Manion Era, 1965-Present

Historical Context

Founding of the Department of Chemistry and Growth in the Sciences

In 1964, the Department of Physical Sciences was split into two departments: the Department of Chemistry and the Department of Physics. Faril Simpson served as the interim chair of Chemistry for the 1964-1965 academic year while Ralva Bass served as the interim chair of Physics for this year (according to the 1965 Scroll, which was printed at the end of the 1964-1965 academic year).

PHYSICAL SCIENCES

Ralva Bass, M.S.
Professor, Head of Department

Donald E. Rickard, M.A.
Asst. Professor of Physics

The purpose of the courses in the department is to contribute to the general education of students in giving them a better understanding of the physical world around them.

Through physics, students gain knowledge of the phenomena which occur in everyday life.

Mr. Ralva Bass is the head of the department and his subordinate is Mr. Donald Rickard.

This department has been set up new this year as a separate department after the division of the physics and chemistry departments took place.

Mr. Bass is sponsor of the American Institute of Physics.

CHEMISTRY DEPARTMENT

Faril Simpson, M.A.
Professor, Head of Department

This department was newly organized this year after the physics and chemistry departments were made separate.

Through chemistry, students gain knowledge of the phenomena which occur in everyday life. The department prepares students for advanced study in the field of chemistry for employment in industry, for careers in engineering, medicine, and other related fields, as well as for careers in the teaching profession.

Mr. Faril Simpson is head of the chemistry department. Other members include Mr. Earl Riddick and Mr. Limuel Parks.

Mr. Simpson is sponsor of the American Chemical Society and Theta Xi fraternity. Mr. Riddick is sponsor of Theta Xi fraternity.

Earl Riddick, M.S.
Instructor in Chemistry

Limuel Parks, M.S.
Instructor in Chemistry

1965 Scroll describing the newly formed departments of Physics (Physical Sciences) and Chemistry, with interim department heads Ralva Bass and Faril Simpson, respectively.

In 1965, Denver Prince became the founding chair of Physics and Jerry Manion became the founding chair of Chemistry. Burdick commented on the impact that Dr. Jerry Manion had on the newly-formed Department of Chemistry (p. 184): "Chemistry, like biology, benefitted greatly from a change in leadership. While faculty remained fewer than in biology, chemistry's gain was actually greater, since it did not have as heavy a general education load. Improved faculty members and capability permitted a sizable upward shift in course content while still retaining some of the more elementary studies that non-majors needed in meeting the chemistry requirements for other curricula." Jerry Manion commented on the split of Physical Sciences into Physics and Chemistry in a January 14, 1980 memo to Dean McChesney: "At the time Physics and Chemistry were split into two departments the general education course was given to Physics. I'm not sure why this decision was made, but over the years it has been a good one because Physics enrollments were low and this course has helped justify the program in Physics. Chemistry had to stand on its own and in the past this has been possible." Burdick agreed that Physics seemed to benefit from the split of Physical Sciences into Chemistry and Physics (pp. 192-193): "Although Physics shared with the other sciences the new prosperity brought by rising enrollments and the completion of the Lewis Science Center, its divorce from chemistry must be seen as possibly the most important factor in its rapid development. Chemistry's dominance in their partnership was perhaps inevitable because of the greatest number of its courses that served other curricula, but with the chairmanship in its [Chemistry's] hands, a stepchild role for physics was certain." In a personal interview with Denver Prince on August 25, 2014, in response the Burdick's comment on the dominance of Chemistry in the Department of Physical Science, he noted that leadership of the Department of Physical Science was by chemists for as far back as he could remember and that Joe Smith and E. E. Cordrey were chemists. A check of chairs of physical science from when the department was created in 1926 (the science department split into biology, physical science and geography in 1926) confirms that all of the chairs of

physical science were chemists. Prince stated that "during my time, it was not a problem to have a chemist as department chair. We were treated just as well as the chemists." Prince noted that physics did not have as many courses nor as many faculty, but that when Physics and Chemistry became separate departments, Physics took the general education course in physical science as noted by Manion. In the late 1960s, enrollments in this course grew, enabling Physics to expand.

The growth in the sciences, beginning in the late 1960s, was largely due to the demand for science courses on behalf of new health sciences majors that were created on campus, as noted by Bryant in "The History of Nursing at UCA" in the September 8, 2012 *Log Cabin Democrat*. For example, in 1967, the Department of Nursing was created. The converse was true as well, with the strength of the sciences at the State College of Arkansas being important in the decision to address the state's shortage of nurses: "One of the reasons that UCA was chosen for the nursing program was the recent completion of the new B. A. Lewis Science Center. The new Lewis Science Center, completed in 1967, was inspected by officials from the Arkansas Baptist Medical Center (ABMC). The ABMC administrative staff was favorably impressed with UCA's facilities which proved to be important in helping UCA secure the nursing program." The BS in Medical Technology was begun in 1967 as well (Burdick, p. 152). Radiological technology and inhalation therapy programs were started during this time period as well (Burdick, p. 152). Students were first admitted to a new degree program in June of 1971, Physical Therapy (Jimmy Bryant's A Brief History of Physical Therapy at UCA" in the October 27, 2012 *Log Cabin Democrat*) and then a third health science program in June of 1972: Occupational Therapy (Jimmy Bryant's "UCA, A Pioneer in Occupational Therapy" in the October 13, 2012 *Log Cabin Democrat*), thereby increasing further the demand for science courses, justifying the hiring of additional faculty and the expansion of departments in the sciences.

Administration

A reorganization of the administration occurred in 1967 as outlined by Jimmy Bryant (p. 81): "In order to structure SCA [State College of Arkansas, UCA's name from 1967-75] along university lines and facilitate the move to university status, SCA Board of Trustees voted to reorganize SCA's twenty-one departments into four academic colleges with an effective date of July 1, 1969. Dr. Orville Rook became dean of the College of Science and Humanities; Dr. Conrad Carroll, dean of the College of Business; Dr. Jefferson Farris, Jr., dean of the College of Fine and Applied Arts and Sciences; and Dr. Robert Morrow, dean of the College of Education. Dr. H. B. Hardy, Jr. became dean of undergraduate studies. The position of dean of the college was renamed vice president for academic and instructional affairs and dean of the faculty. The first person to hold this position under its new name was Dr. Alger E. Burdick." Then, several decades later, Conrad Stanitski described another administrative reorganization at UCA: "Beginning about 1996, a major administrative reorganization occurred. What had been the College of Arts and Sciences was divided into three separate colleges, each with its own Dean. We were fortunate to retain Dr. Domback as Dean of the newly formed College of Natural Sciences and Mathematics (CNSM), who helped make the transition seamlessly. The new college consisted of the departments of biology, chemistry, computer science, mathematics, and physics/astronomy."

The university went through two name changes during this time period. In 1967, Arkansas State Teachers College became State College of Arkansas and then in 1975 the name was changed again to the University of Central Arkansas.

University presidents continued to serve the institution for many years at a time through most of this time period as well, until very recent times (Jimmy Bryant's *The Centennial History of the University of Central Arkansas*):

- Doyne 1908-1917
- Torreyson 1917-1930

- McAlister 1930-1941
- Irby 1941-1953
- Snow 1953-1975
- Farris 1975-1986
- Thompson 1988-2001
- Hardin, 2002-2008
- Meadors 2009-2012
- Courtway 2012-present

The Department of Chemistry had several department chairs since Jerry Manion served as founding chair of the department in 1965:

1965-1992 Manion

1992-2005 Stanitski

2005-2009 Taylor

2009-2014 Mauldin

2014-present Desrochers

Department of Chemistry in the 1960s and 1970s, by Jerry Manion

For the sake of this book, Jerry Manion reflected on the early years of his 49 years of service at UCA:

I was working in the lab at Ole Miss in early April of 1965 when I was called to the phone. It was Neal Buffaloe calling to ask me if I might like to interview for the position of chair of the Department of Chemistry at the Arkansas State Teachers College. It seems that the school's previous chair of Physical Science, Joe Smith, had resigned a couple of years earlier. There had been an interim chair during the previous year and a decision had been made to split the departments of Physics and Chemistry. Denver Prince was completing a doctorate at Oklahoma State and was already slated to be the Physics Chair. The search for a

Chemistry chair had not gone well. There were few applicants and the ones that had been interviewed to that point were rejected. In an effort to gain more applicants Neal had called his friend, Joe Pryor, at Harding and asked him if he had any recent graduates who might be completing an advanced degree. Joe didn't know of any. A few weeks later I sent Joe, my undergraduate advisor, a letter letting him know that I expected to finish that year. Joe called Neal up, Neal found me and I came for an interview the week after a class 4 tornado had passed through town killing four people and doing $25 million in damage.

The interview went well and I was offered the job. I had already lined up a post-doctoral research position under Stanley Crystal at Colorado. I turned down the post-doc and accepted the position at ASTC. A month later my major committee met, grilled me brutally, and informed me that I might not be graduating after all. A product from one of my earliest experiments had never been properly identified and that must be done before I could graduate. Also I was expected to continue to work for my major professor, who was in Florida, for a month during the summer. I went back to the lab, completed the tedious job of collecting and identifying the product, wrote my thesis, purified the endo-dicyclopentadiene that my major professor wanted, graduated and came to ASTC. I was 24 at the time and cocky enough that I didn't see anything out of the ordinary to be a full professor and chair at that age. The full professor came about because Si Snow thought you had to be a full professor to be a chair so he just hired me as a full professor. There was no tenure or procedure for promotion in those days and the University was on AAUP censure at the time.

As a high school senior I never seriously considered attending ASTC. In my mind it was a party school and I was serious enough to want a good education so I chose Harding. It is not something I regret. The only two times I can ever remember coming to Conway before my interview was as part of a swim party at a place that came to be known as the Briarwood pool and as a senior in college to attend a football game in which Harding played ASTC and I had a buddy who was a 2nd string

halfback. He got in the game late and had several good runs, but that was only after Henry Hawk had killed us earlier in the game.

When I accepted the job as chemistry chair, I was a one-man department. Joe Smith had left a year earlier and Alan Robinette had left at the same time to return to graduate school at Fayetteville. ASTC physical chemistry students were sent to Hendrix that year. The department consisted of Faril Simpson, who was leaving to go to grad school; Earl Riddick, who had been a one year hire and was on his way to medical school; and Lim Parks, the local Episcopal preacher who was teaching part-time. One morning I got a phone call in my apartment at Ole Miss from Dr. Burdick telling me that they were in the process of hiring another chemistry teacher and that I should come over and make sure that I was comfortable with hiring him. I drove to ASTC, met and approved the hiring of George Paul, and returned to Ole Miss all in the same day. To fill out the department I arranged to hire a fellow, Homer Rich, who was a high school teacher just finishing a two-year masters degree program for high school teachers at Ole Miss. Lim, George, Homer and I constituted the chemistry department for the fall of 1965. I taught freshman chemistry, organic, and qualitative analysis (21 contact hours). George taught physical chemistry, advanced inorganic and freshman courses. Homer taught freshman chemistry and physical science. George was a bachelor back then and after he got the job here he went out and bought a gold-colored Cadillac and caused quite a sensation when he got to campus.

Back then the fall semester did not finish until after Christmas so it started in late September. I arranged to borrow enough money to live on for a month and came to UCA on August 1. I didn't do anything in particular. I took bottles of chemicals off the shelf and put them back on the shelf and just generally learned my way around. There were 20 students or so in the freshman class, another 20 in organic and 6 in the qual class. Students I remember were Marvin Tanner and Jim Irving in qual. Jim taught in public schools in Pulaski County, retired and had a second career at Pulaski Tech where he became a department chair. In

the freshman class was Gary White who became Dr. White. He had a very successful industrial career with Exxon and Aramco before joining the faculty at Conway High School for many years. Another freshman was Tom Burgess's son, Bill, who got a masters in physics and then went to med school and became an anesthesiologist. In the organic class were Bill Shewbart, Karen Larsen Shewbart and Billy Shipp all of whom graduated with chemistry degrees and have completed very successful careers; Bill and Karen in chemistry with Dow Chemical in Houston and Billy for the Department of Energy as a Ph.D. in Health Physics.

There was only one phone in the department; a rotary one in my office. Our clerical support consisted of one student worker who came in for a couple of hours each day. The girl during the fall semester was Sid Coleman's daughter and she was very good.

During that first semester the chemistry curriculum was revised. Since Harding was all I knew, it was modeled after that one. At the end of the semester I didn't have anything to do and I found out that Neal Buffaloe had submitted an equipment grant to NSF and that sounded like a good idea so I decided to give it a shot. I wrote the grant proposal in about a week, tied it to the fact that we had an entirely new department with a new curriculum and got a matching grant to buy a Perkin-Elmer Infracord IR spectrometer, a UV-visible spectrometer (Beckman, I think) and a Varian gas chromatograph with a recorder. Neal's proposal was rejected and he always said that he wrote this elegant proposal and all I did was drop them a line saying to send money and got it.

During the spring semester, I had three students working with me on Saturdays doing research. I remember that someone was trying to do a Clemmensen reduction that failed, another used our old refractometer to measure the minimum ether to Grignard reagent possible and John David Richardson who was trying to make trans-camphoric acid by heating cis-camphoric acid in a sealed glass tube. Unfortunately, the tube blew up in our faces and John David caught a piece of glass in his

forehead that penetrated a sinus cavity. On the way to the emergency room he kept worrying about fact that he was bleeding all over my car.

Throughout the year we spent in Cordrey Hall, work was taking place on the new Lewis Science Center. Bids for the building were opened sometime during the fall of 1965 and work began shortly after. When the fall semester of 1966 arrived, only the front half of the building was completed. This means that none of the chemistry labs were ready for use until close to nine weeks. Our lecture rooms were available and we had to make do for labs. Sometimes we met outside under the trees and either performed drill exercises or we did experiments as demonstrations. Of course, one of the early lab periods in freshman chemistry at that time was devoted to learning how to use a slide rule. I don't recall when students began using electronic calculators in class. I do recall that for a few years I refused to allow students to use them in class. My reasons were that they were so expensive that some of the poorer students might not be able to afford them and I thought that students who used them missed the opportunity to develop mathematical skills like estimating the answer in their head and doing the exponential notation both of which were necessary when using a slide rule. I still do both of these even when I use a calculator. I never use the exponential function on a calculator and I recommend to my students that they not do so either.

I recall two incidents from the spring of 1967. George Paul was scheduled to teach quant and the quant lab was a 24-student lab. Once the enrollment reached 24, we continued to accept students into the class until the total enrollment in the class was something like 44 students. I don't recall exactly how we handled the situation, but I recall it being something of a mad house. I also remember teaching organic qualitative analysis and being shocked at how little students remembered from the organic class they had taken with Earl Riddick. I wrote it off to poor teaching until a year or so later when I taught the class again, this time to students who had taken sophomore organic with me and I encountered the same phenomenon. I am still somewhat

amazed when I find out exactly how little most students retain from courses they have taken. They have this amazing ability to learn for the moment and then forget.

In the fall of 1967 we added a new faculty member, Chester Kennedy. Chet was related to the Baldridges who lived in Conway. Betty Baldridge Hubbard currently teaches in Health Sciences. He was a widower, I think, and had been a pilot during World War II. He had received an Ed.D. from the University of Arizona. He had done organic research, studying the reaction of alkyl lithium compounds with ethers. At the time he was teaching at SUNY-Oneonta, but applied for a position in our department to get back closer to his roots. We weren't necessarily looking for a faculty member at the time, but folks with doctorates were a bit rare at that time and we hired him. He was an avid tennis player and an amateur maker of jewelry, specializing in the lost wax process. One of the things that Chet did as a faculty member was to write a laboratory manual for our one-semester course in organic chemistry. I continue to use a sample of brown ink that he bought as a sample for paper chromatography (we bought a gallon of it). At one point Chet came into possession of a rubber stamp used to print the word "bullshit." When we first had to fill out faculty activity sheets in the early 1970's, he, Mike Rapp and Art Hoyt made use of the stamp to indicate their opinion of the new form. I passed them on up the system with the stamp and we never heard back regarding that.

For the fall of 1968, Homer Rich decided to move to Oregon State to pursue a doctor's degree in food science. In the meantime, we received an application from Michael Rapp, who was completing a Ph.D. from Indiana University. Mike was an organic chemist whose research involved kinetic studies of SN2/E2 reactions. Mike was originally from Missouri and had been a 1964 graduate of Southeast Missouri State. Mike interviewed here as part of visiting several schools on the same trip. He came here directly from interviewing at a small private school in Missouri. He had pretty much decided to take the position there, but went ahead with the interview here primarily as a courtesy. I remember

picking him up at the airport and being stopped by a train on old Roosevelt Road in Little Rock. We were talking teaching chemistry and I remember telling him that he could take the job at the private school where the students would be homogeneous or he could opt for the much more challenging position here in which students with a wide range of abilities were encountered. Mike accepted our offer and remained on the faculty for 30 years.

When Homer Rich's leave was near completion (one year or two), he sent a letter and asked to be relieved of the necessity to return since he had not completed a degree. That request was granted and a couple of years later when he decided he did want to return, we didn't have a spot for him. He has since returned to secondary school teaching in Northwest Arkansas and neighboring regions of Oklahoma.

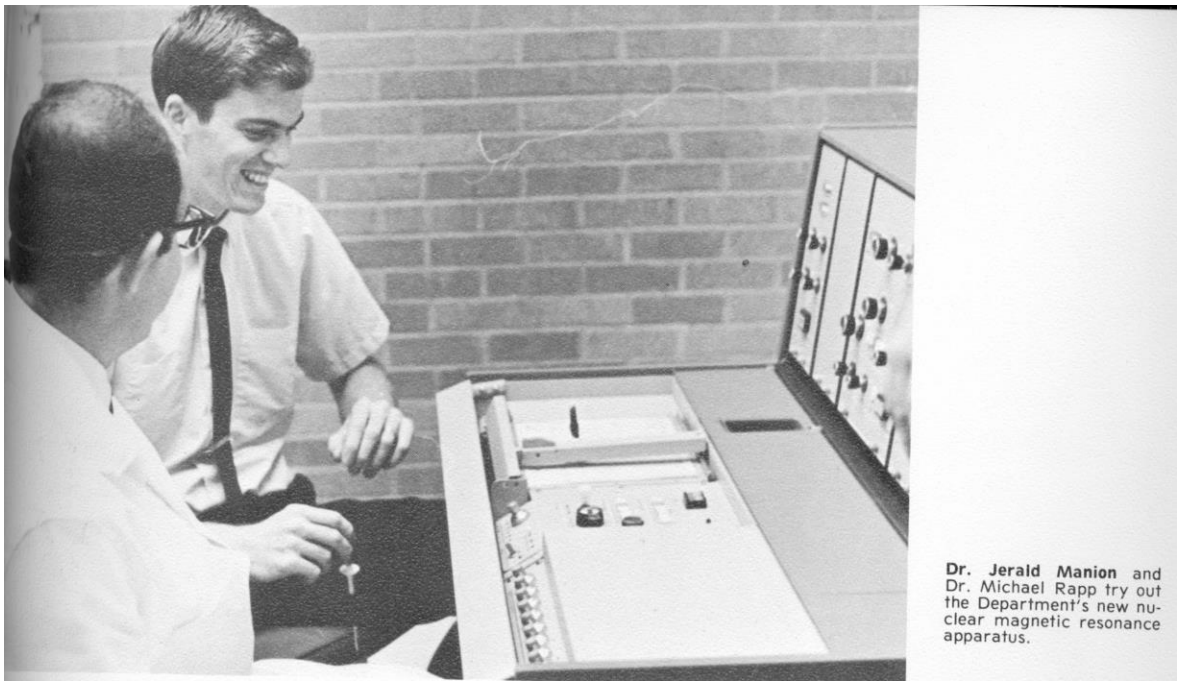
In the spring of 1970 Art Hoyt's dad (also Art) visited Si Snow and told him that he had a son who was finishing a Ph.D. at Purdue in analytical biochemistry and wondered if we had a position so that his boy could return to Conway. Art had been raised in Conway and was a 1962 graduate of ASTC. Si called and asked if we could use another faculty member and I said, "Why not?" Art was late finishing his degree and did not arrive on campus until well into the fall semester. We covered his classes until he could get here. During that first winter that Art was here, Art, Mike Rapp, and I decided to go on an overnight hike in the Moccasin Creek area north of Russellville. It became very cold that night and Mike and Art stayed awake most of the night feeding the fire to stay warm. I had a Ted Williams sleeping bag from Sears that I apparently spent most of the night filling with gaseous gastro-intestinal discharges and sleeping like a log. The hike out the next day was much more enjoyable for me than for either of them. Mike got pneumonia as a result and I had to cover his classes for a few days.

