

DR. ROBERT M. WORTHINGTON WITH DR. ROBERT G. THROWER, 1988, ORAL HISTORY

THROWER: Good morning. I'm Bob Thrower, Dean of the School of Technology at Trenton State College and it is a pleasure for me this morning to welcome back to the campus, Dr. Robert M. Worthington who was Chairman of the Industrial Arts Department here at the college from 1958 to 1965. And this was one of the real significant periods in the history of the college and particularly in the history of the Industrial Arts program at the college. It will be my pleasure this morning to discuss with Bob and to review and to reminisce on some of the highlights of that time. Bob, you came to the college in 1958, would you describe for us a little bit the circumstances that led to your coming to Trenton State College?

WORTHINGTON: Well I was finishing up my PhD at the University of Minnesota at the time and I had been elected president of the Minnesota Vocational Association and they were sending me out to Washington to represent them at the White House conference on industrial safety. About a week later, before I left for the conference, my advisor Dr. William J. Michaels, you remember Bud Michaels.

THROWER: Oh yes, remember Bud very well.

WORTHINGTON: Became president of Stout State University the next year, he was in Philadelphia at the American Council of Teacher Education, sat down to get a cup of coffee and this gentleman sat beside him, turned out to be Ed Martin, the new president of Trenton State College. They got to talking and Ed Martin said he was looking for somebody to head up their Department of Industrial Arts. Their chairman of twenty-seven years was retiring and so Professor Michaels mentioned my name and a week later I got a call from Ed Martin and said could I come out to New Jersey to talk about the vacancy here and he said, "Of course, we can't pay your way but if you can get out here, we'd like to talk to you." So I said, "Well I'm coming next week to Washington for this conference on industrial safety and I'll take the train up to Trenton." So I had never been to Trenton. I got the train and I was rather shocked to see the industrial corridor particularly from Philadelphia to Trenton. I said this is a pretty rugged looking area, it wasn't nice and green and pastoral like Minnesota where I had been studying. So I met with Ed Martin and had a nice day of interview with him and Velma Hayden who was Dean of the College. At that time, they just had a president and a dean of the

college and I was very impressed with the opportunity and they were offering a full professorship department chairmanship and went back to Minnesota to think about it and the day I got back I saw an ad in the newspaper for free publication from the New Jersey Public Service Electric & Gas and it said, "Write for this: 'New Jersey, the land of amazing industrial advantages.'" So I wrote to this publication to learn more about New Jersey and it told about the many firsts that New Jersey had performed and all the industrialization of the state, the most industrialized state, the most densely populated and so forth. I said, "Boy that really is a great opportunity," so I called Ed Martin and told him I would be interested and they offered me the job. Just shortly later I got a letter from Fred Raubinger the State Commissioner of Education that made all the faculty appointments at that time when the colleges were centralized in the commissioner's office. Meanwhile, I wrote to him and I said that with a highly industrialized state I think it would be a good idea, commissioner, to immediately start working on an industrial technology curriculum instead of industrial arts. He wrote back and told me well, sorry about that, Bob, but we want to be a single purpose institution at Trenton State. As you remember we started talking industrial education and technology about the time you arrived.

THROWER: Yes.

WORTHINGTON: We felt we needed to broaden the curriculum rather than just industrial arts teacher education. Of course that's been accomplished.

THROWER: As I recall Bob, your predecessor, Fred Armstrong, was chairman of the program here for many, many years.

WORTHINGTON: Twenty-seven years I think.

THROWER: And it was a program that was highly recognized in the state of New Jersey for turning out skilled industrial arts craftsmen. I think your arrival on campus exemplified one of Ed Martin's goals that he had when he came in to the college and that was to expand the image of Trenton State College beyond the boundaries of New Jersey and bring in leading educators from around the country to supplement the staff that was here. You were one of his first people in doing that. In doing that, I know that you brought with you some goals and ambitions for the program here, would you share those with us?

WORTHINGTON: Yes, well knowing that the president supported a new building, I told him we wanted to develop one of the best programs in America. In addition to undergraduate, we want to get a very strong Master's program to complement to undergraduate program. As you

pointed out, the program here at Trenton State had been in existence a long time. Professor Armstrong had been chairman for twenty-seven years and prior to his service there had been another chairman. So the program existed nearly fifty years. But when I came here there were sixty-seven majors, most of them majoring in what we would probably call today a handicraft approach. There was an emphasis on woodshop and handicrafts and some basic printing with the old style printing presses. But the staff members Connie Johnson and Vince Dresser who were the permanent staff members, Walt Macak was at that time a substitute person and he later became a full-time faculty member, they were highly skilled craftsmen. They had their Master's degree from Rutgers; they had gotten their Bachelor's degree at Trenton State, their Master's at Rutgers and they were very strong within the state. They were not recognized nationally though the college itself having been founded in 1855 was one of the oldest teacher education institutions in America, ranked right up with Oswego and San Jose out in California.

THROWER: In our field.

WORTHINGTON: In the field of teacher education, yes. Our goal was to develop an outstanding program, if not the best, one of the best in America in industrial teacher education to broaden it to vocational education and also industrial technology. Ultimately that was our goal.

THROWER: Yeah.

