. They wouldn't punch cards was it?

Q. No. Well, yes, we carried bundles of punched cards over there. But the computer was 704. 704 or 709 or whatever.

A. Yes, you had to punch cards but not the same thing as today.

Q. That is electronic.

A. I'm thinking of the heavy stuff. I think at one stage it must have gone. I think it went from University Hall over to that other place across the street. It went over there sometime.

Q. Across the street?

A. East of the post office.

Q. Oh, communications. And that's in between my times. I don't know. You're talking about the stat lab equipment.

A. Yes.

Q. Okay. I called them accounting machines but I think it was really a printer. A printer with some capacity to rearrange numbers.

A. That was nothing we had. That was across was Roy. Is that right?

Q. Could be. Could be.

A. After we made the trip to Bell Labs, I don't know how much time elapsed. But they got a machine. You said the number.

Q. 204.

A. 705, I just don't remember.

Q. Well wait a minute, 650 first.

A. Okay. That must be it. At any rate, where was that put? It was put on the east side of the river, on Kinnear Road. And that's where Roy Reeves was. And that equipment was there.

Q. And this would be 1959, 1960, 1958 maybe. '57. Anyhow in that era.

A. See I don't think Ruland came down that early.

Q. No, he was much later.

A. I was thinking perhaps, and correct me if I'm wrong, when he came down the electronic equipment was there.

Q. Oh definitely.

A. And that was wherever Roy was. Now you do something on the new computer. The basement of Cockins Hall at the time the punch card equipment was out. In the basement of Cockins Hall we had a ton of punch cards.

Q. Yes, but those punch cards were there for quite a while. They were still active to feed the machine.

A. The new computer.

Q. Feed the 704 and 7094, whatever it was.

A. It was all for that. It wasn't for punch cards.

Q. That was input. Punch cards were input.

A. Yes, okay. Do you still have punch cards around?

Q. I've got a few at home.

A. Okay. Is there a machine you can put them into?

Q. I doubt it.

A. We were feeding computers when I was stat lab director right there in '62 before I left for that year or two. We were still feeding the computer with punch cards.

Q. The IBM?

A. The IBM.

Q. Okay. And we were running those cards across the street and put them in the stack, and then we'd go back a few hours later and see if you got anything. But it was all punch cards at that time. And I don't know …

A. And at that time Roy was in charge.

Q. Oh yes. They were in Baker Hall.

A. The staff over in Baker Hall did not have the old IBM equipment.

Q. They had a room with punches.

A. The old stuff.

Q. Yes. Cause students had to submit their …

A. Alright. Let's see. Two usages for punch cards.

Q. Yes, all we did with punch cards then was input the computer. There weren't any printing machines or sorters. In the early days everything was done with punch cards. The sorter where you printed stuff out, that sort of thing. You set them in stacks.

A. Regardless of what the computing equipment is.

Q. Yes. That was early on. That's all there was. But then when the electronic equipment came in, pretty soon the punch cards were only the input device and output.

A. Was it the same kind of punch card?

Q. Yes.

A. Looked exactly the same?

Q. Exactly the same.

A. Okay. Alright.

Q. Cause we struggled with the biomed program. I remember that very well. We'd take a bunch of cards over there. People like Bob Dudgeon would take cards over there and then go back a few hours later and would fail because the JCL wasn't right. And so they tried again three or four times. I remember running back and forth across the street with these piles of cards. And in class, when I used mini-tabs, that's what the students had to submit their programs on. This was late 60's.

A. I think what I've been doing, and this is just may fault, when I hear of punch cards I think of IBM equipment, the monster stuff.

Q. The big black stuff.

A. Big black stuff, yes. That's what I think of. Now, when the basement of Cockins Hall, when we reached the end of something, we had lots of cards down there. But those cards were never used in the monster black machine. Is that right?

Q. I don't know. I see what you're saying. They were data decks.

A. Yes. Okay. Right.

Q. We didn't want to throw them out.

A. Yes, that's right.

Q. They were in boxes there.

A. That's the old stuff, right? Or not?

Q. That lasted a while.

A. That could have the data stuff on it even though it went across the street.

Q. Oh yes.

A. Okay. That's where I got mixed up.

Q. Those are the decks that we'd take across and we'd come back and you'd never know if Professor Green was going to come back and put them in a box.

A. That's right. That's right. But that is considerably after the demise of the big black machines. Okay. I just had them muddled together in my own mind. Okay.

Q. But we still had key punches down in the basement down at Cockins Hall. Because we had to prepare the cards. We might have had a sorter down there. I'm not sure.

A. I don't remember it being down there but that doesn't prove anything.

Q. I remember that big black one we had, must have weighed a ton, at University Hall.

A. It was a monster. That's the one we put on the fourth floor. That's true. They ordered it in, they could have taken it up there. They didn't ask for any reason. Or the fact they moved a lot of people out because of the floor.

Q. Anyhow, let's think of some of the names of the people who went through stat lab. I mentioned Dudgeon and Triss. Ruland was now a hired hand.

A. We hired him in. He was the hired hand.

Q. Most of us were graduate assistants.

A. In fact, you might almost say that was the first time the University gave us something for that particular thing.

Q. So you basically bootlegged the graduate assistants out of the math department budget?

A. Yes, I guess. Let's see. There were graduate assistants, but who else knows what they're doing?

Q. Right. So it's just a matter of the math department funding graduate assistants and you got some.

A. Yes. And they were assistants in the same way that they were teaching. That's got to be the way. That's what happened.

Q. And that lasted …

A. Ruland was the first one.

Q. Ruland was the first one. And this lady that I mentioned.

A. Lydia Kinzer?

Q. Well, yes. Lydia was an employee of the math department. I don't know what kind of title she had. That must have come out of the math department budget.

A. That would be the same thing.

Q. Now it got more formal after you formed the statistics department and you probably had a different kind of budgetary arrangement there. Who else was in there while we're thinking of it.

A. The names you mentioned are certainly familiar ones.

Q. But you had a string of graduates. We have to go back, maybe not today, but we have to go back and think of the curriculum and the faculty and how the program evolved up until the split. But let's not do that today. It's 4:00.

A. Okay.

Q. But the stat lab just got bigger and bigger. Quite an operation. Well let's quit for today. It's 4:00.

Q. Testing. This is the Whitney interview, Wednesday, June 3, 2003. At the end of side 2 of tape 3. We're talking about 1959, in the math department.

A. There was a fair amount of agreement between many departments that the Master's degree thesis should be eliminated. This was discussed in the mathematics department, and eventually a vote was taken, and they voted, except for two people, to go along with the omission. And the two people happened to be myself and what's his name. Why do I forget these things right off?

Q. Yourself and?

A. Zassenhaus and myself felt that the Master's thesis for some people was a good idea. I think the argument behind was that, whatever they were going to do, eventually they're going to have to write reports of one kind of another, and this is the way to practice in that direction. As a personal matter, I believe that the

elimination of the Master's thesis was a matter of taking something away from the professors that they didn't really want to do.

Q. There isn't any question about that.

A. It seems to me that it was still possible to do it, isn't that right?

Q. You made me do it.

A. Okay. So it was still possible. But you didn't have to.

Q. Probably because of you two.

A. It could be. Well it certainly would be. I think one of the reasons Zassenhaus, he felt about this reasonably strongly. But he did offer this as one of the reasons; that he looked up some the Master's theses, and in particular I gave him the ones in statistics. And he was quite impressed.

Q. Probably mine.

A. That's an interesting thing in itself.

Q. That's initial trend, sure. Master's degrees have gotten downgraded. But you might mention Zassenhaus the importance, unless the listener doesn't understand who Zassenhaus was.

A. Good point. I don't want to say it's because Arnold told me so. That had an awful lot to do with it. I mean to begin with certainly. But he did seem to be interested in departmental affairs and this sort of thing.

Q. Pretty high up on the prestige list.

A. That's right. That's right. Don't ask me what he did that made him that way.

Q. But his support probably meant a lot within the department.

A. That's for sure. And as long as Arnold was involved he wouldn't go against him, I'm sure.

Q. That's interesting.

A. Now this is related to 1001.

Q. Okay.

A. We haven't said anything about that, have we?

Q. We've talked a little bit about 1001, yes.

A. With that in mind, assuming that that's enough.

Q. Let's remind the listener again, 1001 was the party at the Whitney's house once a month, first Saturday or one of the Saturdays.

A. Yes.

Q. Regularly once a month open house for departmental faculty which lasted many years. And that's on tape earlier. I think we figured out dates.

A. I have the records somewhere else. Now this is a particular month, at one of these, we had a man in the department whose name was Gautuchi.

Q. How do you spell that?

A. Gautuchi. He had a brother who was a twin, which is beside the point for the moment. He came to that and he liked to play the piano. And one of the things he did was to sit down at the piano in the living room and play, and he died right there, as he was playing the piano. Did you know that?

Q. I knew somebody died but didn't know who.

A. That's who it was. And of course that caused a little commotion. Whether it should be in here or not is another matter. I don't really know what he died of, but it certainly had nothing to do with the party. The worse thing was beer.

Q. He was not an old man, was he?

A. No. That's right. And he had a twin brother who came to the department later on.

Q. What was his first name, do you recall?

A. No.

Q. Well it doesn't matter.

A. I have it somewhere I'm sure.

Q. I was wondering if I knew him.

A. When I say he came to the department maybe that's the wrong thing. He visited at least. That was that one. Here's something that did happen. They had an annual symposium on engineering mathematics. This person is referring to him. I don't know enough about that to really comment on it. But it was one of the few things I would say that engineering and mathematics got together on. That was in May, '59. On here we are. Computation. Harold Hotelling saw the person in our department that died. So he was writing to find out if one of his students might come here.

Q. Harold Hotelling was a big name in statistics. From North Carolina?

A. North Carolina? Right, right.

Q. North Carolina at that time was a powerhouse.

A. Powerhouse. And he had two students he recommended ought to be considered by Ohio State. The names don't mean anything to me. W. Adams _____, both were working with S.M. Roy. And I've got a third possibility. I'm sure he wrote that letter because of Henry. Henry thought the world of him. I don't know whether that deserves comment. Let's see this one. Computation. That page is out of order. I have a history somewhere. Well maybe it is. That's new equipment in the laboratory. This is '61. I have something written down here somewhere on the beginning. This is '61.

Q. The beginning would be lots before that.

A. Before that, that's right.

Q. More like '54, '55.

A. I'll look that up. Should I look that up right away?

Q. Well while we're on it. Cause by '60 it was pretty well established under Roy Reeves.

A. Yes. What did you say was the date?

Q. '54 at least, maybe before that. But '55 was my first contact with him.

A. Let's take a look in here. The other box here.

Q. Henry Bloomburg.

A. He wrote a letter to Reichelderfer. He wanted a proficiency test. He says, "Your letter of May 5 concerning a change in the mathematical proficiency test

stimulated me to write this letter." On the advice of the library council, he recommended that the mathematics collection in the Mendenhall Library be transferred to the main library and housed in part in what is now the classics and philosophy graduate library room.

Q. That was 1953.

A. '53. Along with that we occupied mathematics and physics occupied this library, same building, for many years, and when physics got the okay of getting a new building, they told us several times

Q. This is tape 4, side A of the Whitney interview. June 4, 2003.

A. This is the beginning. We already have that other in there.

Q. Yes, you had just started talking about the physics move.

A. Well, the library administration decided that the mathematics collection that was in Mendenhall Library be put now in the main building, and transferred to the graduate library room 204. It was suggested that 3,500 volumes might be put in this room. The remaining 4,300 be housed in the new stacks. The question was precipitated of course by the decision to transfer the physics part of the Mendenhall Library to the new physics building. The department of mathematics requested a hearing on the decision and Professor Helsel and three of his colleagues appeared before the library council. On March 5, 1953 they recommended as first choice that the mathematics collection, books and periodicals be transferred to room 316 and 307 of University Hall. If this was not

possible retention of the collection in Mendenhall Laboratory was recommended as their second choice.

Q. Now the main library was a lot closer to the math building, right? Why did they want to stay in Mendenhall?

A. I think they thought that in the main library they were kind of lost, rather in Mendenhall they would be by themselves. I don't know. You're right about its being closer. Almost anything would have been not favored by the mathematics department.

Q. They lost.

A. That's right. Because of the impending large enrollment and gloomy prospects of providing additional classroom space, it is not deemed advisable to move any present classrooms from use. The location of these 7,800 volumes from an engineering standpoint would be very difficult to accomplish and would be very expensive. It is the understanding of the University cabinet that this collection of books was to be placed in the main library.

Q. The floor probably wouldn't hold it.

A. That could be. Talk about loss by fire and water. Now they're saying location of mathematics library in the addition, oh no, with air conditioning. Their new building. Location of the mathematics library in the new addition with air conditioning, direct access to the stacks and provision of trained library personnel should result in superior library service. University Hall, which houses the

department of mathematics, is as close to the main library as any building on campus. They're not saying much there.

Q. In that context, when the new-old, old-new math building was built the extension of Cockins Hall, it got moved down to the basement there, which was '64ish, something like that.

A. And within a very short time it was full and the building across the corridor, right in the building, was given over to the library. Then the other change comes much later, when they built the main mathematics building, the big one.

Q. Do they call that the mathematics tower.

A. Tower, I think so. And then just east of that building, they had a lot of classrooms, big classrooms in there. And also, there were libraries up in that. I think the chemistry department didn't like that. They wanted their library in their building. I don't recall any strong objections from the mathematics department about that. It was really better than what they had.

Q. What's that about?

A. Housing for mathematics. I think this is signed Bob. The department of mathematics is unusually strong in the fields of algebra and analysis. Professors Hall and Kleinfeld and Associate Professor Riner are the nucleus of the algebra group. These men are doing research in number theory, group theory, etc., etc.

Q. This is a plea for the new building, that Cockins Hall extension?

A. I think so. These men are doing research in measure theory and so on. Interpretation. For the good of the department and the Engineering College, one

or two men capable of building an applied mathematics group and the research level should be added to our staff. [The department of mathematics does not have any courses, it should be dropped or changed in emphasis is enrollment through personnel change.] The department is unique in not having courses that belong to particular individuals. That's more or less true I guess. All of the 700 level courses and most of the 800 level courses are taught by different members of the graduate staff from year to year. This shows the versatility of the staff and indicates that our graduate courses are quite fundamental. Those are nice words.

Q. Well they're absolutely true.

A. Yes. The replacement policy in the department has been dictated by the University administration to a large extent. For example, the department has hired only two persons as full professors in the last 25 years, although there were other occasions during that time when full professors should have been added to the staff. Generally speaking, the department is strong enough to move young men up, when vacancies occur. However, a top appointment in some area like applied mathematics, which is not represented in the research group in the department has been added for some time.

Q. This all led to Stephen Drobot's appointment, maybe?

A. No, what year are we in?

Q. '53?

A. '51. Here's one. This one later was '55. Those remarks sort of show that Helsel did understand what was going on. As a matter of fact, in looking at the rest of

this, I got the idea in general that as chairman he certainly took care, probably in a reasonable way, of the salaries of all the levels. And he made efforts in bringing in people, cause a lot of people came in, and then a lot of people left. And in my own mind, I somehow feel that they left because they didn't feel a part of the department, whatever that means. I know that some came in that period, did come to 1001, and in fact I have a letter somewhere from one who had done that, who had been here, probably 1001, and they left. And he wrote a letter to Marion saying he enjoyed coming to our house. Now he left anyway, so I wouldn't want to claim anything about it. Keeping people there but it's the attention from the rest of the department I think. And I just wonder, now Helsel would have had connection with the individuals, there's no question about that. But I wonder about Mickle and Reichelderfer, whether they in a sense even knew who they were. Now this is pre-Ross.

Q. Pre-Ross. We talked about the ingrownness of the department at that time with Rado's students.

A. Yes. It certainly related to what you just said. Well I guess what you're saying really is what characterizes Mickle in a way. Now Reichelderfer had strong interests and he worked with Rado all the time, until they got mad at each other. Well then he still continued to work with Rado.

Q. That's incredible.

A. But I can't help but believe that the department, the upper ones somehow … I can't see any other reason why they would leave.

Q. Well the University Hall conditions were very bad.

A. Well that's true.

Q. That's True. But it kind of goes back to the senior leadership.

A. Yes, that's right.

Q. Contrast with our days in the statistics department. And a lot of good departments, where there's a good spirit and people really enjoy each other.

A. That's right. If they enjoy each other chances are they don't go home every day at 2:00 or something like that. If a person went home and did mathematics at home, it's another matter. But I don't think that's the case.

Q. Ransom is leafing through a lot of his files here from the old days and reading excerpts from letters from various people. The last one was from Helsel.

A. The date is 1972. Now was Ronald here then? No. He's not there in '72.

Q. '72? Oh yes.

A. Well, at any rate, the date on this letter is 1972, February. "You are hereby notified that a tentative assignment to your department of the following space: In Cockins Hall rooms 004 and 0015" and so on. Oh, this is later. I was thinking this was going to be when we moved there but it isn't. It's afterward. These are additional rooms in Cockins Hall.

Q. Where the statistics department was.

A. Department of Statistics, that's right.

Q. We'll get onto that later.

A. So yes, the other one. I don't know why they would have sent that to me.

Q. That's one you ought to pay attention to here. Okay, now we're talking about the history of the computation at Ohio State. And we have a document by Alfred Garrett, 1962, Alfred D. Garrett, history of computing.

A. It's from me.

Q. Oh, it's from you.

A. Yes.

Q. Ransom wrote that, to Garrett. Anyhow, why don't you read it? Who was Al Garrett?

A. A chemist. I think he was a chemist.

Q. Okay.

A. He was interested in a lot of things. You're saying this is a letter from me to Garrett?

Q. Right.

A. History of computing. One reference is, "The engineering experiment station news June 1952, volume 24, number 3. Because of your interest as director of the cryogenic laboratory set up computing laboratory under Jack Belzer in 1947. Equipment sorter (still used in room 115) mathematics building, tabulator, reproducing punch and calculator 602A. Location is in the temporary building near Woodruff."

Q. Those were the Quonset huts you talked about, right?

A. Yes. You're right. Mapping and charting laboratory also ran a 602A, auxiliary equipment in temporary facilities on the west side of the river. In 1951 or 1952, Mathematics department was invited through the Research Foundation to cooperate and/or supervise the installation formerly run with Jack Belzer. On successive quarters Professors Whitney, Miller and Reeves spent full-time with this operation. It was Roy Reeves who showed considerable interest in this activity. He eventually took responsibility for this venture. In 1955, this installation was merged with the machines in use at the mapping and charting laboratory and a CPC, that is, a card program calculator. This was followed a year or so later with the IBM 650. I guess this is what I was thinking. We were also sent down to Bell Labs, which I think preceded this. Did we put that in somewhere?