Jerald Manion, PhD, Professor, Chairman
Department of Chemistry
Arthur M. Hoyt, PhD, Associate Professor
Chester C. Kennedy, EdD, Professor

George S. Paul, PhD, Professor
Michael W. Rapp, PhD, Associate Professor
Faril Simpson, EdD, Associate Professor

1973 Scroll picture of chemistry faculty. Collectively, these six faculty members worked at ASTC/SCA/UCA for 180 years.

About this time we had made significant strides as a department not only in facilities, but also in faculty and equipment. We had received at least three NSF and HEW grants during that time culminating in the acquisition of a Varian T-60 NMR in 1968.



Chemistry professors Jerry Manion (left) and Mike Rapp (right) pictured with the new Varian T-60 Nuclear Magnetic Resonance (NMR) Spectrometer.

Dr. Burdick made two proposals. One, he asked about perhaps offering a master's degree in chemistry. We discussed that and decided that we thought it more appropriate for us to concentrate on our undergraduate program. At the time we knew of several new chemistry graduate programs that were struggling and we didn't want to join that group. He also suggested that we should apply for ACS certification of our undergraduate program and we accepted that challenge. We completed the application for certification and I was invited to interview with the CPT committee. I think that this was the fall of 1971 or 1972. The interview was held in conjunction with the Fall National ACS Meeting in New York City. I met with the committee and they indicated that they were impressed with the dramatic improvement we had made in the department over the previous 5 years or so, but they were concerned that we had no physical chemist on the staff. George was teaching physical chemistry, but his degree was in inorganic. They asked me

what I wanted from the administration and that they would write that into their recommendations. Being the company man that I was I told them straight up that if I couldn't sell it to our administration, then I didn't want some outside agency pressuring folks into things. It still hacks me off to think about it. At any rate, their written recommendations included hiring a physical chemist and making some improvements in library journal holdings. Drs. Snow and Burdick agreed to both and we began a search for a physical chemist. After conducting the search, we chose not to hire anyone and ultimately we made the mistake of telling Dr. Burdick that we didn't think we needed another faculty member and that put an end to our pursuit of ACS certification until several years later even though we hired Paul Krause in 1976.

I taught the physical chemistry lab for a couple of years in the early 70s while George Paul taught the lecture. Then in 1974-75 and in 75-76, I taught both the lecture and lab for physical chemistry. We had to have a physical chemist. By that time the employment situation had changed dramatically. The economy had gone sour and folks with Ph.D. degrees were driving taxis. We advertised for a physical chemist and received a number of applicants. Paul Krause describes his application as follows. He had received a B.S. from Dubuque where he played football and got a Ph.D. at the University of Iowa. After a post-doc at Pittsburg he had taken a temporary faculty position at Miami of Ohio. He was leaving Ohio to visit his family in Wisconsin and picked up his C&EN on the way out of the building. This issue happened to have our ad in it and he created a resume at a copy center in Wisconsin and sent it to us. Since the application itself looked a bit crude, he didn't expect to hear anything from it. Paul became one of our finalists, but when we called him for a phone interview, he hardly talked at all. We kept him on the favorites list anyway. While discussing the finalists, Mike Rapp swung the offer to Paul by suggesting that he perceived in Paul a depth of character that we would be well advised to add to our department. We did so and never regretted it.

Manion's Academic Legacy

In our history as a university, some people stand out for buildings, such as President Heber McAlister ("Mac the Builder"), others for sports, such as Big Dan Estes (Estes Stadium), some for leadership, such as Burr Walter Torreyson (Torreyson Library), but for academics, E. E. Cordrey, Alger Burdick, and H. L. Minton are notable for promoting rigorous academic standards all the way up through the 1960s. But, since the 1960s, Jerry Manion stands out as having continued this long tradition of quality academics. For example, Jerry led our pre-medical program to the point that it is today in which the UAMS medical school prefers our graduates over other graduates in the state.

Jerry Manion worked at UCA for longer than any other faculty member in our history. He began working here when the university was called Arkansas State Teachers College, and then State College of Arkansas, and finally the University of Central Arkansas. And he has worked under six university presidents. Jerry recently told a story about meeting three women, and the youngest recognized him as her organic chemistry professor. Then the student's mom said, wait a minute, I had Dr. Manion for organic as well. And the grandmother then said the very same thing.

In 2013, Joe Allison (1979 alumnus) won the UCA Distinguished Alumnus Award. At that occasion, Joe had the following to say about his time at UCA: "When I was looking for a place to go to college, I knew that UCA was close to home, inexpensive, and a good school, all very important. What I didn't know was that the chemistry department was so excellent. It was just great. It was small, with five full-time faculty and one part-time faculty member, under the management of Dr. Jerry Manion, who is here tonight. We have two other faculty members from that era here tonight, Michael Rapp and Paul Krause. Thanks a lot, guys. This is quite an honor. What they (the Chemistry Department) did was to provide undergrads like myself, like my wife, with hands-on research experiences that you just don't find at larger universities. We found that when we went to Purdue for graduate school, we were there with

students from Berkeley, MIT, and everywhere in between. We found that we were just as or better prepared than anybody from a larger university in the nation."

Jerry Manion, Mike Rapp, and Paul Krause at the 2013 Night of Distinction, at which Joe Allison, 1979 alumnus, was awarded the UCA Distinguished Alumnus Award.

Mark Woods, a 1981 alumnus of the UCA Department of Chemistry, commented on the quality of his academic preparation at UCA: "I never had a professor at UCA who didn't have an open-door policy, who would not let you come in and ask questions." Also, Woods noted that the "nice thing about UCA was that you could get the same access as grad

students get at larger universities – you could never get that kind of access to the labs, to the instruments, to running the instruments – you'd have a graduate assistant run it for you." Woods also appreciated Manion's support: "He is the reason, of anybody in my life, and I have had a lot of people in my life, but there are key points in your life where there is a fork in the road, and who gets you through that, and I'd say Dr. Manion probably had more of an impact on my life long-term than any other person because he got me into Phillips and he had more confidence in me than I had in myself."

Jerry Manion had several insightful comments regarding quality academics during his years as Chair of the Department of Chemistry from 1965-1992. In 1981, Jerry Manion demonstrated his strong advocacy for the Department of Chemistry. The following quote has been taken from a memo to Robert McChesney, Dean of the College of Science and Humanities, dated November 2, 1981: "Our department has the same space and the same staff that it had in 1970 with a teaching load that has increased by 50% and an expanded research and service program. We have expanded class sizes, opened new sections and offered new courses only because of the willingness of chemistry faculty to work harder and longer hours. It seems to me that we have reached the point that the department is no longer able to respond to these pressures by itself. Recently we have reduced our upper division offerings to accommodate increases in lower division enrollment; an action which has brought complaints from students who need these courses. Should next fall bring the same increased demand for chemistry courses that we have seen for the past two years, we will have no response available at the departmental level. We have never turned students away and it is not an alternative that we relish."

In a June 21, 1979 memo to Dr. McChesney (Dean), Jerry Manion comments on class sizes, emphasizing a quality experience in the classroom: "Finally, it bothers me somewhat to constantly be evaluating various alternatives solely on the basis of economic expediency. Our purpose is not to generate a profit, nor is it to see how many educational

programs we can offer with the money we have. It is not even to arrange class loads so that we can pay the highest possible salary to faculty. We were formed to provide training for students and there are all sorts of levels of training which could be aimed at. We may gain efficiency with large classes, but we certainly lose part of the teacher-student relationship that I consider important. It would seem to me that the Council of Deans might place a maximum on class sizes rather than a minimum. The fact that they have chosen the latter may indicate something about our priorities. We use the student/teacher ratio in reports to accrediting agencies and feel good if it is low. We then turn around and see what we can do to increase it." In this same memo, Jerry Manion commented on the possible lowering of academic standards in order to meet demands on the department by decreasing the number of students who repeat chemistry classes due to low grades, something very relevant to this day as the state bases part of our budget on certain performance indicators: "Finally we might reduce the difficulty of our courses, retaining students into the more advanced classes."

Manion's Personal Legacy

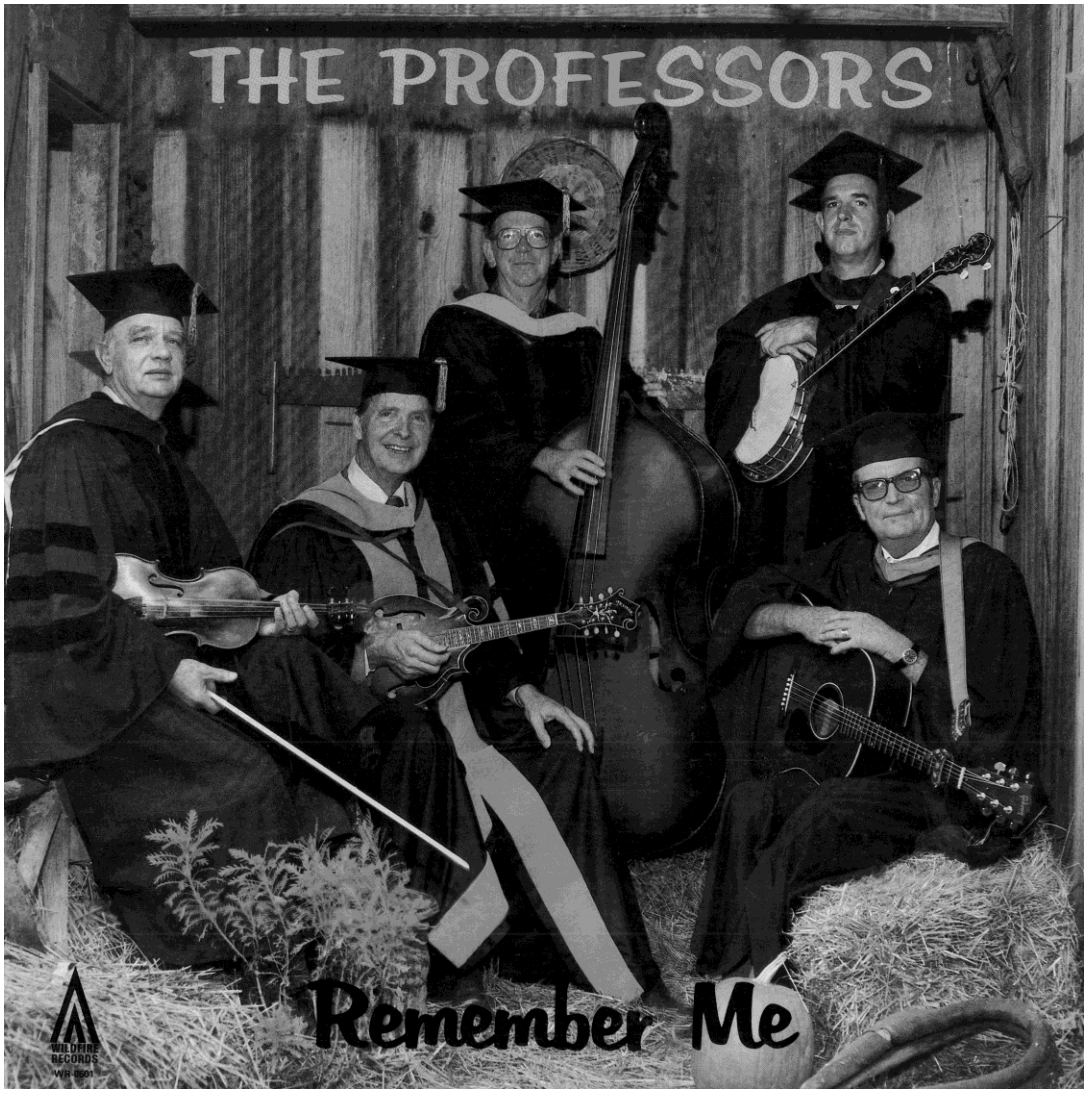
Jerry Manion was very mindful of creating community among the faculty on our campus. Denver Prince and Casey Weaver commented on a sense of community that existed among the faculty while Chemistry shared Lewis Science Center with Physics and Biology. There was a faculty lounge in which faculty members would meet to discuss personal and professional affairs. They also pointed out "Grazing Days" during Christmas time when faculty would bring food to campus and everyone would eat periodically throughout the day. Denver pointed out that both Jerry Manion and he would bring peanut brittle to Grazing Days, with Manion's being made in a microwave and Prince's using a traditional oven. The two would debate whose was best, and Denver Prince thought his always was! He also created a gathering of retired faculty, mostly in the sciences and math, who met for breakfast in the

mornings on a regular basis. Even though Jerry never retired completely, he kept his colleagues in touch with each other and continued to enjoy their company.

Denver Prince had the following statement (transcribed from a personal interview) about the bluegrass band known as The Professors:

When Jerry Manion came here in 1965, he didn't know much about playing instruments but he got involved with playing the banjo. He made several banjos, made several of them himself, and he wound up playing the guitar and just about any string instrument. He played not only with The Professors, but with the jazz group here on campus. Faril Simpson and Ralva Bass both could play the guitar a little bit. I couldn't play anything. Neal Buffaloe [Biology Chair] could play the violin and played with the symphony, but he could also play the fiddle, bluegrass style. Jerry thought we ought to get together and maybe perform somewhere. I didn't know how to play anything so I got a tub with a hoe handle with a string mounted in the middle of the tub. You can make a bass sound with it. We played for the Kiwanis and several other groups. We practiced in the Lewis Science Center, normally in one of the chemistry labs, with the chemicals you could smell in the lab. And in our spare time, during the evenings, we would practice. We played at a beauty pageant in Hot Springs and all the pretty girls wanted to come up and see my instrument, the tub. That got the guys' attention and they said you need to get rid of that tub and get a bass, so I did. I traded a little motorcycle with H. G. Foster who is a judge here in town for a bass he did not play any more. I still don't know much music but I could keep time by watching the guitar pickers and find out what key we were in. We then made an album or two and Faril Simpson did a lot of writing and Jerry got real good on the banjo. He has taught a lot of people, including Fletcher Smith, a jeweler here in town. We had a lot of fun, traveled all over the state, playing for Kiwanis clubs. All of us were in the Kiwanis except Buffaloe. Sometimes we paid to play, sometimes we got paid a little bit. We were the performing group in the first Toad Suck Daze back when it was across the river. We played on an old flatbed

truck. We were the musical entertainment for Toad Suck Daze for a long time until they started bringing in more famous musicians. But it was a good venture. We played for Purina Foods one time and they gave us all red checkered shirts and we wore those a few times. Ralva lost his and we eventually stopped being all dressed alike. We were like one big family. Buffaloe was chair in biology and Jerry was chair in chemistry and I was chair in physics and Ralva and Faril were teaching some of the same courses." As noted by Jimmy Bryant (pp. 91-92), five faculty members in the sciences were members of a bluegrass band for decades: "The five musicians came together in 1967 ….The Professors recorded two albums, 'The Professors' and 'Remember Me,' and several 45 rpm records, including 'Weeds in the Tater Patch' and 'Salty Dog Blues.' They also made several audiocassette tapes of their music. They represented some of the uniqueness of the institution. Dr. Simpson, lead singer of The Professors, pointed out a humorous incident that occurred when the chair of the UCA Music Department requested that Simpson announce to his audiences that The Professors were in no way associated with the UCA Music Department. In 2007, The Professors were still playing together as a group, forty years after their initial performance in 1967." Sadly, as of the summer of 2014, only one of The Professors is still living: Dr. Denver Prince.



Album cover of The Professors' *Remember Me*. Pictured, left to right: Neal Buffalo (Biology), Faril Simpson (Chemistry), Denver Prince (Physics), Jerry Manion (Chemistry), and Ralva Bass (Physics).

One of Jerry Manion's most endearing qualities was his self-deprecating sense of humor. Just as he would question others, he was constantly questioning himself, examining his own thoughts and actions. Socrates said "the unexamined life is not worth living"...Socrates would have been proud of Jerry Manion! In order to illustrate this aspect of Manion's character, two stories of his stand out:

1. Jerry said he was traveling with a friend to play bluegrass. His friend said that some day they would invent a typewriter that would fit in the palm of your hand. Jerry said that he responded: Naaaahhhhhh!!!

2. Another story along the same lines is when Jerry and Paul Krause purchased a computer for use in the department. It had a 5.25-inch floppy disk that was new technology at the time. Not sure what to do with it, they unwrapped the black covering to get to the disk that was inside. Realizing they had made an error, they returned the damaged disk and got another one...and they were happy that the store downtown had given them half price on the new disk!

Jerry's sense of humor is also demonstrated clearly in an e-mail that he sent to Rob Mauldin on September 1, 2011 in which he wrote: "I went to the athletic ticket office to get tickets for football games and asked about the cost of seats in the lower reserve section where they have backs on the seats. The guy said that you have to donate $300 before you are given the opportunity to buy those tickets. I told him that I donate much more than that each year to the University and he said that donations to chemistry don't count, it has to be to the athletic department. This got me to thinking that if I donate to the athletic department, I get something in return, but donating to chemistry gets me nothing, not even a free test tube. Just letting you know that I am reconsidering how my financial support of the University is being allocated."

Jerry's sense of humor is illustrated as well from two memos that have been scanned and inserted below. The first memo is from December 2, 1977, in which Jerry suggest a new administrative office on campus, the Administrative Form Administrator's Office, in order to deal with the ever-expanding amount of paperwork. Also scanned and included below is a memo from October 27, 1980 in which Jerry comments on the expansion of committee work for faculty, suggesting a list of 18 committees within the Department of Chemistry!

UNIVERSITY OF CENTRAL ARKANSAS

December 2, 1977

Dr. Robert McChesney, Dean
College of Science & Humanities
University of Central Arkansas

Dear Dr. McChesney:

With the large number of new forms that have been developed on the UCA campus recently the Chemistry Department has encountered a number of problems. Often we are caught red faced trying to accomplish an operation by the use of an obsolete form. Even more we find it necessary to seek assistance in filling out new forms of which we are aware. It is difficult to locate such help, since no one else seems to know any more than we do.

We propose the establishment of a new administrative office on the campus called the Administrative Form Administrator's Office. This will, of course, require the hiring of an administrative form administrator. Most any type of educational background should be appropriate.

The duties of the administrative form administrator (AFA) might include:

1) Evaluation of proposed new forms with appropriate input from new form committees organized at the department, college and University levels. This would require the development of new forms for the proposal of new forms and new form evaluation forms.

2) The new form administrator could also put out a daily newsletter at the end of each day outlining new forms developed during that work day and could hold weekly seminars all day on Friday to provide the opportunity for discussion of form filling techniques.

3) The AFA might also teach courses in development and filling out of innovative forms. Of course, students with previous courses in this subject could receive credit by examination assuming they had no native competence.

We hope that you will propose such an office. We feel that this change will ultimately be equal in quality with many other recent innovations on campus.

Sincerely,

J. M. Manion

Dr. J. M. Manion, Chairman
Department of Chemistry
University of Central Arkansas

JMM/llh

Conway, AR 72032

UNIVERSITY OF CENTRAL ARKANSAS

October 27, 1980

Dr. Robert McChesney, Dean
College of Science & Humanities
University of Central Arkansas

Dear Dr. McChesney:

In a recent meeting of the College Department Chairmen it came to light that a major function of committees was to provide faculty with the opportunity for University service. Having given this matter some thought it seems that I have failed the chemistry faculty in this regard. After some research into the matter we have patterned a departmental committee structure after a well respected midwestern university. This committee structure should allow faculty to more adequately fulfil their University service obligations and should allow the department to respond to its responsibilities in a more formalized manner.