WORTHINGTON: We started by expanding as you pointed out, by making national searches for staff. As we got authorization to staff up the program and I felt I needed somebody to help me particularly with the Master's degree level and I looked for one of the outstanding persons that I had known in the doctoral research field was Rudy Lockette. He was at Chicago Teacher's at the time and he had done his doctorate at the University of Illinois. He had done a very sophisticated statistical research study. Rudy, being black, was a rather oddity on the campus here, we had one West Indian here on the campus, Oscar Barker, but Rudy was the first American black to come to the campus and he did an awful lot of good as far as racial relations, human relations here for the college. He was a brilliant professor; unfortunately he died relatively young as you know a few years ago from a stroke, but Rudy made a major contribution in developing the Master's degree program particularly. As our new building progressed and I was amused yesterday when you mentioned at your retirement dinner about when we first met you at Ohio State University where you were a doctoral candidate. We had very limited money for travel or for

planning, in fact we came up with the idea if we can put together a plan of the kind of building we think we want, then we can get some experts around the country to advise us on this. But we had no money to bring them in and I asked Velma Hayden, "Well what is my travel budget for the year, Dean?" And she said seventy-five dollars. I said, "Just for me?" And she said, "No, the whole department." So I said, "Well, if you don't mind, Dean, I'd like to use all of that. I'd like to drive to Chicago to the American Vocational Association, take Vince Dresser and Rudy Lockette with me and let some of these people from Ohio State and other places from here to Chicago look at our plan and tell us what's wrong with it." And so we loaded up in my old station wagon and off we went, the three of us. The first stop was out at California, Pennsylvania to see Shrive Couver and some of his people. Then we hit Ohio State to meet with you and some of the graduate students and Dr. Warner.

THROWER: The old matriarch.

WORTHINGTON: The old matriarch. Then we went on to Ball State, stopped there got their ideas there, then to Purdue and Purdue was an engineering school with industrial education and technology attached to it.

THROWER: Yes.

WORTHINGTON: Which seems to be the way Trenton State's evolving. Then we went on up to the conference and in our hotel room every night we invited some people in to have a few Cokes and sit around and talk about our plan. We must have gotten at least fifty free consultants which the college appreciated. We took all those ideas back and we synthesized them in and we revised the plan. We turned that plan over to the architect and believe it or not, our final drawings came out exactly like our plan.

THROWER: Yea.

WORTHINGTON: Which was most unusual, I don't know if you can still do that today or not.

THROWER: It's interesting, Bob, because as you relate about the trip through the Midwest to the convention with the plans, it was the first time that we had met, that I had met you and the vision that you and Rudy and Vince spoke about that day and that evening, as we reviewed the plans for your new building and so forth, made a very lasting impression on me and I know I said at the time to myself, "That sounds like an exciting place to work and an exciting group of people to work with." And fortunately a few years later I was able to join you here.

WORTHINGTON: I know we wanted to offer you a job as soon as we met you but we weren't able to and you went to Oswego to teach.

THROWER: Yes.

WORTHINGTON: And then we got a faculty line, I called you and said we got a job and you came.

THROWER: Well I think a very important thing was happening that you instigated there. You talk about the travel money and the lack of travel money, but I think it's important that it didn't stop you and Rudy particularly from being very active nationally.

WORTHINGTON: Well sure.

THROWER: I think really that is where the name of Trenton State College and the Industrial Arts Program at Trenton State College first started to be recognized throughout the nation as a nationally recognized program and you are to be commended for that because you led the way in that, Bob.

WORTHINGTON: Well Rudy and I were both very active in the National Association of Industrial Teacher Educators; I served as president of the organization. And when we started the Journal of Industrial Teacher Education, the first research journal in the field, I served as a second editor and it did get us some attention around the country. We started the annual fall conference where we selected nationally known leaders to bring in so our students would be exposed to them. People like Harold Silvius of Wayne State University, Ray Carns, University of Illinois, Groneman from Texan A&M. We brought them in from all over the country and they would spend two or three days visiting with the faculty and talking to the students and that did a lot of good for our students as well. But as we developed the plans for the building, we were also developing plans for a new curriculum and we totally reformed the curriculum and made it much more contemporary with a much more emphasis on breadth and we added power mechanics, electronics, graphic arts. Broad based programs had not existed previously. And then we also added the Master's program which grew very rapidly. There was a vacuum in this area, there was no place for an industrial arts or an industrial education or a vocational industrial teacher to go and get a Master's degree and it grew extremely rapidly. I served on the graduate council with Bill Hausdoerffer and Vick Crowell and Velma Hayden, and at first they said, "Well Bob, you're not going to have demand for a Master's degree program" but I convinced them to approve it and it mushroomed. In fact we had a hundred and fifty students majoring in it within a couple of years when we opened the program. And then our undergraduate program

grew as I said we started when I came with sixty-seven majors, when I left we had three hundred and fifty approximately.

THROWER: Yes. Phenomenal growth.

WORTHINGTON: The demand was there.

THROWER: You mentioned the fall conference which was a real highlight and a real important factor. What was your goals for the fall conference?

WORTHINGTON: The idea for the fall conference was to bring teachers together with their students hoping to let them know what industrial education, technology, industrial arts, vocational education was, hoping that many of them would choose careers and would choose Trenton State College and I think it worked. In fact, I'm sure you're probably getting more applicants than you can handle here at Trenton State but that conference was really a highlight of the year and I was amazed at the numbers of people we drew. In fact I remember the day that John F. Kennedy was shot.

THROWER: That was my first fall conference, the fall of 1963.

