Smith: The date is March 6, 1997. This is one of the series in the Living History Project. We are in Room 410 of Barge Hall, and we are interviewing today Professor Bob Mitchell, who is a retired Physics Professor at Central. I’m Helen Smith. The camera person is Ham Howard, and the official observer today is Odette Golden. OK, Bob, you know what we are going to start with, please give us a brief personal history of your background before you came to Central.

Mitchell: Very brief. All right. Well, I was born in Iowa. At nine months I moved to South Texas, McAllen, down in the lower valley. Then at age four we traveled by Model “T” Ford from Texas to New Mexico. It took a week. Not quite covered wagon, but very much, very similar, camping out along the way. I went to public school in New Mexico in the Sacramento Mountains. Started in a two room school, and then graduated to a one room school, and then in fifth grade I moved in so I went to Cloudcroft schools, which was, even had a whole room for each grade. And I graduated from high school in 1945 in a class of four. Played football and basketball, and went to the State track meet in shot and discus and javelin in 1945. Most of the big guys were off to war, so us smaller, weaker fellows had a chance. I got fourth in the discus that year. Then in ‘45 I started school at New Mexico State University, and started the Physics degree immediately. Graduated in ‘49. Upon graduation, got married to Jo Bennett, and we went to Seattle, where I started graduate school. Got a Master’s there in ‘51. Went to Hartford, Connecticut so that Jo could go to school, and I worked for a small ultra-sonics company in Hartford. I worked for a little while at the University Connecticut Upper atmospheric studies project. Well, after about a year there we went back to the New Mexico. I worked with the University of Connecticut on that same upper atmospheric research at Sacramento Peak Observatory. And worked for Harvard after that project had to be taken back to drawing board and revamped. I left University of Connecticut and worked for Harvard, Harvard College Observatory as a solar observer, observing solar flares and taking the solar spectrum. Running their telescopes that did those things. Did that for about a year and then started high school teaching in Colorado in a private school in Colorado, Rocky Mountain School, just out of Carbondale. which is near Glenwood Springs, between Redwood Springs and Aspen. After two years there the problems of raising small children in a private school with high school kids all around, eating meals with, in dining halls, got to be a little much, so I went back to New Mexico and started public school teaching at Gadsden High School which is the very southern part of the state, near the town of Anthony. I taught there six years, and found that I might have a shot at earning a Ph.D. in Physics, so I left school teaching in ‘62, and started a Ph.D. program at New Mexico State, which I finished in ‘66. Went to the New York meeting of the American Physicists Society, and after the New York meeting Wilbur Vance Johnson from Central was interviewing for new faculty. Even though I’d had contact with, I think thirty other institutions, I’d already turned down a firm offer from two of them, something about Vance and the way he built up Central in my mind, and we liked Washington, so we decided to come. We came in ‘66.

Smith: His recruitment skills were very good, obviously.

Mitchell: They were very good, and I never did regret it. Vance and I had a very good relationship for the entire time he was here. He was Chair most of that time, and was an excellent Chair.

Smith: So you came to Central in 1966, and what was the length of your tenure?

Mitchell: Twenty-seven years. I retired in ‘93.
Smith: And did you go on phased retirement, or did you just simply retire?

Mitchell: No. I just simply retired. I was sixty-five, and it always been my plan to retire at sixty-five. I considered phased retirement for some time, but as I did the arithmetic I saw that I would be pretty much donating my time. My time was too valuable to do other things, so when I retired in order to really feel like we were cutting ties, we packed everything we could get in a little Honda and drove to Charlottesville, Virginia where our oldest son Drake and his family live, and spent nine months with them. So we just really got out of town.

Smith: So you started retirement with a clean break.

Mitchell: A clean break.

Smith: Well, when you first came in 1966, Please tell us about what your academic assignment in the Physics Department was and how many staff members there were.

Mitchell: When I arrived the Department was just a year old. It had just been established as a Department the year before. Johnson was the Chair, and Art Ladd, who had been here the longest, was on hand, and E. Smith-Murphy was the other physicist. Sperry and I came the same time. Will Sperry. However, he took one quarter to finish up his degree, so he was a quarter late, but essentially by winter quarter there were the five of us. The only course that I remember specifically in that very, very first Fall was a course called Physical Science Laboratory. Physical Science 103 had been taught without a lab with the understanding that sometime in the student’s career, they would take the laboratory course. It made no sense, but that’s all right. It’s what happened. So I was given this large lab and Physical Science students. And another course may have been that first fall, it may have been, I think it maybe was Electro Magnetic Theory. I still remember a few of the students, and I don’t remember what else. I brought with me a brief history and I could tell you who was there. Our office was on, my office, all our offices, were on the third floor of Lind Hall. Right around the pendulum. The pendulum, well, has now been sealed up with a wall, but it was open then, and the Math and Physics offices were all up there on that third floor.