Committees will be formulated on a rotating basis and each will consist of five faculty with the chairman serving as an ex officio member of each. Additional Ad Hoc Committees will be organized as required. The committees proposed are as follows:

1) Curriculum, Course and Scheduling Committee
2) Committee on the 1302/1403 series
3) Committee on the 1450/1451 series
4) Committee on Honors and Awards
5) Governance and Procedures Committee
6) Equipment and Storeroom Committee
7) Chemistry Major Committee
8) Student Recruiting Committee
9) Library Committee
10) Safety Committee
11) Seminar Committee
12) Staff Recruiting Committee
13) Laboratory Committee
14) Publicity Committee
15) Committee to Coordinate Computing Facilities
16) Committee for Preprofessional Majors
17) Reserach Committee
18) Departmental Committee on Committees

With present faculty involved in University service on this level a commitment will be required from your offide to provide additional staff for the purpose of teaching. In the absence of such a commitment it will be necessary for us to limit our committees to one meeting per century.

Sincerely,

J. M. Manion

Dr. J.M. Manion, Chairman
Department of Chemistry
Conway, AR 72032

Two of Jerry Manion's memos to Robert McChesney, Dean of the College of Science and Humanities, illustrating Jerry's sense of humor.

Jerry's thoughtfulness and consideration for others are clear in a February 16, 2014 e-mail written by Jerry to the department: "I don't know how many of you guys know Mary Jo McKinney, but she had a massive stroke last night and it not expected to make it through the day tomorrow. When we moved into Lewis Science Center in the Fall of 1966, the chemistry department got permission to hire our first ever full-time secretary. We were able to justify this because the same person also served as a stockroom supervisor. She set up administrative procedures that we used for years after. She also set up the physical layout of the stockroom and that remained the same until we moved to Laney in 1995. You can still go to the stockroom in Laney and find things that date back to her time with us. She took a job at the newly opened Kimberly-Clark and increased her salary by a great deal. Nearly broke my heart. She and her husband, Jim, have been friends with Patsy and I for almost 50 years."

Of course, Jerry Manion's personal legacy can be seen in his strong and abiding interest in students. He kept in touch with alumni extraordinarily well as indicated in a December 14, 2012 e-mail to James Duke, a 1977 alumnus: "There is a story involving you that I have probably told a hundred times over the years. During your senior year you had an acceptance to medical school and a prestigious fellowship to grad school at Nebraska and were fretting because the choice was a difficult one to make. I told you that if you had a dilemma, that was the kind to have."

On Friday, May 3, 2013, the Department of Chemistry recognized Dr. Jerry Manion as the longest-serving employee of UCA and its predecessor institutions, at the annual spring picnic for graduating seniors. The record was previously held by Marie Schichtl, who taught Art from 1920-1967, for 47 years. Dr. Manion began at what was then Arkansas State Teachers College in 1965 and continued until his death in the summer of 2014, for a total of 49 years of service to UCA. Pictured

are Dr. Robert Mauldin, department chair, and Dr. Jerry Manion, who is holding a wooden beaker made by Dr. Pat Desrochers and a plaque that were given as gifts to commemorate the occasion. The departmental faculty, staff, and graduating seniors congratulated Dr. Manion with a standing ovation.

Robert Mauldin, left, and Jerry Manion, right, holding a wooden beaker made by Pat Desrochers to commemorate Manion as the longest-serving faculty member at UCA.

The following text was submitted to *Chemical and Engineering News* as an obituary for Jerry Manion, who passed away on July 18, 2014:

Jerald M. Manion, 73, Professor of Chemistry at the University of Central Arkansas for nearly 50 years, died on July 18 at his Conway, AR home. Throughout his 49 years of service, Manion turned people of all ages onto science and helped turned many of them into scientists, motivated by the passion he shared for learning and teaching.

Born in Beebe, AR, Manion earned his B.S. in chemistry from Harding University in 1962 and a Ph.D. in organic chemistry in 1965 from the

University of Mississippi. Manion then was hired to be chair of the newly formed Department of Chemistry at UCA (then Arkansas State Teacher's College) and remained in that position for 27 years, after which he served as a faculty member for 22 years. He was effective in obtaining state-of-the art instrumentation, involving undergraduates in research, and taking students to conferences. Since 1965, Manion guided the pre-med committee to the point that UCA graduates are highly sought by medical schools around the country. Manion remained active in science outreach, presenting chemical demonstration shows and teaching workshops in Arkansas and surrounding states. In his later years, Manion devoted much of his attention to writing a history of the department he helped establish, including stories of its many alumni who have gone on to distinguished chemical careers. In 2010, alumni honored Manion with an endowed departmental award bearing his name and given annually to the outstanding graduate.

Manion was also an avid golfer and banjo player. He played 5-string banjo with "The Professors" bluegrass band, a group composed of himself and four other science professors.

Manion is survived by his wife of 54 years, Patsy, his two sons Mike and Danny, their wives and families including 6 grandchildren and 6 great-grandchildren, and his two younger brothers Dickie and Johnny.

Historical Context: Student and Academic Affairs in the late 1960s and 1970s

Regarding student affairs and continuing changes in social customs on campus, Burdick noted (p. 338): "I dropped the ban on scheduling campus activities on Wednesday nights with hardly a murmur from prayer meeting goers." And "ASTC was spared the extreme manifestations of student revolt in the 1960's, but the mood of the times was not to be ignored. The progressive deterioration of authority and the challenges to moral order were much more than faint echoes."

As with the 1950-1965 time period, Burdick had a number of compelling comments on the quality of education during the latter part of his tenure as chief academic officer, many of which are striking in that they are similar to what we face today:

- Students became more vocational in their approach to higher education, as noted by Burdick (p. 150): "Students entering business programs exhibited two attitudes in particular: they were almost obsessively utilitarian in educational outlook and conservative in their social views. The cultural aspects of higher education usually left them cold, and the programs that were designed for them increasingly reflected their wish to be spared

literature, languages, and the sciences. Intense practicality was the central criterion for business. 'If you can't put catsup on it, I don't want it' expressed the prevailing student view. The liberal arts were not just irrelevant, they took up time that could more profitably be used for the main business at hand: learning business."

- Burdick, p. 198, suggests general education was viewed as something to be gotten "out of the way" by many students on campus: "But for far too many, general education was merely an endurance test, an unwelcome third of their college career, to be passed with minimal effort. For them, the goal of realizing full potential as individuals lay in other directions."
- Burdick, p. 245, commented on a major weakness of the emphasis on vocational education: "The very great popularity of the utilitarian programs is a striking case in point and illustrates the kind of haste-born myopia that can afflict all concerned….And the enrollment gains that enhanced this favor were the result of students looking only to the short-term advantages of preparing merely for entry-level positions. Employers were abettors. While welcoming a ready-made labor force, they failed to see its limitations for the supply of higher-level personnel. An added irony lay in the fact that many of the employers were liberal arts graduates, with the kind of education they would look for in the promotion of their replacements….Inevitably, employers seeking candidates for the better paying jobs would turn to superior institutions for liberal arts graduates with outstanding academic and leadership credentials."
- By the mid-1970s, Burdick describes the increasing role of the liberal arts on the heels of expansion in professional programs (p. 196): "SCA was far from becoming a liberal arts institution, but it had made gratifying progress in redressing the educational imbalance created by the sudden on rush of vocational-professional programs."

- Burdick's view on the credit-no-credit option (p. 304): "Designed to encourage intellectual exploration, this shopper's delight added credit hours with no GPA risk." And on CLEP exams: "This was the quintessential insult to the teacher. To enlarge upon my earlier strong criticism of credit by examination, let me add that permitting an able student to test twenty-nine hours in fundamental studies because he had mastered them earlier is a travesty on the concept of education as progress in learning. To relieve him of boring repetition is one thing, but to deny him the opportunity of becoming a better beginner (baccalaureate) is quite another." And finally a comment on withdrawal policies (p. 304): "A variety of devices (non-grades) designed to protect against unfair penalty for not completing a course, but too often used in plea bargaining: X credit = deferred credit (incomplete passing), WP = withdrawn passing, WF = withdrawn failing."

One can see a slow but steady improvement in academic quality and rigor with several developments during this time period. Bryant notes another milestone in the improvement of academic rigor on our campus (p. 94): "Another first connected with the Farris administration was a change in UCA's admission policy from open admissions policy to selective. The selective admissions policy admitted the best 1,600 applicants. The reason for the change, according to President Farris, was to increase student retention. President Farris stated that too many freshmen were not returning for their second and third semesters. The selective admissions policy was designed to increase student retention by attracting and selecting students who were more likely to stay enrolled in college and receive degrees. Farris counted the selective admissions policy as one of the most important accomplishments of his administration." Also, while an honors program was created in 1961 as noted previously, in 1982 this program was converted to the UCA Honors College, with Dr. Norbert Schedler as its founder (Bryant, p. 96). Bryant also notes that in 1986, the UCA Archives was established

(p. 98). The first residential college in the state and at UCA was created in 1997 (Hughes) under the Thompson administration (Bryant, p. 110) and Sponsored Programs began in 1989 (Bryant, p. 117).

Mike Rapp's Reflections (1968-1998)

Dr. Mike Rapp served SCA and UCA from 1968-1998 as a faculty member and, with this long history has a particularly insightful and comprehensive account of this time period in UCA Chemistry's history:

When I interviewed for a position at then State College of Arkansas in 1968, I was yet to receive my Ph.D. in Organic Chemistry at Indiana University. Conway was the last stop in a loop of interviews at several schools. I was offered a position from a school in Missouri that was appealing, but I didn't accept the offer, since interviewing at SCA was still an obligation. Still, I was fairly certain I would accept that offer. Jerry Manion picked me up at the airport in Little Rock, and I was looking for evidences to confirm my decision. What I saw was a slightly overweight, balding fellow in his older model pickup truck (not even a school car), and he wasn't particularly trying to impress me. Another confirmation came as we drove through the fumes of an asphalt plant near the airport. As we passed a sign for "Lake Liquor" near what is now Maumelle, I thought I didn't want to come to a place where residents named a lake "Liquor."

In the absence of President Silas Snow, who was out of town, I had an interview with Dr. A. E. Burdick, dean of the faculty. I thought I could avoid having to reveal my lack of interest in the position at SCA by asking him to do the talking. Civil unrest was a big topic in the news in the late 60s, and so I asked Dr. Burdick if the students at SCA were interested in current events. He answered quite simply, "No, they are looking for a way to make a living." His statement was disarming – I was playing a game, and he was being honest. I began to pay attention to the people I was meeting, and I liked what I saw.

While I was in Jerry's office and he was showing me a 5-string banjo he was making, one of his students came in with a question. The student was making up a lab exercise he had missed, and he told Jerry the

directions called for a solution of sodium carbonate. Holding the bottle containing the silvery metal covered in oil, the student said he had found the sodium but he had trouble locating the carbonate. Jerry took the student to the back of the Lewis Science Center (which at that time had a loading dock and no two-story addition), pitched a small piece of the sodium on the gravel drive, and threw some water on the sodium. The explosion that resulted was impressive, and I don't know if the student dropped the class. The point to me was that the education of students was a hands-on activity, and this place might be fun!

Then I met Bob Kirkwood, a biology instructor; who was a veteran of World War II, the president of the local Audubon Society, and interested in canoeing. He and Jerry were building a kayak, and it was on the table in the cell biology lab. Things were getting more and more interesting. It's presumptuous for me to say, I suppose, but I began to think that SCA and I could be a "good fit." The college catalog had lists of the previous year's graduates in various programs, and the student's name that was first on the list was Mary Barefoot Brown. The letterhead for SCA contained the caption "Friendliest College in Arkansas," and the evidences I was seeing confirmed that accolade. When I was offered a position at UCA, I accepted it and wrote the other schools that I was declining their offers.

Once I came to Conway, Chet Kennedy was the faculty member whose office was next to mine, and I learned a great lesson from seeing how he had lived different chapters in his life. He had served in the US Navy, played semi-professional tennis (and coached the SCA tennis team), prospected for gold in Alaska and opals in Australia, had 425 hours of college credit – and a masters in botany and a doctorate in chemistry. Seeing that he was able to enjoy different things at different stages in his life helped me avoid trying quickly to achieve goals that would take years for a person to reach. Chet's "current" interest was in metalworking and making jewelry, and he taught me how to weld brass. Without the mentoring that Chet and Jerry and other faculty members provided, my success as a faculty member would have been much less.

Jewel Moore, the biology professor after whom the nature preserve is named, led a weekly luncheon discussion of current events, and I enjoyed taking part in the give-and-take with my colleagues. Ray Kinser,

another biology faculty member, shared an interest I had in stream ecology and activism in environmental issues. Recognizing that I was new to the profession, I chose to audit a class of other faculty members for several years. Jim Shelton (philosophy), Paul Witherspoon (history), and Loren Guffey (economics) allowed me to sit in on their classes, and my then youthful appearance allowed me to avoid "detection" by the students. I remember watching a fellow in economics class look out the window as Loren gave the three major responsibilities of a federal bank, thinking how he was going to miss that question on the next test.

Before the university grew large and science departments began to be located in different buildings, science faculty members were closely connected – professionally and socially. The janitors for the Lewis Science Center, Mr. & Mrs. Pearce, allowed the science faculty to use a part of their work area for a coffee/break table, and daily discussions of professional and personal interest were held there. Neil (& Inez) Buffaloe, Denver (& Freda) Prince, and Jerry (& Patsy) Manion invited the science faculty into their homes; and they made what would have been an institution into a family. Such gatherings often included students, who were incorporated into activities and interests of the faculty. Students were encouraged to join faculty members in their research interests. Some students who worked with me over the years were Pat Griffith and Michael Wood (synthesis of pyrimidine analogues with potential as anti-cancer agents), Jim Irving (investigation of water quality parameters in the Cadron Creek watershed), Joe Massey (measurement of contaminants in Conway's water supply), and Teddy Townsend (development of analytical techniques for grease contamination in NASA's shuttle boosters). The NASA-sponsored research was done in collaboration with Hudson Eldridge, a faculty member in UCA's physics department, and Teddy helped with publication of the results of that research in the Proceedings of the Arkansas Academy of Science, of which I was president at the time.

Art Hoyt would rank only slightly below Jerry Manion as an interesting character in the science faculty, and Art's outspokenness was admired by many. Another faculty member in the department of chemistry was George Paul, and his memory (license plate numbers, physical properties of the elements, etc.) was phenomenal. Once, at the break table, Jimmy Throneberry tried to get George's goat by asking, "George, I

was reading some philosophy of science this week, and I ran across some names of philosophers. I recognized Aristotle and Plato, but I'd never heard of Testicles. Have you heard of him?" George replied, "Well, I've never heard of any of them." (So that you don't look down on George, Jimmy's jabs were not always "productive").

As for students, James Whitaker started a fire in the stockroom. Mike Jones used a hand-controlled metal rod to replace the gas pedal in his car. Terry Watson played a 12-string guitar and was an artist and author. Rick Walser said he wanted to move west, but chose to stop one state short of California. Rick was a member of Phi Lambda Chi, and he didn't have the resources to pay for his needs. He said, "That's OK. I'm on a beer scholarship." Students were interested in life. The students in my organic chemistry class liked the challenge of determining the profitability of their syntheses of compounds in lab, comparing the cost of reactants to the value of their products. When microcomputers came on the scene, I wrote a program my organic students had to complete before being given their "organic qual unknown."

Faculty members (and students) were active in attending and participating in area and national meetings, and the department looked for ways to invite students into activities that would lead to productive, professional lives. Participation by faculty in the Central Arkansas Section of the American Chemical Society was regular, and faculty at other schools in Arkansas (*e.g.,* Bob Shideler at Hendrix, Dee Palmer at Henderson State, and Don England at Harding) became good colleagues and good friends. Instrumentation was readily accepted and incorporated into courses, and Jerry was successful in securing that. He wore so many hats well (chair, teaching, storeroom organization, instrumentation repair, etc.), and as a consequence members of the department enjoyed an amazingly productive setting.

Members of the department served as advisors for professional programs, and Jerry Manion followed Tom Burgess (biology) as pre-med advisor. I served as pre-vet advisor for several years, and one of my advisees (Sharon Stone) currently works at her own clinic here in Conway. So many graduates from our school entered the UAMS school of pharmacy that I wondered if there would be a drugstore on every corner of every town in Arkansas. The history of UCA includes a great

emphasis on teacher education, and many science teachers in Arkansas took training at our school. One who was instrumental in prodding me to add to the offerings for the MSE program was Margie Snider, then teaching chemistry at North Little Rock. The "Laboratory Management" class that I devised led to partnerships with many high school science teachers, eventually resulting in my twenty-year commitment as director of the Arkansas State Science Fair and president of the Arkansas Science Fair Association. Fred Dalske, a member of the department of biology, was a great right-hand man in that endeavor, and four high school students from Arkansas would gain the top award at the International Science & Engineering Fair during the time we worked with the students and teachers. Three of the most successful teachers who brought students to the science fair were Bonnie Moody (NLR), Melissa Donham (LR Central HS) and Mark Welch (Alpena HS). Bill Fulton, a graduate of our university, served for many years as Science Specialist at the Arkansas Department of Education, and he was phenomenally successful in working behind the scenes to promote science education in Arkansas. Partly due to Bill's vision and hard work, the Arkansas Science Teachers' Association became a highly successful network of teachers in our state.

Jerry and Paul Krause enjoyed presenting science programs to area schools, and Paul was particularly willing to challenge me in my grasp of environmental issues. We both enjoyed teaching "Environmental Chemistry," and we encouraged students to use chemistry as a "window" through which they could understand how the world "worked." Casey Weaver had a gift for enthusiasm and sensitivity to students. All three of them liked to prepare students to be active participants in the world they were in. Many of the members of the science faculty shared interests in music and in the outdoors. The bluegrass group, The Professors, entertained diverse segments of the community and the state. (Jerry, Faril Simpson, Neal Buffaloe, Denver Prince, and Ralva Bass were in great demand, both for their musical offering and for their low fee.) Canoeing became an active hobby, and students and faculty came to enjoy nearby Cadron Creek. Darrell Hutchins, faculty member in physics, was my steady partner in the springtime faculty-student float trip for forty years. Darrell, Art Hoyt and I were instrumental in organizing the Citizens' Committee to Save

the Cadron, whose efforts were successful in blocking fifteen dams that the Soil Conservation Service proposed for the Cadron.

Manion and his wife, Patsy, pictured with oars that are still in the chemistry department's office to this day. As noted by Mike Rapp: "Canoeing became an active hobby, and students and faculty came to enjoy nearby Cadron Creek."

The university looked for ways to enable faculty members to use their gifts throughout their careers. As the university grew, lines of communication lengthened, and new ways were sought to monitor the work of the faculty. During the tenure of Jeff Farris as president, a "faculty report" form was developed that included an estimate by the faculty member of the number of hours worked per week. Bob Kirkwood and I each put down 80. (That was when I was learning the

ropes of being director of the state science fair, and I was young enough to burn the candle at both ends.)

Faril Simpson brought many talents to his role as a faculty member. He was keenly interested in music and would bring that interest into the classroom. Faril liked to take a slow pace in the classroom, so that students would be able to "connect" with the topic being covered. He was unmatched in his "likeability," and students were drawn to him. Other faculty members had a hard time with Faril in coordinating the coverage of topics in sequential courses, because he might only get half-way through the schedule with two weeks left in the semester. Jerry would point out, though, that many students who chose to be chemistry majors did so after being in Faril's class. Casey Weaver was keenly interested in students, and she had a gift for ways to bring interesting activities into students' lives. Pat Desrochers (then-chair Conrad Stanitski called him "Doogie" because of his youthful looks) brought a similar openness to students, interesting them in his research. It would be hard to imagine a department with a faculty that was more dedicated to their students.