WORTHINGTON: The fall conference was just getting underway and word came that the president had been shot and the president called me from the president's office and said should we cancel this conference. And I said, "Well, I don't think I would, I don't think President Kennedy would want to cancel and conference like this." So we went ahead with it and of course we had moments of silence throughout the meeting but that was one of the dates that really stands out in my mind as our annual conference.

THROWER: Well the fall conference really was one of the first real efforts in the state of New Jersey on the part of a teacher education program to really take a leadership role and to do what we now refer to as in-service education for the teachers in the field and you started a legacy there that I am very proud to say we have continued.

WORTHINGTON: It's terrific.

THROWER: We now call it a professional conference, but what's a name?

WORTHINGTON: Yeah. Well it really I think did an awful lot of good for the program and for state-wide. In fact we had a lot of people in Pennsylvania and Delaware came to our conference every year.

THROWER: Yes.

WORTHINGTON: Well I think also Bob in our Master's program the thing in-service helped a lot was convincing the graduate council, it was difficult at first to convince them we should give graduate credit for technical workshops. I said well look, doctors and dentists go to technical workshops and put another shingle on their-- why can't teachers do that? They finally gave us an opportunity to give credit for workshops and for ten consecutive years we ran with help of Hobart Brothers in Troy, Ohio, a welding workshop. We did that because somebody in the state department got the brilliant idea that an industrial arts teacher couldn't teach welding, it was unsafe so we made them safe by giving them a technical workshop. But many other workshops followed, I'm sure you still run those.

THROWER: Yes.

WORTHINGTON: Those do a lot of good for teacher upgrading.

THROWER: We're still running a number right now to show the changing in technology in CAD and computer numerical control equipment workshops and it's going very good, very important. You mentioned Dr. Lockette, and would you, during your seven year period in that growth which was a phenomenal growth period, who were some of the other faculty members that you were able to bring aboard?

WORTHINGTON: Well, your fellow retirees from yesterday, Tod Herring and Russ Kruppa came, well starting back early, our first full-time slot we had was Rudy Lockette. We recruited Rudy the school year of '79 and '80 and then Tod Herring, we needed somebody to start our electronics programs. Tod Herring we recruited out of the University of Illinois where he was finishing his doctorate and teaching at the lab school. I had met a very unusual industrial designer at the University of Minnesota, a very creative Hungarian named Dezso Sekely.

THROWER: I remember Dezso.

WORTHINGTON: Dez was the kind of guy who shocked people into looking at design. He loved contemporary design, particularly the Bauhaus School. He didn't go for early American like all of our faculty loved. But I thought that was a good contrast, have a Bauhaus School and an early American, he and Connie Johnson really hit it off when they were discussing design. But anyway Dez Sekely was one of the first ones we recruited to set up an industrial design concentration for our students. The very first day on campus, Dez will really put his foot in his mouth. I took him to lunch at Phelps Hall and he was looking at the furniture, he said, "Bob, who picked out this crummy furniture? I've never seen such bad designed furniture in my life." They just had bought it. I said, "I don't really know, Dez," I said. "President

Martin's sitting over there let's go ask him." So after we finished lunch we went over I said, "President Martin this is Mr. Sekely; he's joining us." And then Dez said, "President Martin, I was just looking at this furniture; it's the worst designed furniture I've ever seen in my life." Ed Martin said, "Well, I'll have you know I selected that furniture." Ed got back to his office he called me he said, "Bob who is this creep who you've just hired?" I said, "Well he's recognized nationally for creative design. He is a very outspoken person; you'll get used to him." Well as it turned out, he did do a lot to get us thinking about the contemporary design and brought a lot of the more contemporary types of furniture to the buildings and things like that but he helped us a lot. He went on to work in the community college. The year you came, let's see, we got three people that year, you and Ron Koble, who has gone on to become a professor at Penn State.

THROWER: Penn State, yes.

WORTHINGTON: He left here, and then I'm trying to think who else—

THROWER: Dave Smith.

WORTHINGTON: Oh, Dave Smith.

THROWER: Dave Smith.

WORTHINGTON: Yeah, Dave Smith was down at the University of Maryland and Dave came that year. And then after Sekely left, we needed a design replacement and we were able to find another young man out of Minnesota who had had tremendous industrial design experience, Jay Sucre, and Jay taught that concentration for a while then Burroughs Corporation recruited him as head of their industrial design. He's still with the Burroughs Corporation. So we were getting some outstanding people at that time. We used a lot of part-time teachers as our program was growing very rapidly. We had George Russ for example. George incidentally was our first Master's degree graduate. George had been teaching drafting over in Perkasio, Pennsylvania and was our first Master's candidate, first graduate and he taught for us part-time several years and then we hired him full-time.

THROWER: You may not be aware that George is still working for us part-time.

WORTHINGTON: Oh really, he is.

THROWER: Yes, in our vocational education program.

WORTHINGTON: I said hello to George yesterday, I didn't have a chance to talk with him. Terrific teacher and he was later recruited to head



up the teacher certification for vocational education the state department.

THROWER: Yes.

WORTHINGTON: And liberalized it a great deal.

THROWER: Yes, yes.

WORTHINGTON: Other names slip my mind. Bill Wensel, for example, who became the state director for vocational education and he was one of our part-time teachers, and we used a lot of people like that.

THROWER: Jay Mills.