Smith: Now is Physics still in Lind Hall?

Mitchell: Physics is still in Lind Hall. It’s been in Lind Hall for that entire period, except for a brief period that we were in Montgomery Hall which is an old barracks right there by the tennis courts. Near where Dean is.

Smith: Which has now been demolished.

Mitchell: It’s been long since demolished. Yeah, then we moved back to Lind Hall. We’ve had various homes, offices been in various places in Lind. For a while in the East end in what’s become the Geology office, then it was down on the first floor in what is now the Geology office, and then finally our offices which was the old Chemistry store room, part of the old Chemistry store room on the second floor.

Smith: So the Physics Department was a movable piece almost as it were.

Mitchell: Very movable. In fact there were times when I was afraid it was going to be more movable then that. But that ultimate move never happened.

Smith: Did you feel that all that being moved around, negatively affected your teaching?

Mitchell: I don’t think so because our class rooms and our labs always were always in the same place.

Smith: I see.
Mitchell: It didn’t matter where our offices might have been.

Smith: What was your academic rank when you came here?

Mitchell: I came as an associate. Johnson managed to convince the administration that eight years of high school teaching was adequate to move into an associate, so I came as an associate. At about twelve thousand a year. Which was great big money in the sixties.

Smith: Great pay, right. And when you retired? Your rank?

Mitchell: I was Professor. I made Professor sometime in the seventies—seventy-two or three.

Smith: That’s fine. OK, then after those first classes that you taught, you obviously graduated into other classes. Give us just an outline of the various classes that you taught during your career here, and the ones that gave you the most pleasure.

Mitchell: We tried, as much as possible, to rotate the classes, so that nobody was stuck with a class for more than three years, maybe four years. So everybody had a chance to teach everything, so the classes I taught went all the way from the, well, Physics 105, the class for elementary teachers, the Astronomy class, which is, that was one that didn’t rotate. Johnson and I were about the only ones that taught that. We traded off teaching that. But both the Calculus and the Algebra based Physics sequences, which are year long sequences, I taught several times. I liked them both. Electro-magnetic Theory was one I found that was very challenging, but fun. One that was very difficult that I didn’t teach it very often was Quantum Mechanics. I never felt comfortable with Quantum Mechanics, but always had good students, and sort of, see what they did, and see if it made sense, and followed them along. Had some really, very good students.

Smith: Speaking of students, can you give us some assessment of what you felt the quality of the students that came to you from the public high schools was? Did you feel that they came well prepared for Physics classes?

Mitchell: Well, it was so varied. Really. Those who came as Physics majors, by and large, were really well prepared. And when they left here I was extremely proud of them. We had, and I think the record is still intact, that none of our graduates who went on to graduate school, had to take the qualifying exams a second time. Which is almost unheard of For the general students, there was a fairly large faction that I wasn’t sure should have been in college at all, based on their background (?). The arithmetic, I won’t even say mathematics, just the basic fundamental arithmetic understanding, not the skills, understanding(?) is pretty bad.

Smith: So they simply were not prepared.

Mitchell: Just (?), just not prepared. I remember a student in an Astronomy class once, when I started talking about longitude and latitude. This student said, “Well, you didn’t teach us that? When were we supposed to have learned that?” I kind of thought maybe that she should have gotten that near the third grade, maybe fifth.

Smith: So how did you handle that in some of these basic classes?

Mitchell: Well, we just spent time, and [drew diagrams, and I wrote a book for the Astronomy course. And put as much of that in there as I could. Tried to catch them up.

Smith: And that must have been gratifying. To see the results from that.

Mitchell: Well, you could see some results.
Smith: Some results. All right. You spoke of some your Physics majors you were very proud of, would you like to name particular students that were outstanding that have gone on to illustrious careers in your field?

Mitchell: Well, I guess I could just do it sort of chronologically. My problem is that I have some trouble with the first names. Johnson, he was a local boy. I can’t come up with a first name.