As the university and the department grew more rapidly, people enjoyed planning for expanded roles. Changing the athletic conference/division was an example of the trend, as were separation of facilities for some departments. The model of a successful faculty member moved toward self-reliance, and administrators began to look to the faculty less for input on directions which the university should take. When President Win Thompson began encouraging the use of tenure as an inducement for first-time employees who were administrators, I met with him and encouraged him to follow the established policy of requiring a probationary period, as listed in the Faculty Handbook. The conversation didn't go well, and I told Jerry that Dr. Thompson had said I was ". . . stubborn as a mule, pig-headed, and misguided." Jerry told me, "Two out of three isn't bad," and he didn't let such events "get to him."

I chose to retire after the fall semester of 1998, and Dr. Thompson's address to the faculty at the start of the semester helped me make the decision to retire early. I sat in Ida Waldran Auditorium, next to Foy

Lisenby (history dept.), as Dr. Thompson said the faculty led a "leisurely pace" and that the university would be able to hire more younger faculty if older faculty would retire. Foy enjoyed drawing cartoons, and I noticed he was drawing a picture of "Huggy Bear" – with a FACULTY label on its chest – lying on a couch, with one secretary fanning him and another feeding him grapes.

Conrad Stanitiski's Reflections: 1992-2005

Conrad Stanitski, UCA Chemistry Department Chair from 1992-2005, wrote the following summary of his time at UCA and significant improvements to the Department of Chemistry under his leadership:

In March, 1992 Dr. James Dombeck, Dean of the UCA College of Arts and Sciences, extended an offer to me to become Chair of the UCA Chemistry Department. My agreeing to accept the position carried several contingencies with it: (1) hiring of a full-time laboratory stockroom coordinator as a priority condition; (2) the acquisition of adequate research space for chemistry departmental faculty; (3) a persistent upgrade of teaching spaces available to the chemistry department; and (4) release time for the Chemistry Department chair in the summer to carry out scholarly activities. Dean Dombeck agreed to meet each of these contingencies. After due consideration, including turning down other offers, I accepted the UCA position. My decision to come to UCA was based on several factors: (1) the long-standing collegiality of the departmental faculty; (2) my perceived potential of the department as well as that of the University; and (3) the likelihood of being able to make an impact on the chemistry program and thereby, the University.

My vision for the Chemistry Department had two major components that would take advantage of the quality of the faculty and students. The first aspect was the prompt reapplication to the ACS Committee on Professional Training (CPT) for its approval of the Department's chemistry program. The application was filed and CPT, after due

deliberation, granted approval in 1995. The second goal I had was to have the UCA B.S. chemistry program become the outstanding such program in Arkansas, an undergraduate program that would combine teaching excellence with student research mentoring. To do so meant (1) hiring additional appropriate faculty members and, (2) remaining an undergraduate-only department. To achieve these goals, Dean Dombeck supported my discussions with Provost Bill Berry as to the need for action early in the academic year on advertising and hiring, as well as his (Berry's) gaining a more contemporary viewpoint in counting teaching loads for laboratory-science faculty members.

Within the first two years of my arrival, Provost Berry pushed hard for me to advocate for an M.S. in Chemistry program. I had no interest in starting an underfunded, inadequate chemistry Master's degree program, one that would drain resources away from what could become a superior B.S. in Chemistry program. Neither the state of Arkansas nor the Conway/Little Rock area would benefit from or need such a misguided entry into graduate chemistry education. Two exemplars of such low-quality M.S. programs were already extant in the area. I was uninterested in starting a program in which essentially all M.S. students were only part-time. If we were to offer an M.S. in Chemistry program, I wanted it to be top-notch at its inception. After extended discussions on the matter, I gave Provost Berry my entire rationale accompanied by complete and realistic estimates, including costs and research resources, required to develop and operate an excellent M.S. in Chemistry program with full-time graduate students, one that would not compromise the undergraduate program in chemistry. Stunned by the magnitude of those legitimate and authentic requirements, and knowing their validity because I was an ACS CPT associate and a nationwide consultant on such matters, Dr. Berry withdrew his request for further consideration of an M.S. in Chemistry program. He was also fully aware of my continued commitment to build an outstanding undergraduate program.

A landmark for a continuing program of departmental faculty mentoring undergraduates in ongoing research projects was the 1992-93 initiating work of Bill Taylor (mass spectrometry) and Pat Desrochers (inorganic synthesis), which they sustained across the 12 years prior to my retirement (and beyond). Both of them have received the University-wide Faculty Research Award.

The first of several other key faculty hires was made during 1993 with the hiring of Patricia and Jeffrey Draves, both recent Ph.D. graduates from the University of Illinois, one of the top graduate schools in chemistry. Their hiring--Patricia was a biochemist; Jeff a physical/environmental chemist—bolstered both areas. The hiring also validated with Provost Bill Berry my prior request for early action in the academic year on advertising and hiring. It also was a breakthrough as well in terms of his adopting a more contemporary viewpoint in counting teaching loads for laboratory-science faculty members. To accommodate the changing ways in which chemistry was practiced beyond academe, the UCA Chemistry Department faculty searches took on a broader view, looking for cross-disciplinary candidates, such as those whose expertise was in biochemistry/polymers and environmental/analytical chemistry (or physical chemistry).

The Chemistry Department has long valued excellence in teaching. Several department members—Pat Desrochers, Paul Krause, and Mike Rapp---have received the University-wide Teaching Excellence Award; other chemistry faculty members have been finalists for that award. High-quality teaching remained an important criterion in the hiring of faculty to work within the teacher/research mentor model. During the 1993-2003 decade, the University grew rapidly, as did chemistry course enrollments, necessitating additional chemistry faculty members. We were fortunate to hire excellent candidates, typically our first choices, from a national pool of applicants. Professors Carter (organic), Isom (biochemistry), Kelley (biochemistry), Perry (physical/environmental), Steelman (analytical), and Tarkka (organic) were among these hires. Each, along with Professors Desrochers, Draves, and Taylor, developed a

significant research program involving undergraduates. Research grants from NSF, NIH, and other national funding sources followed. For an undergraduate degree-only department to receive such funding speaks to the high quality of the proposed and subsequent chemistry research done by the undergraduate students and their UCA faculty mentors. Also noteworthy was that during the previous two decades, Jerry Manion received several NSF grants for major laboratory instrumentation, equipment that became vital to the success of the department's evolving laboratory curriculum.

Undergraduate participation in research increased from 4-5 students per year to over 30 per year. Annually, students presented their research results at regional, as well as national, ACS meetings. Chemistry students were also accepted into graduate programs from a wide range of institutions nationally and offered full scholarships or assistantships. UCA chemistry graduates were eagerly sought by graduate schools who were delighted at the quality and intensity of the research experience and coursework our students brought to their graduate training.

The new administrative structure of the College of Natural Sciences and Mathematics led to, within the College, an enhanced expectation of scholarship as a criterion for tenure and promotion; teaching effectiveness and service to the University continued as criteria. In the Chemistry Department, we chose to view scholarship in the broad sense of a professor showing evidence of "keeping up with his/her discipline." Such evidence included a range of acceptable and expected professional activities: attendance *and* presentation of scholarly work at regional and national ACS meetings; participation at regional and national workshops; authoring and submitting research grant proposals to regional and national funding sources (NSF, NIH, DOE, Howard Hughes Foundation); and submission of work for publication in refereed national journals or other peer-reviewed publications. Thus, the enhanced expectation of scholarship was definitely not narrowed in the

Chemistry Department to a single checklist of how many publications a faculty member authored or co-authored during a given time span.

The years I spent at UCA strongly confirmed the reasons why I accepted the position: the exceptional colleagueship; the willingness of chemistry faculty to assist in whatever way necessary in times of difficulty, such as taking on additional teaching and laboratory assignments during other faculty member's absences for health reasons; a general "can do" *espirit de corps*; an enthusiasm for and commitment to try new teaching methodologies and curricula; and the high level of faculty professionalism. All of these helped to establish UCA as the finest undergraduate B.S in Chemistry program in the state."

Statement by Bill Taylor, Department Chair from 2005-2009

Dr. Bill Taylor wrote the following thoughtful description of issues encountered and progress made during his time as department chair from 2005-2009:

I became chair of the department on July 1, 2005, and served in that capacity until June 30, 2009. I applied for the position during the 2004-2005 academic year when Conrad Stanitski (my predecessor) announced that he would be retiring from the department. Prior to Conrad's announcement, I had been toying with the idea of applying when the time came. I had been a full professor for a few years, and was starting to feel a bit stagnant, so chairing the department presented a challenge I felt I wanted to try. However, the calculus of my decision involved more than the simple consideration of an opportunity for personal growth. I felt that the department was a wonderful environment in which to work, and I wanted it to remain that way. I wasn't comfortable that someone from outside the department would continue to lead us in the same direction. In retrospect, these were not the best reasons to want the job. I had no overarching "vision" of my own for the department, and the subsequent chair, Rob Mauldin,

demonstrated that it is possible to find someone from the outside who shares the same goals for the department as the rest of us.

Prior to his departure, Conrad and I met on almost a daily basis for what I came to think of as "chair school," where we mostly discussed the mechanics of running the department. These were enjoyable sessions, and I learned a lot about what Conrad's priorities were for running the department. He was a great "people person," and in my opinion, did a good job of faculty development, but cared less about the day-to-day details. He had a couple of books on leadership and management that he recommended I read. I looked at them but didn't find them to be that useful. I recall that when an acquaintance not associated with UCA (who ran his own small business) found out that I was to become chair, he told me I should provide pizza for the department every Friday. That probably would have been more helpful than the books. At that time, the university was still using an aging digital records system called the Student Information System (SIS) to keep track of everything from registration to departmental budgets and student records. As I was told, SIS was developed in-house years ago, and anyone who really knew anything about it had long since retired or passed away. As a result, the system had been patched and modified repeatedly in order to meet the needs of the university. As a result, it was cumbersome to use, and there appeared to be few people on campus familiar with all aspects of it. During my tenure as chair, the university transitioned to the Banner system for all administrative records.

When I moved into the chair's office, I discovered that Conrad had left me two gifts: a bag of semi-sweet chocolates, and a set of wooden rowing oars (Conrad was an avid rower). The chocolates didn't last more than a week. The oars are still in the chair's office.

Not long after I became chair, I (along with the other CNSM chairs) was summoned to a meeting with the Provost and some other higher-ups from the president's office. Lu Hardin was the president at that time, but was not in attendance at this meeting. The reason for the meeting was

that the university was experiencing unprecedented increases in freshman enrollment as a direct result of policies instituted by President Hardin. Departments across campus were struggling to come up with enough class sections to accommodate this increased enrollment, and the administration had identified CNSM departments in particular as contributing to this bottleneck. This was probably true since enrollments in laboratory courses have actual physical limits. At this meeting, we were told in no uncertain terms that we were to do whatever it took to make space for the increased enrollments. In particular, it was suggested that we offer classes on nights and weekends. In addition, we were told that we could hire as many temporary, part-time and adjunct faculty as was necessary to meet the demand. Disturbingly, there seemed to be the implicit assumption in the upper administration that individuals with the necessary qualifications to teach science at the college level were readily available on short notice. As it turned out, this meeting foreshadowed a recurring theme of the Hardin administration. I don't recall specifically how Chemistry addressed the enrollment issue in the fall of 2005 (that may have been when we hired Sean Curtis), but I do recall that we interviewed a number of faculty that summer and the following fall semester to fill temporary slots. I believe that Faith Yarberry was hired starting in January 2006 as a result. Notably, Faith turned out to be a successful permanent addition to the department. We also received authorization to interview for two tenure-track faculty lines. Micah Abrams and Lance Bridges were hired into these lines to start in fall 2007. Both of these individuals subsequently left the university for other positions in later years.

Micah was one of our alumni and had just finished a post-doc at Virginia Tech with a theoretician named Daniel Crawford. Prior to that he had done graduate work at the University of Georgia with Henry Schaefer. By all accounts, Micah's post-undergraduate work had been impressive and he earned his Ph.D. in three years. His background in computational chemistry seemed like a good fit for us. Indeed, I pushed for hiring this

type of chemist with the idea that this person would not have the same laboratory needs as a wet chemist would and would thus be less expensive to hire. I had other reasons as well. First, computational chemistry was (and is) a rapidly growing area of chemistry, and I felt that the department needed someone in this area. Also, I believed that there were a number of chemistry faculty whose research might benefit from collaborating with a computational chemist. I still believe this.

Lance Bridges did his undergraduate work at John Brown University, and his Ph.D. at the University of Oklahoma Health Sciences Center. He came to us from a postdoc at the University of Virginia. Like Micah, Lance is also from Arkansas, and was eager to move back home. During his interview, I was impressed by his enthusiasm for chemistry and his excitement about the possibility of working here. The rationale for hiring a biochemist was that this was an area which was also experiencing dramatic growth, and I anticipated that we would be forced to offer more sections of our biochemistry courses in the near future.

To the best of my recollection, we came up for our five-year program review with the ACS the second summer that I was chair. At that time, these reviews mostly amounted to me providing a large amount of demographic data on our graduates and faculty in addition to numerous examples of syllabi, exams, etc. for our classes. Several weeks after I submitted the report, I got a call from the ACS CPT. They wanted to know why I hadn't reported on our Biochemistry option for our ACS-certified degree. As near as I can figure, no student ever graduated under this option. I had it in my mind that a degree with a biochemistry emphasis might lure some students who might otherwise have declared as biology majors. In retrospect, this is somewhat ironic, since I've never had a biochemistry course myself. The ACS-CPT was about to introduce new guidelines for certified degrees which allowed for a great deal of flexibility in designing degree tracks with a specific emphasis, so I decided to take advantage of this. As I recall it, one afternoon I went down the hall to Paul Krause's office and we roughed out what is

essentially our current biochemistry track on a piece of scratch paper. We also took the opportunity to rework our existing certified degree track to eliminate what I felt were some deficiencies. Paul was excited about the biochem track in particular because he thought it might provide a means of attracting students in the prepharmacy program (a non-degree program) to a chemistry degree. Both tracks exposed students to all of the chemistry subdisciplines, but the biochem track included heavy emphasis on biology and required both biochem I and II, as well as biochem lab. The general track leaned more toward physical and inorganic chemistry, and included a significant number of math courses. It also required that the students take Advanced Analytical (the instrumentation course), which had been a seldom-chosen elective in the previous certified degree. The biggest change that these degree tracks incorporated was the elimination of the minor requirement. This allowed us to put in the science and math courses we thought were essential without increasing the overall hours required for the degree. This didn't necessarily preclude those students who wanted a minor from getting one however. The biochem track had what was very close to a biology minor built into it. The same was true regarding a math minor on the general track. Krause and I didn't accomplish all of this in one afternoon, and we obviously got the entire department involved, but this process eventually produced what are basically our current two certified degree tracks. These were subsequently approved through the university, and we began allowing students to opt for these degree tracks starting (I think) in 2008. The biochemistry track in particular was immediately very popular, and many students signed up for it right away. Declared majors on the biochem track far exceeded those on the general and non-certified degrees for years. These degree tracks represented the most substantive change in our major's curriculum in many years. If I had to identify one thing as the signature achievement of my time as chair, this curricular change is the accomplishment that I am most proud of.

In 2008, the Southwest Regional Meeting of the ACS was held in Little Rock. Karen Steelman, Kyle Felling, and I agreed to serve on the planning committee for the meeting. The planning committee had a dozen or so members from schools all over the state (mostly central Arkansas). The committee chair was Marty Perry from OBU. I also got to know Joe Jeffers from OBU. UCA's participation in planning the event was to organize the undergraduate activities for the conference. This involved numerous trips to Little Rock to meet with the rest of the committee. This was a very positive experience and I felt that we provided an excellent undergraduate program at the conference, including graduate school workshops, a career discussion panel, and a strong undergraduate research program. The ACS seemed very happy with how the meeting turned out.

As I alluded to earlier, it seemed that we were continuously under pressure from the administration to offer more sections of certain courses – mostly the service courses. It was difficult to get anyone beyond the dean to understand that this was essentially impossible for Chemistry with the number of faculty we had at that time. A possible explanation for this may lie in part in the fact that of the three Provosts that we had during the time I was chair (Esteban, Atkinson, and Grahn), none had a laboratory science background – although Grahn, a historian, was quick to note that he was a member of the ACS and had the coffee mug to prove it. One of the biggest advantages of ACS certification is the limit of 15 contact hours per semester per faculty. I repeatedly found it necessary to use this limitation to justify not adding additional sections. The problem was (and is) multifaceted. It was clear (to us) that the best solution to both meet instructional demand and to insure academic quality was to hire more faculty into tenure-track lines; however, to do this we would need to provide research space for them. The university's position on this was that there was no money to add the faculty lines or to come up with more laboratory space. This rationalization was difficult for many faculty to swallow given other (visible) expenditures that the university was making at that time, e.g., athletics,

administrative positions which seemingly served no purpose. In any case, the department was left in a difficult position - we couldn't assign more sections to existing faculty without risking our ACS certification, and we couldn't hire new permanent faculty. It was implicitly clear to me that the administration would have been happy for us to bring in more part-time temporary instructors; however, I and the department were reluctant to do this, since we believed that one of our greatest strengths has been, and remains, our excellent permanent faculty. Another solution that was put forth occasionally was that we should add a Master's program. Notably, this suggestion always originated from outside the department. The administrative rationale for a Master's program is that we could use the graduate students to teach labs and thus reduce the contact hours for faculty. This idea was frequently proposed by administrators outside the sciences (Esteban for one) who clearly did not understand the magnitude of the expenditures the university would have to commit to make it work. Also, he and other administrators didn't seem to understand that a Master's in Chemistry doesn't mean the same thing as a Master's in some other disciplines. To be fair, Gabe made sure I understood that he felt that this was something that could not be imposed, but would have to be initiated by the chemistry faculty. Surprisingly, the then Associate Dean of CNSM, Paul Hamilton (a biologist) thought a Master's program in Chemistry was a great idea, and said so to me on numerous occasions. Interestingly, he also emphasized that this was entirely a departmental decision when speaking directly to me or other chemistry faculty. However, (as near as I can tell) he brought it up with every prospective faculty member we interviewed while he was in the dean's office. This gave the impression that it was something that we were contemplating, and produced some awkward moments during a few interviews. To be clear, the chemistry faculty members were unanimous in opposing this idea, believing that we should focus on our strengths, namely excellence in undergraduate instruction (including research). I really appreciated this steadfast dedication from the chemistry faculty during my time as chair.

The other big challenge the department had to deal with during my time as chair was the concurrent credit program that the university had recently instituted. This initiative allowed high school students to receive UCA credit for certain classes that they were taking in high school. The high school student incurred no cost to participate. For example, a student takes World History at his/her high school and gets credit for World History here. For a high school course to qualify, it had to be shown that the content and rigor of the course was sufficient for it to be counted for university credit. A number of state colleges and universities had established such programs, and there was the general feeling that if we didn't do it too, then we would lose prospective students to these other institutions. Furthermore, the argument was frequently made that there was no mechanism to prevent a high school student from receiving concurrent-credit from another institution, then transferring that credit to UCA under the course-transfer index mandated by the ADHE. This indirect method of granting concurrent credit was frequently brought up as a potential "stealth" mechanism, but I didn't ever hear any direct evidence of it happening that much. Notably, the program also inflated our enrollments on paper. Implementation of the program was simple in principle, but much more complex in practice. In CNSM, the concurrent credit program resulted in a completely new layer of administrative oversight to attempt to maintain academic standards for participating high schools. At the time, however, it seemed as if we had little choice. Departments across campus were, let us say, *strongly encouraged* to designate courses which could be counted for concurrent credit. To keep the story short, I'll just note that in chemistry, we had great difficulty implementing this program for a number of reasons – not the least of which was the fact that we already had a system in place for awarding credit, namely the AP exam. These two mechanisms for granting credit fundamentally conflicted with each other. As an aside, I will note here that the issue of the CE/AP double-standard resulted in a lengthy debate with Conway HS regarding how the concurrent credit should be counted. There were also problems with course content and what UCA courses that content

should count toward. Furthermore, the concurrent credit program was generally unpopular with the faculty, who worried justifiably that awarding credit for courses which we really didn't have control over would diminish the quality of our degree. After wrestling with it for a couple of years, I unilaterally terminated Chemistry's participation in the concurrent-credit program. I already knew I was stepping down as chair, Dean Seidman was already on the way out, and we had an interim Provost, so I reasoned that in a year or so no one would be left who would remember what had happened anyway.

