

Yang receives Foundation grant

Dr. Lei Yang has received a \$500 faculty development grant from the Hunt/Farris Family Development Fund awarded by the UCA Foundation. This grant will be used to help fund Dr. Yang's travel expenses to participate in the Virtual Inorganic Pedagogic Electronic Source program.

Yang receives ASTA award

Dr. Lei Yang was awarded \$25,448 for his project "Activation of C-H bond by binuclear transition metal complexes with nitrous oxide"

Marquis receives research grant

Dr. Bryce Marquis received \$7,001 from the UCA Research Council for a project entitled "Identifying Metabolites Associated with Longevity in *C. elegans* with Exceptionally Long Lifespans.

Perez receives Outstanding College Student Award

Sergio Perez, an international student from Bolivia, majoring in biochemistry-premed, was selected as the outstanding student in the College of Natural Sciences and Mathematics for 2014. Sergio excelled academically. He has also been active in departmental outreach activities, as a student tutor and has served as President of the local ACS Student Affiliate. He has conducted research with Dr. Karen Steelman.

Faculty and Students attend National ACS Meeting

Seven faculty members and fourteen students attended the National American Chemical Society Meeting held in Dallas in March 15-18. Students who attended presented posters describing the research they have conducted in collaboration with UCA Chemistry faculty. The UCA Student Affiliate of the ACS received an outstanding chapter award for the second consecutive award. This award was accepted by Sergio Perez, the current president of the local chapter. A complete report on the trip including pictures of students with their posters can be found at [report](#).

Perry and Isom promoted

Dr. Don Perry and Dr. Lori Isom were notified by Provost Steve Runge that their promotion to full professor had been approved by the Council of Deans. Dr. Perry is a very active researcher in the area of surface enhanced IR spectroscopy and nanotechnology. Dr. Isom is a past winner of the UCA Teaching Excellence and her research involves studying factors that affect the shape of DNA molecules.

Adam Morrow awarded fellowship

Dr. Adam Morrow, a 2008 UCA chemistry graduate was recently awarded an American Heart Fellowship to provide support while he pursues post-doctoral research at the University of South Alabama. The research is aimed at identifying how aggregation of tau proteins resulting from lung infections leads to dementia. He has begun a fund raising campaign to fund his research. You can learn more about the research and donate to the campaign at

<https://www.microryza.com/projects/can-lung-infections-lead-to-dementia-or-other-cognitive-deficits>

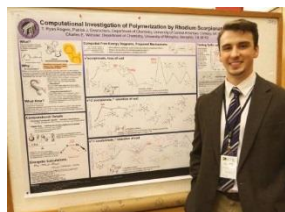
Carter and Yang awarded University research grants

In November, 2013 Dr. Nolan Carter and Dr. Lei Yang received notification of funding by the UCA Research Council. Dr. Lei Yang was awarded \$7,350 to pursue his research related to "*Activation of Alkanes by Multicopper Clusters/Polymers with Pyridyl Amide Ligands.*" Dr. Yang maintains an active program of research in inorganic chemistry in collaboration with undergraduate student researchers. Dr. Nolan Carter received \$3,440 for the "*Characterization of Valine Radicals.*" to support his ongoing research in organic chemistry.

Student Affiliate Repeats as Outstanding Chapter

For the second consecutive year the UCA Chapter of the ACS Student Affiliates has been named an outstanding chapter. Notification was received in a letter from Dr. Marinda Li Wu, the current President of the ACS. The award will be presented at the 247th ACS National Meeting to be held in Dallas, TX in March 2014. From a total of 367 chapters nation-wide only 53 were so honored. The award is based on the activities of the organization during the 2012-2013 academic year and results from the efforts of its officers, President - Jordan Wilkerson, Vice-President - Amanda Wallace, Secretary - Amanda Hanson, Secretary - Ethan McMoran, and Treasurer - Johnathon Schmidt. The activities on which the award was based include a number of outreach activities, service projects on campus and social events. Faculty sponsors who have served as facilitators for the students are Dr. Karen Steelman, Dr. Faith Yarberry and Dr. Kristin Dooley.

Students win awards at INBRE meeting



Ryan Rogers



Julie Davis

Under the direction of Dr. Pat Desrochers, two chemistry students won awards at the INBRE meeting in Fayetteville on October 19, 2013. Julie Davis's oral presentation, entitled "Evaluating the Effectiveness of Supported Nickel Scorpionates to Select for Specific Amino Acids" earned **first place in Chemistry** and Ryan Rogers' poster presentation entitled "Computational Investigation of polymerization by Rhodium Scorpionates" award was recognized with an **honorable mention**.