Smith: That’s all right. It doesn’t matter.

Mitchell: But he was our first Ph.D. after I came in Geo-physics, glacial ice at the University of Washington, was quite in demand by oil companies, who particularly were drilling in Alaska. (?) there. Another one was Ron Rabey who got his Ph.D. at Washington State in, I think, three years which is unheard of. Went to Las Alamos and did shock wave physics. Quite good. A woman, Marian Freuh, who was from Selah, got her Ph.D. at Purdue, and is now, I think in charge of, or head of the Photometry work at McDonald Observatory, Even thought the degree is in Physics, all the research is in astronomy, so she was considered an astronomer at McDonald Observatory. She’s been there ever since she graduated.

Smith: Certainly one of the gratifications of teaching.

Mitchell: And then the last one who I have to mention is my own son Drake, who got his Ph.D. at the University of Oregon in Physics with a Bio-physics specialty in research. He is now at one of the Institutes of Health in Rockville, Maryland in the Institute of Alcoholism and Alcohol Abuse, and is studying membrane transfer and the effects of alcohol on how things get across membranes in organisms.

Smith: Let’s go on now to some of your colleagues. Certainly, during the years that you spent here there were members of your Department that, or were on the staff generally, that you felt were important contributors to the University community.

Mitchell: Well, in Physics they were all important, but they really were, and some were recognized and you could see their importance. And some were more quiet in what they did. Let me start with Will Johnson. Just a little bit about him. His name was Wilbur Vance Johnson, but he was Will Johnson to all of us until his wife died, and that was such a traumatic experience for him that he sort of, well, I think he took at least one year and maybe two unpaid leave, just to recuperate. When he came back, he came back with a new persona as Vance Johnson, so I call him by either name. But in the nationwide Physics community, he was the biggest contributor of all. He was named the Executive Secretary of the Pacific Northwest Association for College Physics which was established to pull together people in the Northwest, Physics Professors at, pretty much, University level, University and Community College levels, Washington, Oregon, Idaho, Montana. This is not part of the American Association of Physics Teachers. It’s an independent thing. There were three or four such regional Physics Associations established in the seventies when the Commission on College Physics was operating out of the University of Maryland. And Bob Bennett was another one of our faculty members, spent a year on their staff Vance was Executive Secretary for a year or so of this PNACP, and then he was tabbed from there to be Executive Secretary of the American Association of Physics Teachers with offices in Washington, D.C. So, as such, Central got a lot of exposure, and those two, Bennett and Johnson, probably, were nationally, our most visible and made the biggest contribution, On campus, Smith-Murphy was often called in to chair various difficult committees. I remember the ROTC Committee was one. I forget now what the question was, I think it was “The role of ROTC before the University in terms of academic status.” And it seems that there was something else, but he was quite active as a committee chair, and as a committee worker. Sperry has done quite a number of things, I believe.

Smith: Will Sperry.

Mitchell: Will Sperry. I was on the Faculty Senate several times, was chair of the under-graduate curriculum committee for a couple of years.
Smith: Did you find that Senate tenure satisfying?

Mitchell: For a while. And then I became discouraged because it seemed as thought we kept plowing the same ground, and we didn’t seem to progress. Actually after I got accustomed to being the sole vote, or maybe there were two votes, one, Claire Lillard and I sometimes were two people on one side of an issue, and everybody else on the other. And after I felt comfortable with that it wasn’t too bad.

Smith: Well, it sounds as if it was a congenial Department to work here.

Mitchell: It really was. We learned from each other and would go to get help from each other. We really were very congenial. We brought in people who came and went as temporaries, as people went on leave. And by and large they were congenial. We had one fellow that we identified within the first quarter, as not fitting in, and Smith-Murphy was acting-chair at the time, and he was told rather early that his contract would not be renewed.

Smith: But that was fairly unusual, apparently in your Department.

Mitchell: Yeah.

Smith: What about administrators? Were there particular administrators that were helpful to your Department that you felt were very supportive?

Mitchell: Well, that’s hard to say. Some administrators would try to be helpful. I’m trying to think back to the early, early days of, Charlie McCann was Dean of Faculty, and I guess one of the things that sort of set an undertone of anxiety with me was, Charlie told me about the first year I was here, he said at least once a week some faculty member says to him, “We don’t need a Physics Department. Why don’t we drop the Physics Department?” And that theme kept coming back, over and over and over. I’ve been in meetings with Deans when exactly those words were said.