Q. We talked about that.

A. We talked about it? You don't think it's in there?

Q. It is.

A. Oh, it is. That's fine. Then all we have to do is put them together. We moved on where I live now.

Q. We were talking about Alfred Garrett.

A. Yes. After retirement, he moved to _____.

Q. Say that again.

A. General title "Mathematics Project in the College of Commerce."

Q. What year here?

A. "For the academic year '62-'63. The mathematics department will assign the following personnel to the statistics laboratory for time equivalent to the stated classroom responsibility. And Richard T. Barnes, John Riner, Jesse Shapiro, Ransom Whitney. The statistics laboratory primarily through these individuals will be available to all staff members in the College of Commerce for any type of consulting or help in relation to mathematics." Now that was quite a statement for them.

Q. Yes.

A. And I'm pretty sure it was Dean McCoy. You know why I know you're right? Because his wife died and sometime later he married his secretary. Izzie McCoy. And in order to see him I had to see Izzie. Well she wasn't Izzie McCoy then. But I had to see Izzie.

Q. Izzie McCoy. You're committing the stat lab to substantial help for the College of Commerce.

A. That's right.

Q. What were the names here? Barnes. That doesn't ring a bell.

A. He was not one that I would choose.

Q. Riner. Shapiro. And yourself. That's interesting. How did they react to that?

A. Well the dean thought it was a good idea. Oh, you mean the people?

Q. The College of Commerce.

A. They brought it up. He brought it up. See they had a group over there that called themselves statisticians. And Dean McCoy thought they ought to be more than what they do.

Q. Collecting data?

A. That's right. It's what an ordinary person thinks of as statistics.

Q. Yes, because they named the _____. The center or something over there that had a name to it.

A. I'd forgotten that.

Q. Well, go ahead.

A. It was a group, whatever the name, and I think there was some national organization behind that.

Q. It got to be a pretty big deal.

A. Yes. And half of the people … I told you the story about my friend Reem going over there. But at any rate, half of their people were from downtown. And some of the names were familiar because of what they did downtown. They were in charge of something or other. But they came up to that and then the students were the other group, part of it essentially. And a number of faculty members. And that constituted that group. It was fairly active, in the sense that they always had meetings. I'm not sure if there was anything else that they did but they exchanged ideas of what they were doing.

Q. The economists were in Commerce College at that time, weren't they?

A. Yes. Who was part of that group?

Q. The economists?

A. Yes. They were in the College and then they moved out. It was against their will. They were not in the College forever. They were there to begin with. What would they be in? What college?

Q. You mean before College of Commerce?

A. No, no, after. They were in the College of Commerce.

Q. They were in Social and Behavioral when the Arts and Sciences was formed.

A. In the statistics part that went over there, whatever you want to call them, they didn't want to go. I think the salaries that were proposed for people there were less. So they were quite happy in the College of Commerce.

Q. Hold on a second. That's a good microphone.

A. In talking with the Dean, in addition to this statistics part, he had in mind that there ought to be more mathematics in their curriculum.

Q. Undergraduate curriculum.

A. And in a way the only thing I can think of is that this would have been the predecessor to what they call a, what's the name?

Q. A major?

A. It's a major. It's well known all over. I think the name was first used in Harvard if I'm not mistaken. At least in some school like that.

Q. It had to do with game theory?

A. Things like that. I wouldn't say game theory, but that would be part of it.

Q. Research, game theory, that area.

A. Yes, that's the area.

Q. Wasn't logistics was it?

A. No. Well at any rate, that degree now is the top one for students in that college. If they get that, they somehow feel they're going to get a job much quicker than anybody else. Just parenthetically, our son-in-law who married Marilyn, had a brother who went through the Naval Academy. When he got out, he spent his, whatever it is, four or five years, in that service in a submarine. And once he got out of that, he went to Harvard in the business school and took this degree. He was a smart guy anyway. But he prospered out of that and did a lot of work in industry and businesses of all sorts. I would say he was, if not wealthy, half wealthy at any rate. Doing very well. His wife divorced him and she wanted to go back to South Carolina where she came from. And so she did. She went A couple of years later, he meets somebody. It's hard to believe this. It turned out that he married somebody who had a lot more money than he did. She was Norwegian and she still had a big home in Norway somewhere. And then, on top of that, she had a house in New York City and one down in Florida and a few things like that. The thing is, she is a down to earth person and they'd come to dinner. In the back of the Dean's mind, now whether there was any such program in existence at that time, I somehow don't think there was. But I think he envisioned something of that nature. That's why he wanted them to take mathematics.

Q. Could that have evolved into what they now call Information Technology?

A. That isn't it.

Q. Computer would be involved.

A. Oh yes. Everything could be involved. Everything could be. Statistics, computers, almost everything. And it's still there, that program is still there.

Q. I'll look it up in the faculty directory for next time.

A. Okay.

Q. Management Science?

A. What?

Q. Management Science?

A. No, no. In connection with this, he felt that, well I shouldn't say he felt, but the way he taught …

Q. This is the Dean?

A. The Dean. The way he talked, we were going to get, as mathematics, we were going to give courses over there. You want to have a text book that somehow goes along with that. And Jessie and I wrote a text book that we thought might do this. I didn't become a millionaire from that book, I can tell you that. One of the troubles, I wish I could be more specific on this. In actuarial work, everything they do is finite, where you have this, that and the other. Calculus is not there at all, period. But you run into things like an integral that's not an integral the way we think of an integral. But they're discrete things. And you have powers and all

this sort of thing. And you could call them the same thing you do in the other part. Well one particular and I wish I could remember their names. At any rate, one particular problem, let's see, oh gosh. I'm working on something and I can't put a name to it. If you have a string of digits, one, two, three, four, five up to 17, you want the sum of those. Well you get a little formula. And that formula looks like the same thing would be if you're integrating. And in particular, if you want the sum, you write things forward and then you write them backwards, you add them together and you get something nice.

Q. That's a standard trick.

A. Yes, standard trick. You said it. In this text book for example, we were doing some of these problems. Well the problem you would assign students. We didn't talk about that standard trick. We talked about doing it this other way. With the calculus. Well one fellow was teaching a class. We didn't teach all the classes. Here was the book. And you were supposed to do this. And this is the problem. And the students were, well I don't know whether the students were having trouble or not, it doesn't make any difference. At any rate, the teacher who was a graduate assistant, said, "Well look, we don't worry about that. Just turn them back around and add them up." Which defeated the purpose. But a lot those things were there and I've always thought that maybe if you started calculus with this first, it would seem quite relevant. Well one good example, if you had an interest, well you know what an interest is, and you, how do I say this, you increase the time interval. The interest is really the growth of something, the growth of something. And if you put this in this framework, this growth becomes

one of these sums. But in the end, what you get for the thing is the "e" for the answer to this. And it's my understanding that that's used if you have a lot of different problems involving different interest rates, you put that in the form of this infinite value, and then everything is nice, you can figure out what you want. Then you can push it back in the other division. Well at any rate, I thought that considering computers, what's the most reasonable thing to do, is to do something that is finite. But that didn't go over.

Q. The trouble is, the continuous stuff is much easier than the finite stuff.

A. In a way, yes, that's right. That's true.

Q. You integrate and differentiate the difference equations are tough.

A. Are tough. You're right. But if you understand it though, then the parallel is there. That's right. What's the name of that program?

Q. Well, we'll find out. I'm sure it's in the directory.

A. In a way, I felt that that was an opportunity for mathematics to expand into, and the people we had helping, were not the statisticians. They weren't necessarily anything else either.

Q. John Riner was pretty big in the undergraduate education.

A. Yes. That's right.

Q. So did this finally lead to the 131, 132, 133 sequence?

A. Probably, yes.

Q. But that's early on.

A. I had even forgotten that.

Q. Cause that was a major sequence. Maybe still is, I don't know. Major service sequence for mathematics. Okay, what else have we got here?

A. I guess we went through these. Oh the math building itself.

Q. Is this the Cockins Hall extension you're talking about?

A. Yes, I'm pretty sure of that. This is what we had. These are the rooms.

Q. Now what year is this?

A. Is there a date up there?

Q. I don't see one.

A. 1962. Make sense?

Q. This must have been prior to when it was actually built.

A. It might be. Seems to me, I won't say it's the same list, but I did have a list. As the acting chairman, I got the same sort of thing. It doesn't say to put the furniture in, but this is what you're going to have. Well once the building was built, now we're going to move stuff in, and somebody had to tell them where people were going to sit. That fell on me. So this is the predecessor to that.

Q. That's probably key, that this is prior to being built. Must have been being built at this time.

A. That could be. Now one thing in connection with this. It wasn't just one thing but there were a lot of things connected with this move. It was clear somehow that nobody in mathematics really made any study of what this was going to be,

down to details, similar to Chuck Summerson. And if we'd had a Chuck Summerson there to do that while Helsel was still around and would sit down with the architects and so on and say, I think they would have been changed. One particular change, I can't think of any others but this one. If you take the corner of the room over there, how do I want to say this? Well, going up it's bounded by one line this way and the other line this way. And there wasn't too much space. You couldn't put a chair in there. It wouldn't be enough for a chair but if you put shelves there you'd have a bookcase. And there's one thing who I think anybody in terms of mathematics would say, not just mathematics but any academic subject, books are going to be there. And all of these rooms, somehow the way the configuration went it just made that little corner there. You couldn't do anything with it, but they could have put shelves in there. And I think somebody who was looking at it would say, "Well, what's the reason for that?" "Well, you've got to have it that way." "Okay, if you have it that way put in shelves." I have a suspicion there were other things too. But you need somebody to look at it. It just seems as though that should have been Helsel's responsibility, to see that somebody was doing that. I mean I don't blame him for not wanting to do it. But this is one of those things you've got to be able to pass off on somebody else.

Q. Anyhow the building was being built there did not get much input from mathematics. There's the floor plan.

A. Was there an elevator in the new part? Yes, I think there was. There was an elevator. I'm pretty sure of that. There were a couple of elevators in Cockins, at least one elevator in Cockins Hall, the original Cockins Hall. When statistics

went up higher, the elevator over there was just too small. I think that was it. If you wanted a piece of furniture on the third or fourth floor in the original Cockins Hall, you had to go into the elevator that's in the new part and take it over. And the one in the old part, I think they finally, the last renovation that was all taken out and they have a new one. Salary budgets. Apparently this was January '64, he (Arnold Ross) wouldn't be on duty yet would he? I don't think so. So these are a number of things that somehow I would find out something and then write a letter.

Q. He's not on board but coming.

A. Coming. And as they go out on this it seems to me the year that he came, was there a year and then went to Harvard for the next half year or year. He was away again.

Q. I didn't know that.

A. It's in here somewhere. I had forgotten all about that. This would not be old enough for that. At any rate, there were a lot of communications. No question about that.

Q. These are mostly administrative details.

A. There are a number of course of new appointments, or people he was interested in. And as a matter of fact, I think there were several times when he was, and I'll call him Joe, he was interested in Joe but he wants to meet him at Ohio State.

Q. This is tape 4, side B. This is the Whitney interview, June 3, 2003.

A. The day before Ross came he wanted to do as much as possible at Notre Dame before coming. And he was interested in not only the present workings of the department, but as far as new appointments was really his main issue most of the time. And he would contact various and sundry people himself and then write and say, “Would you invite him over to meet here?” And he would come and meet him at the same time. He was interested of course in knowing more members of the department, and on occasion he came in for the day and people like Riner and Bob Fisher would enlighten him on the undergraduate problems. And in particular, he would ask something about, “Well how large is this class or how many people are taking this one?” It would put several of these together and say, “Well there might be 500 people taking this course.” And of course this number staggered him by the way. He couldn’t really believe it but they were right there. The problem of having enough teachers for these students was a very critical one. And there were a number of so-called solutions to this problem. One in particular was to have a television set in the classroom. The instructor would be there using the view graph, would give a lecture on television. I’ve got this all down. The room holding 100 or 200 students with a screen there, and prior to this time the instructor had given his word to the machine, and this was played. The instructor was not necessarily there. It just happened this way. And this was done in a number of classes. It’s very difficult to say that it was successful. It took care of them temporarily and that’s about it. What happened after that?

Q. Then they broke into small rooms, didn’t they, with graduate assistants?

A. You're right. This was augmented by other times that the students would be in the classroom with the graduate assistant for a little more intimate contact. The additional problem there of course is you have to have enough graduate students to carry this out for a lot of people.

Q. I might add in those early 60's, the job market was wide open for mathematicians. It was difficult to hire people. Thank heaven for me.

A. That's true. That's right. Along that line, at the end of WWII, when the flood of students came in, the department would hire most anybody to do something in mathematics. There were a number of ex-high school teachers, some of whom I think were quite satisfactory. Others might not have been. But they were hired. It was a problem to keep up with the stroll of students.

Q. They were hired as regular faculty or just lectures part-time?

A. No, these were part-time. Paid for the quarter in a sense.

Q. You were talking about the television stuff.

A. Yes. I'll have to augment on that. Large number of classrooms. But then after a certain number of years, whatever that was, they weren't used anymore.

Q. Let me say that again. The next stage after what you mentioned was the stage where you had a graduate assistant in a room and the lecture would broadcast on TV for 20 or 30 minutes, something like that. And then the graduate assistant had the remaining time to answer questions or go over problems. That lasted a long time. I'm pretty sure.

A. You're probably right.

Q. It wasn't anybody's favorite.

A. That's very true.

Q. Did Ross change that? What happened after Ross came? The burden just got bigger and bigger, didn't it?

A. Sure didn't get any smaller, that's true. That's right. For a long time. I'm just guessing now, that he left that up to …

Q. John Riner was a key to that. And Bob Fisher. And later on Bert Waites.

A. Waites came in. There's another one whose name eludes me.

Q. Zilber was co-author. I don't know if he was the director of that or just was a co-author.

A. Who's that?

Q. That book of Fisher Zilber. The big book that lasted so long.

A. Who's the name again?

Q. Zilber. He was a co-author with Fisher.

A. I guess somehow that has eluded me. He was a regular staff member.

Q. Yes, he wasn't as prominent as Bob Fisher.

A. That's true. In fact, I'm trying to think what his main interest was. And I can't even think of that.

Q. Doesn't matter much. But Riner and Fisher were the big guns in the undergraduate or elementary part of the undergraduate.

A. There was another person whose name I don't remember right now. It was the third one that came in. The one thing we didn't touch on, the College of Education, wanted their students, some of them of course, to take mathematics. And they said they wanted a certain type of mathematics, and the result was that their students did not mix with any of the classes that the normal undergraduate would take in mathematics. Later on, the staff member who handled these classes essentially was …

Q. Leslie Miller at that time. This is in the 60's now still.

A. Was the primary teacher for these courses that the College of Education wanted taught. In my own mind he did a very good job teaching these courses. And the principal objection to this, that they didn't really encounter the same students, they didn't mix with the same students who were taking mathematics. And later on the College of Education dropped this considerably. Now Leslie Miller at one time, he had a lot of interests. And he had the opportunity to spend the summer at a California university on problems related to computation. And he wrote Professor Helsel if he could have that extended for a quarter or so to finish up on work. And I hated to see Bob Fisher cut him off and say he had to come home.

Q. You mean Bob Helsel?

A. Bob Helsel. Yes. One of the interesting things was that in some of his work in California, he had a reason to make use of the table of random numbers. And he happened to notice that in another table of numbers written by a different person that the numbers were the same. And this is where I'm a little bit unclear as to exactly how much he did. On the campus a professor who was interested in ways

of distorting pictures on the screen, and one way of doing this of course is to have a picture and using triple coordinates you could decide what you have to change in each coordinate to move the picture around. You get some startling results in this sort of thing. And Bob Fisher, Bob Miller, Leslie Miller worked this out. To the best of my knowledge he was never really given much credit.

Q. And you're talking about the award winning graphics designer which I can't think of his name now.

A. That's who it is.

Q. On the ground floor of everything you see.

A. That's right. It was a simple enough mathematical procedure but a person who wasn't in mathematics wouldn't have thought of it.

Q. Sure. The acorn seed there. We'll get his name. It's very obvious who he was. [Chuck Csuri]

A. The remarkable thing about him, he was not a very big man but a small man. But he played center on the Ohio State University football team.

Q. You're talking about the graphics computer guy.

A. Yes.

Q. Okay.

A. Where are we?

Q. 3:30. Where are we here? You've got more of these tidbits here? Talk about that a little bit.

A. Don't know that I know anything about it.

Q. Well there's a memo in '64 that talks about apparently the beginnings of placement testing for placement in remedial courses in mathematics and in English. Remedial courses in mathematics and English in 1964.

A. And he's asking again that I'm asking him to do something.

Q. Arrange a meeting and talk it all over.

A. Okay.

Q. That would be another line of thought. But I guess it's not really ours but the whole build-up of remedial courses. When that started? That's another line. I don't think that's for us to worry about.

A. This period of time … Remember all the furor about new math? It was thunder isn't it? Well it says something about it.

Q. Careful of your language.

Q. We're starting a new session Wednesday, the 16th of July. This is the Ransom Whitney interview. We're going to start talking about the formation of the statistics department. We've already done dibs and dabs of it, of the early days with coursework and so on. But now we're going to do a more coherent build-up. Okay, Ranson, where do you want to start?

A. Well, there were two professors who were very much in favor of statistics in general, made use of it and so on. One was Henry Mann and the other was Earl Green in the Department of … I don't know.

Q. Was he in agriculture?

A. No. His office was over on the street that goes through down.

Q. Neil Avenue?

A. Yes, Neil Avenue. It's right on that street, right near the end of it before you got out of the campus. Easy to find. Both he and his wife were very much interested in experiments that involved, for lack of a better word I'll say mice. And he was one who understood the statistics problem associated with these experiments. And both Earl and Henry Mann would willingly subscribe to a Department of Statistics as being a good sort of thing.

Q. Is this as far back as the 50's when you're talking? Cause you dealt with him in the stat lab in the 50's I think when I was there.

A. With Earl?

Q. Yes. Cause I remember that name. You had some projects going.

A. Well, I guess yes, we certainly had a lot of connection.

Q. But there was no talk of a separate department.

A. Not at the beginning. But somewhere later on. Both of those two were, they both saw the desirability of having part of statistics be a source for other people doing their work. And I think they looked at the idea of the department as something that would help that sort of operation.

Q. This is early 60's maybe? Who were the faculty members around then? Yourself and Henry. When did Rustogi come?

A. Did Jagdish come before or after Arnold?

Q. All I know is he came after ’61 and before ’66. But he had been there a while I think when I came back in ’66. Let’s see. We’ll pause here.