Dr. Lori Isom publishes papers

Dr. Lori Isom published two research articles during the summer of 2013. The first, entitled "DNA phosphate crowding correlates with protein cationic side chain density and helical curvature in protein-DNA crystal structures" was published in *Nucleic Acids Research*. The second article was published in *PLoS ONE* with the title of "Cations form sequence selective motifs within DNA grooves via a combination of cation-pi and ion-dipole/hydrogen bond interactions." Both research publications had undergraduate research students as co-authors.

Dr. Patrick Desrochers publishes book chapter.

The book, "NMR Spectroscopy in the Undergraduate Curriculum," published in January, 2013 contains a chapter written by Dr. Patrick Desrochers titled "Beyond Undergraduate Experiences: Routine Measurements with Heteronuclear, Heterogeneous and Paramagnetic Samples". The book is based on a symposium of the same name that was held at the Spring, 2010 ACS national meeting. Dr. Desrochers presented at the symposium and was later asked to contribute a chapter to the book. Examples cited in the chapter are primarily based on experiments conducted by Dr. Desrochers and his student collaborators. These experiments span his twenty years on the UCA faculty. Dr. Desrochers is a past recipient of both the University Teaching Excellence Award and the Research and Scholarly Activity Award.

Graduating Senior Awards - Spring, 2013



From left: Li Chen Chen, Jordan Wilkerson, Dr, Faith Yarberry, Amanda Hanson, Ryan Parker, Claire Desrochers, Amanda Wallace

Annual awards were presented to graduating senior chemistry majors at the departments spring picnic. Receiving awards for service were Jordan Wilkerson and Amanda Wallace. Research awards went to

Amanda Hanson and Li Chen Chen. Distinction in academics awards were presented to Claire Desrochers and Ryan Parker. Ryan also received the Manion Award for overall excellence which included a \$500 gift certificate.

ACS Spring National Meeting - 2013

The UCA Chemistry Department was well represented at the spring meeting of the American Chemical Society held in New Orleans, La. Eight faculty members and nineteen students from UCA attended the meeting. The students made poster presentations of their undergraduate research and participated in a variety of activities designed for undergraduate affiliates. The UCA Chapter of the ACS Student Affiliates received an outstanding chapter award and the officers gave oral presentations describes the many social, service and professional activities of the local chapter. One highlight of the trip was T-shirts that were designed for the trip designed by Li Chen Chen that featured a molecule in the shape of a Mardi Gras mask on the back. These caught the attention of representatives of the ACS and are displayed in a video featured on the C&EN web site at <http://cen.acs.org/articles/91/i17/Scenes-American-Chemical-Society-Meeting.html>.



From Left: Dr. Dooley, Dr. Steelman, Amanda Hanson, Elizabeth Collins, Li Chen Chen, Ethan McMoran, Ryan Parker, Dr. Kelley



Unique T-shirt designed for trip to New Orleans

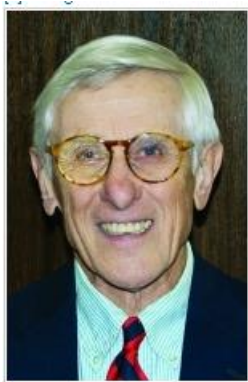
Manion - Longest Serving UCA Employee



Dr. Mauldin & Dr. Manion

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 continues until present, for a total of 48 years of service to UCA. Pictured are Dr. Robert Mauldin, department chair, and Dr. 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.

Former chair receives Pimentel award



Dr. Conrad Stanitski

Conrad Stanitski, UCA Chemistry Department Chair from 1992-2005, was awarded the 2013 George Pimentel Award in Chemical Education. After receiving his PhD at the University of Connecticut in 1971 Stanitski joined the faculty at Georgia State University. While there he began his long and prolific career as an author. He moved to Randolph Macon in 1971 and later served as an American Council on Education fellow in academic administration at Franklin and Marshall. He became Provost at Mount Union College in 1988 and Chemistry Chair at UCA in 1992. Since his retirement from UCA in 2005, he has served as a visiting scholar at Franklin & Marshall. In addition to his roles as chemistry professor and administrator Stanitski has been influential nationally as an author and administrator. He has authored or coauthored a number of textbooks including two sponsored by the ACS: “Chemistry in the Community” and “Chemistry in Context”. He has served administratively as chair of the ACS Division

of Chemical Education, Project Kaleidoscope, the Chemical Heritage Foundation and on a number of ACS committees. He and his wife, Barbara, are currently retired in Lancaster, PA.

While at UCA, Conrad supervised a major expansion in the Chemistry Department. Under his guidance the department obtained certification of its program by the American Chemical Society. As enrollment increased and the research mission of the department expanded the number of faculty members increased from seven members to fifteen. The department also added an ACS certified major in biochemistry. In recognition of his work at UCA Conrad was named Professor Emeritus upon his retirement.