In summary, I think it's fair to say that the four years I was chair represented significant change in the university and the department. We had a new CNSM dean (Seidman), three provosts (listed above), and a president who was more than a little fast and loose with university finances. This eventually got him into real trouble – but that's a story for another time. We also had a number of faculty come and go within the department – both temporary and tenure-track. The increased enrollment discussed above was accompanied by a significant increase in the number of declared chemistry majors. There were policy changes as well. Guidelines for promotion and tenure became more formalized, and in my opinion more rigorous. This was essentially mandated from above, which bothered me somewhat on the face of it, but I don't necessarily think it's a bad thing.

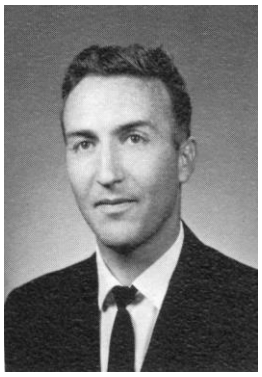
After two years of serving as chair, I announced to the faculty that I was going to step down as soon as another chair was hired. I had learned a lot about myself in those two years. In particular, I realized that I was not really interested in the administrative tasks associated with running the department. In particular, I was very uncomfortable with the part of the job which required me to evaluate and judge the performance of my colleagues. Finally, I missed the focused, contemplative nature of doing research much more than I thought I would. When I applied for the chair's position, Paul Krause spoke to me regarding "seasons" in a person's career. Specifically, he asked me if I was ready to move into the new phase in my professional life that the chair's job represented. In

retrospect, I was not. We conducted a search in the 2007/2008 AY which was unsuccessful. The search was re-opened the following year, Rob Mauldin was hired as the fourth chair of the chemistry department. Rob ultimately served five years as chair before stepping down. With the exception of whoever the incoming chair will be, I will have the dubious distinction of being the shortest-serving chair in the history of the UCA Department of Chemistry.

Faculty

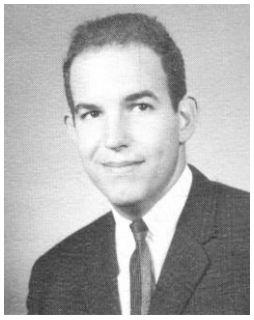
As for faculty affairs, Bryant (p. 94) points out that both Faculty Handbook and a Staff Handbook were put into place during the Farris administration. The AAUP censured UCA again in 2000 due to reported mishandling of faculty affairs as noted by Bryant (p. 123): "These items included the dismissal of a tenured professor without due process; disregard for standard procedures in denying tenure to a professor; termination of the employment of two professors without adequate notice, reasons, or opportunity to appeal; adoption of policies that allowed faculty members to choose between higher salaries or tenure; and denying the faculty its role in academic governance." Faculty voted no confidence in Winfred Thompson as president yet he continued to serve for 7.5 more years (Bryant, p. 123). AAUP's censure was removed early in Lu Hardin's tenure as president from 2002-2008 (Bryant, p. 130).

As with the other three time periods covered in this book, what follows is a listing of faculty members in the department, along with brief biographical sketches and pictures as available:



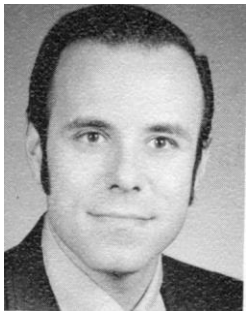
1967 Picture of Homer Rich, Chemical Education.

Homer Rich, M. S. (1965-68) At the time that Manion was hired as chemistry chair, Homer was enrolled in a 2-year masters degree program for high school teachers at Ole Miss. He was offered a teaching position at ASTC and taught general chemistry and physical science. He decided to pursue a doctorate in food science and went back to graduate school at Oregon State University, however he did not finish this program and then taught in the public schools in Northwestern Arkansas/Eastern Oklahoma for many years.



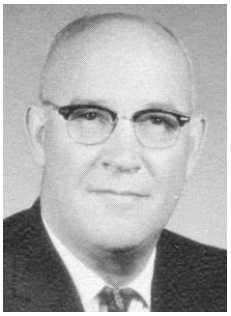
1966 Picture of Jerry Manion, Organic Chemistry.

Jerald M. Manion, Ph.D. (1965-2014) Jerry was raised in Beebe, received his B.S. from Harding and his Ph.D. from the University of Mississippi. He was hired at ASTC directly out of graduate school as professor and chair of the Department of Chemistry. He served as chair from 1965-1992 presiding over a doubling in the number of chemistry faculty from three to six. After stepping down as chair he remained first as a full-time and later as a part-time faculty member in the department. Active in campus affairs including a number of committee appointments, he served three different terms as President of the Faculty Senate and received the UCA Public Service Award in 1999. Jerry played banjo and served as spokesman for the Professors Band. Upon the retirement of Tom Burgess he assumed chairmanship of the newly formed premedical advisory committee a position he held for approximately 30 years. During this time the number of UCA students accepted to medical school increased from approximately 5 per year to about 20 per year.



1970 Picture of George Paul, Inorganic Chemistry.

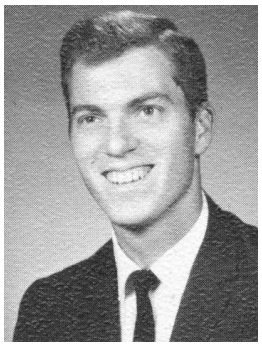
George Paul, Ph.D. (1965-2004) George grew up in Cedar Rapids, IA and graduated from Coe College there. He received his M.S. and Ph.D. in Inorganic Chemistry at Iowa State University where he measured dissociation constants for complexes containing rare earth metal ions bound with various ligands. The goal of this research was to develop more effective separations of rare earths. At one point about this time Parade magazine did an article on rare earths and George's picture was on the cover surrounded by containers filled with colorful rare earth salts. George taught general chemistry, quantitative analysis, advanced inorganic and physical chemistry. Art Hoyt ultimately took over quant and Paul Krause took over physical chemistry. During his first years at UCA, George was known for the gold Cadillac in which he would frequently take students on day road trips to as far as Fort Smith and back. In the classroom George was known for his methodical approach to teaching. Currently retired, George lives in Conway with his wife, Patsy.



1968 Picture of Chester Kennedy, Chemical Education.

Chester Kennedy, Ed.D. (1967-77) Chet served as a pilot in WWII and later received his Ed.D. in Chemistry at the University of Arizona where he studied the reaction of butyl lithium with ethers. He was teaching in the State College system of New York at Oneonta and applied for a position at ASTC. Chet was related to the Baldridges who lived in Conway and owned a house at the corner of Donaghey and Bruce and wanted to move closer to his roots. He taught general chemistry and the courses for the new allied health students in nursing and occupational therapy. He wrote a lab manual for the one semester organic class that was used on campus for many years. It contained a paper chromatography experiment for which we purchased a gallon of brown ink (contains several pigments). In 2013, we were still using that brown ink in a paper chromatography lab for our 1402 class. James Duke, a 1977 alumnus, had the following to say about Chester: “And Chester Kennedy taught biochemistry. He had a doctorate in education, so he had a bit of a different perspective. But he was a really good guy. A very fatherly

kind of guy. And I knew that he was a metallurgist and he would do lost-wax method to do gold jewelry, which I had never seen before, but he had a hood in his office to take care of the fumes." Once a biology major brought him a tarantula and he created a detailed replica of the spider cast in silver.



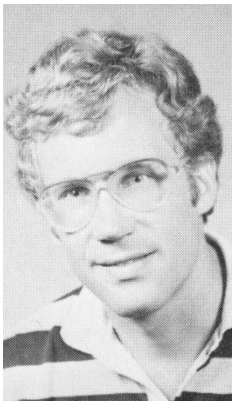
1969 Picture of Michael Rapp, Organic Chemistry.

Michael Rapp, Ph.D. (1968-1998) Mike received his B.S. in chemistry from Southeast Missouri State in 1964, his Ph.D. in Organic Chemistry from the University of Indiana in 1968, and immediately joined the ASTC faculty in fall, 1968. He taught primarily general and organic chemistry although he made a major contribution toward the teacher training program by developing and teaching a graduate course in laboratory management for high school teachers. Mike spent a year's sabbatical at the University of South Florida where he was involved in the synthesis of synthetic nucleotides as potential anti-cancer agents. Upon his return to UCA, he began a research program in the same area. Mike received the University Teaching Award in 1989 and the Public Service Award in 1997. Mike retired in 1998 and continues to live in Conway with his wife, Sharon. Long active in church and community activities, he currently devotes his time to these efforts and to their two daughters and grandchildren.

Picture of Arthur Hoyt, Analytical Biochemistry.

Arthur Hoyt, Ph.D. (1969-1992) Art grew up in Conway and received a B.S. degree from ASTC in 1962, an M.S. in 1966 and a Ph.D. in Analytical Biochemistry from Purdue in 1969. He taught primarily quantitative analysis and biochemistry. He spent two academic years and several summers on sabbaticals to hone his research skills. He developed the first continuing research program in the department involving analytical methods development and centered on capillary flow electrophoresis which he learned during a sabbatical at the University of Tennessee with Dr. Michael Sepaniak. James Duke, a 1977 graduate of the UCA Department of Chemistry, had the following to say about Art: "And I took Quant with Arthur Hoyt and that was a great class. He usually had

his class on Friday afternoons, but I had to go back to Jacksonville where I worked every weekend. He let me take the class back in the area where the professors sat and drank coffee." Art retired in 1992 and after working in the Biochemistry Department at UAMS, retired to his home in Wooster, then to southern Missouri where he pursued his hobbies of classic car restoration and woodworking. He currently resides in Mountain Home.



1978 Picture of Paul Krause, Physical Chemistry.

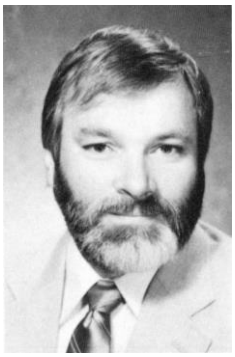
Paul Krause, Ph.D. (1977-2012) Paul grew up in Racine, Wisconsin and received his B.S. from Dubuque College in Iowa after a short stint at the U.S. Air Force Academy. He completed his Ph.D. in Physical Chemistry at the University of Iowa. After a post-doctoral position at the University of Pittsburg he joined the faculty at Miami University of Ohio as a temporary instructor. At UCA he taught primarily general chemistry and physical chemistry where he was noted for incorporation of innovative techniques into his teaching. He partnered with Jerry Manion for approximately 30 years in outreach activities involving programs of science demonstrations. They also partnered on a research project measuring the rate of isomerism of ionones thereby providing senior research projects for a number of students. Paul received the UCA Teaching Excellence Award in 1994. He retired in 2012 and continues to reside in Conway with his wife, Marlyn.

1986 Picture of Karen (Casey) Weaver, Organic Chemistry.

Karen (K. C. or Casey) Weaver, Ph.D. (1985-present) Casey received her B.S. in chemistry at Marietta College and joined the UCA chemistry faculty in 1985 as an Instructor (ABD). In 1987, after completing her Ph.D. at Ohio University, her faculty rank was changed to that of Assistant Professor. She teaches organic chemistry and chemistry classes for the health sciences. Casey has explored interests in computer science over the years and has served in the capacity of a summer advisor in the UCA Academic Advising Center and as one of the

department's pre-pharmacy advisors. In a September 24, 2014 e-mail, Casey noted that when she interviewed at UCA, she had a job offer in hand, but noted she was impressed by "how Jerry and the other four members of the department treated me. It brought back to mind my early roots in Texas, and 'Southern hospitality'…it felt like 'home.'"

Gary Skiles, M.S. (1987-88) Gary received a B.S. in chemistry from UCA in 1983 and a master's degree in instrumentation from the University of Texas, Dallas. Gary served as a one-year replacement for Arthur Hoyt who was on sabbatical at the University of Tennessee.

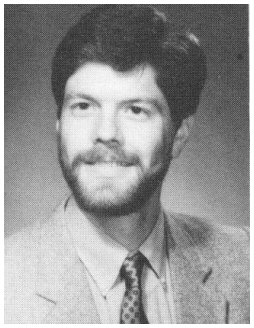


1989 Picture of Tom Groshens, Inorganic Chemistry.

Tom Groshens, Ph.D. (1988-1990) Tom received his Ph.D. from Iowa State University where he worked for a number of years as a research associate in synthetic inorganic chemistry. He taught general chemistry and inorganic chemistry at UCA. He resigned after two years and accepted a position with the National Bureau of Standards.

1991 Picture of Beverly Fithen, Inorganic Chemistry.

Beverly Fithen, Ph.D. (1990-91) Beverly received her B.S. degree at Louisiana Tech where she did research with Bill Deese, a 1976 graduate of UCA. After completing her Ph.D. in inorganic chemistry at the University of Arkansas-Fayetteville she joined the UCA chemistry faculty in a tenure-track position in inorganic chemistry. After accepting the position at UCA, she became engaged and then returned to northwest Arkansas where she was married.

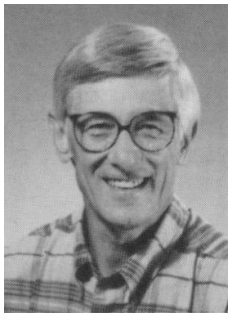


1991 Picture of Bill Taylor, Physical Chemistry.

Bill Taylor, Ph.D. (1990-present) Bill received his B.S. from Hendrix College and his Ph.D. in physical chemistry from Louisiana State University. After graduate school, he worked as a developmental scientist for Extrel, a mass spectrometer company for two years. Bill's hire marked a new chapter in research expectations for new faculty members in the department, with arguably one of the most successful research programs in chemistry in our history. At UCA, he has taught college chemistry, physical chemistry and advanced analytical chemistry. Bill received the University's research award in 2001 and served as chair of the department from 2005-2009. Bill's research specialty is gas phase ion-molecule reactions. He generates metal ions via a sputtering process and allows them to react with a variety of molecular substances in a drift cell. His work is conducted using a mass spectrometer obtained from NCTR (Pine Bluff) that has been modified specifically for this research.

Picture of Cameron Dorey, Analytical Chemistry.

Cameron Dorey, Ph.D. (1991-2011) Cameron received his B.S. from Virginia Tech and his Ph.D. at the University of Georgia. He held a post-doctoral position at the U.S. Air Force Academy before joining the faculty at Wichita State University. He then joined the UCA faculty in 1991 and taught general chemistry as well as quantitative analysis and advanced analytical chemistry. Cameron was active in writing grant proposals and received grants for development of a quantitative analysis lab based on clinical chemistry, the purchase of a GC-MS spectrometer, and the purchase of 2 mass spectrometers: an LC-quad system for biological compounds and a MALDI-TOF instrument for analysis of large molecules. He left UCA in 2011 for a position in private industry.



1993 Picture of Conrad Stanitski, Inorganic Chemistry.

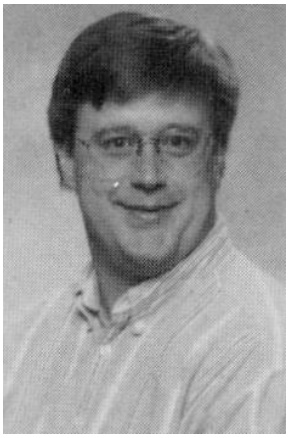
Conrad Stanitski, Ph.D. (1992-2005) Conrad received a B.S. from Bloomsburg State Teachers (Pennsylvania), a masters from Northern Iowa, and a Ph.D. in Inorganic Chemistry from the University of Connecticut. He taught at Georgia State University and held administrative positions at Franklin & Marshall (Assistant to the President) and Mount Union (Provost). Conrad joined the UCA chemistry faculty as chair in 1992. Conrad presided over a rapid expansion in both the size of the department and its research activities. Under his direction the number of faculty members expanded from 7 to 14 and each of the additional faculty members developed a program of research incorporating undergraduate students as active partners. Early in his tenure in 1995 he was able to complete the process of obtaining approval of the department's program from the ACS Committee on Professional Training (CPT) which allowed the department to award ACS approved undergraduate degrees. He was also instrumental in the design and construction of a new building (Laney Hall) for the chemistry department. Conrad played a significant role in the broadening of the department's mission in the area of Biochemistry; hiring new faculty in that area and obtaining CPT approval for an ACS certified major in biochemistry. Conrad was active in the American Chemical Society and served as chair of the Chemical Education Division, the Chemical Heritage Foundation and Project Kaleidoscope. Conrad was a prolific writer and authored a number of college level textbooks in Chemistry including two sponsored by the ACS: "Chemistry in the Community" and "Chemistry in Context." He received the 2013 George Pimentel Award in Chemical Education. Conrad was an avid tennis player and an accomplished musician, both clarinet and vocal, singing in the UCA University Choir. After retirement he was named a University Professor Emeritus. Conrad retired to Lancaster, PA where he held a position as visiting scholar at Franklin and Marshall. He and his wife, Barbara, currently reside in Lancaster.

Picture of Patrick Desrochers, Inorganic Chemistry.

Patrick Desrochers, Ph.D. (1992-present) Pat received his B.S. from Sacramento State University and his Ph.D. in inorganic chemistry from the University of Arizona. He has taught general and inorganic chemistry, conducting an active program of research in the syntheses of transition metal complexes most recently in collaboration with Rick Tarkka. He actively uses chemical demonstrations in lab and students make effective use of his office hours. Pat won the University Teaching Excellence award in 2001 and the University Research Award in 2004. Both Conrad Stanitski and Pat Desrochers were hired in the same year and an article in the *Log Cabin Democrat* had their biographies switched, leading to the nickname of Doogie Howser since Pat, with his youthful appearance, gave the impression of a child prodigy because of the mix-up. Pat began as chair of the department on July 1, 2014.

1995 Picture of Pat Draves, Biochemistry.

Pat Draves, Ph.D. (1993–2002) Pat grew up in Rhode Island and received her B.S. from Bryn Mawr, her Ph.D. from Illinois in 1991, and served as a post-doctoral research associate at the University of Texas. She filled a vacancy in biochemistry (after Hoyt's retirement) and was instrumental in the expansion of the department in that direction. She was able to obtain significant external funding for her research and also an NIH-AREA grant to purchase computers for a program in biochemical modeling. In 2000, she was appointed to the position of Assistant to the Undergraduate Dean. In 2002, Pat and her husband, Jeff moved to Monmouth College where he assumed the position of department chair and she joined the faculty. Later she became Provost at Mount Union.

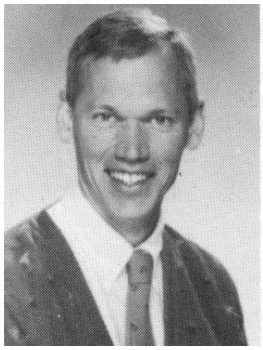


1995 Picture of Pat Draves, Biochemistry.

Jeff Draves, Ph.D. (1993-2002) Jeff received his B.S. from Monmouth College (1985) and his Ph.D. from the University of Illinois (1990). He worked in Austin, TX for a commercial firm. His specialties were spectroscopy, computational chemistry and environmental chemistry. He developed the department's program in environmental chemistry. Jeff left UCA to assume the position as Chair of the Department of Chemistry at his alma mater, Monmouth College. He later moved with his wife, Pat, to Mount Union College where he currently (2014) serves as department chair there.

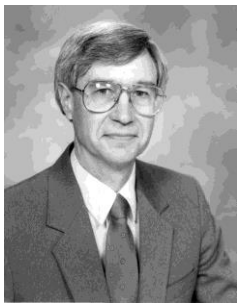
Jim Hood, Chemical Education, Computational Chemistry.