A. That person could have been Helsel. Or it could have been later.

Q. We’re talking about Jagdish Rustogi, probably the first real addition to the statistics group. There’s no problem of getting them. So that must have been Arnold. Either that or when you were chair.

A. I can get this information. I’ve got all that information.

Q. Anyhow we know he was there in ‘63-’64. Of course Jesse was there too. Jesse Shapiro. He’d been around a long time.

A. That’s true. But he was not interested in going into another department.

Q. No. But certainly he was an addition to your teaching …

A. That’s true, that’s true.

Q. Okay. It looks like Rustogi came in ‘63-64 for the first time. Who was chairman at that time? Arnold was the chairman by that time. You must have hired him the year you were acting chair, cause he came the next year.

A. Okay. I had a lot of communication with Arnold and I proposed it obviously. And in retrospect it seems hard to believe that Arnold took that the way it was presented and did it. He was pretty close on that sort of thing and other ways. He certainly agreed to it. And whether he agreed to it simply because he didn’t want to offend me.

Q. In deference to you. It seemed like that was the way it was all the way along, that he kind of deferred to you on the statistics business.

A. Yes, there was no opposition from him on that. Let's see. Another thing that comes into that which is very much in the same business. What's his name, who was the first head of the computer set-up?

Q. Roy Reeves.

A. Roy Reeves, yes. Okay. Now at that time that was the closest approach the Department of Mathematics had any connection with computing because of Roy. Now what was the occasion of bringing in, they were going to have a department of what do they call it?

Q. Computer and Information Science.

A. Okay. And let's see, Hildebrand, in whatever was going on before that, Hildebrand. There was a group. But anyway it was up in Michigan, Hildebrand had been at Ohio State and then he got involved in this. And there was talk of a department. And the ones that were working with Hildebrand and so on did not want to see it become a Department of Engineering. And I thought at the same time it was bad. But at any rate, at that time Arnold didn't want to be involved. Well, in a way the way I was looking at it was, that what do you call it, part of the mathematics, somehow it's … I was hoping that it would be a department for that, but it would be closely allied with mathematics, in the same way that statistics was. But then they hired this fellow from outside, I've forgotten his name. And it confirmed my idea that it was a bad idea.

Q. It was a bad idea to do it in engineering.

A. In engineering and in particular his background was such, I don't know what his background was.

Q. I know who you're talking about. He was before Ivan, not Ivan, forget it. He was the guy that engineered the break-up, I mean the move over to engineering. He was kind of a promoter.

A. He was named that. And it was in engineering, there wasn't any question about that. And this seemed to me that there should be a closer connection with mathematics then there was. Arnold had no objection to statistics being a separate department, because you wouldn't have to worry about it. I think that's it. And I think that would be the same thing with the other part.

Q. In a way he was right. It's a tiger by the tail.

A. That's true.

Q. We didn't know it at that time.

A. Let's see, the name of the section … well first of all, way back there was a big department of, go way back, what was the entity that had in it mathematics, art.

Q. Oh, the old Arts and Sciences?

A. Yes, the old Arts and Sciences under Oz Fuller. Now then they divided that up and we got something that had, I've forgotten the name. I have to look this up to make sure I get it right. Oh how was that phrased? The current name is what?

Q. Mathematical and Physical Sciences.

A. Yes, that's right.

Q. But at first it was mathematics and physical science.

A. It was something different and I told, who was the dean?

Q. Jeff Keller at first.

A. No, no.

Q. Oz Fuller.

A. No.

Q. Colin Bull.

A. Yes. Oz Fuller and then I guess Keller, right? Then who came after Keller? An Englishman.

Q. Colin Bull.

A. Colin Bull, yes. And I convinced Colin that the name should be such that it is now. And it was changed. And Colin always thought, well he kind of made fun of what I was worried about. I think he liked it anyway. So it got a name. Arnold wasn't worried about that one way or the other. Mathematics is here, period. And I had sort of hoped before when computer science went into engineering, I was hoping that that would be part of the group. And after that to be in that college. It irritated me.

Q. Well that's where it should have been and still should be I think, particularly … Of course at that time you had the electrical engineers and they were still building pieces. It was a lot of hardware stuff too. But it's not today. It's very much

mathematical science. Anyway, I just noticed here that Rizvi came in ‘64-’65, Mohammed Rizvi. So he was your next acquisition.

A. If that’s what’s there I believe it.

Q. Now he didn’t stay past ’68 or ’69 I think. He went on. Anyhow, you’re building up a faculty over these years. In ‘65-’66, Jagdish is now a full professor.

A. And the chances are that any reasonably big appointment in statistics, Jagdish was behind it.

Q. I’m looking for who came next. Who came next?

A. He wasn’t an Indian. He came from a school in Florida. I know his name just as well as not.

Q. We’re tracing the faculty acquisitions in the statistics group. So we’ve got Mohammed Rizvi came in ’64 and then in ’66 first appears Ramesh Srivastava. He appeared in ’66 and we’re not sure, he may have come mid-year. I don’t know. And then I appeared in ’66 and Francis Allaire, a joint appointment with dairy science, appeared the same year. So now we’ve got four, five, six people. You, Henry Mann is still there. Rizvi, Srivastava, myself, Allaire. That sounds about right. So you are piece by piece putting together a group. Were you thinking about a separate department at that time yet?

A. Well if I wasn’t thinking about it Jagdish would have reminded me.

Q. I don’t think it was in the open yet.

A. I think that’s probably right. I’ve got that stuff, I could write all this down.

Q. Let's continue. By that time did we have separate course listings in statistics? I don't think so.

A. I'd have to look it up. I just don't know. We certainly did to begin with.

Q. But that was well before.

A. Well before the department was formed.

Q. It wasn't long after that that you got the separate course listings.

A. Is there something that Arnold, maybe this irrelevant to what we're doing. But there was some issue, I can't say what it was, and it seemed appropriate to me that Arnold ought to go along with it. But he didn't want to make any statement about it, because he felt it was, I'm making up something now. Something like this. We want to hire somebody and we're all gung ho on how good he is and so on. And somehow Arnold has no objection to hiring him but he didn't want to endorse it. I'll have to look that up a little more. And in a way I understand. See he was sort of saying, so and so would be a good acquisition of this nature. And he says, "I don't know anything about that," which was in a sense true. So it would be nice to have his name on it. Oh well. Well I think the stuff I have at home I can put it all together on this.

Q. Okay. Let's see. Now I'm in the '67-'68. When did we get Doug Wolfe? Let's continue on here. We're talking about new faculty. And the question is when Doug Wolfe came and we're not quite sure but he does appear on the rosters '68-'69 or '69-'70. But on the other hand, oh Pete Anderson. Peter Anderson appears on the scene in '69-'70. But he didn't stay long.

A. That's true.

Q. So he was another addition. Jagnir Singh, another addition, '69. So now you're really putting the people together here. He came in '68. Okay, so now you've got maybe eight people, because it was in '70 we became a division, right?

A. I believe it.

Q. Yes, here we are, Division of Statistics 1970-71. Okay. Peter Anderson, Austin Barron, that's another one.

A. What were we called there, a division?

Q. Yes. So by then it was essentially a department because you had everything, it just took awhile to get the title straight.

A. Yes.

Q. He (Who? Barron?) came in '69. So you had quite a few people by then. He appears in '68. I didn't realize we were picking up so many people so fast. Yes, '68. So Jagnir Singh in '68, Austin Barron in '68, Peter Anderson in '69 and Doug Wolfe must have come after that. And I think that's right, because I was thinking he was close to retirement. I talked with him and he was a youngster yet. Okay, so you got a division starting in 1970. So that was the real break from mathematics, right?

A. Yes.

Q. But prior to that we had our own Ph.D. program too. We had our own course listings. And the people were going through pretty much with our field exams or whatever we'd call them.

A. That's right.

Q. Do you remember what you had to go through to get the division?

A. I'm sure I could find that out.

Q. Okay, this is tape 5, side A of the Ransom Whitney interview. We're still on July 16, 2003. Alright. Where are we? I asked you the question, do you remember anything of the process that you had to go through or the opposition or anything in getting the division?

A. Specifically it would be hard for me to say right now. But I've got all that at home. The whole business.

Q. But generally Arnold Ross, didn't have any problems with?

A. No, no. As I say, he was happy to see us go.

Q. Happy to see us go.

A. This is personal but his summer program was very nice. It was okay. But somehow or other, I had the feeling that you could do the same thing that he was doing with number theory, you could do it with probability or statistics. Name a joint somewhere. And if you look at the problems you could phrase them and such, that young kids could do this. And get just as much out of the program as what he had. But I always had the feeling that he didn't believe this. His program was fine.

Q. One thing probability shares with number theory in a lot of areas, it's accessible in a very simple way. You can't do calculus that way. You can't do functional analysis that way.

A. That's true.

Q. Number theory, probability too. You propose very simple problems everybody can understand.

A. Understand them.

Q. Some nobody can solve.

A. And you ask them, "Which way do you think it will be?" And their guess is not good necessarily.

Q. But anyway there was an issue I remember of whether to include the probablelists. We're not talking about personalities at all. I think that was a fundamental issue as to what sort of direction the department was going to go in.

A. The one that comes to mind of course is Shapiro. And he understood what we were trying to do. Well, "Do you want to come with us or not?" And he said, "Not really." I think maybe if I had been in his shoes, I would have probably said that too.

Q. Well I think you had a vision of a department that was pretty much rooted in applications as an applied area. And the probablelists, some would be that, and Jesse of course was very good. But some of them would turn into a more mathematical department like Michigan State for example.

A. That's true.

Q. And your idea just didn't go in that direction.

A. The laboratory was an essential part of it.

Q. That's right.

A. And I think Bob Helsel, I've probably told you this before, that he felt that he got more good things about mathematics through statistics then he did through mathematics itself. He could see that. This is one of the reasons I was curious about whether physics had a course in relativity. Now I know such courses exist because when I went to graduate school at Princeton, Einstein was right around the corner.

Q. That didn't have one there.

A. But he didn't get it. He didn't get it. I can't remember the name of the fellow who did. But there was another person in the department from Germany, and he wrote a book on relativity or whatever you want to call it. And this fellow who was giving the course, he said, "If you want to really know how things work, that's the book you should study." And I didn't absorb as much of that as I probably should have.

Q. Did you take the course?

A. I took the course. And gosh I lose track of things. But prior to that, there were sort of, seems to me there were three sort of fundamental, what's the right word, things that the physicists are concerned with. And I can't remember what these things are. I can't remember the names that were used.

Q. Earth, air, fire, and water.

A. The odd one that came in later, gosh I can't have a name for that. Oh well. I'll have to look it up. But these sort of three fundamental things that the physicists

relied upon. You had to change them a little bit to set the relativity. You didn't have as nice a thing as you had before but you still had something. I can't put my finger on that at all. But it just seems as though mathematics and statistics and mathematics and physics, it's a good place where they could have done things to help each other.

Q. I'll call my friend at Otterbein who was in the physics department as a research associate or something like that for many, many years. He's not a great specialist, let's put it that way, which is why he didn't survive at Ohio State. But he was a good broad-based guy. So he'd know something like that.

A. I would be curious.

Q. Yes, I'll try to remember. Well, let's see. So you got the separate division which was tantamount to a department but it took what, a couple more years?

A. Yes, that went on.

Q. Then in the way of faculty what happened? I'm looking for Doug Wolfe here after we became a division, cause he was a '70-'71, '71-'72. Wait a minute. He came in '71. So that was your first hire within actual statistics. Doug Wolfe. Someday we ought to talk about students too. I'm just looking down here. Jay Lee, J.C. Lee, Shuping Chi. John Davis.

A. John Davis was a funny one in a sense.

Q. Bob Fouts, Greg Mack, he went a long way. John Skillings.

A. Yes, what happened to Mack?

Q. He became a high mucky muck over at Battelle. He went to Battelle, worked his way up, and was a Vice President or something or other. Let's see. What else in the build-up of the department, is worthy of mention? We've got [William] Ted Archambault.

A. He was a student.

Q. No, he was an assistant professor.

A. Oh. What did he get his degree in?

Q. Well he appears in '73.

A. Don't worry about that.

Q. He was young. Remember he left for big bucks with an insurance company or something. Or pharmaceutical company. And I've got a Keith Everhardt too.

A. Archambault. He came as an assistant professor. So he must have had a Ph.D.

Q. Yes. I forget where he came from. And [Edward J.] Dudewicz appeared that year too.

A. Oh yes, don't forget him.

Q. But he comes as an associate. So by now you're talking 10, 11 people at least. One, yourself, two, three, four, five, six, seven, eight. Maybe eight.

A. In my own mind I must have got somebody mixed up with Archambault. But I used to always go over to the Faculty Club and talk with a bunch of people. And they were talking about the exams they take and so on. And said, "Well, in statistics it's sort of nice. If a fellow comes up for a Ph.D. and something, they

don't agree with the thesis, whatever it is, so they don't pass him. If you have a fellow like that he can go out and get a job that pays twice as much as what we make here." And I always had Archambault in mind. But that story applies not only to the students. Students who are working on getting their Ph.D. you see. They don't make it but they still do pretty well. Apparently he was already that. I've got the wrong person in mind. The image is sort of there.

Q. No, I remember that pretty clearly. I don't know just how soon, he only stayed two or three years, and whether there was some problem with promotion or what.

A. That would have been it, yes. Promotion. Yes.

Q. That he got a not too swift review or something.

A. That was it. I've got the things mixed up there.

Q. Well it would be pretty much the same. Oh there's one. That's in '73 that you got a lot of these people. Archamboult, Eberhardt, Dudewicz, probably all new additions.

A. Eberhardt, I liked him very much. And I hated to see him go. And here a year or two ago I was talking with somebody in the department, and they said, well this one fellow volunteered that he thought that when we got rid of Eberhardt and kept this other fellow, that we had them backwards. It was the first time I had heard that view expressed and it was sort of the way I felt about it too.

Q. I can't remember why he left.

A. Probably promotion. Lack of it or whatever.

Q. Well let's see when things got to that. Well Fligner came in '74.

A. One thing about Eberhardt. He came before he got his Ph.D. And then he hadn't really finished it up and I think that was the reason.

Q. That was the problem. In '74 we picked up Fligner, Michael Fligner. Eberhardt is still there. Archamboult is still there. Everybody else is still there. I'm on leave. Okay. And then in '75 you picked up somebody I don't know. George Policello.

A. Oh yes. I think he came from someplace in Pennsylvania.

Q. We've still got Archamboult, Everhardt, Fligner. Still all the old crew.

A. I'm not sure what, Policello, I think he would have been more comfortable in the computer science department.

Q. He couldn't have stayed very long, did he?

A. No, I don't think so.

Q. Then we've got Obremski.

A. He came from ...

Q. Michigan State, wasn't it?

A. I thought it was down east.

Q. I may be wrong.

A. I could be wrong too.

Q. So in '77 we've still got Eberhardt, Jason Hsu comes.

A. I have another connection with him, now that you mention it. His father lives in the same place I do.

Q. And Peter Nelson appeared on the scene. Wait a minute.

A. He was never very happy here as I recall.

Q. Federer appeared. He was an appointment at the associate level. So I guess he came in ’75. No, ’76.

A. Let me ask. In the final result of this, do you feel as if we should have all these names there?

Q. No, no. I don’t know how far we want to go. These are the early days, and then when you were still in charge. But how far you want to go, I don’t know.

A. Hopefully somebody’s going to read it. I guess what I’m asking is, do those people want to see names of people, or quantity? It’s sort of two different things.

Q. Well they can get both from these. That’s all record.

A. If they wanted to, they can go to something like that.

Q. Yes, they can go to something like that. But I think we’re fishing for personalities of people who really had an impact on the department, and then the people who came and went. We’re seeing people like Michael Fligner come in the picture now and he stayed. And Dudewicz on the other hand came and went.

A. You know, he went to Syracuse. And nobody, I shouldn’t say nobody, but the chairman there never wrote a letter to us asking for some details.

Q. Really?

A. I never had to write anything. Before he went to Syracuse he was applying at … I can't remember the name of the place. At any rate, it was a smaller school. And the fellow there, and I should know the name, at any rate he called up and he said, "Dudewicz has applied here and what can you tell us about him?" So I let him know my feeling about this. He wound up the conversation by saying, "Well, that's the way I felt about it too." It's the thing I like to hear too. But I never did hear anything from Syracuse. Well that's their problem. Then of course what happened, some of our people went up to Syracuse, good people went up there.

Q. You mean students? Graduates.

A. Yes. They went up there. No, some of our faculty members went up there.

Q. Oh they did?

A. Yes. Oh gosh now. The name eludes me. This fellow, his concern was non-commutative, studying groups. That sounds too easy. At any rate, it was something of this nature.

Q. Algebraist?

A. Yes, and he went up there, and I'm not sure whether the one who … he went out to someplace on the west coast, good school. And he was a good man.

Q. You're talking early on or later?

A. He was not our student. He came to Ohio State and stayed there for quite a while.

Q. A faculty member?

A. Faculty member. And very good. He might have been called an algebraist as much as anything but that isn't necessarily true. But he went out there. And he may have gone to Syracuse en route. Because I know two or three people went up to Syracuse at the same time. And then of course this is another subject completely. My older son went to Syracuse. And well that was fine. He knew these names up there but had anything to do with it. When graduation came up I went up there and in his fraternity, I think he was the only fellow in the fraternity that was going to wear a cap and gown. Some went without it; some didn't go. And that's the way they did. And here we come up, wasn't any worse, our ex-big wig went up there as the head man.

Q. You're not talking about Dudewicz?

A. No, no. This is the fellow in administration. He was high up in the administration. He went up there. Somebody like that. And my wife knew his wife very well. So we went up there and accidentally, and it was an accident, she ran into … maybe it wasn't an accident. I guess she told her, "You ought to come and see where I live." And so my wife goes over there to talk with her. And she says, "What are you going to do for commencement, for activities?" "Well, we'll sit up there and see what's going on." "Well, don't you want to sit with us?" With the President and his wife. So here's our poor boy down there. His folks are up there with the President. His buddies down there who didn't really want to go anyway thought this is the height of something. Oh well. Corbally, that's who it was.

Q. Oh Corbally.

A. Did you tell me that?

Q. No.

A. It just popped up.

Q. John Corbally, President of Syracuse. I guess going back to these faculty members here, I don't know how far we want to go. But I just wonder if you've got any ruminations on which people, the effects some of them had that seem to be instrumental one way or another. Or you know, anecdotes or something. What you want to put in here before we leave it.