Smith: That’s a tad frightening.

Mitchell: It was a little frightening.

Smith: But it was always just a rumor? No action was ever taken on it?

Mitchell: Well, there was some attempted action. Actually, it was not in one of the RW plans.

Smith: Explain RIF for us.

Mitchell: Reduction In Force. Heading to supposed financial excellence in...In 1981 it was decided that Physics should lose somebody. And it was rather a tough time because there were only four and if we lost one there would have been three, and that would have essentially ended the Department as such, here. We avoided that somehow. Partly because, I would like to take credit, but I’m not sure I can. I was chair at the time. The documentation that said that Physics should be cut involved nothing more than student credit hours over the past four or five years. There was no other rationale or no other justification. Just that spring, at least three new Departments had added a Physics requirement in their major. The committee who was doing, making the recommendations, didn’t notice. They hadn’t looked at all at the new curriculum, hadn’t thought about the curriculum. I don’t know what they thought about. Vice-president hadn’t looked at it. I don’t know what he had looked at. Nothing I think. And the other thing that I could show people from the very data that they were losing that there were three immediately preceding years, there was a steady loss in students, and it continued to drop after that. So I don’t know what the decisions were, I mean I know what the decisions were, I don’t know what the thinking was.
Smith: But your Department did then avoid the RIF cutting.

Mitchell: And as far as I know, no other Department had to lose one because we didn’t. I think it was. And so I, that whole reduction in force, I guess there had been one previous to that, and it was never clear to me after it was all said and done that the furor was necessary at all.

Smith: But it was a very frightening time, a tense time.

Mitchell: It was a very tense time.

Smith: Would you care at all to comment on the styles of the various Presidents that were here during your time? Rather they were helpful to your Department, if they ignored your Department.

Mitchell: Well, I think primarily, I sort of felt we were ignored.

Smith: Ignored.

Mitchell: Yeah. I never did feel much sense of support.

Smith: OK, let’s go on to problems. You’ve already mentioned a few, and whichever way you want to approach it, is fine. Either problems between faculty and administration, or faculty and students, or faculty to faculty, what problems come to mind?

Mitchell: Well, the basic problem that just sort of overrode almost everything else was one of funding for equipment and staffing. I kept trying to present our case to the Deans, whatever Dean happened to be, and that’s why I’m not singling anyone out, I think all the Deans tried as best they could to help us, but I think they were sort of helpless, too. We taught about a twenty-five per cent overload, just year after year after year, and some Deans would say, “Well, that’s your own fault.” But the students needed the courses, and one of the frustrations for all of us was that we always saw ourselves, primarily, as a service Department.

Smith: As a what Department?

Mitchell: Service.

Smith: Service Department.

Mitchell: Service to other majors. And we felt than, and always have, and still do feel that to do an adequate job of teaching for service courses, to keep alive and fresh, you need your own batch of majors, you need some majors to keep you courses healthy. But you need some majors just so that you are not simply reading from ten year old text notes, lecture notes and trying to stay up with what’s going on, not only in Physics, but in Physics Education. And I don’t think that sense ever came across to any administrator at any level. And so we were forever teaching these rather large overloads. Our labs were such that it was really hard on us. We would often, in terms of actual contact hours, not the number of hours that you counted on the books, twenty, or over was very, very typical. ’Cause we might spend twelve hours in lab every week. And equipment was always a problem. And we, these difficulties went beyond the local administration, this went to the state. The one time we were given money in advance, they said here is equipment money you can spend was when Dixie Lee Ray gave the school a few million. And we got...

Smith: Do you feel that was because she had a science background, perhaps?

Mitchell: Perhaps, but then she had to convince the Legislature, and I don’t know how she did that. The other thing that we did for equipment was when I first came, we had got a College Science Improvement
Grant, CoSIG we call it, there’s more to it than that, but in that grant we bought a machine shop, a lathe, a drill press, a milling machine, a grinder, and all of the attachments that go on all of them, which are still there and still functioning very well. And that was thirty years ago. So that was a real boost because with that, and we did get a machinist, a technician who could do the machining, and that helped a lot in keeping the equipment up and building up on it.

Smith: Was that early on?