WORTHINGTON: Oh Jay Mills was our laboratory school teacher and taught for us as well.

THROWER: Yes.

WORTHINGTON: You may think of others.

THROWER: Bob Whitlock, I think.

WORTHINGTON: Yeah, Bob Whitlock who is at the Princeton Country Day School and he was one of our early Master's graduates and taught for us as well. But we had about seven persons part time, all their names don't come to mind at once.

THROWER: You've referred to facilities several times, Bob, what were the industrial arts facilities like when you came here?

WORTHINGTON: Well, they were like, what does an old surplus World War Two broken down barracks like? I think that they had a facility but it was not very good. The teaching that went on there was good despite the building. There was a surplus building; across the front there was a large room that could become a laboratory. It was used just kind of like a classroom, and then space for offices. Then there was a shop, there was a woodshop, a metal shop it had some surplus lathes in it and what they called a print shop with about three or four platen presses, the old style, couple you pull the handles manually, the others the old style with the large platen. Then outside the building was a little brick building about equivalent of a two stall garage made of brick which Vince Dresser's students had made so they had a little auto shop. So the facility was, it was obviously totally inadequate but good teaching was going on there. In fact, we had no electronics program but I was fortunate to let Dave Buck who later expanded his company into what's now known as Buck Engineering,

Dave had a little electronics company and was a member of the school board in Freehold and I told him one time at a meeting, I said, "Dave, we want to start an electronics program." And he said, "Well I have just put together a power supply that I am going to be marketing nationally, would you like to test some of them?" I said, "Sure, how many you got?" He said, "Well I got six, I'll give you half of them." He gave me three power supplies, these were basically the first product that Buck Engineering of Freehold, New Jersey put out industrially and he gave me those three and Vince Dresser studied up on his electricity and electronics and taught the first course. And of course as you know, we recruited Tod and Tod developed an outstanding electronic program. But that was some of the problems we had with early days in facilities. We had a very tragic fire. We never did find out what happened to it but our woodshop caught fire three o'clock in the morning one morning and burnt to the ground, destroyed. The woodshop, we had some very, very good equipment. Heavy duty Oliver equipment, you remember?

THROWER: Yes, yes.

WORTHINGTON: And much of that, the heat from the fire just distorted and destroyed the equipment. So we were accused of course of burning it to rush the building of our new building but only a kidding way.

THROWER: The new building was a thirty-six thousand square foot facility and knowing you, I'm sure you were scrapping for every inch of square feet that you could get into this new facility.

WORTHINGTON: We were, Bob. We were doing everything we could to get the most space. We adopted the philosophy immediately, let's get space. Once we get the space, they're going to be embarrassed if we don't have the equipment. And that worked, we didn't buy much equipment as we built the building. We got, for the amount of money, in fact I understand the college spent more money to air condition the facility than we spend the whole building, I'm not sure if that's right.

THROWER: Well the recent addition we put in was way more than the total cost of the original.

WORTHINGTON: Yeah, the original. We were very fortunate that the contract was let jointly to add the addition to the gym and every time a little cost overrun came, it came out of the gym and into our building. I never told George Krablin that. I saw George yesterday. But they were just adding a small addition to the gym and we allowed it jointly in the contract and that did help us a lot.

THROWER: Yes, well I think it's a testimony to the careful planning in that with all the changes that have taken place over the last twenty-five, thirty years, the building has been adaptable and useful for the changing programs and it showed a lot of foresight and planning.

WORTHINGTON: Well it was designed, as you recall, as a functional facility that could be adaptable and could change quickly and it's served that function well. Your new addition, I admire that, it's very nice. I walked through there this morning, it's beautiful. I'm looking forward to seeing what the next addition looks like.

THROWER: Yeah, I am too. So, actually the seven years you were here, a great deal of expansion and redirection took place. As you say, we went from sixty-seven majors, undergraduate majors to about three hundred and fifty.

WORTHINGTON: About three hundred fifty.

THROWER: And added a graduate program, you developed the national reputation; you brought together a dedicated group of professional people that established very quickly loyalty to the program and to the institution.

WORTHINGTON: Loyal to the college, right. Well I'll tell you, yesterday at the retirement luncheon I was very proud to see you and two colleagues, Tod Herring and Russ Kruppa, that I had recruited. All of you made full professor, you made dean, then became department chairmen, one of them assistant of the president. So I guess we did something right in that recruiting.

THROWER: Yeah.

WORTHINGTON: The fact that--

THROWER: I thank you for that.

WORTHINGTON: Bob, I want to congratulate you for the work that you've done here at the college.

THROWER: Thank you very much.

WORTHINGTON: Really, really have moved ahead.

THROWER: In 1965, you terminated your direct association with Trenton State College and moved on to a job of even greater importance. Would you, I think it's important that because of your significant contributions to the college that we learn a little more about your subsequent career.