UCA Students Present in Memphis

Three faculty members (Drs. Rick Tarkka, Patrick Desrochers, and Lei Yang) and seven students (listed below) participated in the 33rd Annual Undergraduate Research Conference at the University of Memphis Department of Chemistry on Saturday, February 26, 2013. The conference involved 14 schools from seven states throughout the Southeastern United States. UCA research student Ryan Rogers, under the direction of Dr. Desrochers, won one of only five \$200 awards for best presentation.

Laney Mason (Tarkka) - "Polymerization of Phenylacetylenes by Rhodium(I) Scorpionate Catalysts"

Elisabeth Collins (Tarkka) - "Synthesis of Boron-Centered Heteroscorpionates by Metathesis Reactions of LiTp* with Heterocycles"

Mishal Benson (Tarkka) - "Color Chemistry as a Theme for Chemical Education: Lessons from Natural Dyes and Dyeing"

T. Ryan Rogers(Desrochers) - "Fast, Functional Immobilized Metal-centers on Solid Supports"

Claire Desrochers (work with Dr. Kevin Raney at UAMS) - "The Investigation of Gold Nanoparticle Delivery of HCV Antisense Agents"

Julie Davis (Desrochers) - "Amino Acid Selectivity of Immobilized Ligand Nickel Complex: Quantitative NMR with Histidine and Serine Methyl Esters"

Ethan McMoran (Yang) - "Synthesis and characterization of Transition Metal Complexes Supported by Pyridylamide Ligands"

Student Affiliate Featured



Outstanding ACS Chapter

The UCA Student Affiliate of the American Chemical Society was featured in the spotlight portion of the publication, *inChemistry*. The back cover article includes interviews with chapter sponsors and members with the goal of providing other chapters with suggestions for organizing a successful chapter program. The UCA chapter was recently selected as an outstanding chapter and continues an active schedule of professional, service and social events under the sponsorship of Drs. Dooley, Steelman and Yarberry.

Joe Allison named as Outstanding UCA Alumnus



Dr. Joe Allison

Dr. Joe Allison, a 1979 chemistry graduate, has been designated outstanding UCA alumnus for the 2012-2013 academic year. Joe received his Ph.D. degree in Inorganic Chemistry from Purdue University in 1983. He was then employed by Conoco Petroleum Co. in Ponca City, OK. After Conoco merged with Phillips Petroleum Joe moved to Bartlesville, OK. He has a number of publications and patents and is currently a Phillips Fellow, a position that grants him considerable latitude in the selection of research projects.

Joe has been active in the American Chemical Society at the local, regional and National level for many years and was named a fellow of the American Chemical Society in the second year of the fellows program. The [fellows program](#) began in 2009 to recognize and honor ACS members for their outstanding achievements in and contributions to the science, the profession, and service to the society. Joe was also recognized as a 2010 outstanding alumnus of the Department of Chemistry at Purdue University. In 2008 he was selected as the outstanding Oklahoma chemist by the Oklahoma Section of the ACS.

Joe and his wife, Laura (Hollenbeck), have two grown children and currently reside in Bartlesville where Laura is retired after a number of years with Conoco as the company specialist in mass spectrometry and is now active in volunteer work. Joe and Laura recently established a travel fund in the UCA Foundation

which provides financial support for chemistry students who attend scientific meetings to discuss their undergraduate research.

UCA Chemistry Club Receives Outstanding Chapter Award

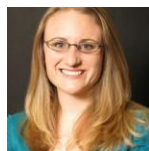


Dr. Steelman



Dr. Yarberry

The Student Affiliate Chapter at UCA was awarded an outstanding chapter award from the American Chemical Society for its activities during the 2011-12 academic year. The award, one of 46 awarded nationally, was in recognition of activities such as chemical demonstration outreach programs provided to local public schools and in other venues, participation in regional and national ACS meetings and a full schedule of local service and social activities during the year. Chapter officers who were responsible for organizing most of the events were Venusa Phomakay - President, Amanda Wallace - Vice President, Jordan Wilkerson -



Dr. Dooley

Secretary, Katie Primm - Secretary, and Ashley McKinney - Treasurer. Special recognition was given to chapter sponsors, Dr. Faith Yarberry, Dr. Karen Steelman, and Dr. Kristin Dooley, who were commended for making the "great commitment of time and energy that a successful chapter requires". Their efforts were characterized as representing "the best in undergraduate science education and mentoring around the country" and they were described as "exemplary chemistry ambassadors". The award will be presented April 7, 2013 at the 245th National ACS Meeting in New Orleans.