A. Well I can think along those terms. Things that would have something to do with the operation of the department.

Q. Operation or influences on the department.

A. Yes, that's right. Okay. Well let me see what I can come up with for that.

Q. Okay. We'll get that out next time.

A. Yes. In retrospect, I'm not at all sure that I like the way this is done. It has nothing to do with you.

Q. Why?

A. It seems as if, let me put it this way. If they had suggested something like this, why don't you write down the things that went on when you were … anything that seems to be pertinent. And then somebody else like you will look at it and say, "Well, we ought to change a little of this, change a little of this." And it just

seems like that would be much less time consuming than what we're doing. I don't know. Maybe not.

Q. Think People would do it?

A. Well, if you'd ask me that before we got started, that's the real question. Would I have said yes. I probably would have said yes.

Q. Well maybe you would have. Would you have ever gotten done? That's another question.

A. Well if I said I was going to do it, I would do it.

Q. That's probably true. But I suspect a lot of people would say, "Yes, I'll do it." And then it goes on and on and on and on and on.

A. That's true. I'm all in favor of one or two other people take what I put down and say, "Well, this part is a little silly. We can do something here. Change this around." I certainly would have no objection at all to that. It's just hindsight.

Q. Of course, we'll have a chance to edit out, like this last conversation, we might not want any of that in there. When we get the written version. It's the poor transcriber who has to put up with it. But I suspect we'll cut out …

A. The transcriber doesn't matter. He or she is getting paid for that.

Q. That's true.

A. What are these dumb people writing about? This English is terrible. Am I supposed to put that the way they said it? The answer is yes, put it down that way.

Q. Well I know my secretary has often felt so bad that I put them through re-writes and everything else. They must get awful bored with doing this. But I guess that's not our problem.

A. Well what's the next step after this?

Q. Well I think the stat lab. We've talked about the department. We've got it through the initial growth state. So now it's pretty well established and no problem there. Good size faculty. I think you ought to talk about sort of the philosophy that you built behind the department. I mean I mentioned before that we had more of an applied bent, the statistics lab was an important factor. We didn't want to hire anybody who was a pure theoretician. We looked for people as much as we could get who would get their hands dirty.

A. You had no objection to hiring one or two of them.

Q. As the department got bigger. But I think your philosophy was very, very clear. And I'd like you to talk about that. That had a profound effect I think on the growth and as a service outfit too, in the service teaching. That's another aspect I think your philosophy was pretty well fixed on that. So now or later I think that's what we've got to talk about. I mean for instance, with the speaking on the service philosophy, we taught a lot of low level service work. And as far as the growth of the department I think your philosophy was that if we did our job well and the students came, good things will happen to the department.

A. Yes.

Q. And that sort of thing. I'd like you to just sort of ramble on about that. And then the students. We might want to do that later.

A. Would this thing be sort of in order? I get my degree and what should I do next? And I'd run around places. And the place where I got the biggest nibble of all was Case, which was sort of nice because they had … people look at the stars look through …

Q. Observatory.

A. Observatory. The Case Observatory was on the same street where I lived. And the family is all there and so on. And that was a big temptation see? But there were certain things about it that weren't quite as nice. But on the other hand, if I stay here, to begin with, I don't think people should stay in the same place. There's nothing wrong with one or two but you don't want the whole department to be that. Not too extreme. And here I am in that situation. The situation that I don't like. Why should I stay here? And my main reason was the fact that I liked the connection with agriculture and all this sort of stuff that comes out of this business. And it seemed to me that that, well I don't know if I want to use the word challenge, but it was definitely something that looked like a good thing to do I guess. That is reasonable to put in.

Q. Absolutely. That's what I would say is the genesis of what you did in the department.

A. That's true. And I guess that the people that I'm talking about are alive. And I wouldn't necessarily use names anyway.

Q. That's why you put so much emphasis on the stat lab. The end product was our students, a lot of them did very, very well. If you look around, they didn't have any trouble getting placed, at least in that era.

A. Yes.

Q. I don't know if we can dig out names from the pre-stat days. Think of your earliest students dating way back to the 40's.

A. The first ones I think of are some that were students the same time I was. That's not the right statement. We were over in what was the new mathematics building. And let's see. The office was down here, down this corridor. I must have been an assistant professor. At any rate, I had an office there. And then over here was where the laboratory appeared. And the secretary here, her husband was in statistics. He went down to someplace in Texas. Been there ever since as far as I know. Seems to me he went with an automobile manufacturer. That ring any bell with you at all? I can't even tell you the name right now. Then there was another fellow, he was a student at the same time. He was a student under Mann too, as a matter of fact. What was his name?

Q. You mentioned a new mathematics buildings. So this is in the 60's.

A. Must have been. The one just opposite the post office.

Q. Yes.

A. Yes. That's right. It was new.

Q. It was new then.

A. That's true. What was this fellow's name? He got his degree and then he wound up in Canada.

Q. Well you've got the names of Richard Stewart.

A. I remember him.

Q. Ron Thompson.

A. Ron Thompson was the secretary.

Q. Yes, you were talking about him.

A. No, that was a different one. This one who went up to Canada, he had a lot of interesting papers on this same sort of thing.

Q. Here's the list of graduate assistants in mathematics from '60. We're talking about students now. Do you remember his name?

A. No, but he was here for a year and he had come from a job in Washington relative to agriculture. And he went back there. And then the ironic thing to me was, that if we had a student who was looking for a job, this fellow would give him a job. He never did get anything from us as far as a degree was concerned. But he was a big man down there in that area.

Q. We'll find his name It's Tommy Davis.

A. Yes, that was good.

Q. We're talking now about the Speaker's Rule and this sort of diversion. The Speaker's Rule and the year that we didn't go to the Rose Bowl. Go ahead.

A. Well, before the Rose Bowl incident, I went to a professional meeting on the west coast. And as usual, I got my ticket through ordinary channels. And for some reason or another I got a first class ticket, which was sort of amazing in a way. And I went on this trip, very nice, nice seat and all that. Come back and this other thing occurred. And once that occurred, the papers looked at everything they could possibly do you see. And they were talking about their spending money on this and money on this. And I thought to myself, "Well pretty soon they'll get to me." And they never did.

Q. You weren't on the Athletic Council?

A. No.

Q. Lucky you.

A. I remember the old offices up on the third floor and the name just slips away. We talked about it earlier. He went to Syracuse later.

Q. Dudewicz?

A. No, a little guy. A little fellow. At any rate, he had a car parked out in front of University Hall and he was jumping up and down and saying, "Look at my car." There were a bunch of students out there jumping on it. Oh dear.

Q. This is the Ransom Whitney interview. We're continuing July 22. This is tape 5, side B. I think it's a go.

A. I don't have the date. But I wrote a letter to the President of the University.

Q. This is while you were interim chair probably. Must have been. Because they hired Arnold right after that.

A. Not too far, that's true. Okay. Yes. The people that had left the department. Let me start over. I wrote a letter to the President of the University, Oz Fuller. No, to the President.

Q. Oh to the President. That would be Fawcett.

A. I wrote a letter to Novice Fawcett, President of the University, telling him something about the status of the Department of Mathematics. And pointing out some of the good people that recently left, and the strong chance that certain other good people at the upper level would also depart. And I felt that something should be done. I would like the University to know that the mathematics department is really not in a position to carry out the duties of they should. I received a letter back from Nov Fawcett, saying the person to whom I should have written the letter, and he would forward it to him, was the Dean of the College, who at that time was Oz Fuller. Now, what happened after that, is a matter of conjecture. But it seemed to follow this sort of line. Oz Fuller used the power of what he was supposed to have as Dean of that college, and went up to the Department of Mathematics and said they should have a review of the existing chair and how it should be handled. To the best of my knowledge Oz did this, talking with everyone of the senior staff of the department, and definitely came up in his own mind with the fact that something should happen. Then, again, this is my conjecture, that he requested names of possible candidates for the chair of the Department of Mathematics. And I think that he visited with some of them personally, and his own mind came to the fact that maybe Arnold Ross was the one in question. He made several trips to Notre Dame where Arnold Ross was.

And he came convinced that he was his choice, and he presented this idea to the department, and the eventual decision that he would be the person came about. Arnold Ross was hired. He was hired to start at a certain time and Arnold replied that he couldn't possibly start that particular year and it was postponed to whatever the time was. And I remained the Acting Chairman of the department for a period of at least a year if not two. Arnold took a decided interest in what was going on even though he was not there, and would ask questions and I would try to answer them the best I could. And he made several proposals for a person he would like to see hired. And I think these were put through without too much trouble. And eventually he came to the department and brought with him a number of people that changed the attitude of the department toward what was going on. It is not clear in my own mind how many years I was acting chairman. That's on record.

Q. Okay. Let me mention here that Ransom has a letter that he wrote to Nov Fawcett in his file and we'll present that, along with other paper, when this is all done. It's probably very important, a pivotal point, that letter probably. The department could have deteriorated much more. Okay. That's a good piece. Well, we had planned to go on and talk about the stat lab now. From way back. So Ransom, why don't you start from the very beginning on the stat lab itself. Here I have in my hand a piece written in October, 1999, a short history of statistical science at the Ohio State University by D. Ransom Whitney, Jagdish Rustagi, Tom Sainter, and H.N. Nagaragna. And this deals with the stat lab in particular or the whole thing?

A. The whole thing.

Q. We'll enter that in the record too then. So why don't you reminisce though on those … boy you've got everything, from 1870 to the beginning. But the post-____ years when you were on the scene. Because you did consulting from the very first, even as a graduate student.

A. Yes, I guess that's true. Now whether that's in here or not I'm not sure.

Q. I think we covered some of it because that wrapped into your decision to stay at Ohio State. We talked about that a little bit.

A. Working on the assumption that a department of statistics would be a thing to work toward in the beginning, in the matter of record we have a rather large list of people from around the University representing all the places that had an interest in statistics gave their opinion as to the desirability, hopefully in our time, and why there should be such a department. And in our own mind we felt that a number of people behind it that were not in statistics itself but had occasion to be connected with it, these were a very desirable asset ahead of time. It could very well be that a lot of these people had made contacts with people in statistics through the laboratory and saw some reason for expanding that sort of thing. There were occasional misgivings in some departments that thought they had the true answer. But as a general package, we felt that the overwhelming people interested in statistics in the University saw a department as being a logical ending.

Q. May I say something here? I expect there were several levels of that. One was a purely academic level, that it's a discipline the University ought to have. But a lot of it was sort of self-serving in that they used statistics as a service to them within coursework and particularly in the stat lab. They wanted a strong statistics department because it was useful. Is that fair?

A. That's fair. Very much so.

Q. So we're working around the stat lab right now with the statistics department because in those people's minds they are the same thing.

A. That's true.

Q. Okay, go head. Tell me what you've got there.

A. I thought I did.

Q. But you've got a stack of papers there two inches thick.

A. I should say that the evaluations of the reasons for a department of statistics. We feel our well documented in a collection of papers from the people around the campus in many disciplines.

Q. These are letters with dates back and forth.

A. Yes.

Q. Got another stack in there?

A. Yes. The other stack, the fact that there are no dates on it. Well it could be viewed as one big stack. It goes along the same way as this. We just don't have a date. Isn't quite as fat as the other.

Q. That's headed off by _____, Statistics Department at Ohio State University.

A. Teaching of statistics, that's what's his name? Does it say? Well in some sense what we're saying there, this is really all one. When they look it up wherever they go, they will find out that it's two different things.

Q. It would be in the same box.

A. Yes. Right.

Q. Along with a copy of this.

A. That's right.

Q. I presume you've got more copies.

A. Oh yes. There are a couple more of that. If you want that you're welcome to it.

Q. Yes, please. Okay, we're talking about the short history of statistical science at the Ohio State University. So we'll get another copy of that and put it with this pack of papers. So that would be another contribution to the archives.

A. I guess in sort of dividing this up, this kind of an article, sort of a general overview of statistics. Then it comes to the point of what are the things we do to do this? And one of them is the stat lab. So the general view sort of comes first and that's to make some sense. And then the nitty gritty. Now I'm not sure it is in this pile but at any rate, it's probably true in the same way. They are really the same kind of thing. At least in this, this contains the documents that people wrote us. We'd ask them questions and they would come back with some answers. And these are in here. And to me, the people that did that, the answers in

themselves are of interest but somehow the number of them and the fact that they're not just graduate students, is to the point.

Q. From your point of view, that is your personal rationale for having a statistics laboratory, why did you think a statistics laboratory was a good thing, a necessary thing?

A. Well, one part of it is certainly connected with teaching. It is the people that would bring in problems. They had heard of certain things but it wasn't really a collection that they could deal with by themselves. And the particular problem, you point out the things that make it work and not and so on. Some of the pitfalls, what people do. They ignore completely information that is somehow contradictory to what they're trying to find out. And frequently these are the important things, that they ought to have some reason for it. So that is a prong of teaching. You just have a different set of people. People who somehow should be well aware of what they're trying to do. How they manage it, maybe acquire a little help. Having graduate students in statistics …

Q. Before you get onto that, let me just maybe add a little bit. Certainly that attitude came down from you to me. That I knew the statistics lab is almost primarily a teaching function.

A. Yes.

Q. And these are pretty receptive people. It's like this with a lot of classes. They want to know. So it made it all much better. But go ahead. Sorry to interrupt.

A. Parenthetically on that, if you're advising somebody on something, it's much better if that person asks you for the advice then you just going in, where they don't take it. They don't take it, if you're the one that says you ought to do this. But if they see some reason to it, then they'll learn. This is what people in class do. If you're teaching a subject and they think that's a lot of hooey, it's not going to go through. They have to be convinced.

Q. As they would say in the jargon, it's a teaching moment.

A. That's right. That's right.

Q. You were going on about graduate students, the role there.

A. If they have a handle in it, they see these things. This brings up another subject. Maybe I shouldn't say it right now. But somewhere in here, according to this time zone, there was a movement across the campus to get rid of the, let's see, a person got a … well, you're a graduate student, the first thing you get really is the fact that you had finished the Master's degree.

Q. We talked about the Master's thesis.

A. And a thesis was a part of that. And this movement across the campus was to get rid of that. And the department had a lot of conversations about this thing, and a good share of the department was very happy to get rid of it. And this was, in my own mind, it was because that meant the instructor had to do a little bit more of his own to get the person to do it. And when a vote was taken in the mathematics department, the vote was to get rid of it and I guess I told you this before. There were two of us who were against it and one of them was Arnold's favorite person.

The first one that came over, oh what's his name? Number theory. But he was pretty versatile. He was interested in a lot of things. He was the only one in the department.

Q. And you.

A. And me. But he was the only one that looked at any of the theses. Well, I can't compare what we do in statistics with what they do in number theory or something like that. But when he read some of these things, to my great delight he thought, "Well, that's good for the student." He's not discovering something new but he's elaborating on something he ought to know.

Q. Pause a minute. So the person you're talking about is Zassenhaus.

A. Yes.

Q. Go ahead. About the thesis.

A. I haven't said anything yet.

Q. Well you said he looked at it and he liked it.

A. Oh yes. There was wide spread discussion about this in the department. Eventually voted on it and decided to agree with the rest of the University in getting rid of it. There were two of us who felt it was still a viable thing. Myself and Zassenhaus.

Q. Well they made it optional.

A. That's right. You're right. It isn't that you couldn't do it but you didn't have to do it.

Q. And you made all the people in statistics do it. If I remember right.

A. Well, we had a lot of people who would get a Master's degree and eventually stop. And those are the people that it would help I think. They look in the literature and here's this problem and they see how it was done, and then they're supposed to take it from there. And not just re-write what's there but say something about it while you do this and while you do that and so on.

Q. Knock off a few corners.

A. Yes.

Q. Actually, if I may interrupt in a lot of these things the trails are in quite disparate notations and from different directions. And to bring them all together, the different viewpoints and the different notations and everything else.

A. That's right.

Q. That's a piece of work.

A. And it should be in good English so a person can read it. I don't know what else to say about that.

Q. You made me do one and it was a good thing to do.

A. I've forgotten what the title was.

Q. "Paived Comparisons."

A. Okay.

Q. And there's a case where it comes from different directions. Well okay. Back to the stat lab. You started to say something and I interrupted you about the reason

for the stat lab from a graduate student's point of view. I think you were heading in that direction. We did the teaching end of it. And that is the teaching of the customer, the people we served.

A. Well, my introduction so statistics was with Henry Mann. And the first thing he wanted me to do before I was really his student, was to do some of the nitty gritty on one of his jobs he was doing something for a client. And he simply told me what I should do and this is what I did. I mean, in a way just doing it you learn something about it.

Q. Absolutely.

A. And if you put in a wrong number that sort of louses things up. And you have to have an ability, you compute something from this data, and if somehow or other you have a feeling that it just couldn't be that way. And then you ask, "Well, did I make a mistake back here?" And you found out yes, you typed in a bunch of the numbers that weren't right. An outgrowth of that, it doesn't belong here, but it's a side point. Go to lunch at the Faculty Club. Still working. Well no, no, even after that. If I would go down to lunch there's a table where everybody sits. And there were a lot of engineers there. And one of the things they brought up, this is not too long ago, this thing they brought up. They had one student in this particular discipline and he just couldn't put the decimal point in where it ought to be. And at the computer, just the business you know, he would get something way off base. Something's crazy. Well they said that in talking with this student, he said, "Nobody ever told us about this in high school." They just sort of, well, any crazy person ought to know where the decimal point is. But they never had

any practice with it. And one of the engineers had practiced with that slide rule. And if you weren't brought up with a slide rule and you don't know where that decimal point is, you're just out of luck. They finally decided this was it. That they had never had anyplace where the student had to confront this. So he never bothered, he never bothered finding out about this. And in fact if an engineer, a successful engineer, is one who can take on a problem, go out where the building is or whatever it is, and make a few calculations, and say, "Well you ought to be able to do that for $300 or $1,000 or something like that." And they're usually, if they're any good, they're in the ballpark. And this sort of irritated the people in engineering. This one fellow that was there, a star student as far as what he was doing … it's one of those things. I don't think I realized that. If you divide or you want a square root you get a number but it's just an approximation. And back in my time, in the math book, the back of the thing was full of tables. One table was for square roots, and the other was for the other kinds of functions. Well, in a way, the fact that two-thirds. Make a little scale here, where on earth is two-thirds? You don't know. And this was never pointed out to me in school and it was amazing to me that when the computer comes around you see, then they didn't have to bother putting those tables in the books. Because it could compute that damn thing faster than you could look it up on the tables. It was completely lost. I don't know when it was that it finally dawned on me the fact that two-thirds, where is it? That's an abstract notion. Not something concrete. We keep talking about mathematics as exact you see. So much of it isn't exact.

Q. And there's the trick.

A. And that's the trick.

Q. To know when it is and isn't.

A. That's right.

Q. Well anyhow let's get back to the reasons for the stat lab. I was trying to prompt you on the graduate assistants, cause I thought that was where you were going when I interrupted you before. The reason for this graduate assistant's point of view or graduate program point of view.