WORTHINGTON: Yes well as a professor here at the college, I became acquainted on a very friendly basis with the Commissioner of Education, Fred Raubinger, and his deputy Joe Clayton and they often visited our department. Even during the construction they came to see our building and they attended our fall conference on a couple of occasions and invited me to lunch to talk about how we're doing and that sort of thing. So we had very strong support at the State Department of Education. At that time, the Commissioner of Education was in charge of all education, higher and lower, then he had an Assistant Commissioner for Higher Education was Earl Mosier, assistant commissioner for vocational and adult which is a position that became open and they offered to me. I gave up a tenured professorship and I just was ready for sabbatical at the time, which I never got, when they offered me the job of Assistant Commissioner. It seemed to offer such great opportunity. New Jersey had been studied by President Kennedy's commission and ranked forty-ninth in the nation as far as the youth being served in vocational education and there was such a long way to go that seemed a wonderful challenge. And about mid-year, of the academic year of '64-'65 the board appointed me and I told the Commissioner I would have to do some work here at the college for a while and I stayed on jointly as department chairman and Assistant Commissioner of Education for about four or five months and Rudy Lockette then was named acting chairperson and I devoted my full attention to being Assistant Commissioner. One thing I found most interesting was the first day that I was on the job, I had found a memo that I had written to the State Department of Education as department chairman of Trenton State College, indicating that the college and the president had approved the change of name of our Department of Industrial Arts to Industrial Education and Technology. It was a much more contemporary title and it had been on the desk of the Assistant Commissioner Dr. Mosier for almost a year and a half and I went to see the Commissioner, I said, "Commissioner, is there something we could do about this request from the college? It's been here almost nearly a year and a half, two years." And I explained it to him, he said, "We'll take it to the board this afternoon." So the very first day I was on the job at least I got something done for Trenton State College, changed the name from Industrial Arts to Industrial Education and Technology and Rudy Lockette became the first chairman for a few years before he went on to Michigan. At the State Education Department, recognizing the good program at Trenton State College, I did fund several projects here at the college, direct funding. Rudy Lockette wrote up a beautiful proposal on industrial technology, as you recall and brought in Ray Carns and others from outside the area to study the industrial technology where it should go. I also did rather heavy funding to the college, what's now the

School of Business, then it was the Department of Business Education, bought the first computer. Our office gave funds to the college to buy the first computer on the campus. Hank Matelson was then the head of the computer center.

THROWER: One of the things I remember very distinctly, Bob, up until that time, Rutgers was basically the only institution in the state that was directly involved with the division of vocation education for the preparation of vocational teachers. And I know under your leadership downtown you expanded that to several of the state colleges including Trenton State.

WORTHINGTON: Yes, it really didn't make sense to have people all over the state just go to one central point and it seemed to me there was too much of a monopoly there, good staff members at the other colleges so we broadened it and gave them permission to offer the vocational teacher certification. I think that was a good move, it helped in expansion. We expanded vocational education over the next seven years by three hundred and eighty percent as far as enrollment. And we built fifteen area vocational centers around the state. But we did get a little bit of money when I was department chairman at Trenton State College. We started that welding workshop and we needed some equipment for the college so Dr. Joshen gave us a rather generous grant to buy some sophisticated welding equipment which is the first vocational education grant the college ever received, from Dr. Joshen's office.

THROWER: Another major program that you had a great hand in starting and felt fortunate to be part of that and that was the Technology for Children program. Would you want to speak to that a little bit?

WORTHINGTON: Well Bob, you know you and I both had a strong interest in industrial arts in elementary school and one of the reasons we asked you to join us from Oswego was to get that going on the campus, it was really a dynamic program which you developed. When I went down to the State Department of Education, I talked to the commissioner about a program that we had not yet named. I said we wanted to do something in the elementary school where we can get-- we've got to go from K to fourteen in vocational technical and career education, we've got to teach young people early about careers and get them acquainted with a manmade environment and help eliminate sex stereotyping that occurs at the elementary level. So we came up with a project proposal and we came up with the name Technology for Children. During this period that we were trying to sell this idea, I recruited the first female state supervisor of industrial arts in America, your former colleague Elizabeth Hunt and she joined me. Word got out around the

country we were starting this program and the head of research in Washington called me about it and said, "Next time you're in Washington at our state director's meeting, I'd like you to tell people about your Technology for Children you're starting up there." I told them about it at the meeting in Washington and several of the state directors got up and told me I was totally wrong. It's ridiculous to even think about elementary students in technical education, but we went ahead with it anyway. They warned me not to use federal dollars so I went to Commissioner Raubinger and for the first summer of training the teachers, do you recall we did that down in South Jersey?

THROWER: Marlton.

WORTHINGTON: Marlton school system. The commissioner gave me sufficient funds to select twenty-one teachers who became the cadre, bring them in and we gave them a nominal per diem to help pay their expenses, gave them graduate credit at Trenton State College for that. And those twenty-one teachers funded by the commissioner's office became the cadre. Then we went to the Ford Foundation and we got a three hundred thousand dollar grant to establish a staff. So we established a staff headed by Elizabeth Hunt with five persons just to promote and direct this Technology for Children. I think our effort paid off, the program's about what, twenty-two, twenty-three years old now at least and still in operation.

THROWER: Still in operation and I think they claimed that somewhere over five thousand elementary classroom teachers are using it in their classrooms this year.

WORTHINGTON: I understand that. And the American ORT the Jewish organization of rehabilitation and training came to New Jersey to study our program, the one program they took and adapted around the world was Technology for Children. They took it to Israel, to Brazil, other places where ORT had centers. Marv Feldman who was the program officer at the Ford Foundation that helped get the funding, he was really sold on that program.

THROWER: Yes he was.

WORTHINGTON: And Marv has helped sell the program, he still talks about it. The program, I guess it's probably in its twenty-third or twenty-fourth year now. We started it about '65 I think we got the funding.

THROWER: Yes.