Tarkka attends Green Chemistry workshop



Dr. Tarkka

In July, Richard Tarkka attended a week-long workshop on Green Chemistry at the University of Oregon. This was an extension of his long-term interest in improving the environmental friendliness of the experiments performed by organic chemistry students. The workshop is part of the cCWCS (Chemistry Collaborations, Workshops & Communities of Scholars) program which is sponsored by the

NSF. Chemistry professors from around the country participated. The focus of the workshop was evaluation of up to 24 different lab exercises for the organic chemistry sequence, all of which had major green chemistry themes. There were also presentations about toxicology, life cycle assessment, strategies for implementing green chemistry, and other related topics. Several experiments tested at the workshop, or under development at UCA, will be incorporated into the Organic Chemistry 2401/3411 sequence during the 2012-2013 academic year.

Drs. Dooley and Marquis fill Tenure-Track Faculty positions



Dr. Marquis

Dr. Bryce Marquis will be responsible for teaching general chemistry, quantitative analysis, and advanced analytical chemistry. He also will coordinate the research of undergraduate chemistry majors in the development of analytical methods as applied to biochemical samples. Dr. Marquis earned a BA in Chemistry with Minor in English from Albion College in Michigan and a Ph.D. in Analytical Chemistry from the University of Minnesota participating in the NSF's Preparing Future Faculty program. He then served as a postdoctoral associate for the National Institute of Standards and Technology (NIST) in Washington, DC. Dr. Marquis and his wife, Christy, live in Little Rock with their daughter. Christy teaches at the Episcopal Collegiate school.



Dr. Dooley

After two years at UCA as a Visiting Assistant Professor of Chemistry Dr. Kristin Dooley will fill a tenure-track Assistant Professor position beginning in the fall, 2012. Dr. Dooley will teach general chemistry, physical chemistry, and environmental chemistry. She also will involve undergraduate chemistry majors in research in the use of lasers to study chemical phenomena. Dr. Dooley and her husband, Todd, recently moved into a new home on the outskirts of Conway with their two daughters, Jenna and Morgan. Todd teaches in the Conway Public Schools.

UCA Students attend national ACS meeting



From left: Vivian Huynh, Katy Primm, Elana Huelle, Jordan Wilkerson, Lennon Bates, Jenna Shamburger, Venusa Phomakay, Jessica Gambill, Jon Bishop, Taylor Caston, Ashley McKinney, Tsung Yen Chen, Amanda Wallace, Ashley Hicks, Taylor Quattlebaum, Yen Le, Ben Ward[/caption]

Seventeen University of Central Arkansas (UCA) students attended the 243rd American Chemical Society (ACS) meeting in San Diego, AC, March 23rd through March 27th. They attended presentations by Sandra Pizzarello (amino acids on the Murchison Meteorite) and Roger Tsein (2008 Nobel Prize in Chemistry for the development of green fluorescent protein, GFP) and were first in line to learn about advances in instrumentation at the National Exposition.



UCA students show off their "dynamite" shirts

On Saturday students explored San Diego including the San Diego Zoo, the Midway, and the Beaches of La Jolla. They all enjoyed cuisines available in the gas-lamp quarters. On Sunday chapter officers participated in the Chem Demo Exchange. All seventeen students attended an Awards Ceremony where the UCA Chapter received an Honorable Mention award. and enjoyed a presentation by “Science is Fun” guy and ACS President, Bassam Shakhashiri.

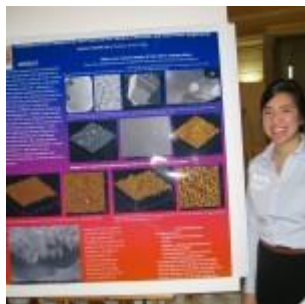
On Monday students presented posters dealing with their research and chapter activities. Lennon Bates, a student in Dr. Steelman’s group, received a special invitation to present her research at Sci-Mix on Monday evening.

Desrochers organizes “Arkansas STEM Posters at the Capitol”



Capitol Rotunda

On February 15 eighty undergraduate students from 14 different Arkansas public and private colleges and universities participated in the "2012 Arkansas STEM Posters at the Capitol", the brainchild of UCA Chemistry Professor Patrick Desrochers. Attendees at the two-hour session included Governor Beebe and approximately 25 members of the Arkansas Legislature. Students discussed their work in the natural sciences, computer science, engineering and mathematics to legislators and the general public. They also will provide first-hand experiences about their promising educational opportunities in undergraduate research in technical science, technology, engineering and mathematics (STEM) fields.