A. If they have some conception of the numbers that they're working with.

Q. No, I mean the statistics graduate program.

A. Yes.

Q. You made us go from theory to practice very purposefully.

A. Well that's true. Certainly if a person comes into the laboratory with a problem, he's put the data out there and the student's going to work using a machine. So they translate this into the machine and they have to be able to somehow see that what they've done is made a mistake somewhere, which is what we've been talking about. And somehow learning to make sure you haven't made a mistake is not the same thing as learning something else. That is, if I've typed in those numbers, why should I doubt the fact that I've made a mistake. I've got them right. You have to work with the numbers.

Q. But as far as theory and the practice goes, bringing the theory alive, and we learned in classroom. At least for me. It only made sense finally when I worked on a problem.

A. Yes, okay.

Q. So that was really an integral part of our education was to, well if statistics isn't an applied science then you wonder why you bother with it. Probability is neat. I mean it's good mathematics. But statistics. You wouldn't do it unless it was applicable. The theory goes beyond the course of practice. But still. Well in this respect, you remember when we hired faculty and we had doubts about people who had taken a very theoretical Ph.D. program and had never done any work like stat lab. And we were reluctant to hire that kind. Just as we were reluctant to hire people who hadn't done any teaching.

A. Yes, yes.

Q. And that's a point you might speak to. Because there's a difference in departments and you directed the department in a certain direction, which is different than some of the others. And our Ph.D.'s were I think well received because they had that background. Would we have hired a statistician out of Catholic University?

A. Out of where?

Q. Catholic University. I don't know if we ever faced that question.

A. Never occurred to me that it was a question. Is that the same category as hiring a Black?

Q. No, no. There was a very theoretical probability kind of department. Lucabs was there. And if you got a graduate from Catholic University, they probably

wouldn't know what to do if they saw a set of numbers. And they might think they're statisticians because they've done Lehman and all that.

A. What's the rub?

Q. We're talking about different kinds of graduates. And you directed the department a certain way that our graduates by and large had practice in the stat lab, so the theory was grounded in practice, a little bit anyway. That's not true at some universities, some statistics departments. And Catholic University sprang to mind right away because … In other words your philosophy bent the department or shaped the department in a certain way.

A. Now why would that conflict?

Q. With what?

A. A person coming from a Catholic university?

Q. Well, he got his degree. He comes.

A. He apparently has the necessary things to come. Okay.

Q. In a sense. Some, part of it.

A. At least we think so.

Q. Got a good theoretical background

A. Okay.

Q. But I bet we wouldn't hire him. Well there's always exceptions of course. People with other backgrounds. But by and large he couldn't do anything in the stat lab. He couldn't …

A. You know when you say this the only thing I can think of is Indians. Some of us went over to India and taught for a little bit of a time in the summertime. And it wasn't so much in mathematics. Jesse Shapiro was over there. Well he was there in mathematics, so that has nothing to do with it. But the fellows that were in agriculture. Students are here and he wants to demonstrate something. So he tells Mr. so-and-so to go over there and bring this thing over and we'll look at it. And the fellow says, "I'm so-and-so. I don't have to bring that over here. My servant will bring it over." There was no servant around. And so the fellow would refuse to do anything. "I can't do that work." In a way it's like not doing that is the same thing as not doing something else, when you come right down to it. And these people got mad about this. The crowning point for Jesse was he said one time we thought we would give them a quiz. And boy there was an uproar. These people, they'd gone to a college in England, and they had a degree and so on. Respectable degree. And there apparently you were going to get your degree in something, you study this and worked on it you see. And nobody ever questioned anything until the final thing was this exam, you had to take this exam and pass it. There's no such thing as a quiz. So Jesse tried to give them a quiz. And they interpreted this in the same way, well if you fail that we're out. No second chance. So he had an uprising on this triviality. When you were bringing up this other thing, I thought well maybe it's the same sort of thing.

Q. Well it might be a matter of attitude. And this might be a matter of education.

A. Yes.

Q. They are just a little less well rounded than the people from our department by and large.

A. Would the person who went to the Catholic university, if he applied for a position, wouldn't he know something about this?

Q. He would think he knew.

A. Okay. That's true. That's true.

Q. Well maybe that's a bad example. But my background in Maryland I was acquainted with the department there. It turned out some great people in probability.

A. Yes, that's a danger. You hire somebody and you hope that he will fit.

Q. We talked about Tom Obremski before. If I got the people right I think he was an exception. I'm maybe mixed up but there was somebody who was from a department like that, but he had worked.

A. He came from the east, didn't he?

Q. I'm confused, I'm not sure. But there was a character who had that kind of Ph.D. program but he had worked in a scientific organization of some sort for a while. And so he really was a hands-on person for a couple of three years. And that of course fixes the background. I'm thinking of Tom and that was a successful hire. But I may have names mixed up.

A. He had some other problems.

Q. Well that may be. And I'm real foggy about characters.

A. I remember him.

Q. Yes, I remember him but characteristics I'm a little confused on. Let's see, we were on the reasons for the stat lab. We talked about the teaching aspect of it, a little bit about the importance in our own graduate program. Is there anything else? What about your own teaching? And other faculty in the department.

A. I don't know. In retrospect, it seems as though if somebody we hired was doing something a little bit different than the model, it comes out of this common sense. He shouldn't have done that (end of tape).

Q. This is tape 6, side A of the Ransom Whitney interview. We're still on July 22. The question at hand was, how does your work in the stat lab, did it affect your teaching in the classroom? Not just you but the rest of us as well.

A. I'm lost here. If you're analyzing data of some kind the person has to deal with numbers and come out with what one might call the right answer. And the student has to be convinced to come out with the right answer he has to be careful of what he's doing. He can't blame that on anybody else. He just has to learn to do it right. Does that make any sense?

Q. Yes. But how about examples of the classroom, for your approach to presenting the theory.

A. You have to compute it average times and you have to compute a standard deviation. And you have to be able to do that and do it correctly in order to get any sense. And it somehow should be, if you make some mistake in the computation you should look at the answer and say, "Somehow or other that can't

be." You have to look at the data. If you get the average as 5.6 and there are no elements that are bigger than that at all, numbers, they're all less than that, it's a little bit crazy to have that as being the average. You have to realize this sort of thing. And you don't get this by listening to somebody talk about it; you have to do it. So if you don't carry out the simple calculations correctly, you just have to find a way to do it. I don't know if that's what you're getting at or not.

Q. I don't mean to push you but your style almost always was to go from the concrete to the general. You start with an example. And give us something concrete to picture, to understand. And then you move to the theory and generalize. Isn't that right?

A. Yes.

Q. I know it was right.

A. I can't argue with that.

Q. And part of that I think, I can't help but think, that's part of the way you think. You work with applications and the theory then flowed from that. It made sense because of what it is you knew you were doing. And that's why I'm pushing this, because I think your style of teaching was very influenced by your approach to the whole area of statistics. You don't think so?

A. No, I do. I don't know if this is an analogy or not. But you have some set of numbers and you raise the question of whether or not you can describe some reason why the array is meaningful. Is this something you can prove that this is so? In a sense you don't try to prove your theory out of the blue. You have made

some simple examples and it seems to always come out this way. If once you've done this, then there seems to be some argument for trying to prove that this is always the case. You want that example. That's the reason you want to do it. It may turn out that other things don't work that way, so you can't prove it. So your examples were not typical of everything at all. I would say this is sort of a general sort of situation. The way certain numbers come together and do something. Looks as if that ought to happen all the time. But there very well be an example where that is not true. And in a way, this goes back to the following. I've forgotten one professor I had. It may have been Rado but I'm not sure. But he came in and said, "Here's a theorem that I think is interesting." And he would give this theorem. And he said, "Now I want you to contradict this if possible." And if you can find a contradiction of this, then this is not a theorem. And people would stumble around trying to get a contradiction. And in a sense that's the heart of the matter. You make a guess that this is true, but if you can't find something to contradict that, you're never going to prove it. And as a matter of fact I remember he would raise this question in class. I'm pretty sure it was Rado. And he would say, "Will somebody contradict this?" And people would scratch their heads you know. Somebody would try something out. It didn't work. And eventually he got his point across. It's one thing to prove something. It should be a lot easier to prove that it's not true. It should be. If a person, let's make it personal. If a person thinks that he's got the idea of something that is true_____, and if you can produce a counter-example to that, that should squelch him in a hurry. It should. Along those lines, there have been certain things that come out.

If you have an angle and you want to divide it into triples, a third of it, well under certain conditions you can't do that. But the people forget, and this would happen time and again, if I happen to be in the office telephone, we'd come in and the secretary would say, "Just a moment. Ransom Whitney will try to answer that question." And this fellow was on the line and he said, "Well I've got a way of doing this you see." Well but that's not the problem. You can get an approximation to it in 50,000 different ways. You're never going to get it right there. And if people understood what the problem was, they'd never call up. And there are a lot of those things. These things are all sort of related to teaching. There's no question about it.

Q. Say you would be teaching in analysis of variance, didn't you have in mind problems that you had done?

A. Oh yes. If you have an example it's always good.

Q. Didn't that maybe influence the way you presented it?

A. Oh I'm sure it would.

Q. Okay. That's what I'm getting at. And the fact that you had an example that was real life, didn't that give the topic a little more respect in the minds of the students?

A. Yes, if they realized that that configuration somehow has a meaning. That certainly helps.

Q. That's the kind of thing I'm getting at I guess. The fact is, if you draw from your experience it shows in the classroom. The way you present it, the way the students accept it.

A. That's true. How much I thought about that ahead of time I'm not sure.

Q. And then the rest of us.

A. The examples are certainly …

Q. And if they're real life examples.

A. That's true.

Q. Well I had this problem from a psychology professor and he was doing such and such. Then the ears perk up.

A. That's right.

Q. Whether you thought of it explicitly or not, intuitively you knew it was valuable for your faculty as teachers to have this experience. Cause we'd bring it in the classroom. Even the short time that I did it, boy I drew upon that, the Bureau of Standards and the early years in the statistics department. I drew upon them all the time.

A. That's certainly true.

Q. There's another aspect I wonder if you've thought about too. More on the political side. Did the contacts that you made and the rest of us to some extent, help the department grow and get influence and respect in the larger University community?

A. One thing that occurred after the fact, was when Gee first came. He went around talking to various departments. And I think he was actually talking to the college. And one of his big points was, "Well this is the University but the question is, is it so big that the people here never talk to the people over here and so on?" He had some nice words on that. And I thought, "That's what I thought too." But at any rate, somehow the fact that it's a University there should be contact between departments. And the way things work, it doesn't work that way. And the only thing, the only hope in some sense, is the Faculty Club. But not everybody belongs to the Faculty Club. As a matter of fact, well it's nice that they go over there for lunch, but if there are three people from the Department of Mathematics go over there and eat by themselves, it's very nice that they do it, but it's nice that they ought to talk. There's no question about that. But they're not talking with anybody else. Well as a matter of fact, the thing that I never did and somehow I just couldn't bring myself to do it I guess, but I should have insisted that people join the Club. And that would not have been different than a lot of departments, particularly in agriculture. The conflict I had, people would tell me, "Well when I joined the department the first thing the chairman told me to do was go to the Faculty Club." And a fellow would say to them, "Well I'll go with so and so." "No, I don't want you to go with that person. Go over there and sit with other people." And I think that helped. That helped. But I don't know what I'm saying. I just didn't like the idea of saying, "Do this." And I've always regretted that. Whether I could have made any effect, I think the current department is … well several people were members but I don't think they joined. Well I know

these other fellows left the University and the one I'm thinking of, I don't think he was a member or anything. So there's nobody in the department that's a member of the Faculty Club. And in talking with Schecter in whatever he teaches chemistry, and he said he's the only one in the department that's a member. And that's a pretty big department.

Q. That's a topic we should get to. Maybe not now but your whole concept of the Professorate and the way it's gone.

A. I think every department, the push is for a person to concentrate on this, period. And to heck with anything else. And they should concentrate on that but on occasional breakfast or lunch with somebody else is not going to hurt them.

Q. Yes, I think that's a big issue. The change in the universities is universal. In the role of the professorate you had a concept I think that certainly rubbed off on me, of the sort of thing you were talking about. And I don't see that. Well one of the things, the Faculty Club gets pretty expensive for the assistant professor to go over there and spend $7 for lunch. That's pretty pricey. So that's part of the problem. But the issue is much bigger than even the Faculty Club. Well your 1001 parties. That was a smaller scale within the department but actually the same notion.

A. On that, when a person left the department and I know people have left for one reason or another, and I think this was true of practically everyone who left the department, wrote us a letter and said this was of the nicest things. If the people were in mathematics it seems as though the least they can do is to talk with other mathematicians. I mean, a person in number theory shouldn't be restricted to just

talking to another person in number theory. He ought to talk to somebody else in mathematics, and he might get some ideas. In a way I think that's one reason people left. Why did Marshal Hall take up and leave? Why did Herb Riser and so on? I can't help but think that that's behind it partly. It's not the whole answer.

Q. Well let's see. We've been talking about the stat lab and its effect. What other aspects are there? Is that it for a while?

A. I don't know whether this is relevant or not. But people from the University would come in and take care of them. And occasionally somebody outside the University would find out from Joe down here that there is this place where you can get advice in statistics. So this fellow from some company or other would call up or something and come over and talk with me. And the question though was, what sort of payment? It's one thing to do it for the University; it's another to do it for somebody outside. And I thought, "Well, they ought to pay for something." And there was somehow we had this what do you call it? We had a machine taking care of it.

Q. Rotary Fund.

A. Rotary Fund, yes. Now any job from outside would come in, they had data, and it had to get put into action, and this is one thing graduate students could do. And the department could charge for that. And there was no objection from the outside. They'd get this done for a reasonable sum. And the graduate students I think got a little money out of this too. But I'm not too positive about that.

Q. I think you hired graduate students out sometimes.

A. Yes. Well at any rate. Now the question is, if I give good advice, there seemed to be no way at all that I could (unintelligible). And the only way was to do it outside the University. So this problem had something that I had to spend a lot of time on, then I could charge them for that and I wouldn't do it on University time presumably, which was alright with me. I made an extra buck here and there. How shall I put it? I think if I didn't have any particular thoughts about this I could have done a lot that I shouldn't have done. It's just that way. So in a way the only thing that I did was, if I was interested in the problem, I would take it. If I was not interested in the problem, I might say, "Well our students can put the stuff in the right form." And that's sort of the end of it. There was never really any good answer to that.

Q. Even within the University the practice was not to charge University folks generally, except for maybe hiring a student to work on it.

A. That's what we did.

Q. But the consulting basically was for free. Even when the people had grants most of the time. And that was an interesting point, because some universities, like Iowa State, they are a business. And you don't write a grant unless you, at that time, 5% for statistics or something like that. And you never pushed that.

A. I never did. Maybe I should have, I don't know.

Q. I don't know. It was a lot more fun the way you did it, because we could have attracted business from downtown if we wanted to do a business. And nobody wanted to do that.

A. That's right.

Q. And then you get into the point where you get faculty release time and all of a sudden you start counting the chips.

A. That's right, that's right.

Q. So that's a good point to make about stat lab. That was basically a free service for the rest of the University, graduate students and faculty.

A. In a sense the University paid for it.

Q. The University paid for it. Whether the stat lab was adequately rewarded for people on the faculty, that's another question. But we got by.

A. Well the students got the money.

Q. Yes, I know but you contributed a lot of time. You taught the classes anyway.

A. Yes, that's true.

Q. And we all did that. I don't know about nowadays, whether they get release time or not. But that goes back to your notion of the Professorate. You viewed yourself as a member of the University faculty first of all.

A. That's true. Very definitely.

Q. So this was part of what you did.

A. Yes.

Q. I'm not sure that's the way it is nowadays.

A. I think you're right. One thing I've always thought about. The Department of English teaches lots of students from all over. The only thing approaching that is mathematics I think.

Q. Mathematics is bigger than English.

A. Is it biger than English?

Q. Yes.

A. And it's on a different level too I think. Well maybe not.

Q. Well mathematics has got tiers.

A. Yes.

Q. With elementary courses for freshman, but they also teach junior, senior engineers in the graduate school.

A. From all over.

Q. And English doesn't have much of that.

A. I think statistics is in the same position as mathematics. And if not, in some sense it's even wider than mathematics. The people that are outside of physics or whatever that need something from the physics department, I think is a very small group. And I don't think that's true in statistics. We get them at very high levels so to speak. So it's a lot different. In my own mind if the people in the department have the view that they ought to be in contact with the rest of the

University, the Department of Statistics would have a lot of influence. More than mathematics I think.

Q. Particularly at the graduate level.

A. That's right.

Q. Because take away the engineers and some of the business people, in mathematics that's the bulk of their … but statistics is all over the place.

A. You want to know something else along this line? With all of these students coming in, and didn't have enough people to teach them and so on, and then we would hire a lot of foreigns and so on. And the bad will we generated in the government, because of that, probably had something to do with the budget we'd been getting. And somehow or other the University somehow didn't care. When we had these crowds of students, time and again, well what are you going to need for the next quarter or something like that? And I'd give them some numbers. Well we'll cut it down to this. And every time you cut those things down, then somehow the students get the raw deal. And I think I can see why that the legislature would say, "What on earth are they doing?" And I don't think we ever thought of them as being satisfied, what they would like to see. Just to make things better for us. But they never seemed to catch on to that. Well it doesn't matter.

Q. Anymore on the stat lab? We've moved around. So many implications, so many directions. We've wandered around a bit but still it's all tied to that. Anymore

aspects on the stat lab? Any particular episodes? Particular jobs? Or samples that stand out in your mind as being noteworthy?

A. Well, when I came to the point of trying to get a department, where we had done consulting for people, they were all foreign. This for a way of getting something for yourself, to do this for them.

Q. A political aspect of it.

A. And the experiment station north of Wooster, they had a man up there who was statistics. I've forgotten his name. But we helped him out. This happened in other areas too. And I always had a feeling that mathematics and engineering was a place where we should have been doing something. I might have mentioned this before. Before Arnold came, the person who did the most work for them was a friend of mine. What's his name?

Q. Colson?

A. Colson, yes. And I really have no idea what his qualifications are in this direction. But I have a feeling that what he did they liked. He could sort of understand what they were after. And he adapted. Well Arnold came he put a full professor in charge of this. And I can't document this but I have a feeling that drove it – looked at this as oh, these yokels over there don't know what they're doing, so I can't help them. It doesn't take long to realize that the person who's trying to help you or something isn't really trying. And that bothered me to no end. And then this question that I raised, I asked you, whether the physics department had a course.