WORTHINGTON: But I think your contribution at the college still continuing to push the elementary industrial arts concept, it all fit right in to that.

THROWER: And a lot of summer workshops for teachers here on the campus.

WORTHINGTON: Frankly, every elementary classroom teacher should have exposure to that program because it makes their teaching much more realistic. Kids studying the manmade environment and technology and the world of work as part as their academic learning, not a separate course where they take them off into a shop or something like that. But that was a good program, now we built another one on top of that called Introduction to Vocations, a seven through nine career development program which I think is probably still in operation. That did a lot for the junior high students. Our total program we wanted to be from K to fourteen on a continuum.

THROWER: Well, you were downtown for a few years and established a real national reputation I guess they found out about you in Washington, D.C. and from Trenton you went to Washington, right?

WORTHINGTON: Yeah, I was at the State Department of Education seven years and Sid Marland who became the U.S. Commissioner of Education, he was serving at schools in Pittsburgh and when I first met him. He had tried to replicate our Technology for Children in Pittsburgh. He was ready to start a new program in Washington. He hadn't quite named it yet but as it turned out, it became career education and Sid asked me to come down and do what we've been doing in New Jersey on this K to fourteen continuum type of program. And I went to Washington as Associate U.S. Commissioner of Education. At that time, we had a U.S. Commissioner who reported to the secretary of A.T.W. and the assistant secretary for education and I was Associate Commissioner in charge of adult, vocational, career and a few other things reporting to Sid Marland. I stayed there three years and came back to New Jersey for a year as a visiting professor at Rutgers, then went in the consulting business, which I enjoyed very much, great flexibility, good opportunities financially but one day I had a call from Ted Bell who was the Commissioner of Higher Education out in Utah, wanted to know if I would come out there, I was a consultant, and look at a couple positions. So as a result of that, I became the Associate Commissioner of Higher Education in Utah. And from that position after Reagan's election, Secretary Bell went to Washington as U.S. Secretary of Education. A month later, the White House called and invited me to be the assistant secretary for vocational and adult

education. I accepted and I served five years there, I just left there last February.

THROWER: Yes.

WORTHINGTON: Now I'm back in the consulting business.

THROWER: Back in the consulting business and looking great.

WORTHINGTON: Not really pushing it, enjoying just some small consulting jobs around the country. Could be working full-time, I'd say I'm working maybe half now.

THROWER: Well, might be interesting to bring you up to date on some of the things that have been transpiring here at the college since you left. As you indicated, one of the first things you did when you got downtown was to change the name of the program and very as a prophecy of industrial education and technology, we started, added the vocational education department which was an expansion. And then in the late sixties when the state college system were looking to the possibilities of going multi-purpose, breaking of from strictly the single purpose as the commissioner told you years ago that's all you're going to be, a teacher education program. We used that study that Rudy did on industrial technology as a basis and out of that we started three programs in technology that were non-teaching programs in 1970, a program in electronics, one in mechanical and one in industrial technologies.

WORTHINGTON: Right.

THROWER: And in 1970 we started, I think we had about thirteen majors that year in three programs.

WORTHINGTON: The teacher education majors were still the large group.

THROWER: Teacher education majors were still the large group and over the intervening years, the program we upgraded the technology program to engineering technology, a baccalaureate degree program in the three programs and we now have over five hundred majors in those three programs.

WORTHINGTON: And the program has an outstanding national reputation, it's recognized every place I go.

THROWER: Thank you, one of the real strong things that we built into that program and built it on the strong base that we had from the old industrial arts laboratory experience was that we needed engineers that had a practical background that could use equipment and knew how



to solve problems. And so that was a strength of the program and it still is.

WORTHINGTON: That's a critical thing. I hope as you convert to more pure engineering you don't go into theoretical engineering. Theoretical engineers are not the kind that the industry wants.

THROWER: Right, no.

WORTHINGTON: I know when I taught at Purdue, Dean Potter there, the School of Engineering was fighting that idea of becoming a theoretical engineer, he wanted his Purdue engineers to have hands-on experience and that's why every one of them went through machine shop and welding and all the different kinds of shop programs because an engineer who can't put these ideas down into real materials aren't very valuable.

THROWER: Now we are talking about what we call a baccalaureate engineering degree which is a practitioner laboratory oriented type of degree that has the strong calculus and physics base but at the same time turns out graduates-

WORTHINGTON: Still the hands on.

THROWER: Who still can be productive from the word go.

WORTHINGTON: Well actually Bob, if you remember, many of our so-called industrial arts majors, in fact a large percentage of them, were going right into industry, industrial training or engineering jobs from the old curriculum.

THROWER: Well they were telling us something that the curriculum at the college needed to be more than just a teacher education program.

WORTHINGTON: Well I hope you can continue here at the college a strong teacher education program, it's badly needed. There is a shortage developing around the country in vocational teaching.

THROWER: Interesting as you say the industrial arts program here, as it has all over the country, the enrollment's declined primarily because of job conditions and also because of salaries.

WORTHINGTON: Also converting some of the programs we used to call industrial arts to vocational. Training industrial vocational programs have grown because many of them have been upgraded a little bit technically and changed over. Federal funds.

THROWER: Just as you did when you first came in with a conversion from the handicraft curriculum to a broader industrial-based curriculum, I

am very proud of what is now known as the technology education department here and what the faculty has done is they recognize that the old curriculum needed a revision and they have spent a lot of time totally revising the curriculum so they are now once again in the vanguard in the entire country with a new technology education curriculum that is geared to taking our youth into the twenty-first century.