Chemistry Student Katy Primm

“This should become something the legislators and public anticipate, a showcase of the best and brightest students from around the state involved in exciting and innovative projects. In the end, this should advocate for the good the work these students and faculty do at their schools,” he said. “Most importantly, this advocacy comes from the students themselves who benefit most from the experience. Hopefully, this poster session will help it become widely known that outstanding educational opportunities are available right here in Arkansas in highly technical, exciting, challenging, and sometimes financially lucrative fields, following undergraduate and graduate training. Arkansans should know these opportunities exist at schools throughout the state. Arkansas STEM students who go and present their work at national meetings see that even though they are from a smaller state, their original work is often of equal technical stature compared to other students and scientists all over the country and sometimes the world.”

A [video](#) of the event is available.

Department fills two tenure track positions

Tenure track positions beginning in the Fall, 2012 were filled shortly after the Christmas vacation. A position in Analytical Chemistry will be filled by Dr. Bryce Marquis. Dr. Marquis earned his B.A. in Chemistry from Albion College, his M.S. in Chemistry at Carnegie-Mellon University, and his Ph.D. in Analytical Chemistry at the University of Minnesota. He is currently on a postdoctoral fellowship at the

National Institute of Standards and Technology. Dr. Marquis is married and his wife is a specialist in classical languages.

A position in Physical Chemistry will be filled by Dr. Kristen Dooley. Dr. Dooley is a native of Harrison and received her B.S. in Chemistry and Applied Mathematics UCA. After completing her Ph.D. in Physical Chemistry at Texas A&M University she completed a year of postdoctoral research at ASU in Jonesboro. She joined UCA in a temporary faculty position Fall, 2010. She is married and has two young daughters.

Chemistry majors receive early acceptance to medical school.

The majority of medical school acceptances are awarded in February each year with early acceptances given in December and January to exceptionally qualified applicants. Three students scheduled to graduate with B.S. Degrees in Chemistry with biochemistry emphasis were among this year's early acceptances. Seniors Tsungyen Chen, Jessica Gambill, and Venusa Phomakay were among five UCA students who were in this category for the fall, 2012 entering class. This distinction significantly improves their prospects for academic grants and scholarships to help fund their medical studies.

Paul Krause retires.



Dr. Paul Krause

After 36 years of distinguished service to the UCA Chemistry Department Paul Krause taught his last chemistry class in the fall, 2011. His retirement becomes official July 1, 2012. Paul joined the faculty in the fall of 1976 and has specialized in teaching physical chemistry and in the freshman chemistry program. He came to UCA from an instructor position at Miami - Ohio after receiving a Ph.D. at the University of Iowa and doing postdoctoral research in IR spectroscopy at the University of Pittsburg. Paul was the recipient of the UCA Teaching Excellence Award in 1995 and has been consistent in his embracing of new teaching methods.

ACS Student Affiliate Receives Honorable Mention Chapter Award

UCA's American Chemical Society group has received an Honorable Mention Chapter Award for its 2010-2011 activities from the ACS Society Committee on Education. To earn this award the students had to demonstrate in an annual report their efforts to promote chemical education on departmental, college, university, and community levels. Additionally, the chapter had to indicate its efforts in

promoting a unified chapter through chapter meetings and social activities. The report was submitted and reviewed by three faculty advisors that provided helpful feedback to the group. The overall comments from the reviewers stated: "This is a solid chapter. They are active in attending meetings and in departmental service. This chapter is on the cusp of taking a significant step forward." The chapter officers plan to continue these efforts and take the chapter to new heights for the 2011-2012 academic year.



Ecofest 2011

On September 10, 2011, UCA's American Chemical Society group volunteered at Ecofest at Laurel Park in Conway. Venusa Phomakay, Jordan Wilkerson, Katie Primm, and Ashley McKinney helped attendees make a memory game and officiated a relay race relating to the recycling of polymers. The memory game involved kids coloring recycling symbols, gluing the symbols to construction paper and cutting the symbols into squares to make the game. The relay race involved teams of kids identifying the recycling number on a series of plastics, running to the opposite end of the playing field and matching it to the appropriate symbol and polymer name, and then running back and tagging the next player in line. This continued until a team won by identifying the polymers correctly. The kids that attended the booth had a fantastic time learning about recycling.



Dr. Melissa Kelley

Dr. Kelley receives research grant

Dr. Melissa Kelley has been awarded a grant funded by the National Institutes of Health entitled: *Understanding Immune Cell Signaling: Effect of Retinoids on ADAM Shedding*. The grant will provide \$500,000 over a five-year period. This work will examine the ability of vitamin A to maintain proper immunity in living organisms. The grant focuses on how vitamin A derivatives (retinoids) mediate biochemical events necessary to initiate and regulate vital immune-cellular signals and will provide research experience for a number of undergraduate students. Students will be working closely with Dr. Kelley to determine which particular vitamin A derivatives are responsible for maintaining proper

immunity. The training of UCA undergraduate students in biochemistry will be enhanced and opportunities will be provided to present their research findings at significant scientific meetings.