Q. I didn't check on that.

A. I'm not saying that anybody in mathematics did. But it isn't all that difficult. And I think my friend Henry Colson, if they had come to him and said, "Can you do something in this direction," that he would have done it. I think he could have. But somebody in mathematics, well there was no reason why we couldn't do it, why statistics couldn't do it on its own. But it should be sort of together. And this is why I raised that question. I've forgotten all I know about that subject. But it wasn't all that bad. Sort of the fundamental question is, well, before that stuff came long, this is the way you could compute how long it takes to get here or there and this sort of thing. And now, if you take relativity into consideration, that process changes. And the question is, how does it change? And once you find out what it does, it's no harder than anything else. But it's a different language. I'm sure that Henry could have done it. He would have had to work but I think he would have enjoyed it, really enjoyed it. Well so much for that.

Q. Well maybe, when you think about it, you might think of other examples. I don't know whether any of the particular jobs are noteworthy. You might come up with something. It's about quarter til four now.

Q. This is July 24, Ransom Whitney interview continuing. We're going to talk about the stat lab a little bit, fill in the gaps from what we talked about earlier.

A. Henry Mann and Earl Green liked the idea of a, what am I saying? Of a consulting service. And there was no real opposition to that that I know of. The department of statistics allowed us to have, at the very start, a certain number of graduate students.

Q. You mean mathematics at that time?

A. Mathematics. What did I say?

Q. Statistics.

A. No, no. The mathematics department at the start allowed us to, in some sense, hire or use a graduate assistant who was being paid by the statistics department. And we were given a certain number of those at the very beginning. (Note by TW: There was no stat department at that time. Only later.)

Q. Let's see. I'm looking to see when it first appeared in the faculty directory. I clearly don't have it far enough back. I've got a listing here in the faculty directory in 1948 with you and Robert Gardner and Howard Hedlesson. That's the first listing I have. So anyhow at least by that time now it appeared formally. Did you just put it in there?

A. Let me make a note of that and see if I can't dig it out.

Q. The next year Lydia Kinzer appears on the roster. Marion Burnstein.

A. I don't remember that name.

Q. Paul Maranda. Your student?

A. I think he was Henry's, I think.

Q. And Virginia Hoy is the secretary. You've now got a secretary in '48.

A. And her husband was in, he was in mathematics, but he really wound up in statistics. Went to Texas.

Q. Anyhow, go ahead.

A. What was I looking for? Now right at this moment I think there is stuff on that in here. What I ought to do is make a note that this is something I ought to find out. And again, while we were under mathematics seems to me they finally allowed us, if a person graduated, got his Ph.D., technically in mathematics, and as far as we were concerned he was in the mathematics department, but his name could be put in the graduation bulletin that he was in statistics.

Q. That was much later though.

A. Well, the preliminary to that would be something to the effect that a person could get his degree in the mathematics department, but his examinations could be in statistics.

Q. I think it was a graduate thing.

A. That's true.

Q. Because when I went through, that was 1960, I was listed in mathematics but I had to take the extra exam in statistics. I had to take three instead of the two. You know the algebra, the analysis with the folks who went through with me. And some were after I got back and this would be after '66, then we had an entirely separate exams in the program. I guess that would be late 60's probably.

A. We were still in mathematics.

Q. Still in mathematics. So that's before 1970. So somewhere.

A. When you went through you had two exams in statistics and a third one …

Q. Well two in mathematics.

A. I'm sorry.

Q. Two standard ones in mathematics.

A. Yes, standard. And the third one could be in statistics.

Q. Me and the other Indian fellow. There were three of us going through at the time. Anyway, that's beside the point. Sometime before 1970 …

A. Let's see, let me put this date down. You went through in 1960.

Q. Well that's when I graduated.

A. Right, right, okay.

Q. So sometime between then and 1970, and I think it's after I returned.

A. Okay, 1970.

Q. There was a distinctly different program for statisticians. We still probably made them take some mathematics. I don't remember what.

A. I think if I look through these papers I could find something to go along with that. Excuse me. Let me make a note of this. This seems to me that that happened before we became a department.

Q. Yes. Almost sure of that. The evolution as I remember was, you built up the faculty, then we got course listings called statistics, and either concurrently or around that same time, we've got separate Ph.D. programs, and then we got division status. By the time we asked for division status we had everything. In a curricular fashion.

A. They made us a division, didn't they?

Q. Yes, 1970.

A. 1970.

Q. Because you had put together all of the pieces.

Tape 6, Side B

A. I think a lot of that material would be in one of my stacks that was devoted to arguments for a statistics department, and the answers we got from people, would sort of show what's going on there.

Q. That's the stack you had yesterday.

A. It's still here. The question is, how much of that or all that we put down.

Q. We'll ask them and see what they want. They've got a big building here. With the stat lab can you remember when you started it, it was just an informal thing, did you just do it? Nowadays you have proposals and all sorts of stuff.

A. That reminds me of another thing as far as the lab is concerned. What do we call it, the rotary account?

Q. Yes.

A. At that time we thought that was quite something.

Q. It was. You got that early on?

A. Well the department gave us some people and then we had somebody from some other department comes in with a project, and he's got this data. Before any rotary account there was no way you could do anything about that. But once we got that, when this person would come in, we could say that we can have this

other stuff computed easier than you can probably. I think this is true. And we must have used that as an argument for the rotary. Mathematics was certainly not a help, they wouldn't bother.

Q. But still your consulting was free and probably what Lydia Kinzer did was free, in terms of computations. Cause those early days there were desk calculators.

A. That's true. It just depends on when that rotary account was established. And if it was established and Lydia Kinzer was there, we could charge for that. And whether she got the money or not I guess is …

Q. In later years I know we saved it up and bought graduate assistants.

A. Yes.

Q. Or paid the student assistants, the undergraduates.

A. Yes, that's right.

Q. That's sort of curious.

A. I doubt if Lydia ever got any money out of it frankly.

Q. She was just on salary I think, wasn't she?

A. Her husband was a professor. She was in a position where somehow having a salary from us wasn't vital of her doing it. If that were the case, then we might have had something to worry about. But I don't recall any worry. She wanted to be there.

Q. Yes, but you must have paid her a salary.

A. I can't believe we paid her anymore than we would have a graduate student.

Q. Could well be.

A. But maybe as an undergraduate.

Q. Could well be.

A. And it's true if we did that, it would make her feel better, whether she needs the money or not that's not the point.

Q. She was around for a long time and an important person. Your statistics laboratory first appears in the, it doesn't appear in '46.

A. The statement that there is a laboratory.

Q. It does appear in the '47 and Lydia is there. In '48 she's not. In '49 she is again.

A. Well maybe her husband wanted to go somewhere else.

Q. Might have been on leave or something. Anyhow, she was there basically from the beginning. So you just started and ran with the ball basically.

A. That's true. Now if, how do I want to say this, nowadays that's a different time. But any department on the campus, somebody has a grant from someplace and how much can he get and who decides this, etc., etc. That's the ball of wax. But I don't ever remember having any problem with her.

Q. It looks like by '48 you had two …

A. Did you say you have a date there on the account?

Q. No, I don't know about that. But that must date way back. But you were picking up graduate assistants then. Apparently by '49 you had two graduate assistants and a secretary.

A. Remind me, when did we become a department?

Q. ’70 or a division in ’70.

A. ’70 we were a division. Let me see what this says.

Q. Alright, that’s department business. We’re back to the stat lab now. So early on you pretty much did that with graduate assistants. I remember you telling me once about the rotary fund that you sort of snuck it in somehow or another and got it. And I worried that somebody was going to check on us and you said, “Oh, it’s so small, nobody’s ever going to look at it,” which is probably the truth.

A. That’s right. Six digit numbers, they would look a little more closely.

Q. I don’t know whether you want to go over some of these names in here. They are graduate students who come and go. Paul Maranda was around a while according to this. Oh, Bob Silverman appears in ’52. Remember Bob Silverman?

A. Oh yes, definitely.

Q. He’s the one who went to Wright State.

A. Is that what they call that?

Q. Uh-huh. He lived in a little town but he taught at Wright State. Can’t think of the name of that town.

A. Well he may have started at State. A bunch of them went over there at the same time. But then it seems to me he wound up in the place that has the record of being rather different.

Q. We couldn’t think of the name but it’s the flaky place.

A. I told you I think. Every time his name comes up I tell him I had him as an undergraduate. I gave him a “B” and later on I had him as a graduate assistant. He got a degree. After he got to know me a little bit, one night he said he had to tell me something. He said, “You know when you gave me that “B”? That’s the first “B” I ever had. Maybe it was the only one.” And he was smart that way. There’s no question about it. I have a feeling if he had been at Wright State to begin with, there would have been people there that might have kept him going so to speak. But this other place, in a sense there would be more stuff going on that would distract one.

Q. So he stays on until ’55, when he gets a National Science Foundation Fellowship. And I appear and Donald Robinson. I wonder if that wasn’t Robinson. No that was Ed, his name was different. So now you’ve got two graduate assistants and Lydia Kinzer. And that continues.

A. Now those are in there in that capacity?

Q. Yes. Lydia Kinzer is mentioned. She’s also mentioned in the department as technical assistant. Where am I looking? There.

A. Now we’re in mathematics.

Q. That’s in mathematics. And then there is a technical assistant. And she is listed down there. That’s neat.

A. Does that mean that’s where she got paid?

Q. Out of the department, sure. I’m sure all the while.

A. Okay. So whether she ever did any work for mathematics is open to question, even if she's that technical assistant.

Q. Yes. But the stat lab was under mathematics. It didn't matter.

A. That's true.

Q. Interesting in '57 the numerical computation laboratory appears under mathematics. With Roy Reeves as director. Anyhow, you've got an assistant, Donald Story. Don't remember him.

A. Story, no I don't either.

Q. And then the numerical computation laboratory continues. Mary Gong, Dixon Call, Ted Hildebrand. That was '58-'59.

A. Scattered in these papers there's a fairly good resume of the whole business.

Q. There it is in '59 and building up but you've got William McWhorter. He was your graduate assistant in the stat lab?

A. Could have been.

Q. Yes. And Dick Stewart.

A. Stewart stayed on. He got a degree.

Q. And this is still under mathematics in '60 and so it goes. Numerical computation laboratory is growing, growing, growing.

A. Yes.

Q. At some point that thing split off. Bert Price appears in ’63. Lydia Kinzer disappears and then the numerical computation laboratory disappears. So that probably split off from underneath by ’63.

A. Here it shows under mathematics.

Q. Up until now.

A. Yes.

Q. And the statistics laboratory no longer appears under mathematics. So you’ve probably got a separate listing.

A. That was when?

Q. By ’64. It’s probably under “S” instead of “M.” Oh no, it reappears in ’65. So then it’s probably just a slip. Bert Price, Rustagi and Rizvi. So I guess that’s the way it goes until we’ve got a division.

A. Yes.

Q. In ’66 it’s a separate listing under “S.” No longer under mathematics listing. It’s under “S,” statistics. You’re busting out little by little in a sneaky way. And then it’s separate all the way I guess. It’s interesting how the department formed, step by step until it was a done deal, whether they recognized it or not.

A. What do we want to do about this pad that contains _____?

Q. I think I’m going to take this note, so it’s on record. What we have here is a stack, actually two stacks, one that is chronologically dated documents, which date all the way from 1962, all the way up through the approval for department

status in 1947. They include proposals and support material and there's a big survey in there with comments from around the University about the need for a separate statistics unit. And that's in pretty good order. Then there's another separate stack, a lot of support materials, and other things that are not dated but go together. We'll put this all in a package and Ransom will give that to the archives to include with this package. And this stack changes in the culture, particularly promotion and tenure from your early days to your final days.

A. Start over again.

Q. Talk about changes in the culture which specifically start with promotion and tenure. What to do to get promoted or approve a promotion, early on compared with now. What did you do in your first years as chairman or even before that?

A. Let's see. Something that, and I don't know whether this is true or false, but I somehow had the idea that people look at the actual research of a person to decide what he gets in the way of promotion. It's based on that more than it used to be. Now I don't know whether that's true or not.

Q. Well what about the paperwork you had to do? Formalities?

A. Well, if I think in terms of Bob Helsel who was chairman, don't write this down exactly.

Q. Let's get some of this on tape. We're talking about Arnold Ross.

A. That's right.

Q. This is somewhere in the 60's. He asked you if you would be second in command.

A. Yes. Those weren't the words but that's what it amounts to. And another of looking at it is, he wants you to be his lackey. You can say it either way you want. I don't know whether this was before or after you. Somewhere in there. At any rate, I told him that, from my point of view, the best thing for me to do was to stay within statistics. And you can see the letter. And that was the way I felt about it. And he took that. And to the best of my knowledge, following that, there was no difference in his attitude toward me. That is, if he wanted me to do something, I'd do it. He'd ask me an opinion, I'd give him an opinion and so on. So that I didn't feel that I had stepped on his toe and he would never talk to me again. I never felt that at all. On the other hand, the other side of the picture is, he did have some people where I thought that connection was very much being a lackey to him. When he came from Notre Dame, one fellow came with him. What was his name? He'd taken a lot of courses but he had never actually committed himself to getting a degree. His record was kind of spotty. But he was Arnold's right hand man.

Q. I remember two names. Archie. And Harold Brown. Or was he later?

A. Gosh, how can I forget this?

Q. Anyway, it doesn't matter.

A. At any rate, he did a lot of work for Arnold, a lot of work. And I think, from my own point of view, I think Arnold took advantage of him. But he was still nice to him. And I think he pushed him to get his degree and so on. I don't know how I got into this but at any rate if somebody crossed him on something, he didn't hesitate to get rid of them. And one of the people in here, I can dig this out,

Kreczi, I don't know. But there was somebody who apparently Arnold didn't like. Now whether I can't tell, but his attitude toward this fellow was sort of that way. And I think Kreczi was the name but I wouldn't swear to that. I can find it. At any rate, he took a leave of absence and went somewhere. And a leave of absence, I'll make up the numbers now, he wanted to be gone for two quarters or something like that. And he wrote a letter back saying that circumstances were such that he'd very much like to say here, etc., and then come back the next year. And Arnold said, "No. Come back now or never." I mean, those weren't the words but close. I could just see that happening. And I think there were some other people in that category.

Q. That's not uncommon.

A. That's true, that's true. That's the way it goes. Now you asked me whether there is a difference.

Q. I was talking particularly about hiring and promotions, and the case in point was mine. I was asking you what you …

A. Well I think and specifically I don't know what I said. I don't think I could even find it. I must have said, "We need somebody in this department and I think this would be a good choice." I mean I could have said that without any qualms or anything. And I think he took that. Now if I had been under his bad graces he never would have taken it. No question in my mind about that. I could have gotten down on my knees and prayed and it wouldn't do any good with him.

Q. But the process was very informal. I met you at a meeting and we talked about it. You went home, did something about it, and I got an offer. I don't even know if I formally applied for it.

A. Well you probably didn't. It could be.

Q. But that's the way it worked then. Nowadays there would be, "We have an opening for an associate professor. Therefore we form a search committee." And people would apply. You would advertise. And you'd get 30 or 50 applications.

A. That's true. Arnold wouldn't have a committee, wouldn't bring the people together and say, "We can hire three more people or something. How about some suggestions?" If the person had a suggestion in mind he would tell Arnold, but Arnold expected that he would tell him.

Q. That's the way it worked.

A. And somebody like Zassenhaus would have no qualms about telling Arnold, "Hire this boy," and Arnold would do it. You can sort of say well, it worked, why should I worry about that? Or how he did it. There were a couple of things about Arnold I didn't like but the overall business was okay. I didn't want to work for him as a lackey or something. It wouldn't have been quite that way. I appreciated that fact. I thought, "Well, this has nothing to do with statistics and I'm better off if I stay with that." And he took that.

Q. But nowadays, I bet by the time you got out of the chairmanship, to hire somebody you had to do a lot of paperwork.

A. Oh you mean in statistics.

Q. In statistics. By the time you finished up, I'll bet you could no later just go to the Dean and say, "Let's hire this guy."

A. Well, Jagdish was in the department. We really don't have to say anymore. He would propose all sorts of people. Well I didn't keep any diary on this but I think there's some people he wanted that we never made an offer to. By and large if he could come up with some good reasons that you ought to hire this person, outside of the fact that he was Indian or not, do that. I think other people came up with suggestions.

Q. That's still the way it works. Somebody will suggest something and you didn't have to advertise. I don't know when that all came into effect, the Affirmative Action and the advertisements.

A. Oh, they're thick now. There's no question about it.

Q. Well it is an interesting evolution. You wonder where it will end up, because the portfolios now …

A. Yes, it would be interested to see what happened after Arnold is not in the picture.

Q. Well it probably wasn't in his control anymore, because now you get laws. You've got to advertise. And you've go the Human Resource Department or whatever they called it then to say, "You've go to do this, this, this, and this."

A. Oh, you are forced to advertise.

Q. You are forced to advertise. And people apply now and you've got to look at all of them.

A. So in a way that really answers your question, doesn't it?

Q. We all know what it's like now but I just want to get on record how it was then. How informal it was. The same thing with promotions. Again, my case just for example. I remember we were walking over to the Faculty Club one day, you and I, and you said, "I'm putting you up for full professor."

A. Just like that.

Q. Just like that. I said, "That's great. Yes. Right on!" And I don't think I ever, I know I never made up a portfolio or anything like that. And sometime later I got this letter in the mail.

A. I don't know how to explain it. I guess the way I looked at it, was you're doing this business and you're doing this business, and everything seems to be nice. When Sucheston came around, of course that was after we were a department, we were in mathematics, and he was a nice fellow but somehow or other, if I had been chairman at that time … I mean maybe he was hired as a full professor although I'm not sure of that either. But let's suppose he were not. And I was chairman. I'm not sure I would have promoted him very fast, simply because his goal was only research. There's no question about that. But then he neglected everything else as far as I was concerned. If a person has to teach a course to undergraduates, he shouldn't get that mad about it or upset about it. Somehow he ought to know what's going on, and if the rest of the people are teaching undergraduates the wrong way, then maybe he ought to help with changing them. But he didn't want anything to do with that. I think there were a couple of times when, he was already in statistics or not?

Q. Sucheston? No.

A. Okay. Well he was always in mathematics.

Q. Yes.

A. So I had nothing to do with this, cause we were already statistics.

Q. Well I don't know when he was promoted but yes, I don't think it was a matter for you but it's a good example.

A. Had I been chairman of statistics I would not have pushed him to the extent of anybody else. His way of avoiding teaching undergraduates was simply to do a lousy job. You don't want to take care of him at the expense of these poor undergraduates. You can't win on that. It goes back to the other statement. It seemed that when I was in statistics, in mathematics, if I wound up doing something it was by default. They couldn't find anybody else. And I thought that when Helsel was chairman, Mickle was there and he could have done these things just as well as I. And he should have. But he might want summer teaching but he didn't want to do anything else. I don't know. It's hard to answer your question I guess.