Jim Hood, Ph.D. (1995-1997) Jim received his B.S. from Southwest Missouri State and his M.S. and Ph.D. degrees in chemical education and educational computing from Purdue. He taught at Middle Tennessee State from 1991-1995.



Bob Bergen, Biochemistry.

Bob Bergen, Ph.D. (1995-1998) Bob received his Ph.D. in biochemistry from Iowa State University in 1985. Before coming to UCA he taught at the University of Wisconsin – La Crosse. He left UCA to accept a research position at the Mayo Clinic.



John Mosbo, CNSM Dean and then UCA Provost.

John Mosbo, Ph.D. (1996-2001) John earned the B.A. in Chemistry from the University of Northern Iowa and the Ph.D. from Iowa State University. John was hired as Dean of the College of Natural Sciences and Mathematics and was later promoted to Provost in 2000. John left UCA in 2001 to accept a position at Gustavus Adolphus College in St. Peter, Minnesota.

Craig Wesolowski, Ph.D. (1999-2002). Craig received his B.A. from the University of Wisconsin – La Crosse and a Ph.D. from the University of Iowa in 2000. He was hired as a replacement for Mike Rapp and was an organofluorine chemist . This produced his primary contribution to an NSF grant proposal for our 300 MHz NMR which was the writing of an undergraduate laboratory experiment involving the synthesis reaction that produced a fluorohydrocarbon that was examined by F-19 NMR. Craig left UCA to join his fiancée as a pharmacy student in Iowa.

Lori Isom, Biochemistry.

Lori Isom, Ph.D. (2000-present) Lori earned the B.S. in Chemistry from the University of Oklahoma and a Ph.D. in biochemistry from the Georgia Institute of Technology. Lori has involved many students in research in the area of computational biochemistry. She has been extremely active in departmental, college, and university service and won the university-wide teaching award in 2006. Lori was promoted to the rank of Professor in 2014.

Rick Tarkka, Organic Chemistry.

Rick Tarkka, Ph.D. (2001-present) Rick received his B.S. from the University of Prince Edward Island and his Ph.D. from Queens College. He did postdoctoral research at the University of Illinois. Rick was hired as a permanent replacement for Jerry Manion who had entered into a phased retirement contract with UCA. Rick arrived on campus in time to participate in the selection and purchase of the 300 MHz NMR and has pioneered the use of Green Chemistry in the department as well as microwave synthesis. He has primarily taught organic chemistry including organic spectroscopy. He has conducted research in a variety of areas including polymer synthesis and chemical education. Recently, Rick as taken on a leadership role in the department in the area of assessment of student learning outcomes. Rick was promoted to the rank of Professor in 2013.

Don Perry, Physical Chemistry.

Don Perry, Ph.D. (2002-present) Don earned the B.A. in Chemistry in 1993 from the University of Nevada at Las Vegas and a Ph.D. in Physical Chemistry in 2000 from the University of California, Irvine. Prior to joining UCA, Don served in a post-doctoral research position at the University of Texas. He has taught College, Physical, and Environmental Chemistry and served as the Environmental Science/Chemistry track coordinator for many years. Don has obtained extensive funding for his work with undergraduate chemistry students in the surface chemistry of nanoparticles and has disseminated that work in many journals. Don was promoted to the rank of Professor in 2014.

K. Nolan Carter, Organic Chemistry.

K. Nolan Carter, Ph.D. (2003-present) Nolan earned a B.S. in Chemistry in 1997 from the University of Arkansas and a Ph.D. in Organic Chemistry in 2003 from Colorado State University. Nolan has involved undergraduate students in synthetic organic chemistry involving free radicals. Nolan won the university-wide teaching award in 2009.

Melissa Kelley, Biochemistry.

Melissa Kelley, Ph.D. (2003-present) Melissa earned a B.S. in biochemistry in 1994 from Kansas State University and a Ph.D. in Biochemistry and Molecular Biology from Oklahoma State University in 2000. Prior to joining the faculty at UCA, Melissa served as a post-doctoral research associate and visiting instructor in the Department of Biochemistry and Molecular Biology at Oklahoma State. Melissa has involved undergraduate students in research in the area of vitamin A metabolism and has been successful in obtaining external funding from the NSF and NIH-INBRE to support this research. Melissa was promoted to the rank of Professor in 2015.

Karen Steelman, Analytical Chemistry.

Karen Steelman, Ph.D. (2004-present) Karen earned a B.A. in Chemistry in 1998 from Hendrix College and a Ph.D. in Chemistry in 2004 from Texas A&M University. Karen participated in a museum internship in 1996. Karen's work in graduate school was continued at UCA and has involved many students in the research area of a unique and relatively nondestructive method of sampling archaeological artifacts for carbon-14 dating. Karen also has obtained extensive external funding and has published her work in a variety of books and journals. Karen also has been active as a co-mentor of the chemistry club. Karen was promoted to the rank of Professor in 2016.

Darrin Gainer, M.S. (Fall, 2004) Darrin grew up in Oklahoma and received a B.S. from UCA and an M.S. from UALR. Darrin has been a high school chemistry teacher at Greenbrier and has been a significant and positive influence on many science students there. He was hired at UCA as a one-semester temporary faculty replacement.

Gary White, Ph.D. (Spring, 2005) Gary grew up in Conway. He received a B.S. from UCA and a Ph.D. from the University of Texas. He worked as an industrial chemistry for Exxon, Nalco and Aramco gaining extensive expertise in corrosion inhibition and emulsion breakers. He worked in Saudi Arabia and England as well as the U.S. He retired to

Conway and worked for a time as a consultant. Ultimately, he accepted a position as a high school chemistry teacher at Conway High School and is currently retired with his wife, Joan. He was a one-semester temporary faculty replacement.

Linda Desrochers, Chemistry.

Linda Desrochers, B.S. (2005-2014) Linda Desrochers received her B.S. in chemistry from Texas Tech University. She was hired to teach lab courses at UCA in August 2005 and continued to help the department for 9 years as a lab instructor. She also worked temporarily as lab coordinator for the UCA Department of Chemistry. Linda has worked part-time at Hendrix College, assisting with the preparation of chemistry teaching labs.

Micah Abrams, Computational Chemistry.

Micah Abrams, Ph.D. (2006-2008) Micah received his B.S. from UCA and a Ph.D. in computational chemistry from Georgia Tech. After a six-month post-doc at Virginia Tech he joined the UCA faculty. He left UCA to work for a software company on the east coast and now owns his own company.

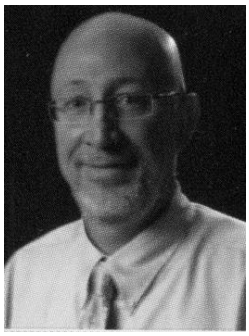
Faith Yarberry, Analytical Chemistry..

Faith Yarberry, Ph.D. (2006-present) Faith earned the BS in Chemistry from the University of the Ozarks and a Ph.D. in Analytical Chemistry from the University of North Texas. Faith began at UCA in January of 2006 as a visiting assistant professor and was hired permanently as a Lecturer I in 2010. Faith has been active in chemical education research, including retention initiatives and the development of teaching labs for general chemistry. She also has served as a resident master for Hughes Hall and the

STEM Residential College. Faith was promoted to the rank of Lecturer II in 2015.

Kyle Felling, Inorganic Chemistry.

Kyle Felling, Ph.D. (2005-2010) Kyle earned a B.A. in Chemistry with a Minor in Religion from Hendrix College in 1999, followed by a Ph.D. in Inorganic Chemistry from the University of Texas in 2002. He then served as a post-doctoral research associate at the South Dakota School of Mines and Technology for one year and then an Assistant Professor of Chemistry at the same institution for two more years before his time at UCA. Kyle left UCA to accept a position with Southwestern Energy.



Robert Mauldin, Analytical Chemistry.

Robert Mauldin, Ph.D. (2009-present) Rob earned his undergraduate degree in chemistry with a minor in philosophy from the University of Tennessee at Martin and a Ph.D. in Analytical Chemistry from the University of Tennessee. Having served as a faculty member at Georgia Southern University and Shawnee State University in Ohio, Rob was director of general education for 11 years at Shawnee State. Beginning in 2009 as Chair of the Department of Chemistry, Rob focused his energies on improving the safety of the teaching and research labs, assessment of student learning outcomes, facilities, and increasing student retention. Rob Mauldin returned to a full-time faculty position in 2014. He is enjoying teaching and scholarly pursuits, such as finishing this joint project that began in collaboration with Dr. Jerry Manion: *A History of Chemistry at UCA*.

Emily Malcolm, Chemistry.

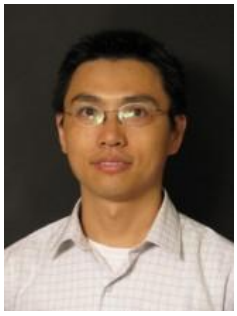
Emily Malcolm, M.S. (2011-2012) Emily earned the B.S. in Chemistry and Biology from UCA in 2007 and the M.S. in Chemistry from Georgia Tech in 2010. She served as visiting assistant professor for one year, filling the faculty position vacated by Cameron Dorey. Emily is now pursuing a Ph.D. at the University of Iowa.

Kristin Dooley, Physical Chemistry.

Kristin Dooley, Ph.D. (2012-present) Kristin completed the B.S. in Chemistry and in Applied Mathematics at UCA in 2004 and then a Ph.D. in Physical Chemistry from Texas A&M University in 2009. While at UCA, Kristin was an undergraduate research student for Bill Taylor. After graduate school, Kristin worked as a post-doctoral research associate at Arkansas State University. Kristin then joined the faculty at UCA in 2010 and served as a full-time, temporary faculty member from two years, first to fill Kyle Felling's position and then as a sabbatical replacement. Kristin was hired as an Assistant Professor of Chemistry in 2012, taking the faculty position in physical chemistry vacated by Paul Krause. Kristin has been active in the chemistry club and involving undergraduate students in research in laser spectroscopy.

Lance Bridges, Biochemistry.

Lance Bridges, Ph.D. (2006-2011). Lance earned a B.S. in Biochemistry in 2000 from John Brown University and a Ph.D. in Biochemistry in 2003 from the University of Oklahoma Health Sciences Center. Lance then served as an NIH post-doctoral research associate at the University of Virginia Health System. At UCA, Lance was active in involving students in research in the area of biochemistry. Lance left UCA to accept a faculty position at East Carolina University.



Lei Yang, Inorganic Chemistry.

Lei Yang, Ph.D. (2011-present) Lei earned the B.E. degree in Material and Chemical Engineering from Guilin University of Technology in China, the M.S. in Chemistry from Nankai University in China, and a Ph.D. in Inorganic Chemistry from the University of Oklahoma. Lei has been active with involving undergraduate research students in the area of synthesis of air-reactive compounds. He has taught both intermediate and advanced inorganic chemistry, general chemistry, and organic spectroscopy.

Katherine Marvin, Bio-inorganic Chemistry.

Katherine Marvin, Ph.D. (2011-2013) Kathy earned a Ph.D. in Bio-inorganic Chemistry from the University of Wisconsin-Madison in 2007 and a B.S. in Chemistry from Ball State University in 1997. Kathy served as a full-time temporary faculty member for two years, filling the faculty position vacated by Lance Bridges. Bridges' faculty line was filled by Tori Dunlap in 2013.

Victoria Dunlap, Biochemistry.

Victoria (Tori) Dunlap, Ph.D. (2013-present) Tori earned a B.S. in Chemistry at UCA in 2007 followed by a Ph.D. in Biochemistry from the University of Kentucky in 2013. While at Kentucky, Tori also taught at Bluegrass Community and Technical College. At UCA, Tori has been involved with the pre-med advisory committee and has guided undergraduate students in biochemistry research. While at UCA (then Tori O'Bannon), Tori served as a math and science tutor and Dr. Lori Isom was her research mentor.

Bryce Marquis, Bioanalytical Chemistry.

Bryce Marquis, Ph.D. (2012-2015) Bryce earned a Ph.D. in Analytical Chemistry in 2010 at the University of Minnesota in Minneapolis, where he participated in the Preparing Future Faculty Program. Prior to joining the faculty at UCA, Bryce worked for two years as a post-doctoral research associate at the National Institute of Standards and Technology. Bryce, a bioanalytical chemist, filled the position vacated by Cameron Dorey. Bryce's research focused on damage to DNA using liquid chromatography-mass spectrometry. Bryce left UCA in 2015 in order to join UAMS in Little Rock as a research faculty member.

Kimberly Reynolds, Biochemistry.

Kimberly Reynolds, Ph.D. (2013-2014) Kim earned a B.S. in Mathematics and Minor in Chemistry from UCA in 2007, followed by a Ph.D. in Biochemistry and Molecular Biology from UAMS in 2013. Kim served as a full-time, temporary faculty member in the department in order to assist in handling the increased demand for our freshman-level courses.

Josh Moore, Applied Science/Chemistry.

Josh Moore, Ph.D. (2014-2015) Josh was hired in the summer of 2014 to assist with increased demand for general chemistry classes during the fall semester of 2014. Josh earned a B.A. in Chemistry and Secondary Education with a minor in Biblical Studies from Ouchita Baptist University. Josh then taught chemistry, physics, physical science, and earth/environmental science at Malvern High School from 2007-2009. Josh decided to further his education and attended graduate school at UALR from August 2009 - May 2014, earning an M.A. in Chemistry and Ph.D. in Applied Science with a Concentration in Chemistry.

Nilu Larroya-Runge, Biochemistry.

Nilu Larroya-Runge, Ph.D. (2015-present) Dr. S. Nilu Larroya-Runge has a Master's and Ph.D. in Biochemistry from Punjab Agricultural University and Post Graduate Institute of Medical Education and Research, respectively. She completed two postdoctoral fellowships in biochemistry at St. Louis University and The Ohio State University before coming to University of Central Arkansas in 1991. She worked as a part-time faculty member in the UCA Department of Biology, teaching endocrinology, microbiology, and introductory biology while taking care of her two children from 1991-2011. In 2011, she took a year-long, full-time instructor's position at UACCM, teaching physical science and general chemistry. Thereafter, Dr. Runge returned to UCA and started teaching for the Biology department again before joining UCA's Department of Chemistry in the spring semester of 2015 as a Visiting Assistant Professor, teaching general, organic, and biochemistry and biochemistry laboratory.

Gregory Naumiec, Organic Chemistry.

Gregory R. Naumiec, Ph.D. (2015-present) Dr. Gregory Naumiec, an organic chemist, joined the chemistry faculty at UCA in 2015, filling the vacancy left open by the passing of Dr. Jerry Manion. Greg earned a B.S. in Biochemistry from the State University of New York at Geneseo in 2005, followed by a Ph.D. in Organic Chemistry from the University of Rhode Island in 2010. While in graduate school, Greg helped to modernize the organic chemistry laboratory and published two novel experiments in the *Journal of Chemical Education*. Greg then served as a postdoctoral fellow for the PET Radiopharmaceutical Sciences, Molecular Imaging Branch of the National Institutes of Health in Bethesda, Maryland until 2015. Greg is involving undergraduate students in laboratory research at UCA, with an emphasis on the development of drug candidates to treat tropical diseases.

Nathan Meredith, Analytical/Inorganic Chemistry

Nathan A. Meredith, Ph.D. (2016-2019) Dr. Nathan Meredith is a bit of a hybrid chemist specializing in both inorganic and analytical chemistry. He received his B.S. in Chemistry and Mathematics from the University of Alabama in Huntsville in 2010. From there, he went on to complete his Ph.D. in Chemistry at the University of Notre Dame (2015) where he studied inorganic actinide chemistry. He investigated various factors that may influence the incorporation of Np(V) into U(VI) compounds expected to form during nuclear waste disposal as part of his dissertation research. He then moved to Colorado State University where he conducted research in environmental applications of microfluidic paper-based analytical devices (μPADs) during a two-year post-doctoral appointment. In the fall of 2016, Dr. Meredith joined the faculty at the University of Central Arkansas as an Assistant Professor.

Juliette Rivero, Organic Chemistry

Juliette Rivero, Ph.D. (2016-2017) A native of Colombia, Dr. Juliette Rivero joined the chemistry department at UCA in August 2016 as a visiting assistant professor. After successfully completing her Ph.D in organic chemistry at the University of Arkansas, she worked as a researcher and instructor at the same university. Her research was focused on developing practical and scalable synthetic routes to build small libraries of azole derivatives as possible anti-fungal agents. Juliette has taught organic chemistry I and II, physiological organic chemistry and her current teaching responsibilities at UCA include College Chemistry I and II.

Marsha Massey, Inorganic Chemistry

Marsha Massey, Ph.D. (2016-Present) Dr. Marsha Massey, an organometallic chemist, joined the department in 2016 as a lecturer to assist with an increasing demand for introductory chemistry courses. Marsha earned an Associate of Arts degree at the Oxford College of Emory campus and continued to the main campus in Atlanta to ear a B.S. in chemistry from Emory University in 2010. Marsha earned her Ph.D. in chemistry from the University of North Carolina at Chapel Hill in 2016 with a focus in inorganic chemistry. While in graduate school, Marsha studied and synthesized organometallic complexes for carbon dioxide reduction catalysis. At UCA, Marsha teaches college chemistry and introductory chemistry for health sciences and looks forward to conducting research with undergraduate students.

Burt Hollandsworth, Inorganic Chemistry

Burt Hollandsworth, Ph.D. (2017-2018) Dr. Hollandsworth joined the chemistry department at UCA in the fall semester of 2017 for a one-year appointment as visiting assistant professor. He earned a B.S. in chemistry from Roanoke College in 1999 and then a Ph.D. in organometallic chemistry in 2006 from The Ohio State University. Prior to joining the faculty at UCA, Dr. Hollandsworth served as an adjunct professor at Capital University in Ohio from 2003-2004, a lecturer at The Ohio State University, Mansfield Campus from 2004-2005, a postdoctoral research associate at University of South Carolina from 2005-2006 and an assistant/associate professor at Harding University from 2006-2017. Dr. Hollandsworth has accepted a faculty appointment at Lyon College beginning in the fall semester of 2018.

Soumana Daddy, Biochemistry

Soumana Daddy, Ph.D. (2017-2019) Dr. Daddy joined the UCA Department of Chemistry in the fall semester of 2017 as a visiting assistant professor. He earned a B.S. in Biochemistry/Microbiology in 2005 from the University of Bamako in Africa and the B.S. in Agricultural Engineering in 2006 from the Institute of Rural Technology and Applied Research in Mali, Africa. He then earned an M.A. in Applied Chemistry in 2010, an M.S. in Applied Sciences in 2015, as well as a Ph.D. in Applied Chemistry in 2015, all from the University of Arkansas at Little Rock.