UCA tops in acceptances to Pharmacy School

UCA students have a long record of successful acceptances to the UAMS College of Pharmacy and 2011 was no exception. Of the 120 students accepted to start matriculation in the fall, 34 of those were from UCA - almost 30% of the total. This means that once again this year UCA is the largest feeder institution for the College of Pharmacy.



2011 Graduating Senior Awards

The American Chemical Society (ACS) Local Section held their annual banquet at the University of Arkansas in Little Rock on April 19, 2011. At the banquet several individuals from the University of Central Arkansas Chemistry department were recognized for outstanding achievements. Brian Besel received the Research Award for outstanding undergraduate research. Brian has been doing research with Dr. Patrick Desrochers for the last three years. This research has led to two publications in peer reviewed journals and presentations at national meetings. Kaleb Smithson received the Scholarship Award for outstanding performance in academics. Both Casey Thurber and Jabin Miller received the Service Award for their service to the department. Casey serves as the Treasurer for the UCA ACS Chapter and has assisted with Museum of Discovery activities during National Chemistry Week to name just a couple of things. Jabin has gone above and beyond in helping the department in the office and in the stockroom.



In addition to the recognition of our students at the banquet, Dr. Karen Steelman was recognized for her efforts as Past President of the local ACS section and was surprised when she received the Professor of the Year award. Casey Thurber and Kaleb Smithson, two

individuals that submitted letters of recommendation, were present to share their reason for the nomination. Casey said “This was an amazing accomplishment for Dr. Steelman and an award that she absolutely deserved because of her service inside and outside the department.” When asked about the evening, Kaleb said “I was very honored to have been invited to the Local ACS banquet to receive my award. It really meant a lot coming from all of my past and present professors.”

Nineteen UCA Chemistry Students Present Research Posters at National ACS Meeting in Anaheim.



Six faculty members from the UCA Chemistry Department along with nineteen undergraduate researchers attended the Spring American Chemical Society meeting in Anaheim, California. Students were required to make a poster presentation of their results of their research as a prerequisite to participation in the trip. Funding for travel expenses was provided by the UCA Chemistry Department, the College of Natural Science and Mathematics, the Joe and Laura Allison Travel Fund, the local ACS Student Affiliate, individual faculty members' research grants, and travel grants from JEOL instruments, the national ACS, and the UCA Student Government Association.



Melissa Kelley

Dr. Mellisa Kelley is finalist for 2011 Teaching Excellence Award

Faculty members from the Department of Chemistry have received consistent recognition through the UCA faculty awards program and this year was no exception. In recognition of her exemplary record in the classroom Dr. Mellisa Kelley was selected as a final for the Teaching Excellence Award for the

spring of 2011. The award was won by Dr. Balraj Menon from the Department of Physics and Astronomy.

UCA Students Celebrate National Chemistry Week



The Museum of Discovery in Little Rock was a site for celebration of this year's National Chemistry Week. Approximately 200 students from local public elementary and middle schools gathered at the museum and participated in a variety of science demonstrations and hands-on activities. They were guided in these studies by faculty and students representing the UCA Chapter of the Student Affiliates of the American Chemical Society. Twelve UCA chemistry students participated along with faculty sponsors Drs. Karen Steelman and Faith Yarberry.



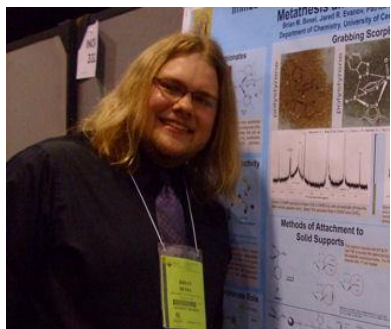
Hands-on activities included writing using pigments from cabbage and radishes, creation of chemical snow from sodium polyacrylate, and the use of guar gum to make slime. In addition, UCA students provided demonstrations involving Cartesian divers, dry ice, and iodine clock reactions.



UCA students who participated were Casey Thurber, Derek Watts, Mary Freres, Kaleb Smithson, Elizabeth Dourlain, Elana Huelle, Mishal Benson, Brian Besel, Phillip Cook, Venusa Phomakay, Bryce Grant, and Desiree Shaw.



National Chemistry Day is observed each October 23 in recognition of Amedeo Avogadro, the first chemist to propose a method for counting molecules. This cleared the way for chemists to obtain accurate atomic masses for the first time. He is most famous for Avogadro's number, 6×10^{23} , the unit used for counting small items such as atoms and molecules.