Q. Well but the process was at that time, a chairman would decide it's time for somebody to be promoted. You'd go to the Dean and you'd say, "Let's do it." And the Dean would agree or not agree. And it happened.

A. That's true.

Q. Maybe the Dean had to go forward with a list or something. But it was informal in that sense compared to now, where very much formal, person has to make a portfolio, committees, and all that.

A. Yes, something has been superimposed on the system is what you're saying.

A. Yes, I can see that.

Q. And people come to you and say, "It's time for me to be promoted" in those days? Or thereafter?

A. I can't remember any particular case. If Jagdish felt that somebody ought to be promoted, he would bring it up.

Q. Fair enough.

A. Which is alright. But I don't recall the individual doing anything about it. They might ask about salary. You wound up getting so much for the department and you've got to make do.

Q. Zero sum game.

A. That's right. I agree with you that things are different.

Q. Let's throw another one in the pot, again with myself as an example. When one comes an associate professor you have to be tenured within three years or it's out. Those were the rules. I didn't understand that at the time. And I wasn't thinking much about it, because these formalities didn't exist. And somewhere in my second year I got a letter saying I had tenure. I didn't apply for tenure. I didn't put a portfolio together or anything. I just got the letter in the mail. You must have done something or maybe it was automatic in the graduate school, I don't know.

A. I don't remember doing anything in particular.

Q. Well the graduate school is forced to do something in the second year or else they can't give a year's notice and get rid of you. So I get this letter and I didn't expect it to happen until the end of the third year, cause I was naïve and I didn't know. So much for promotion and tenure and the administrator's role. Do you want to talk about 1970? The riots?

A. I don't have much to add to tell you the truth. I think one day, you know where we lived then, not lived but where my office was, opposite the post office. And one day, for one reason or another, there was a lot of gas floating around in the air. Someone had come in and squirted it all over for some reason or other. And that was the closest approach to any kind of action that I saw one way or the other. There wasn't anybody coming around knocking on windows and all that sort of stuff. Arnold, when that happened, he got his class together and met someplace. And I think he actually met on campus but I wouldn't swear to it.

Q. This is when the University closed.

A. Yes. And he did that. I didn't know anybody else that did. But he did.

Q. I didn't.

A. And I sort of hate to say it but this was just sort of something going on. I didn't get very excited about it one way or the other. I suppose that if I had a tendency to blame the governor for telling them to shoot. I don't know did he do that, or somebody did it at any rate. That was a big deal. And in my own mind I thought, "Well, sort of they brought it on themselves when they got shot," which is a

passout or something. But that was sort of my feeling. The whole incident, I hate to say it, but it didn't make much of an impression on me one way or the other.

Q. Okay. What about students in general, mostly undergraduates I guess I'm thinking of but graduates too, from the early days to later days, how they changed as a group. Do you see much change in them? Attitudes, abilities, preparation?

A. This is an odd answer to this. I think there is a bigger change in undergraduate education, not the undergraduate but the system we have where people can go to high school for nothing. And somehow the system has, well let me give you some examples. A kid gets up as far as high school and they have a lot of activities they can go to. They can be in the band. They can play football or basketball. There are all sorts of nice organizations that they can get acquainted with in all sorts of ways. And I think this is, on the other side of the fence, I don't think they do homework. Now good ones do but it depends so much on the parent. A parent can make them stop watching TV and do their homework. And if a parent doesn't do that, it's not going to work. And it just seems to me that this other kind of stuff, we've sort of gotten away. They have a car, they go to a movie at night. Whatever. The whole thing is sort of crazy as far as I'm concerned. And that ought to be, I think that's the reason not very many of them do very well. Why did I get off on that?

Q. I asked you about the students.

A. The students that come to Ohio State. The time when I should have noticed this, I have an excuse for not noticing it. But I might have been teaching a class with

100 students in it. And you know, what did I do? This was for business. I made a tape that they could play and listen to this and I wasn't there. (end of tape)

Q. Alright, this is tape 7, Side A, of the Ransom Whitney interview. We're still on July 24, 2003, talking about students.

A. I'm trying to think of the last time I had a class of undergraduates, an ordinary class.

Q. You were starting to talk about having 100 students and what you did.

A. Not television, a projection went up on the wall. And that was detached. I was not making contacting with any of them. I still can't get over the fact that there's too much stuff going on for them in the last grade before they graduate. And I think part of this is a person takes presumably a course that will get him into college, college preparedness. Now, if that's done properly, then it probably works. But there's a lot of records apparently that I read in the paper, a lot of people who go to college just don't make it the first year. And part of that I think comes from the fact that they haven't learned how to study. They are on their own in college and they've got to do it. And somehow they ought to get the idea and get rid of this other stuff before they can do it. As far as one's coming to college … Now I guess the last time that I taught sort of an honest course, who was the Dean of, we called it the …

Q. Math and Physical Science?

A. No, outside. The business field. The Dean at that time was, who did I say …

Q. It's not McCoy.

A. Yes.

Q. McCoy is still there.

A. When I was there. The time I'm talking about he was the Dean. And just beside the point, the secretary that I had to go through when I went to talk with him was Izzy something. And they eventually married. He married his secretary. Considerably later. And then he died and she went into a retirement home exactly where I am. That's beside the point. At any rate, he had ideas about what the students in business should know in the way of mathematics. And he asked me to come over and talk to him about this. Maybe it's because he got the idea that I was interested in statistics. That may have been it. At any rate, he wanted to know what they could do about this. He wanted the mathematics department to take a good look at what they ought to be doing for the business students, and give them a good course. And we got together some students who would teach such a class. I can't remember names I'd like to say it was Bob Fisher, etc., etc. but I really don't remember. But they seemed to be okay. And then the idea was to somehow tailor our curriculum to something that eventually goes into the other. And this program eventually, I'm not saying it grew out of what we were doing, but it was, what do they call it? They've got a name for it. Every business school in the country has this. If you go to Harvard and graduate this way, you're sort of assured in a top-notch job in some nice company and this sort of thing. Oh what is it? Just an ordinary title.

Q. A degree?

A. It really wasn't a degree because these were all undergraduates. It was a program, a program. I'll try to remember to tell you the day after tomorrow or something. And the statistics department agreed to furnish certain people for teaching this course. It was a pretty good crowd as far as I could see. But they never got accustomed to what they should do. And there was something, well let me just give you an example. One of the things that, they talked so much about well after you do algebra and then you take, what's the next course? Words.

Q. High school trigonometry.

A. Well trigonometry and then after that?

Q. Analytic geometry?

A. Yes, that sort of thing. The crowning thing though, and they tried it in high school, calculus. One thing that occurs when you've got a computing machine and so on, to know how to put certain things together in a way. And in a sense finite, well, what's an example? If you have one, two, three four, ten, what's the sum of that? What's the product or something, this sort of thing. There are a lot formulas.

Q. Discrete mathematics.

A. Discrete mathematics, that's right. And in a way this is the backbone of doing it with a machine. The result of this course was that we got a book out that emphasized this sort of thing. And one reason it didn't go over too well, is that a mathematics student, graduate student, was teaching the course at this level. He comes across this thing about what's the sum of the first ten digits or whatever it

is, and do I have the right example. Now the simple way of getting to that sum is, you turn it around and add. Is that right?

Q. Yes.

A. Well, that's an easy, quick way to do it. And, on the other hand, if you want to make it look like the beginning of calculus, you want to do it some other way. So we had to try to get them to do that. And some of the teachers, they didn't want to do that. They would say, "This is a bear," but the simple way is to turn it around and add it. Well, how do you do it for other things? There's no little nice trick. And this stuff has been around for years because it was the center point for, what do you call it? My memory is terrible. Prior to WWII, if you got a degree in mathematics, where did you get a job? Teaching, right? After the second World War, mathematics, if you were a hot shot there you could get a job anywhere. That was it. I don't know how I got off on that track. But at any rate this is why you want this other look before you get to calculus, you can do this other. The people that figured out your life insurance.

Q. Actuarial.

A. Actuarial work. That's what I was trying to say. Before WWII the only place a mathematician could go outside of teaching was to become an actuary. And it was good payment and everything else. There wasn't too much argument there and I had a number of friends who went that way and they did very well. Well at any rate. So there's all that body of knowledge and if you just switch it around a little bit, it makes sense as far as computers are concerned. But you've got to get somebody to teach it you see. A fellow who wants to turn these backwards

defeats the whole purpose. Well that's beside the point. And I think, at any rate, what I want to say is, the Dean of Business liked the idea of getting more mathematics into this curriculum. And I was all for it. But that one thing eventually petered out. So whether that did any good or nor I don't know. But the Dean there had the right idea.

Q Later you wrote a book for their introductory _____.

A. That's true and that didn't go anywhere.

Q. We used it for a few years. In the 131, 132 sequence.

A. Yes, we could have done that. Did I force that on you?

Q. It was pitched in their direction.

A. Yes, that was the whole idea. A little statistics in there too.

Q. Probably is some statistics. But what about the whole business of difference equations?

A. That's the heart and soul of that business.

Q. Yes. Cause most mathematicians don't know anything about it. I certainly don't.

A. Yes I'd forgotten.

Q. And they're harder than the calculus in some ways.

A. In some ways. On the other hand it's very concrete, right?

Q. Oh yes. We teach what we know.

A. Of course, of course. What else can you do?

Q. That's right.

A. Calculus, or even before you get to calculus, you had tables as I recall, when you were in high school. In my math book at the end of the table was a table of square roots. And then when you got to the next step up, there were tables for everything. And none of those tables are exact. But we keep telling people mathematics is exact.

Q. Except when you do it.

A. Except when you do it. What's two-thirds? You can't tell me what two-thirds is. Where is that on that line? That's about as abstract as you can get in a sense. So in one way you teach that to a bunch of freshmen in high school, maybe that's a little too much for everybody. Granted you have to find out eventually.

Q. It will be interesting. We learned how to extract square roots by hand, right?

A. That's true.

Q. You probably couldn't do it anymore.

A. That's very true.

Q. Okay. So now you have tables but they're not efficient. Now you've got a little calculator and it does it just like that. Well the calculators will also differentiate anything you give it. And probably integrate anything you give it that's integrateable. Do you think that differential calculus and interval calculus will ten or twenty years from now be taught so that they learn how to differentiate and learn how to integrate?

A. I'm not so sure. You mean the machine or the student?

Q. The student.

A. I question that.

Q. And is that good or bad?

A. Maybe I've told you this before but one of the breakfasts I go to occasionally out at the Faculty Club, if I happen to be there at lunch, some of the engineers at this table, a lot of different people. But one day they got talking about the following. This one fellow said, "We've got a student," in this branch of engineering whichever it was, "and we think he's one of the best students we've ever had." This is a pretty big statement. "But," he says, "that fellow doesn't know where to put a decimal point."

Q. Don't build my bridge.

A. You give him a problem and he doesn't know how to do it. And the fellow would say, "You do this." "Well nobody ever told me about that." And the computer is a good place to fall on. If you don't know how to do it you get the computer to do it. But if you don't know where that damn decimal point goes, you're out of luck. And if you had a slide rule you would find out. You have to find out. And that's what those engineers were saying. These people don't know how to guess what the answer ought to be in order to know where they are. And they ought to be able to do something like that.

Q. That's the hesitation I had with what we said would happen to calculus.

A. Yes.

Q. I just don't know what to think. In a way, yes it's silly to learn how to differentiate the arc sign of something or other.

A. That's right. That's right.

Q. Cause never in my life have I had to differentiate an arc sign. Or maybe I did but stuff you do in calculus is way beyond …

A. One of my first teaching jobs down in Virginia, we lived in this apartment and the fellow over here was considerably older than we were. At any rate, he found out that I taught mathematics and he said he was an engineer and he said, "I've got a good job and I haven't used calculus ever since." So what's the point? He got along without it.

Q. That's something else, although I've got all kinds of theories on that.

This is August 28. We're continuing with the Ransom Whitney interviews. We have a few odds and ends here. One of them is the Faculty Club. You want to reminisce on the Faculty Club?

A. Essentially what I thought good in it?

Q. Yes.

A. From the very start I felt that going to the Faculty Club was one of the ways that I could become acquainted with the University in a general sort of way. And later on, when I was immersed in the laboratory and talking with people about their problems, I found out that if I could talk with a client just about ordinary topics, it gives me an idea as to how he thinks, and I think that produced a better rapport if you will between me and the client. In some departments the chairman would

rarely enforce the idea of the people under him to join the Faculty Club. This was not a case in statistics. The ones that wanted to join joined, and the ones that didn't didn't. When it came to statistics, I was wrapped a little bit loose on this but I never told them point blank they ought to join the Club. And maybe I should have done that but I didn't. And I think now, in retrospect, I think I would have done better if I told them to get over there and join, because I don't think we have too much representation in the present situation.

Q. You were President for a while.

A. Well I guess the people that were sort of running the Faculty Club, they wanted somebody, there was a position as chair in that situation. And I really don't know how much success they had in getting people to do this, but many of them did. The Faculty Club did what it could in trying to get people to come and enjoy themselves. Along this line some of the people in mathematics, a group of people in mathematics were very, they went to lunch at the Club at least once a week if not more than that. But they sat together and that was very good as far as statistics was concerned, but it really didn't tell them anything about people who happen to be in medicine or somewhere else. If you confine yourself to your own department, you lose out on some of the advantages of going to the Club. And in statistics I think that's even more important.

Q. So you went to the express table or bachelor's table or something like that pretty often?

A. I went there some of the time and some of the time I sat with the people in statistics. I didn't wander around looking for somebody to sit next to that I didn't know. But as far as I was concerned it was a nice thing to do.

Q. As President you did some things, made some changes or started something? Did you do the thing for the retirees?

A. Before the Retirees Association?

Q. No, no. For the Faculty Club. If you forfeited your entrance fee, then after you retired you were a free member forevermore. Did you start that?

A. No. At one time the Faculty Club had money problems and they really had extended themselves one way or another too far. And they felt as if they ought to get their money back in shape.

Q. The cash flow?

A. The cash flow. That's right, exactly. And what they did was come up with the idea of telling people who would put in their deposit to join the Club, that if they acted in a certain way they would get a lifetime membership but they wouldn't get their $100 back or whatever it was that they had put in. As far as I was concerned that an enormous advantage and the people who did it I think felt so too. And when I meet people now that didn't do it, I think I notice the idea that they had missed the boat. But it is true that when they decided to do this under one of the President's who preceded me, then there was a lot of, they wanted to finish this program. They wanted to get this program off the way but it took them several years to do this, and in the process the chairman of the committee or the President

would keep changing it. And the result was that, when they finally got everything the way it ought to be, I happened to be the President.

Q. I see.

A. And people say, “Oh you did that.” And I “Well, so and so, without naming names, really did it. And it just came down and I signed all of these.” That would give a person the idea that I started it but I really didn’t. Considerably after this program had gone into effect, all the time there were rules what would happen when you retired and so on. And I remember several of us thought that the people who had been members for sometime should have something like this. They would have access to the Club and treated like a member. They would pay no dues but they would pay some nominal fee for their food. This never got off the table for reasons I can’t say. There were several people who viewed it the way I did and they had more clout than I did and we never got it going that way. And I still think that the Club would be better off and people would be better off if once they retire having been a member for sometime, they ought to have the privilege of coming down and eating and not paying dues.

Q. A surcharge.

A. That’s right. And nobody seemed to catch on to that, so it didn’t happen. I think it still should.

Q. I don’t know how much they’re catering to the faculty anymore.

A. There are certainly people who might come down to the Club once a month and have a meal. And this doesn’t really cost them anything to do that. But it’s

goodwill. Even if a person doesn't want to belong to the Club, it's a pleasant place to go. It could be that if I'd thought of this when I was President I might have been able to put it through. But after that it's somebody else's business.

Q. It's so different now. It's really different.

A. It is. That's true.

Q. Okay. Anymore about the Faculty Club that you remember?

A. Well I mentioned going there with clients.

Q. Yes.

A. That was the big thing as far as I was concerned.

Q. I remember that you did a lot of the discussion about the formation of the statistics department over lunch.

A. Oh yes, that's certainly true.

Q. You want to go on to OSURA, the Ohio State Retirees Association? You're a founding member of that, weren't you, founding father?

A. I guess that's right. Before retirement, different departments would come over to lunch and after lunch we'd go down to the big room where we could sit and talk. At the same time there was another group, considerably older than we were.

Q. What was the name of that?

A. The Anvil and Bellows Club. These gentlemen, somewhat older than we were, occupied a few tables in the very center of the room. And I never tried to break in on their ranks. But the stories that I would hear is that they didn't treat new people

very well. So in a sense our group that met over in the corner. And we were a little louder than they were and seemed to have a lot of fun. And we called ourselves The Lunch Bunch. And occasionally a stranger would come in and sit down and he was welcome and so on. And he might continue thereafter but it was a fairly loose. There were enough people there that you always had a good crowd. And the Anvil and Bellows Club were over there with maybe two or three. At any rate, this happened. Then we retired. Prior to retirement, we would visit the home of other people, yours or anybody else, and have just a good time and a visit. It wasn't exactly a party. You went there, husbands and wives, and we'd call ourselves still The Lunch Bunch. That went on for a little while after we were retired. And then … I want the name of the organization, the professors who joined that are interested in having things done the right way, what's the word? If somebody sort of went off the end on something, on some topic that was very controversial, then maybe the University or somebody else would say, "What's he doing here?" And this group would defend him.

Q. University AAUP.

A. AAUP, that's right. Someone in that group thought that there should be some kind of retirees association. And they believed this. If they're going to have an association sometime, they realized that they wanted to get some officers and so on at the very start. And like a lot of things people want to see something happen but they don't want to take a job. And for one reason or another I remember someone came over to me in the faculty Club and explained this to me. This is what they were trying to do and would I be the President. And like a fool I said

okay. And actually the AAUP, once it got started, it really made no different who had started it. There were enough people who liked the idea and whether they liked the people in AAUP is irrelevant. And so we started. The AAUP said, "Well, it's sort of up to you to see what you can do. And there's no money in the till. Where are we going to have an office?" Off the cuff, who was the black person high up in the ranks?

Q. Madison Scott.

A. Madison Scott, that's right. Madison Scott, his office was in one of the buildings on campus. I can't tell you the name of it. I know which one it is. But one of the buildings. And he had really control over that particular building. And he said, "There's a room where you could call your own." It wouldn't be big enough for a big meeting but two-three people could get there. If you had a secretary, treasurer and all that sort of thing, they could be in that room. One of the question was, "Well, if you have something that needs typing," his words were this, that he thought the girls who were working in that building down on the bottom floor …"

Q. Was that Archer House?

A. Yes. Archer House. And this group down there, they were busy and I can't recall what it was. I think that what's his name again?