Mitchell: That was very early on. That was within a year after I came. But those two things, that continual battle over trying to get enough staff to do what we had to do without putting in those kind of hours. And I will have to say that on the plus side of all of that, that our requirements to publish, and do research, we weren’t held to that as much as might have been, so people could get promoted by just significant work, and with giving papers at meetings without actually publishing in some of the more prestigious journals.

Smith: So the constant overload and lack of funding did not adversely affect morale too much because this other...?

Mitchell: No, it was always hanging around and there’d always be a time come spring when you wish you could do something. We were a little bit frustrated by the policy of dumping extra money, fuel money on us in May, and giving two weeks to spend twenty thousand dollars.

Smith: A frantic scramble.

Mitchell: And then the Dean seemed to think that well, you can make up a list of what you want early in the fall, and then we’ll just have a list and draw from it, and they did and we often didn’t get what we really wanted because by spring we saw needs that we didn’t see in the fall, and so that didn’t work very well, either.

Smith: Well, let’s go on to this rather long list of topics here, and you have said that on that you could really have something to say about long range planning. Let’s start with that. How do you feel about long range planning at Central?

Mitchell: Well, there was something known as the Delphi Project which I can’t remember the details, but it was a plan that did some long range planning, and I was quite excited by it. I was involved with that, and shouldn’t say took courses, but took some lessons from others who knew how to do group dynamics and do group process kinds of things, and I thought it was quite fun and quite interesting, but it didn’t take long before I realized that it wasn’t going to go any place. That it was pretty much pie in the sky. We could never get from what we wanted to do and get from here to there. There was never any strategy plan. In fact one year, we hired Phil Dumas to be the long range planner and when he made his presentation to Geology and Physics and Geography, anyway, a group of Departments in Lind Hall. I asked him, “How are you going to use your plan to make decisions?” “Oh, we can’t use it to make decisions.” And I think that’s the way it’s been, the case with long range planning throughout. The plan was always something great, but the decision was always made independently from the plan, mainly because the plans were never designed for decision making.

Smith: So your assessment for long range planning is not very positive.

Mitchell: Not very positive, no, and as far as I can tell it hasn’t gotten any better. I know I wrote out all sorts of long range plans in my last year as chair, and put in all kinds of good stuff and as far as I can tell it might just as well have never been written.

Smith: Would you call it an exercise in futility?
Mitchell: You might, on the other hand, I, not entirely because for me and for the Department just to see everything laid out was worth doing. So I didn’t feel like it was a waste of time, but the University which pays for my time to do it for their function, it was a waste of their money.

Smith: What are your feelings about the salary schedule over your years?

Mitchell: Well, oddly enough, I never had much to complain about.

Smith: Good.

Mitchell: Now that I’m retired, I look at what TIAA and CREF are doing for me, I feel better and better. So people will tell me how much money people are making at other institutions, and at the time I always felt that I could have used more, but I really didn’t ever feel strongly that that was a major problem.

Smith: That’s good to hear. What about the Faculty Code? Did you find it helpful?

Mitchell: Well, I guess I didn’t interface with the Code very much. I remember when we would bandy it about a lot, and talk about it a lot, and always somebody found a way to get along where it was too complicated to think too much. No, I guess, I would be just, what do you call it, a “push” on the Faculty Code. Not particularly helpful, and not particularly in the way either.

Smith: During your years here did you feel that you did indeed have academic freedom?

Mitchell: Yeah.

Smith: There was no coercion, no pushing to keep you contained in a little box?

Mitchell: Well, I won’t say there was none. There was some, and that coercion was again financially motivated. And it wasn’t too bad, but it was more than I would have liked. We were often, I shouldn’t say often I guess, but from time to time we would be encouraged and almost demanded to teach some course, some place usually off campus that really was pure garbage. Just really would not...and one of the things that was held against us in the RTF, was that we had refused to teach a course in auto-mechanics for the “WPPSS” people in the Tri-Cities.

Smith: Describe “WPPSS”.


Smith: OK.