WORTHINGTON: Well that is keeping you right on the cutting edge of education. I noticed this recently; the national association changed its name from the American Industrial Arts Association to the International Technological, which is good. This morning I had an opportunity to walk through briefly while your staff members had technology lab. That no doubt is a laboratory of the future for the colleges to train the teachers and the high schools to use to introduce young people to technology.

THROWER: Yeah.

WORTHINGTON: I think every young person should be introduced to that technology type of lab like you're setting up at the high school level and continuing in the lower levels as well.

THROWER: It's very interesting to see the enthusiasm that a lot of the veteran teachers that are coming back for workshops in this new technology education are developing an enthusiasm for teaching that they lost a number of years ago. And I know I was talking to one the other day who was on the verge of retiring this year and he told me the other day he was having so much fun teaching this new technology education, he was going to delay his retirement. Which I think really speaks well of the leadership that that department has given not only to the state of New Jersey but to the nation.

WORTHINGTON: Well I think Trenton State has been blessed by having some outstanding craftsmen on the staff as I mentioned earlier, Vince Dresser. Vince Dresser, who was one of the best teachers that I've ever seen any place in any field. If you wanted him to teach electronics, he would study and learn it as he did, he knew the basic electricity but he studied electronics and set up the first program. Connie Johnson was the same way. And Walt Macak in the graphic arts field, developed really one of the outstanding graphic arts teacher training labs we had in this part of the country. And I'm sure it's going to continue and whoever your successor might be and there's still some of your recruits still back there at the college.

THROWER: Yes.

WORTHINGTON: When do you plan to leave your position, fairly soon?

THROWER: Officially I will be leaving my position as of June the thirtieth of this year and will complete twenty-five years here at Trenton State. It doesn't seem that long ago when I came here in the spring of '63 for the job interview with you.

WORTHINGTON: Now, time really has flown, Bob. It was nice last night to hear you talk about it at the retirement luncheon about that first meeting at Ohio State when we got your help in reviewing the plans.

THROWER: Yes.

WORTHINGTON: Did you want to talk about any of the other national trends that seemed to be developing around the country?

THROWER: I think it would be well because you had a hand very much on what was happening nationally.

WORTHINGTON: Well I of course as we fought through congress the reauthorization of the Carl Perkins Act, we built into that several components that are extremely important. One of them the equity component. You remember we used to fight to get young ladies to take our program, I don't know how many women you have in the program, but-

THROWER: Over ten percent.

WORTHINGTON: Traditionally technology programs have been mostly male-dominated and the Carl Perkins Act that we got through congress three years ago has a very strong emphasis on sex equity, particularly on getting men and women to enter non-traditional occupations. I think that your successors need to be alert to that, ten percent is good but-

THROWER: It still needs to be higher.

WORTHINGTON: When you consider that half of the work force is female it's not as good as it might be.

THROWER: Yes.

WORTHINGTON: That certainly was a strong emphasis. Another very strong emphasis, we worked with the National Association of State Directors in Vocational Education in a research center in Texas to develop an introduction to technology curriculum, much of which is contained in your technology lab. I think the college needs to be working very carefully with those pilot states. There are several states piloting this new introduction to technology program. It's part

of vocational education. I don't know whether your staff is working with them or not.

THROWER: Yes they are.

WORTHINGTON: But that, several years and several hundred thousand dollars went in to developing that curriculum at the Turk Center in Texas. Of course the Perkins Act has placed a great deal of emphasis on disadvantaged and so many of our disadvantaged are inner city. I know the college, your president has made a major effort to recruit minorities. We were talking earlier about Rudy Lockette being to our knowledge the first American black professor on this campus that we recruited. But there needs to be a great deal of emphasis in that field as well. There's such a high dropout rate of kids in the inner city and anything the college or its technology program can do to foster holding power of the high schools is very important. I frankly would like to see, and we tried to promote it nationally, closer working relationships between the four year colleges, the two year colleges and the vocational technical schools, partnerships. We formed some of those partnerships with special federal grants in some of the major cities. One of the better ones is in Jacksonville, Florida, one in Oklahoma City, there's ten of those sites around the country where partnerships were formed with the four year college, the two year college, the area vocational technical center, the high school, and a community based organization recognizing that the community based organizations are really good at identifying and reaching out to young people who are either about to drop out. I know of course as Tod Herring pointed out yesterday in his remarks, there's a tendency for people to look at Trenton State now as an elitist college. I know the president doesn't intend that but with the higher admission standards it may be difficult to get young people interested in moving in to those kind of programs I've just referred to. I'm not sure that it would or not but certainly the college has raised its standards and gotten national recognition for those higher standards. We of course had the open door policy but we always got tremendous students, we got some of the finest students in the state in our program. But from a national point of view, Bob, I think you're on the right track with what you're doing.

THROWER: You talk about students, Bob, one thing that we kind of glossed over a little bit, you were talking about the Master's program.

WORTHINGTON: Right.

THROWER: And I think very significant that a good number of people that went through your Master's program went on for their doctorate and have taken leadership roles around the country.

WORTHINGTON: I was thinking about that yesterday sitting and listening to the speeches. I was thinking about for example, Dick Swanson, who just immediate past president of the National Association of Industrial Teacher Educators, one of our majors.