Q. Madison Scott.

A. Madison Scott. Was halfway in charge of this group. And so he had no compunction about saying, "Well if you need something done you can take it down there." And then after a while, there was another girl who was in some

other office up there and instead of that other group she was the one we would take it to. But of course the obvious thing was, if you wanted something done right away, you couldn't expect that. If you got it the next day that was pretty good. And she was smart, capable and so on. She's still around. But then how do we get mail? Of course, we had to send letters out to people saying this organization is here. And if they want to call us, not call us, but write us a letter or do something of this nature, we needed an address. And it seemed that the best way to get an address was for me to go over to the post office nearby and sign in. And so we got one under, I guess by that time we made up a name. And either I or this one secretary, well there were several secretaries in that building, and they could get that mail and bring it in. So that was taken care of. And the first year everything was really done by volunteers who came in and they spent a lot of time.

Q. How did you ever start it? I mean, where did you get the mailing list to begin with? And how did you stuff envelopes and all that?

A. When AAUP sort of voted me in, then they called a meeting. They called a meeting and I'm afraid of using names. Who was the librarian? There for years?

Q. Prior to Bill Studer?

A. Yes, that's right.

Q. I didn't know him very well. I know who you mean.

A. Well he was the one I could get. Maybe my wife will remember the name. But at any rate, he presided at the meeting. They put out word that there was going to be

this sort of meeting. I think AAUP must have done that. We didn't do it. In fact, this was really the first thing that happened, this meeting. This fellow presided. They put out this flyer that said what we were trying to do and he went on with that in what he hoped to do and so on, etc. And then I guess he said that they had elected me. I don't know if they asked for a vote or not but nobody was going to say no. And that sort of got it going.

Q. Was this before you retired or after you retired?

A. After.

Q. That's what I thought.

A. We got a committee together who sort of made some kind of a chart that shows who's doing what and what we need from time to time. And it just grew out of that. If we were going to send out mail, we would ask or tell them we need eight or nine people who were going to come and sort letters or fold them and mail them, put them in a bucket, this sort of thing. And this was done with virtually everything. A volunteer group would come in and actually do the work. There were both men and women. In retrospect I can't say which one I had the most. It was both.

Q. Where did you get the mailing lists, the names?

A. AAUP did that.

Q. Well that was neat. I didn't realize that, that they were so instrumental in this.

A. Yes. And once they got it going, they didn't come around and look and say, "Why don't you do this or that or the other thing?" There was nothing of that nature.

Q. Very nice. From the beginning was this open to all staff?

A. Yes.

Q. As it is now.

A. Yes. I think the AAUP, the people there that were interested in this, somehow or other they got me to do that, be the President. And that group on their own thought that everybody should be a member. That was brought up at the first meeting and there was no objection. And I had some reservations in my own head that this was good. I think some of the same sort of thing, Purdue might have been one of them. But I think they were all men. I'm not sure of that. I wondered how this is going to get together. If you're having officers and people are doing things, somehow if women are part of it they should be in the same boat as everybody else. And there must have been a woman president in there somewhere. Yes, I know there was later but exactly when I'm not sure. The thing that bothered me was, if you're going to try to have the group do something like a take a little trip or come to this meeting for whatever it is, is it going to make any difference whether they're staff or not. I was sort of skeptical as to whether that would work. But I think it did.

Q. I've got no idea where most people come from. I've been active lately in OSURA, the retirees association.

A. Along this line who's in and who's not.

Tape 7, Side B

The Faculty Club, when I was not retired, went there reasonably often. I lost my thread. Just a second. Before I retired I at least had the feeling that a good share of the University were eligible for that. We had representatives from a lot of places. That is, a lot of departments would have people who were going to the Faculty Club. In recent days, right now for example, I might as well use the right name, the Chemistry Department, which is a large department, has one person who is a member of the Club. Only one and he is retired.

Q. Harold Schecter.

A. That's right. I think the Statistics Department has at least, for a few years, there were half a dozen of the younger ones who were members of the Club. And I don't think anybody is now.

Q. Too expensive.

A. Yes. That's all I can say about that. The other thing on the retirees, the sort of thing I was thinking ahead of time, if I'm President somehow I want somebody to do a certain job and I have a feeling the woman that's sitting over there is going to do a greater job and some of these other professors over here wouldn't do anything at all. And it could work the other way. That is, if the person says, "Well, we don't want anything to do with them." But as a rule I think it worked out.

Q. Well it certainly has blossomed into quite an organization.

A. Yes, it is a good size one.

Q. Tremendous amount of activity. Anymore on OSURA that occurs to you?

A. What are we on?

Q. I was going to mention you got a Distinguished Service Award. Any reminisces about that, thoughts about it?

A. One way to start is to say one reason is because Jagdish Rustagi was here.

Q. That's true but it doesn't just work because Jagdish is here.

A. I don't know what to say. I can't say I didn't like the idea. It's certainly nice if they do that to people in some periodic way. And I guess I'd also say that it would be, I don't know what Jagdish did to get it done. He could say most anything. It isn't that I discovered anything in a big sort of way or whatever. I kind of thought that I did what I was supposed to do and that was it.

Q. You had a lot of influence in a lot of different areas and managed to manage quite a number of things. So it was very appropriate. So I just wondered if you had any particular thoughts. It's a nice award.

A. Yes. They had a dinner you know and so on. They wanted me to say, well whoever was there, to say a few words. So I pulled this one out of the hat. The President was there and all those guys. So I said, "We could go and put in a requisition for a rope." Why did I want a rope? Well, we were on the third floor of University Hall and my room, the office where I was, through one of the walls there was an empty elevator shaft. Used to be an elevator there. But it's not there anymore. And I always thought, now this building could get on fire without much

trouble, and that fire would come right up that elevator shaft. I wanted a way to get out. So I had a rope and I tied it onto the heater or whatever it was.

Q. Radiator?

A. That's right. Tied it onto that. And it was there, in case of fire I could throw that out the window and go down. And I said in that situation I don't need any practice. I can make it down. I don't know whether they liked that as a thing to say. At the time I didn't have anything else to say. I always thought it was sort of a nice sort of thing. There was no argument about that, getting that rope. And why, you would think somebody would question that. "Why does some stupid person over in wherever I was want a rope?"

Q. That's interesting because when I was a graduate student there was a rumor going around that Bob Helsel had a rope, a rope ladder in his office.

A. Oh really?

Q. Yes.

A. I never heard that.

Q. Well maybe it was you.

A. I don't know. Could be.

Q. We all thought that was a pretty neat idea. Cause there you are on the third floor and God help you if that thing caught on fire.

A. This is an awful thing to say but Bob Helsel would never get caught there. He's not there. I got a letter which came from the Dean but the person who gave the

Dean the letter to write was Helsel. And the gist of the letter that I got or notice or whatever you call it, wasn't a letter, was specifying who was going to be the Acting Chairman for the next end days or something. That was part of the problem. That to get that in plain sight. And the length of time that I was Acting Chairman was …

Q. You were Acting Chairman in the summer sometimes?

A. Yes. Now the first whack or whenever it was, he had different people each month or whatever it was. And that always bothered me. It just seems as though if a person has any pride or something about the department, they ought to be able to do something of that nature. If you go away every summer. Things like this would come up. The time we moved out of University. That occurred in the summertime. And you can't just tell the people who're moving to well push it anywhere in there you see. It should go where it's going to go. So the idea was you have to make out a chart and say this goes here and so on. Maybe you shouldn't do it but part of the game was if Zassenhaus is one of the people you can assign him an office, you don't give him the worst office. So you do all this crap just to get that done. And prior to all that, you get a letter saying, "You've got to decide what color you want for these three different things."

Q. What about the course scheduling for fall? Did he get back in time? There's always last minute adjustments.

A. He must have gotten back in time. I really don't know.

Q. Unless somebody else did that. Did he have an assistant at that time who handled it?

A. I don't think so. Well there was, what was her name?

Q. Ms. Jones.

A. Sounds right. She did a lot of stuff.

Q. Yes, I remember her.

A. And so she could have taken care of it some way or another. You see, I don't know whether anything I had to do was always trivial or not.

Q. Well office assignments are not trivial.

A. Those aren't trivial. I did that. I did that. Another thing that was different, well not different, but the building next to the Faculty Club.

Q. Orton Hall?

A. Yes. And the fellow over there, not the chairman, I know his name.

Q. Summerson?

A. Yes, Charles Summerson. When they had a lot of changes in the building and so on more than once, and he was the man who talked with the people who did the work. And he was good. And he would find mistakes. He took care of that. And there was nobody in mathematics, as far as I know, that was ever assigned to do that. When we moved into the building that was hooked onto the old one, Cockins, statistics got that whole building. And one chunk of it was supposed to take care of the library. I think within a month after we moved in the library was

crammed full. You couldn't put anymore books in it at all. Now somehow if somebody in mathematics was aware of that ahead of time, you might get it changed. Chuck, he did that. And I wondered, of course I didn't have anything to do with that, but I saw it happen. But now when mathematics got their big tower I wondered who looked after that.

Q. Somebody must have because that was a big deal.

A. That was a big one, yes. I remember talking with someone over in the engineering, the department over in engineering, whatever you call them.

Q. Aeronautical.

A. Aeronautical I'm sure. One fellow over there, I think he'd been a mathematics student before my time, a graduate student. And so he knew a lot of mathematics. But he gave that up for whatever reason. And he got a position with the aeronautical people. And I don't know how much he knew about aviation and that sort of thing. But at any rate, he had an office over there. And for one reason or another I periodically would see him for some reason. I can't remember why. But in his office he had a blackboard that he had right here. And the desk was over here. And the cord for the electricity came right underneath the place where the blackboard would be. And I remember going over there and he would talk about it and get a big laugh about it. But nobody checked this. And in the building, the one that we were talking about before, in that there were a lot of rooms where there would be a corner there that wasn't big enough for anything except if you put shelves in there, there would be a place for books. But did anybody ever think about doing that? No. It goes on and on.

Q. Okay. Let's see. On my list you were instrumental in forming the Tertulia Breakfast. You started that?

A. Oh yes. Well, we were talking before about the Lunch Bunch. And when that stopped, people retired, even before retiring we had occasional meetings at people's houses. I won't say we made the rounds or anything of that nature but there are enough of those to have women involved. Then when we retired, probably somebody had an open house for that or something. And said, "Why don't we do breakfast," which didn't involve the women but at any rate we talked about that. People were amenable to that and they just came. I may have gone down and talked to the head man just to see how things would work. Wasn't any problem there. The only thing that bothers me right now is, if for some reason or other the Faculty Club arbitrarily would decide, "We don't want to do that." Now if they've got a good reason you're not going to get anywhere anyway. But if they don't, then somebody ought to go in and argue. And that's the only thing I worry about right now, is that we don't have any organization which is fine, but somehow there ought to be a little bit.

Q. Well OSURA would come in, wouldn't it?

A. Who?

Q. OSURA. The notice of the Tertulia Breakfast in the newsletter.

A. It's in the newsletter. I don't know who got it put in there but they did.

Q. You might have. But anyway it's a good idea.

A. It's a good idea. I'm not arguing with that. They had something there and they might do it.

Q. They might come in and do it.

A. They might. Now I was very happy to see something happen although I wish I had been there. We were away somewhere for a day or two. And there was a meeting while I was away. And who did they have there? Our new President [Karen Holbrook].

Q. At the breakfast?

A. Yes.

Q. Is that right?

A. So somebody picked it up and did it. Could very easily have been John Mount. Schecter conceivably might have but John would be my first guess. That's fine. I'm very happy about, that it happens.

Q. It would be interesting to see if she ever shows up again. Probably doesn't occur to her.

A. That's true.

Q. But it would be interesting.

A. Refused to come.

Q. That's right.

A. Refused to come. That was nice. And if our famous football coach he would have come. I'm sure of that.

Q. He would show up at that express table quite often.

A. Oh yes. That's true. I have a nice anecdote about him. After a football game, when we were going, we'd come over there after the game. And eventually go upstairs and have something to eat. And Hayes, Woody did that every game. He would come there and have supper. He would sit over there on the sideline, over in the corner, all by himself and eat and disappear. And somebody told me later what he did was go to the office and look at pictures, at tapes. So he was there. One of my son-in-laws lives up in Michigan and when he met my daughter somewhere else down in Florida and eventually they got married. And we sort of say this, "Well things were fine," but he knew when he got married he was marrying somebody from where we live, right here in Ohio. And then he found out that I was at Ohio State University, terrible place. So life began. So at any rate they would come down for a game when we played Michigan State, and we were over there eating and Jack would say, "That's Woody Hayes over there. I'd like to go talk to him." I said, "Go right ahead." And I could never do it myself but he gets up and goes over there and he talks with Woody. And after that he was a Woody fan. And he gets home later on, a week or two later or whenever it was, and one of his friends got sick and was in the hospital. And Jack says, "You ought to do something for us." Of course this fellow was a fellow from Michigan State. So he wrote a letter to Woody and put in the necessary material. And the end result was he wanted him to send him a letter to get well. Minny's picture was there too. Woody did that. So Jack goes into the room the day that mail would come and the fellow in bed said, "The craziest thing happened to me." He

tells him this. And Jack says, now the name eludes me, the coach at Michigan at that time, said …

Q. Schembechler.

A. Said, “He would never have done that for you.”

Q. And he didn’t tell him that that happened?

A. He didn’t tell him. Well maybe he did eventually. Woody was quite a person.

Q. Okay, we’re on the list here. We’re pretty well done. I’ve got a note here, I’m not sure, the Speakers Rule and University governance. I don’t know about that.

A. Speakers Rule, did that come under what we talked about before?

Q. Faculty Council.

A. No. The one that decided we ought to have ASRA.

Q. AAUP?

A. AAUP.

Q. I don’t know. That is deep in the history and I’ve never got it straight. What was the Speakers Rule?

A. Well right now I certainly don’t remember what the thing was that started it off. Somebody in a department _____ on something or other. That’s the wrong word to use. He must have done something that the University didn’t like. So there was a big squabble about that. And maybe there was a rule presented but I just don’t know. I don’t know what that was. I think that would be in the archives somewhere.

Q. Yes. I just thought maybe you were involved in it.

A. I wasn't involved in that.

Q. The same thing with the Rose Bowl thing back there. Were you in any way involved in that?

A. I was on the President's, what do you call it? The President had people come once a month or something to a meeting.

Q. Faculty.

A. Faculty Council, is that what they call it?

Q. I don't know. By the time I got there it was a Senate. But that was only faculty.

A. Yes, it was faculty. And it was at a faculty meeting that they decided they shouldn't go to the Rose Bowl. And for the life of me I think I was on that committee at that time. And I don't remember how I voted. I actually don't. The only incident I remember was after that vote, went up to the third floor of University Hall as usual, and there were a group of people over at the window looking out. Oh, what's his name?

Q. You mentioned him before. He was jumping on the car.

A. He saw them jumping on his car. And the other thing that bothered me later was completely disconnected but I was going to a meeting on the west coast, and I asked the University to get my tickets, which they did. And I went and the first surprise to me was, when I got on the plane I found out I had first class seats. That was a very nice trip. And then shortly after that, the Dispatch started printing that so and so got this much money for doing this and doing that and so

on. You know how it goes. And I kept thinking, "They're going to find out that my name is on that stupid list." It never happened. But that's all I know about it. The other thing at University Hall, one thing that got me about the possibility of a fire in there, was one summer they would have different meetings in University Hall outside. And one group was a group of the people who run fire engines. And they were meeting in University Hall. And after a meeting they'd come out and as part of the meeting they could come out for intermissions. And have a smoke. And there are all sort of signs up there "No Smoking" at all. These characters from outside were smoking and it didn't seem to bother them a bit.

Q. Oh boy.

A. Another thing about that building, one time we took a vacation and I don't know where we were going then but we stopped at, what's the state west of Wisconsin, the next state.

Q. Minnesota?

A. What's the one beyond that?

Q. North Dakota, South Dakota.

A. I think it was North Dakota. That area, it doesn't matter which one it is. At any rate, we stopped there for some reason or other, and in looking at the building, here was a building that was the splitting image of University Hall. Same thing. And we just walked in and looked around. And that building was in immaculate condition. Nothing wrong with it at all. And then shortly after that. Our building got a lot of troubles about it and eventually was torn down. That's irrelevant.

Q. I heard then that the mortar and the bricks were bad. They couldn't do much about it. Maybe that was the cover story. I don't know.

A. Well, I don't know anything about that. But prior to their tearing it down, we had computer equipment, the old stuff, those things that weigh a ton. And we got this one or we already had it, and where can we put it now. And the fourth floor of University Hall just had some department was put out of it because they didn't want any students up there at all because of the weight, because of the building. And we had this IBM equipment in the room up there. So we didn't take it up there. We got some University people one way or another to take it up. So we had all that equipment up there on that fourth floor, which was supposed to be condemned.

Q. That one place did collapse though. I don't think it was with that equipment but it did finally collapse.

A. Oh yes, I can believe it. And then another place that same equipment went was, it was in a building just east of the post office.

Q. The old communications lab.

A. Yes. And we got something on the second floor of that where we could put the IBM stuff. Had to travel around a bit.

Q. Well that's the end of my list.

A. That's good.

Q. Unless you've got something else you want to talk about. We've covered a lot of ground.

A. I'm not prepared to do it right now and maybe I shouldn't do it. Sort of what happened to the Department of Mathematics that made it go down hill.

Q. We did talk about that.

A. Well, I don't know, did we? I certainly did in that letter. Maybe that's the best place for it.

Q. I think we did. We'll get the transcripts now. You can look at that. If there's not enough there we can always do a little more. I think that popped a number of different places. I don't know how thorough we did it. So we might be doing some cutting and pasting on the transcripts.

A. You made a remark one time why we got the division category. And your statement short of implies that we didn't ask for that. And then somewhere in those papers that I didn't bring here there was some remark that would give me the other impression, that we did ask for it. I don't remember any time that anybody delivered a speech or wrote a speech about what all happened. It was never about that. So the only thing I could come up with is that that committee up there somewhere that read all of this and thought, well the first step is to just make them … and then maybe my impression that something got in there that said we asked for it. I don't remember asking for that.

Q. It's not on the proposals. You asked for a department.

A. That's right. Speaking of that and this thing that I'll leave with you here and at home.

Q. This is the end of the recordings, at least for now, for the Whitney interview. I just want to say whoever is transcribing this, God bless you. You've had a difficult chore and we appreciate very much your efforts. Thank you very much.