Mitchell: And the people at the Nuclear Regulatory Agency decided that reactor supervisors must have a degree. Reactor supervisors were primarily Navy nuclear submarine people who had very little formal education. We, I guess, as I understand it, WPPSS went to almost every University in the state to see if they could get degrees for these guys, finally settled on us, and I’m not sure just why. But, we tried to work out something at the community college. We said to WPPSS people, “if your people will take Calculus and a first year Calculus Physics in the Tri-Cities and it’s offered there every year. Pass that, then we will take down the next level, Modern Physics and then Electro-Magnetic Theory, and so on. And they tried that, and they couldn’t pass the Chemistry and Calculus. So then they said, no, we want a course in Nuclear Physics and we want it taught it out of this book. So I was not on the committee, so I’m just very much in the background of this, I wasn’t chair, but I felt the pressures. I looked at the book and it looked very, very much like a Boy Scout Handbook that had
little pictures of little neutrons and protons running about, and one neutron comes in and three come out, and that was the lot of it. And these people wanted to OK the professor, they wanted to approve every exam, and we were strongly criticized by the Vice-president for not participating.

Smith: But you weren’t forced to participate?

Mitchell: Well, one doesn’t know.

Smith: Ah, ha.

Mitchell: We don’t know, you know, we almost were forced because that was one of the arguments being made, I heard from, not directly to me, but to members of the committee told me later that was one of the arguments and Physics ought to be punished in a sense, for not participating. So we weren’t punished, but we were made to feel the heat. We got to look at the instruments of torture. As Galileo.

Smith: You mentioned earlier, about getting time to work on research and to write. Did you ever feel a sense of the old expression “Publish or Perish” while you were here?

Mitchell: No. I don’t think that was ever stated or even implied. Most of the writing, or publishing, or whatever work of that nature we did was pretty much from our own volition. We did not use sabbaticals as we should have, I think. I only asked for two sabbaticals, and I got them both. I used both of them for writing: One I wrote the Astronomy book, and the other I developed some computer assisted experiments in the days when computers were just getting started. But those were pretty much things that I wanted to do and seemed right for the Department and nobody, no administrator pushed them (?). In that sense, they were supportive.

Smith: Tell us a little more about your own personal research and publication. Do I recall that you were working one time on an interesting project on time?

Mitchell: Well, that was not so much a project, I wanted to teach a course on time in London because the whole concept of time, and development of time, and understanding of time, you know, how various writers use the concept of time, how time and the development of the clock is so important for navigation, and the different kinds of time (?)... including not just time, but the calendar, I made two submissions to teach such a course in London. It was very well received by the Physics community, but these proposals had to go to a broad set of referees because, remember this was a multi-institutional program that reviewed these courses, and it got very high marks there. What it finally came down to, the people on the committee choosing courses just finally had to say “Well, it says Physics and nobody will take it, so we’re not going to offer it.”

Smith: Oh, so you never did get to teach it?

Mitchell: So I never did get to do it.

Smith: That’s a shame, because it was a fascinating project. Tell us about your work in Astronomy? It took you far a field, did it not?