Makenzie Long, Physical Chemistry

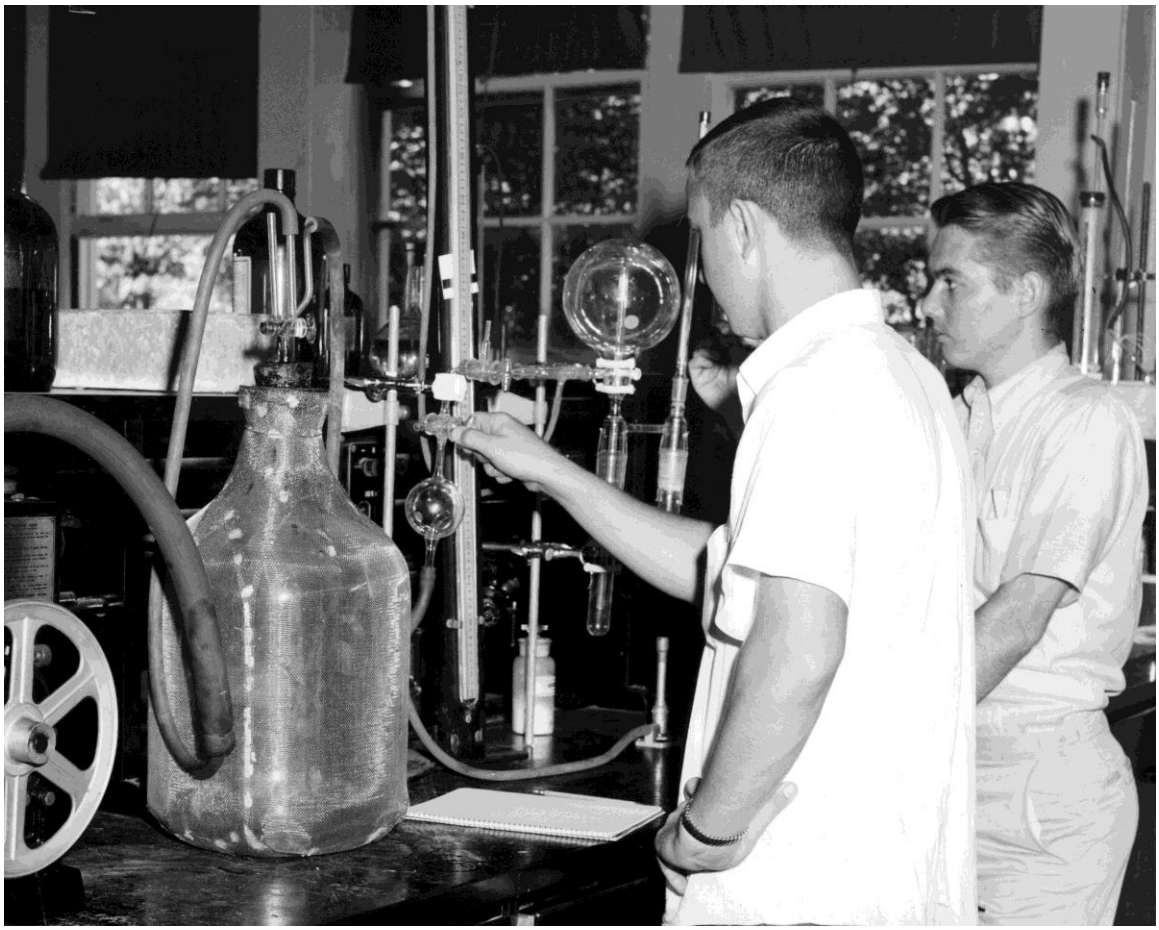
Makenzie (Provorse) Long, Ph.D. (2017-Present) Dr. Makenzie Long is a computational chemist with research interests in condensed phase chemistry. She joined the chemistry faculty at UCA in the fall semester of 2017. Dr. Long received her B.S. in chemistry from Kansas State University in 2009 and a Ph.D. in Physical Chemistry from the University of Minnesota in 2014. Her Ph.D. research used theoretical quantum chemistry methods to model proton-coupled electron transfer (PCET), which has applications in biological catalysis and energy conversion processes. As a postdoctoral scholar at the University of California Merced (2014-2017), Dr. Long used combined quantum/classical computational methods to study electronic excitations of aqueous chromophores and investigated unphysical peak-shifting predicted by real-time-dependent density functional theory. Her current research aims to understand the interactions of DNA with functionalized surfaces via hydrated metal cations using classical molecular dynamics simulations and combined quantum/classical active-learning based teaching materials for an undergraduate quantum chemistry and spectroscopy course.

Julie Eberle, Biochemistry

Julie (Davis) Eberle, Ph.D. (2018-Present) Dr. Julie Eberle earned a Ph.D. in Biochemistry in 2018 from the University of Arkansas, with research aimed at the understanding of mutant forms of human acidic Fibroblast Growth Factor. She joined the UCA Department of Chemistry as a visiting assistant professor to begin in the fall semester of 2018. Dr. Eberle is a 2014 alumnus of UCA, having completed a B.S. in chemistry, emphasis in biochemistry, with a minor in Honors Interdisciplinary Studies.

1965-present Facilities

Chemistry remained in the Cordrey Science Building until the B. A. Lewis Science Center was constructed in 1966, at which point Chemistry shared the building with Biology and Physics.



Two students conducing an experiment in a chemistry lab in the Cordrey Building. Chemistry was located in the Cordrey Building from 1908-1966.

Denver Prince, while on leave in graduate school at Oklahoma State University in 1964, reported that both Faril Simpson and Ralva Bass, interim chairs of the Departments of Chemistry and Physics respectively, brought blueprints for the Lewis Science Center to Oklahoma for him to review. The Lewis Science Center was then

expanded in 1985 and Computer Science was added to the building. The Lewis Science Center was named after B. A. Lewis, who was Chair of the Department of Teacher Education and Psychology, followed by serving as the founding dean of the graduate school beginning in 1955 (Burdick, p. 74).

From 1966-1985, Chemistry shared the original Lewis Science Center with Biology and Physics. Then, from 1985-1995, Chemistry shared the enlarged Lewis Science Center with Biology, Physics, and Computer Science. Burdick commented on the design of the Lewis Science Center (p. 184): "An important feature of the new science building, attributable in part to Dr. Buffaloe's [Chair, Biology] planning, was the inclusion of a private laboratory adjunct to each faculty office. In addition to the obvious encouragement to faculty research, there was the increased likelihood of students observing professionals at the business of their profession, a prime learning situation."

Picture of B. A. Lewis Science Center from the 1981 Scroll. Chemistry moved to the Lewis Science Center in 1966, and remained there until 1994.

Jerry Manion had the following statement regarding the move to the Lewis Science Center in 1966:

We had summer school that first summer (1966) and offered College Chemistry I and II and Organic Chemistry I and II. Dean Burdick was a bit skeptical that we could adequately cover organic in the summer, but as always gave me my request and allowed me to add it. Students would do organic experiments on a macroscale from 10 AM to 1 PM in temperatures above 90 ^{o}F. They were a hardy group. The balances that we used in quant were the old double pan analytical balances and the newest equipment available were the bomb calorimeter, the Beckmann pH meter, and the refractometer that Bob Hankins describes as being bought when he was a student in 1950.

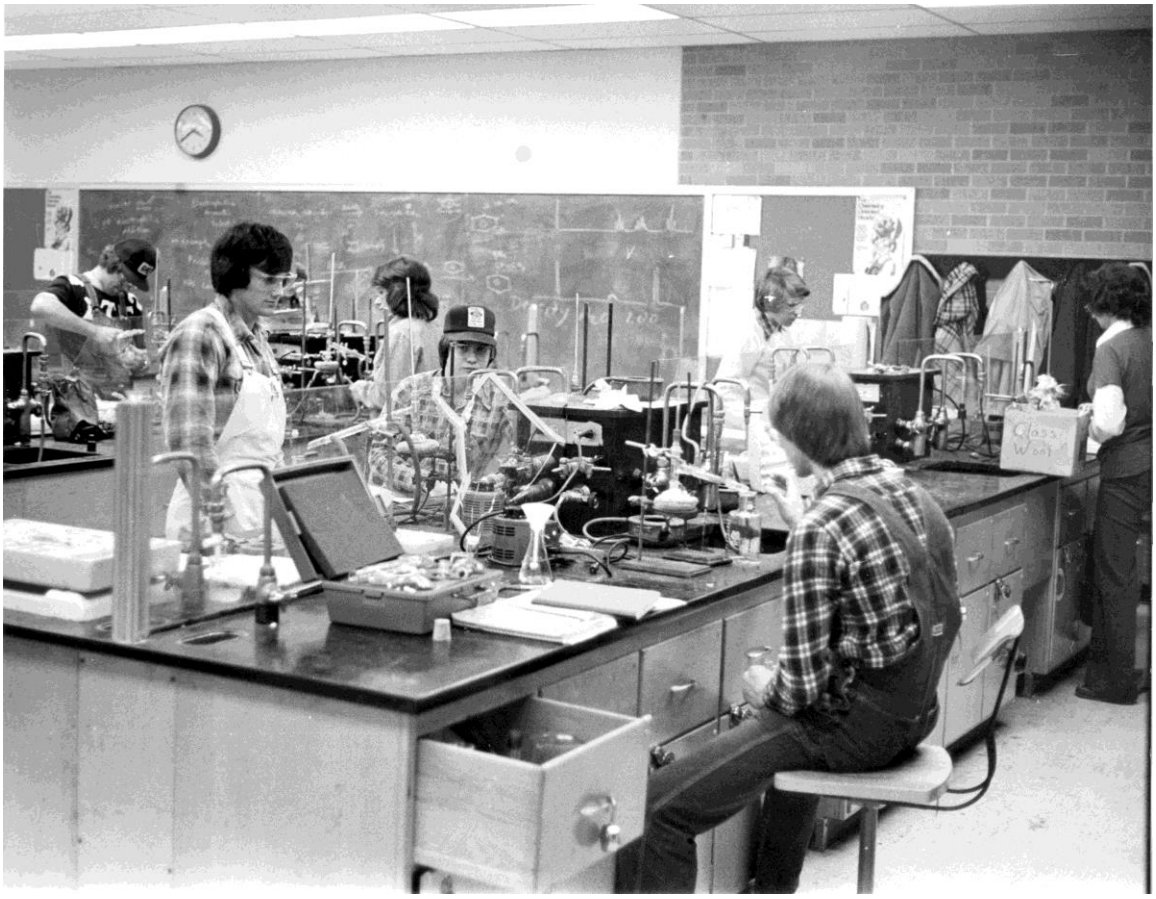
Plans for the Lewis Science Center were already developed when I came on campus. Apparently, this had been one of the last substantial acts that Joe Smith [as Chair of the Department of Physical Science from 1958-1964] had done and he did a very good job. The new building contained two 24 person freshman labs, 24 person labs for organic and for quantitative analysis as well as a physical chemistry lab. The two freshman labs shared a balance room and a prep room. The organic lab had a prep room, quant had a prep room and a balance room and physical chemistry had an adjoining storeroom, balance room and three instrument rooms. There were 5 large faculty offices each of which included research space with a lab bench, sink and hood. The general stockroom was long and narrow and designed so that each of the five teaching labs had a dutch door leading directly into the storeroom. The dutch doors were heavy and folks would often lean on them so that it was not long before their hinges began to pull loose and had to be reinforced. At the south end of the storeroom was what was called the "bomb" room for storage of solvents and other hazardous chemicals. It was constructed with specially reinforced sidewalls and a roof that was separated from the rest of the roof so that in case of an explosion the force would go up rather than out.

The furniture was designed by the Kewanee furniture company and they greatly over furnished the building so that the contract for furniture would be larger than necessary. One discovery I made was that they had included no cabinets with drawers for small items such as corks and rubber stoppers. I had them go in and modify the furniture design to include these items which are still in use in the current stockroom. Interestingly, when the contract was bid, the low bidder was Hamilton furniture company with the result that we wound up with maple furniture instead of the oak that we would have received from Kewanee. When we moved to Laney, we brought some of the furniture with us and they threw out a great deal of it. Wilbur Owen got wind of the fact that they were throwing solid maple lab benches into trash bins for disposal. He pulled several out and my son and I rescued two of them; one of which I have now in my storage building at home.

I was present at the opening of bids for the construction of Lewis and I remember that the total bid was about 1.1 million dollars. It was very close with Nabholz being low. There were a number of alternates that

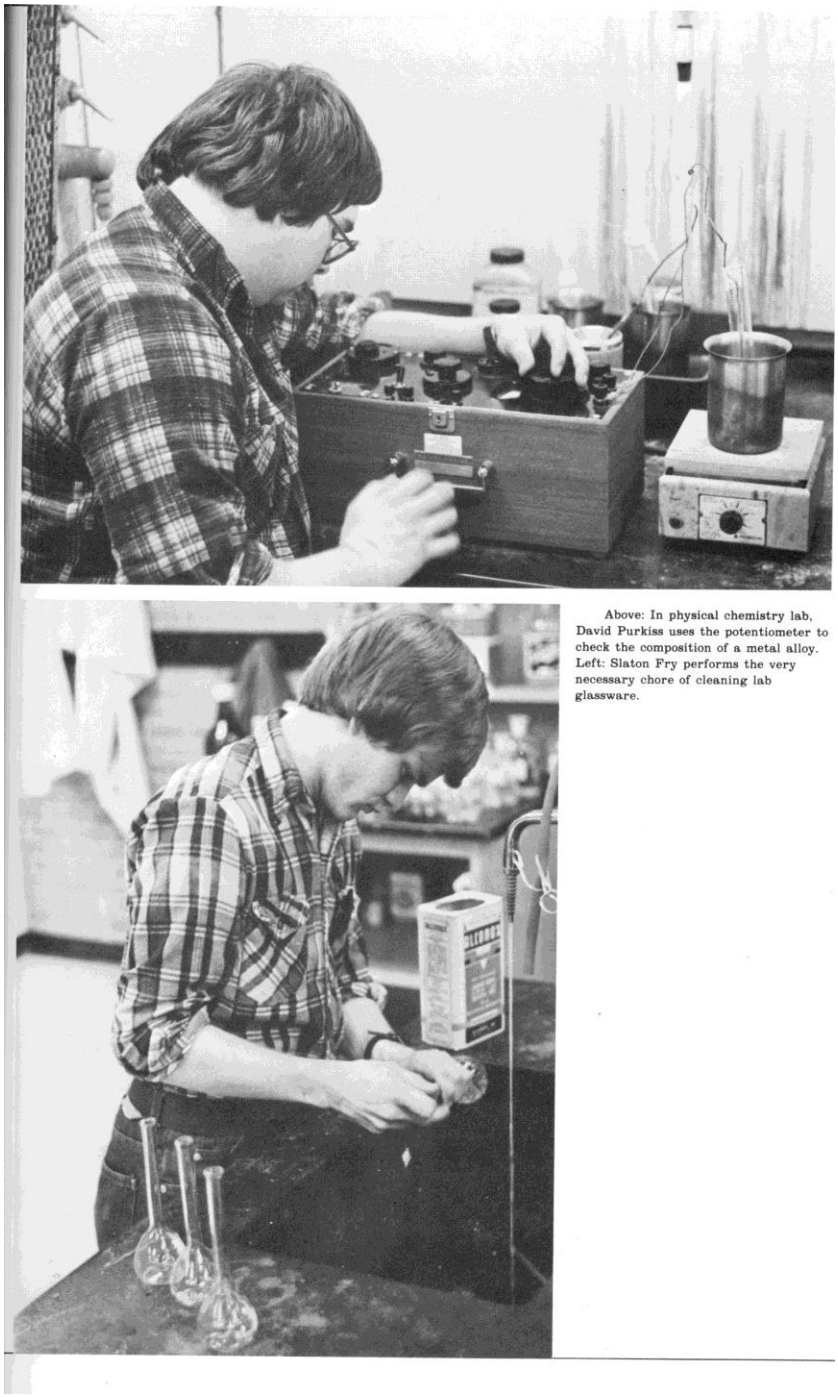
we could choose and depending on the ones selected the low bidder could become a different company. Because of this we were advised to accept alternatives that preserved the overall low bidder. One of the alternates that Silas Snow pretty much insisted on keeping was the brick walls on the inside. He thought that concrete block looked cheap. I remember that a couple of alternates that we did not get were terrazzo floors and direct current wired to the benches in the P. Chem. lab. One of the great things that we kept were the real slate blackboards. I never completely appreciated them until we moved into Laney and got these crappy ones.

Note that the move into Lewis constituted a shift in educational philosophy. Until then all lecture classes were necessarily small because there were no large lecture rooms. In Lewis, the large Biology lecture room seated 250 students and the physics/chemistry lecture room seated 350 so lecture classes could be made very large and divided into smaller groups for labs. This was efficient, but it increased the work load for faculty because to teach 96 freshman students would have required something like 24 contact hours (12 lecture and 12 lab) in Cordrey, but in Lewis this could be done with 9 contact hours (3 lecture and 6 lab). Freshman labs were taught in adjacent 24-student labs and one faculty member would run labs in both rooms simultaneously with (hopefully) an undergraduate assistant in each room. Every student had his own locked drawer with equipment he was responsible for. In the freshman labs this constituted around 500 drawers. There were 96 lockers (drawer on top and cabinet below) in the organic lab and we ultimately outgrew this upon which we divided each locker into two by giving one student the drawer and another student the cabinet below. At that point, we built a cabinet at one end of the lab and kept the specialized ground glass stuff there and these were shared by all lab sections.



1978 Picture of Organic Chemistry Laboratory in the Lewis Science Center.

In the Lewis Science Center, Chemistry had total use of a 40-student lecture hall and shared a 250-student lecture room with physics. Classes were allowed to grow much larger than had been done previously. The space available for laboratory instruction and faculty offices was a total of 11,500 ft^2.

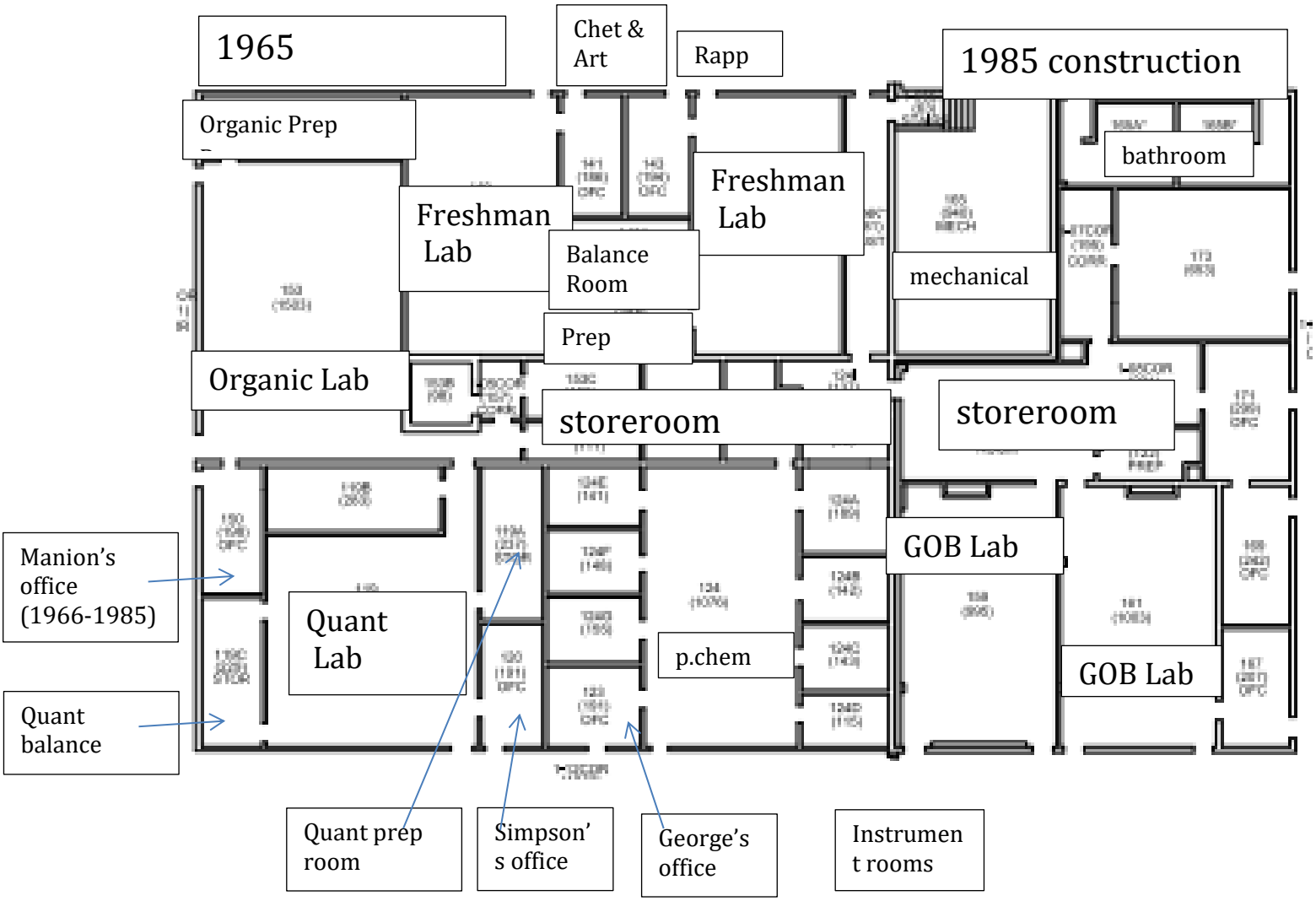


Above: In physical chemistry lab, David Purkiss uses the potentiometer to check the composition of a metal alloy. Left: Slaton Fry performs the very necessary chore of cleaning lab glassware.