Brian Besel

Chemistry Student Wins First Place

Brian Besel, a senior chemistry major, won first place for the best oral presentation in the chemistry division at the INBRE conference in Fayetteville on Friday, October 16th. Twelve schools from Arkansas and Oklahoma attended the conference. Brian's research, funded by the National Science Foundation, was directed by Drs. Rick Tarkka and Patrick Desrochers. The title of his talk was "Scorpionate Immobilization by Facile Substitution of a Pyrazole Ring on an Existing Tris(pyrazolyl)borate and Functional Nickel(II) Coordination." The award included a \$400 cash prize, part of which Brian used to buy lunch for his fellow travelers!

Faculty Research Grants

Faculty members in the Department of Chemistry received word this summer that they were awarded nearly \$500,000 in external funding by the National Science Foundation. Three research grants, totaling \$498,622, will fund projects for UCA undergraduate chemistry students to conduct research in gas-phase chemistry, surface chemistry, and archeological chemistry.



Bill Taylor

Dr. Bill Taylor's project, entitled "RUI: Exploring Mechanistic Parameters Regulating Bond-Activation in the State-Specific Reactions of Gas Phase Transition Metal Ions with Halogenated Molecules," will examine the reactions of gas-phase metal ions with a number of small molecules. Understanding the mechanisms of these processes can aid in the design of new and better catalysts for use in chemical synthesis, and in the production of alternative fuels. Undergraduates participating in this work will gain research experience which serves them well in a variety of subsequent career choices including graduate/professional programs and science-related jobs. Dr. Taylor received a \$173,413 grant for this project.



Dr. Don Perry received a \$131,611 grant for the project "RUI: Development of Organic and Biological Films on Vapor-deposited Metal Nanostructures." Silver and gold nanostructures formed on solid supports have a dramatic impact on organic and biological film growth. This work will aid development of new nanoscale metal/organic and metal/biological composites and devices and add to the knowledge of metal nanoparticle interactions with organisms and the environment. The Macromolecular, Supramolecular, Nanochemistry Division of Chemistry through the National Science Foundation supports this work.



Dr. Karen Steelman is the principal investigator of a two-year grant for \$193,598 to investigate the use of supercritical fluids to remove organic contamination from archaeological artifacts prior to radiocarbon dating. Dr. Jerry King of the Department of Chemical Engineering at the University of Arkansas at

Fayetteville is a co-principal investigator on the project. Dr. Steelman's laboratory has already utilized plasma oxidation to collect microscopic amounts of carbon from an artifact surface non-destructively. An equally non-intrusive pre-treatment method to remove organic contamination from a burial environment is now needed. The grant is from the National Science Foundation's Archaeometry Program.

Chemistry Alumni Win National Awards

Bill Deese (76) and Joe Allison (79) received prestigious awards at the National ACS Meeting held in Boston in August of 2010.



Bill was awarded the [Helen M. Free Award](#) for Public Outreach which recognizes outstanding achievements in the field of public outreach by a member of the ACS who improves public recognition and appreciation for the contributions of chemistry. This award was established in 1995 by the American Chemical Society Committee on Public Relations and Communications. Bill, the T.W. Ray Johnson Professor of Chemistry at Louisiana Tech University, has made presentations full of exciting demonstrations that incorporate the history of science, juggling and unique methods of performance art, music and multi-media. He has presented before tens of thousands of school children and university students. In addition, he has led chemistry demonstration programs at local and national meetings of science teachers.



Joe was named a fellow of the American Chemical Society in the second year of the fellows program at the Boston meeting in August. The [fellows program](#) began in 2009 to recognize and honor ACS members for their outstanding achievements in and contributions to the science, the profession, and service to the society. Joe has been active in ACS activities at the local, regional and National level for many years. Joe was also recognized in September as a 2010 outstanding alumnus of the Department of Chemistry at Purdue University where he received his Ph.D. degree. Joe has been employed since his graduation by Conoco-Philips where his research in a variety of areas has resulted in numerous patents. In 2008 he was selected as the outstanding Oklahoma chemist by the Oklahoma Section of the ACS.

Dr. Kristin Dooley hired as visiting Assistant Professor



Dr. [Kristin Dooley](#) has joined the faculty for the 2010-2011 academic year as a visiting Assistant Professor. She replaces Dr. Kyle Felling who resigned to pursue a position in industry. Dr. Dooley earned a BS in Chemistry and Applied Mathematics from UCA in 2004 followed by a Ph.D. in Physical Chemistry from Texas A&M University in May of 2009. For the past academic year, Dr. Dooley held a postdoctoral research position at Arkansas State University.