Mitchell: It did, yes. Actually, in a sense, when I started graduate school I had in mind that I would do Solar Physics because I did become quite interested in the work at Sacramento Peak Observatory, and I’d gone back there three summers while I was teaching high school, worked for the director doing research on solar magnetic fields. So the concept of at least solar physics, which is a stepping stone to more general astronomy, was there. But things worked out such that I wound up working with lasers instead of that.
When I arrived here, soon after I arrived the Department got a twelve inch Cassegrain telescope to mount on the roof of Lind Hall. There’d been an old Newtonian eight inch, and this new twelve inch, Smith-Murphy was interested in astronomy and had ordered this. And then about the second year I was here Chair Johnson said to me, “It’s your turn to teach astronomy.” And in terms of the kind of astronomy that I always thought was appropriate for beginning students, for this general education, I really knew nothing, so Smith helped me and I got books and charts and began to study, and we limped along for a few years. And little by little I developed this concept of helping students feel, in this spaceship Earth, that they could point in some way to where we were traveling, and where we’d been and where the planets are, and where they’re going to be, and swing the arms around and see, so when they looked up, they’d have some sense, not only of just identifying some stars and things, but in some sense, how we fit into what we can see, as well as some of the historical points of this. Well, in doing that, I got interested in variable stars in astronomy because it looked like something I could do that might fit in someplace, and since I’m too much of a coward to stand out in the cold and just look through telescopes when it’s cold. I thought I would learn to just take photographs of the sky, and then I can sit down in my warm office and study the photographs and determine the magnitude of the stars to see if they are changing. So I started taking pictures of the stars, and found that it was really quite easy I had a lot of nice pictures, and then I discovered that Tri-X film that I was using was not very red sensitive and many of these variable stars are red, and so, in some of them anyway, as they get brighter, they get redder. We took this one called Mira and when I realized even as that star got brighter and brighter on my picture, it got dimmer and dimmer. And I was never going to be able to get magnitudes, or brightness of stars, on my photographs. But about that time I was trying to find some color photographs that I could show students in the classroom, so as to help them identify the star groups and asterisms, the Dippers, the (?) and the Pleiades, and whatever. And I found that they just couldn’t. There were a few for sale, but when you duplicate star pictures, even once, the grade of chemicals, the contrast is too much. And so all the stars look alike. You don’t have subtle differences in bright stars and not quite so bright, so these asterisms just don’t stand out any more. So I tried some color film and I found that my pictures looked quite good. So I took a whole set of the whole sky, and then, this was all in about the early eighties or late seventies, I...Oh, Hanson’s Planatarium, which is in Salt Lake City, had published a little set of postcards with real nice paintings, color drawings/pictures of the constellation figures, The Lion and the Eagle in gold and other figures. And so I wrote them and asked if I could get permission to photograph these, all I was going to do was double expose those and just stay with an orientation, and double expose them onto my star slides. So I asked for permission to do that and they granted permission and they granted permission and in the same letter he said, “Your project sounds interesting. We had planned one, but we never did get it done, so we’d like to see your slides.” So I sent them my set, and they went down the list, and said, “We like this one and this one, but we want these others.” For instance, I remember specifically, do you want one of Perseus and Andromeda with the Pleiades in the lower left corner? And that’s the kind of specificity they gave me. So I got out my camera with the twenty-eight millimeter lens and a home-made drive, these were five minute exposures, and took the pictures they wanted. They were quite happy with them; they sold, for about five years they sold these all over the country. And then at the end, they went out of business, the slide business, and even today people who want such slides call them, and then they have them call me, and I have now turned all that over to the Physics Club, so that any money that we will make goes to the Physics Club. And sometimes they get paid. Somebody right now, I’m having a set, five slides duplicated that somebody wants to look at. The most exciting, probably the most exciting phone call I ever got relative to these slides, was when we were in Virginia, when I answered the phone, the voice, a woman’s voice, said, and I can’t remember her name, “I’m from the Swedish Academy of Science.”

Smith: That was reason for ... (pause).

Mitchell: I said, “I’ll accept” But what she wanted was a particular, she wanted to use a particular slide. They had bought the set. I find that it’s interesting how many people over the world had bought these sets from Hanson’s. And they wanted permission to use one of those slides in a big poster to advertise the Nobel Prize for that year. Somebody had found a particularly interesting Pulsar, and I can’t remember their names now, so anyway this slide was used as a background on this big poster. And they have been used for other things. Willie Nelson put one on the cover of one of his records.
Smith: And the royalty from that was?

Mitchell: I think we got three hundred dollars from that one.

Smith: Good. Awesome, from your wonderful hobby of taking pictures.

Mitchell: So, they were quite useful. I developed some other things that nobody else that nobody else was finding as interesting as I was. The students did. I took pictures of Jupiter and the background stars for about twenty years, almost. And from those pictures, using appropriate overlays, we calculate, or draw out on a piece of paper, the orbit of Jupiter. So we can tell from those slides how far away Jupiter is and when it’s close and when it’s far away.

Smith: So it sounds to me as if your research and your classroom teaching are very closely tied together.

Mitchell: Yes. That way I felt like I could justify the research time because it gave me something I could use, you see I didn’t have time to do quite different things, and this way I could make my time count double in a quarter.

Smith: And so you would not have negative feelings about one or the other, but to you, they’re tied.

Mitchell: Yeah.

Smith: Did you end up getting any honors as a result of all of this work you did in photographing, or from any other?

Mitchell: No. I don’t think so. I can’t remember.

Smith: Still to come. If we were to ask you to name specific contributions that you feel that you made to the Physics Department while you were here in the development of new courses, or writing, what would you name?

Mitchell: Well, I thought about that and I think probably, I can’t think of anything else, it will be for history to decide what I did that was useful.

Smith: What gave you the most pleasure?

Mitchell: I was going to say, I did think I made a couple of significant contributions.

Smith: Good.