1980 picture of student David Purkiss using a potentiometer and student Slaton Fry cleaning glassware in the Lewis Science Center.

When an addition was made to the Lewis Science Center in 1985, the department gained shared use of a second large lecture hall with a capacity of 75. Also added were two general chemistry labs, a

community research lab, a stockroom extension, a departmental office and two faculty offices. This addition brought the total space available to the Chemistry Department to slightly over 16,000 ft^2 plus the shared lecture hall.



Floor plan for Chemistry in Lewis Science Center, sketched by Jerry Manion.

When Lewis was expanded to the rear, the architect was chosen based on the split-level plan that they proposed and which was ultimately built. The new chemistry space consisted of two adjacent labs for the health science sequence, and extension of the stockroom, a small research lab and adjoining instrument room, a department office (now Physics), a chair's office and another faculty office. In addition,

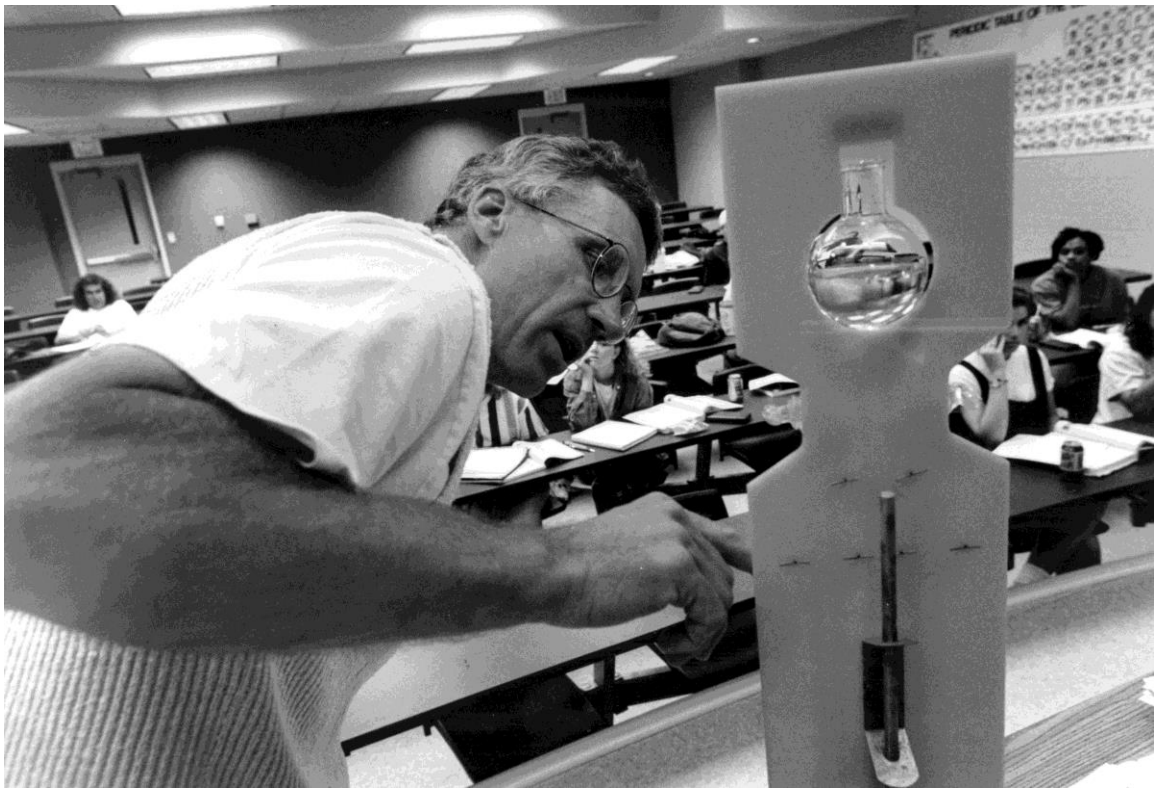
Chemistry shared with Physics the middle of the three steeply tiered lecture rooms. The expansion also included room for computer science for the first time.

Then, in 1994, Laney Hall was constructed on the site of the former Ben T. Laney Industrial Education Center (also named after Ben T. Laney, former governor of Arkansas from 1945-1949 (Worley, p. 121)), just south of, and later attached to via the Laney Annex, the Prince Center on Bruce Street. Ben T. Laney was a "one-time student and star infielder for the Normal School, better known as governor of Arkansas" (Worley, p. 38). Chemistry classes were offered for the first time in Laney Hall in the fall semester of 1995.

The way that we wound up in Laney is bizarre. Win Thompson had arranged to build the current Irby building to mirror McAlister on the front of the campus and when bids came in, they were much lower than the money they had for the construction. This money had to be used for new construction so they decided to erect another building. So here was a building looking for a purpose. For several months they debated about what department to move into the new building. At one time it was communication (radio and TV) and for a while we talked about moving all of the freshman science courses into it. The building was offered to Physics, but they rejected it because they didn't want to leave the planetarium, the telescope and the particle accelerator for which they had built a special room during the Lewis expansion. So they finally got around to offering it to Chemistry, the most expensive of the sciences to build for. We had a meeting about it and several of us were skeptical. Cameron Dorey suggested that we take the offer only if they upped the money by 2 or 3 million dollars and I have contended since it was built that we actually lost floor space in the move. I know that we lost in terms of quality of construction.

Anyway we ultimately got a new building and again it resulted in a shift in teaching philosophy. Conrad supported the building partly (I think) because he had some ideas about building design and educational philosophy that he wanted to try out. The largest change was that students no longer had their own equipment which leads to much more breakage and irresponsibility on the part of students, but that has been alleviated somewhat by the levying of a new lab fee. (I recall that Si

Snow used to brag that we charged one tuition and that there were no hidden fees such as those charged by many schools - times change). So we went from having 7 instructional labs to the current 5 instructional labs. We gained more faculty offices and more research space.



Faculty member Paul Krause teaching in a Laney Hall classroom.

I think that the Laney Annex was built at a later time. It was built to house faculty offices for the physical therapy department. When they built the PT building, we expanded into that space and got the two research labs in Prince that Bill and Karen now have. As you can tell I am not a fan of Laney. Too much space is unusable because it is taken up by hallways, bathrooms and stairs. I'm not sure what percent of the total space is devoted to chemistry instruction, but it seems very small to me in comparison to Lewis.

Ben T. Laney, as Jerry Manion noted, was a governor of the state of Arkansas from 1945-1949 and a graduate of Arkansas State Normal School in 1924 (*Arkansas Democrat-Gazette*, Tom Dillard). Dillard also noted that Laney was known for the Revenue Stablization Act which required a balanced state budget each fiscal year. Governor Laney also

"secured passage of a bill to create the Arkansas Legislative Council" that reviews annual budgets and proposed legislation (Dillard). Dillard also wrote that Laney was known for a defense of segregation: "Laney did not run for a third term in 1948. He should have retired to one of his farms, but instead, as one historian has written, he 'turned from the good government issues to the construction of a regional defense of segregation.' President Harry Truman had proposed civil-rights legislation to eliminate the poll tax, eradicate lynching, create a federal fair-employment program, and halt segregation on interstate transportation – and this had caused a backlash in the South." The site of the current Laney-Manion Hall originally had the Ben T. Laney Building, a building for industrial arts. As noted by Minton in his History of UCA (p. 308): "It was completed by October 4, 1948, and the name of the building was approved at that time as the Ben T. Laney building."

Faculty members (left to right) Cameron Dorey, Conrad Stanitski, and Jeff Draves pictured in the "Quant Lab" in Laney Hall.

The construction of Laney is quite different from Lewis. Laney has five lecture halls on the first floor, with two general chemistry labs and offices on the second floor, faculty offices and three upper-level labs on the third floor, and a stockroom on the fourth floor. The amount of space on each of the other three floors for labs, offices and storage is 16,000 ft^2 - the same as was occupied in Lewis. Two significant differences were that the number of faculty offices increased from 7 to 12 and the amount of space devoted to research increased from about 400 ft^2 to about 1400 ft^2. This was made possible by the fact that there was a decrease in instructional labs from 7 to 5 and also a decrease in the amount of space devoted to storage and preparation, most of which is now in the 4^{th} floor stockroom.

Picture of Pat Draves, faculty member in chemistry, in her research lab in Laney Hall.

In 1999, the completion of the new Physical Therapy building allowed Chemistry to expand into the Laney Annex. This expansion provided 900 ft^2 in research space and 1200 ft^2 in office and storage space.

2013 picture of Laney Hall (left) and the Laney Annex (middle). On the right is the Prince Center, which is connected to the Laney Annex.

As of the writing of this book, Chemistry continues to occupy Laney-Manion Hall, and since 1995 not only have we expanded into the Laney Annex, but we also have two rooms in the Prince Center (135 and 136) that have been converted to research labs for Drs. Steelman and Taylor, respectively. We are now at 16 faculty members who are involving undergraduate students in research more than ever before. As such, we have converted all of the space possible to research space and are at capacity now in terms of our research space. In order to relieve some of this pressure for research space, in 2015, we were given another

research lab in the Prince Center. It is important to note that the UCA Board of Trustees, at the recommendation of President Tom Courtway, voted to approve the re-naming of Laney Hall to Laney-Manion Hall, in recognition of the life and work of Dr. Jerry Manion.

Curriculum

Given the magnitude of change during this time period, rather than detailing all of the changes in curriculum associated with each bulletin edition, the approach taken during this time frame is to look at selected bulletins in order to outline major curricular changes. As such, the exact dates of some of the curricular changes might not be listed in this summary, however, it is our hope that the major curricular changes are represented.

The **1966-67 Bulletin** includes changes to the chemistry curriculum patterned after the curriculum Jerry Manion completed at Harding University. In this bulletin, there are descriptions of three chemistry degees: B.S.E., B.S. and B.A. The three degrees had much in common, including College Chemistry I and II, Organic Chemistry I and II, Quantitative Analysis, Physical Chemistry I and II, Calculus IV, a year of German, and a year of General Physics. In addition to these requirements, the B.S.E. degree allowed hours for education courses and then had six hours of electives and Physics 4410, and Electricity and Magnetism. The B.S. degree required more chemistry and science courses by way of 10 hours of upper division electives, a two-hour Chemical Literature Course, and a two-hour Senior Research course, as well as a recommendation of Differential Equations, and a recommendation of Modern Physics. The B.A. degree required no additional coursework besides the courses in common listed above. This bulletin also included an increase in the number of hours required for a minor in chemistry (from 15 to 24 hours). Another addition was the "Major Honors Program in Chemistry" which required a junior or senior to have a GPA of 3.0, completion of not less than two semesters of

research, writing a report, and a "satisfactory score on the Graduate Record Exam in chemistry." And finally, a new addition was the Graduate Studies (Master of Science in Education, Major in Physical Science) for the sake of secondary science teachers. The requirements included a plan of study, six hours in professional education courses, 18 hours in chemistry and physics, with at least 6 semester hours of each, and at least nine hours of 6000-level courses in physics and chemistry. Also required was Special Problems in Chemistry in which a research report was required.

In **1970**, the B.S.E. degree was changed by only requiring through Calculus III, rather than through Calculus IV. The B.S. degree was altered by requiring 6 rather than 10 hours of upper-division electives, and Science and Engineering Physics (calculus-based) was required rather than General Physics. For the B.A. degree, a year of German was no longer required.

In **1977-78**, the B.A. degree was deleted, leaving the B.S. with Major in Chemistry (requiring completion of a minor) and the B.S.E. with Major in Chemistry. The minor in chemistry was altered, now with the requirement of 19 hours in chemistry (a decrease from 24 hours) and completion of Physics 1410-1420, College Physics (algebra-based), with three hours required at the upper division. There was not a required inorganic course, such that inorganic chemistry likely was covered in College Chemistry and other courses. The current chemistry curricula require an inorganic course. There was, however, an advanced inorganic course and students were encouraged to take upper-level electives beyond the required courses as noted in the following statement: "Students electing a major in chemistry receive instruction in the four classical areas of chemistry and then may build on this by enrolling in more advanced elective courses in the area of interest." At that time, note that biochemistry was not considered one of the four classical areas of chemistry and was not required for this degree as it is today,

with the ACS now recognizing five foundational areas of chemistry. Much like inorganic chemistry, however, there were two advanced courses in biochemistry that students could take to count toward electives: Biochemistry (CHEM 4300) and Advanced Biochemistry (CHEM 4370). Also a change to the Master of Science in Education, major in Physical Science was included in which education hours were increased from 6 to 9. General Science continued to be offered as a major under the BS in Education and the BS degree.

In the **1988-1990** Bulletin, the Honors Program in Chemistry included removal of the statement that students "will be expected to make a satisfactory score on the Undergraduate Record Examination in Chemistry." For the B.S. with Major in Chemistry, the B.S.E. with Major in Chemistry, and the Minor in Chemistry, a statement was added that excluded CHEM 3300 (Principles of Biochemistry) and CHEM 4300 (Connections: A History of Technology). Both of these courses appeared for the first time in this bulletin. A course was added that remains an important part of the chemistry curriculum today: CHEM 3111, Organic Spectroscopy. This is a one-hour course that has a co-requisite or prerequisite of CHEM 3411, Organic Chemistry II. The course number was later changed to CHEM 3211, a two-hour course. Another important course, CHEM 4112, a one-hour capstone seminar in Chemistry, was added. A new course CHEM 4290/5290, Chemical Literature, was added and required for both the B.S. and B.S.E. with Major in Chemistry. Also, CHEM 2440, Introductory Organic Chemistry, was added as a service course that did not count toward a chemistry major.

In the **1998-2000** Bulletin, the new B.S. with Major in Chemistry, ACS Certified was described. Additional chemistry classes for this degree program included CHEM 4380 (Advanced Inorganic Chemistry) and CHEM 4385 (Topics in Advanced Chemistry). Two hours of research were required for this degree program in order to meet a requirement of the ACS for laboratory hours beyond general chemistry. This degree, along with the B.S. with Major in Chemistry, had the stipulation that the

following two courses could not count toward these degrees: CHEM 3300 (Principles of Biochemistry) and 4301 (Laboratory Management). The course description for CHEM 4301, Laboratory Management, includes goal of providing "school science teachers with skills needed to integrate laboratory exercise efficiently and safely into the science curriculum." The previous B.S. with Major in Chemistry is described as "Non-ACS certified" in order to distinguish it from the ACS-certified degree and had the same requirements as the previous B.S. with Major in Chemistry. Both B.S. degrees now required CHEM 4112, Seminar. The minor in chemistry remained the same except for exclusion of a new course CHEM 4301 (Laboratory Management) in addition to the previous exclusion of CHEM 3300 (Principles of Biochemistry). There was a change of course number from CHEM 2411 to CHEM 3411 (Organic Chemistry 1). The requirement of six hours of German was removed. CHEM 2440, Introductory Organic Chemistry, was removed from the listing of chemistry courses. The minor in chemistry was changed once again, with an increase in hours back to the previous 24 hours, and with more specificity in terms of required courses was put in place with the requirement of CHEM 1450, 1451, 3520, and 11 hours at the 2000 level or above, excluding CHEM 3300 (Principles of Biochemistry). This bulletin also included removal of the Master of Science in Education, Major in Physical Science from Chemistry offerings, including cross-listed 4000/5000 level courses in Chemical Literature, Environmental Chemistry, Advanced Inorganic Chemistry, Physical Chemistry I, Physical Chemistry II, Biochemistry and Special Problems in Chemistry. Also removed from the listing of CHEM courses graduate-level courses CHEM 5390, Workshop for High School Teachers, CHEM 6300, Laboratory Demonstrations in Chemistry, CHEM 6320, History of Chemistry, and CHEM 6340, Modern Chemistry.

In the **2004-2006** Bulletin, CHEM 4290 (Chemical Literature) was changed to CHEM 4190 (from a two-hour to a one-hour course) for the ACS track. CHEM 3360 (Intermediate Inorganic Chemistry) was listed as excluded from the ACS track since Advanced Inorganic is required. CHEM 4320, Biochemistry I, is now required for the ACS track. For the "Non-ACS certified" track, CHEM 3300, Principles of Biochemistry, is

allowed in place of CHEM 4320, Biochemistry I. CHEM 3360, Intermediate Inorganic, is added as a requirement for the BS with Major in Chemistry as well. The minor in chemistry was changed, with two possible tracks: CHEM 1450, 1451, 2401, 3520 or 3411, and 7 hours at the 3000 level or above if CHEM 3520 were taken; if CHEM 3411 were taken, then 8 hours at the 3000 level or above were required. There was a change in hours for CHEM 3111 to CHEM 3211 (Organic Spectroscopy). For the ACS track, CHEM 4385 (Topics in Advanced Chemistry) was deleted as an option. For both tracks, PHYS 1410 and 1420, College Physics I and II (algebra-based) were allowed "if approved in advance by the chair of the Department of Chemistry" although in practice College Physics was allowed as a matter of course, without permission from the department chair.

The **2008-10** Bulletin included the addition of the new ACS-certified track in biochemistry with the calculus-based physics track as required and new courses of CHEM 4121 (Biochemistry Lab) and CHEM 4335 (Biochemistry II) as required for the new track. As with the standard track, two hours of research are required in order to meet ACS requirements. The biochemistry track also required five BIOL courses: BIOL 1440 (Principles of Biology I), 1441 (Principles of Biology II), 2490 (Genetics), 3402 (Cell Biology), and BIOL 4420 (Microbiology). No minor is required with the biochemistry track, however, students are close to a minor in biology with the required biology courses. This bulletin also included deletion of CHEM 4190 (Chemical Literature) from the ACS Certified "Standard Track" (first use of that name to distinguish it from the new ACS-certified Biochemistry Track). Also, CHEM 3300 (Principles of Biochemistry) or 4320 (Biochemistry I) is allowed rather than just CHEM 4320. For the ACS-certified degree there are added choices of electives: CHEM 3360 (Intermediate Inorganic Chemistry), 4335 (Biochemistry II), 4351 (Environmental Chemistry), and 4385 (Topics in Advanced Chemistry).

The **2015-16** bulletin includes deletion of CHEM 3300 (Principles of Biochemistry) from all course listings, with Nutrition meeting their

accrediting body requirements via the General, Organic, and Biochemistry (Physiological Chemistry) year-long sequence. The Minor in Chemistry remains at 24 hours, but eliminates the two tracks, with simplified language of CHEM 1450 (College Chemistry I), CHEM 1451 (College Chemistry II), and CHEM 2401 (Organic Chemistry I) with chemistry electives at the 3000-level or above, to total at least 24 hours, excluding CHEM 4301 (Laboratory Management). CHEM 4301 remains in the bulletin even though it has not been taught in many years. The university's general education program was changed a few years prior, with the designation of a 38-hour lower-level component and a 9-hour upper-level component. The upper-level component was determined by each degree program and Chemistry decided to have their majors take these courses outside of our department with the hope of broadening their educational experience at the university. The Major in Environmental Science, Chemistry Track, is now listed with Chemistry offerings and includes additional chemistry and math requirements. Also featured under the Department of Chemistry's section of the bulletin is the statement "Students are no longer admitted to the B.S.E. in Secondary Science Education. UCA STEMTeach is now the path to licensure in science education." This program is patterned after the University of Texas' UTeach program in which students get a major in a traditional degree program such as Chemistry and then earn the equivalent of a minor in education. Also, this bulletin includes the deletion of Cell Biology from required courses in the ACS-certified Biochemistry Track, in order to accommodate a decrease in total required hours for four-year degrees from 124 to 120 semester hours.