THROWER: And Dick is now at University of Minnesota.

WORTHINGTON: University of Minnesota. He heads up the program of industrial training, he's a full professor. We've got them like that all over the country, Bob. Well, one of our finest outstanding leaders was George Meyer and George's untimely death just in the last few months was a shock, but George Meyer, we identified, if you recall the first year I established what we called the Fred Armstrong Leadership Award, George Meyer was selected for the first of those awards. I'm sure you're still probably giving that award to the young person who exemplifies all the characteristics of a future leader in industrial education.

THROWER: You'd be interested in how we've expanded that, Bob. We had our School of Technology awards convocation on Sunday, May the fifteenth.

WORTHINGTON: Oh, you did.

THROWER: And we awarded thirty-five awards in the School of Technology.

WORTHINGTON: Terrific.

THROWER: Eighteen were cash scholarship awards to outstanding students in the various programs and then at the senior level we awarded seventeen additional awards in leadership, scholarship and service.

WORTHINGTON: Terrific.

THROWER: As you know, when Connie Johnson and Vince Dresser each retired, I started an award in their name.

WORTHINGTON: Oh you did? I didn't realize that, that's great.

THROWER: When Vince retired, the thing that Vince exemplified to me was that as you mentioned earlier, how Vince no matter what you wanted him to teach, he would move and do and retrain himself and so forth.

WORTHINGTON: He was adaptable.

THROWER: So with Vince retired I started the Vince Dresser Service Award which was to perpetuate his memory and to, we select the student each year in each of the programs that best exemplifies an outstanding service to the program.

WORTHINGTON: Terrific.

THROWER: And we have a big plaque in the main office where we put their names in and each individual gets their own personal plaque to take with them.

WORTHINGTON: I hope that kind of thing continues after your retirement. You know, one thing I've noticed in my moves around the bureaucracy, the memory is very short, the historic memory.

THROWER: Yeah, when Connie Johnson retired, the immediate characteristic that came to mind there obviously was craftsmanship. So I established the Conrad Johnson Craftsmanship Award and we still award to the outstanding craftsmen on-

WORTHINGTON: Well I'll tell you, Connie exemplifies the ultimate of craftsmanship. He could take a piece of wood and just do miracles with it, or a piece of metal, any type of material, he's remarkable.

THROWER: Yeah, I'm very proud of the fact that we have expanded this scholarship fund and awards that you started.

WORTHINGTON: We named it after Fred Armstrong. Fred was here twenty-seven years and he himself was a craftsman and he particularly enjoyed working with iron. He did a lot of work, in fact the picture in the front of Armstrong Hall with him standing with his anvil.

THROWER: Yes.

WORTHINGTON: He loved to do that kind of work, after he retired several years that he lived he did a lot of that work with the Bucks County Craftsmen Guild.

THROWER: Yes.

WORTHINGTON: He instilled that I'm sure into Vince and Connie as his students.

THROWER: Well, fortunately we've been able to build a scholarship fund so that we are drawing the interest off of this account to the point where we are able to give our awards and perpet-- so that it is a permanent fund that will carry on these awards long after you and I are gone.

WORTHINGTON: That's true. What do you think the future, with Trenton State becoming more difficult to get in, what do you think the future of Trenton State's teacher education in vocational, industrial ed. or technology, what do you think the future will be?

THROWER: I think the future will be very bright, Bob. I think the reputation that we have established starting with you in an outstanding program so that we are attracting high quality, high achieving high school seniors that are looking to teacher education as a career. Some of the students we're bringing into that field now are what we call, are students who have qualified for the Garden State—the governor's Garden State scholarship awards which means they are twelve hundred or above SAT scores and in their top ten percent of the high school class so that we are attracting a very good student population and at the same time they're dedicated.

WORTHINGTON: Are many of those twelve hundred and up SAT students choosing to become teachers?

THROWER: Yes, we have some in that category, of course then the other side of it are the vocational people that we are continuing to serve and that program is expanding. As you know the Rutgers program has somewhat declined over the last few years to the point that Trenton State has now been pretty much identified as the number one vocational teacher education institute in the state. Bill Alexander has been able to expand that program and we are drawing a high caliber student into this vocation program.

WORTHINGTON: You're still going for the industrial experience, the industrial person?

THROWER: Yes we require the industrial person.

WORTHINGTON: And they come with work experience and then they—

THROWER: Then they take the NACHI exam as you are familiar with for their technical background. Interesting, we are getting high percentage of those people who are not satisfied to stop once they get certified, they are going on for the Bachelor's degree and we will be awarding several baccalaureate degrees this week.

WORTHINGTON: There's one thing I was just thinking of as you were speaking about that, as part of that study that Rudy Lockette did on technology, we were talking about an option. The student would study the four year technology major and then they would take an option, a Master of Arts in Teaching and then they would build a teaching skill on top of that.

THROWER: Yeah.

WORTHINGTON: That may be something that's still viable.

THROWER: Well, we're still looking at it. And I think they just cut our throat.

WORTHINGTON: They just cut our time?

THROWER: Yeah, we've gone an hour.

WORTHINGTON: We didn't even have time to sum it up.

THROWER: Bob.

WORTHINGTON: Robert I enjoyed visiting with you.

THROWER: Been a real pleasure.

WORTHINGTON: We could have gone another hour I think.