Mitchell: The most significant contribution was probably hiring Roger Yu. And I say hiring Roger Yu because when he came I was, Johnson had retired rather abruptly, I wasn’t expecting him to retire for another year or so, and so I was left in June with nobody to step in, in September, and Roger called and we hired him temporarily, so in a sense, without going through the whole rigmarole, I got him for one year, and then my colleagues saw the wisdom in hiring him permanently. I’ll take credit for getting him here. And I really think, the other one is Mike Braunstein. I talked to Mike on the phone, and encouraged him to apply, and he did. Once again, somebody else made the final decision. But I think those two people have been amazing. Well, the other one that I felt quite instrumental in getting was Sharon Rose!! because when we suddenly needed somebody to replace Bennett when he retired, Johnson asked me if I knew anybody, and I recommended Sharon. So in a sense, I feel some responsibility for getting them and I feel quite satisfied.
Smith: So you feel you left the Department in very fine shape?

Mitchell: Yeah, very fine.

Smith: Good.

Mitchell: Yeah, they’re doing a lot better job than I did.

Smith: So you feel the hiring policies and practices on this campus, you had autonomy to do that in your department?

Mitchell: Oh, yeah.

Smith: How do you feel about the hiring policies?

Mitchell: Even, Affirmative Action and all. In fact, I really felt good about the way Affirmative Action worked because it forced us to do our job well. I didn’t ever feel like it got in the way. No, I don’t, I just can’t think of any, any way we could have been helped more. Certainly, well, the fact that we got who we wanted, I mean, one could argue if you didn’t get who you wanted, then some Dean some place wouldn’t pay enough money. But in none of those cases did we have a problem.

Smith: Well, as a long resident of the town, do you have any comment on the Town-Gown relationship? How do feel those were over the years?

Mitchell: Personally I felt they were quite good. I never saw the record. I mean, none of them, town and gown conflict, ever affected me, I guess. I interfaced in the town in a couple of well, in several ways, I guess. Early on, one of the first things that my wife Jo and I did was to establish Head Start. She wrote the first proposal, and I was the first chair of the committee. At the time it was called the parent’s committee before we actually had parents. Some other people had done a lot of work before us, but still we, she and Jean Smith wrote that very first proposal.

Smith: And when was that?

Mitchell: This would have been in, I guess, sixty-eight when they got rolling.

Smith: And is Head Start still functioning...

Mitchell: Oh, yeah.

Smith: In our community?

Mitchell: Very strong. We just had an anniversary last year. I did some, we got some, our first teacher and our first secretary and our first home visitor, all together in a room and I did what Ham is now doing, I taped them while Jo did what you’re doing.

Smith: That has to be very gratifying.

Mitchell: Yes.

Smith: You started something that vitally important to the community.
Mitchell: And that was good. And then I bowled, I was on a bowling team, and so that interfaced with another whole set of town, and then through church you get yet another one. And I just never had a problem.

Smith: Perhaps it was because you were a part of the community.

Mitchell: May be. When I retired, at my retirement party, which wasn’t big, but extremely satisfying, some of the townspeople came, John Woods came, and that felt pretty good.

Smith: In our final two minutes would you like to leave here with a statement about how you felt your years at Central were, or some statement of your philosophy of teaching? What would you like to leave us with?

Mitchell: Well, I got one, two things, one is sort of, one is upbeat, the other is not so upbeat.

Smith: All right.

Mitchell: The upbeat part is I thoroughly enjoyed working in the Department. I enjoyed my colleagues. I enjoyed the students even though they were sometimes frustrating. On the down side, when I came, and one of the reasons I turned down some of these other offers, is that, I always envisioned that physics would be part of, an essential part of the core of understanding of life, just as literature and history and art and music and language are, and I had the impression from Vance when I talked to him in New York, that he had that same vision, and Charlie McCann had that vision, and Central was moving that way. Now it never ever, ever happened. I don’t feel any closer, I don’t know if we’re any farther away, in some ways. It’s not just Central. I feel that the all of mankind, and I guess as a final story I, they have on Public Television, Bill Nye, the Science Guy. And Bill Nye is pushed by National Science Foundation and some of those materials go out for educational purposes, and most of what he says is pure garbage. I would rate Bill Nye as “Z” rating. Not fit for public consumption. If students listen carefully to him, my colleagues teaching will never undo the damage he has done. And so, you know, but I have this vision for students. And this one last thing, which is not really Central, but one very last thing is that we just had last week a visiting lecturer here, Dr. David Otteson, who was my high school student in New Mexico...

Smith: Wonderful, so on that note, we thank you so very much for your time.