Dr. Faith Yarberry Accepts Lecturer I Position in Chemistry for Fall 2010



[Dr. Faith Yarberry](#), who has served as a visiting assistant professor in the UCA Department of Chemistry since 2006, has accepted the position of Lecturer I in Chemistry, to begin Fall Semester of 2010.

"We are elated to have Dr. Faith Yarberry with us. Faith always goes above and beyond the call of duty for the department and her students," said Robert Mauldin, Professor and Chair of the Department of Chemistry.

Three New Cordrey Scholars in Chemistry Entering UCA in Fall Semester 2010

The [Cordrey Scholarship](#) supports the studies of students majoring in chemistry. The Department of Chemistry welcomes the following three awardees of this prestigious scholarship for the fall semester of 2010:

Ashley Bizzell will be entering UCA as a chemistry major, having graduated from Joe T. Robinson High School in Little Rock, AR. Her summer pharmacy camp director praised Ashley's enthusiasm, self-confidence and maturity demonstrated among her peers in camp. Ashley is excited about studying chemistry as a route to a career in the pharmaceutical sciences. She will be a member of the State Residential College.

Casey Cameron graduated from Vilonia High School and is entering UCA as a chemistry major. Casey's chemistry teacher described him as "a natural leader." Casey looks forward to the research opportunities available in our department and plans to complete a Ph.D. in chemistry on his way to becoming a professor of chemistry. He said in his career in chemistry he wants to "discover something that would have a positive impact on humanity." He will be a one of the charter students in our STEM Residential College.

Laney Mason is entering UCA as a biochemistry major. She graduated top in her class (out of 145) from Clarksville High School in Clarksville, AR. Laney's high school chemistry instructor

described her as “an exceptionally gifted problem solver.” Laney described her early experience with chemistry, when “suddenly homework was fun.” She has long been interested in science and math. Laney also will be a one of the charter students in our STEM Residential College.

Two Chemistry Seniors Selected as UCA Outstanding Students.



Liz Schiefer and D. J. Martin, two graduating seniors in chemistry, received outstanding awards for "University Student at UCA" for 2009-2010. A cash award of \$100 accompanies the recognition. These awards are particularly noteworthy since only seven awards were granted to students from across the entire campus! Congratulations Liz and D. J.!

Laney Hall gets a green roof



About 2,000 square-foot of sedum, a drought tolerant plant material, has been planted on the roof of Laney Hall. Sedum plants are drought tolerant and grow to an approximate height of six inches. The existing roof was re-covered with a premium, white reflective therma plastic roof layer followed by a water retention mat. Engineered soil was installed and then the sedum layer. A green roof protects the membrane resulting in longer material life, acts as an insulator resulting in energy saving and slows water runoff. The performance of the green roof will be monitored with a eye toward similar installations in the future with new construction and roof replacements on existing buildings. UCA officials used money from the 2007 bond and stimulus money to pay for the project.

Dr. Yarberry provides help for chemistry teachers



Dr. Faith Yarberry from the Department of Chemistry participated in a summer 2010 institute for teachers funded through a grant obtained by the Arkansas Center for Mathematics and Science Education. The title of the grant was “MSP-Science Lead Teacher Institute” it has been funded by the US Department of Education through Arkansas Department of Education. Dr. Yarberry met with groups of 14-28 teachers from 7th grade science to high school chemistry in local Arkansas schools. Dr. Yarberry provided teachers with lesson plans, demonstrations, overheads, and laboratories that they could use in the classrooms to illustrate chemical concepts and their connection to biological concepts. The teachers gained valuable information as well as materials that can be used to illustrate the concepts in the coming year. The materials included glassware and chemicals funded by the grant.

2010 Seniors Recognized

Four senior chemistry majors were recognized with awards for excellence in academics and service at the Awards and Recognition Banquet of the Central Arkansas Section of the American Chemical Society on the campus of the University of Arkansas at Little Rock on April 20, 2010.

Darrell (DJ) Martin, Jr. and **Liz Schiefer** were presented with the Academic Excellence Award, an award that recognizes superior achievements in coursework and research. **Daniel Fields** and **Martin Sharum** were presented with the Service Excellence Award, an award that recognizes service to the institution and the community.

Daniel Fields is the current Treasurer of the UCA student chapter of ACS and recently presented a chapter poster at the National ACS meeting in San Francisco in March 2010. Daniel helped plan and implement the Undergraduate Programming at the Southwest Regional Meeting of the American Chemical Society in Little Rock in 2008. He also regularly volunteers his time for on-campus tutoring, assisted with National Chemistry Week at the Museum of Discovery, and participates in other chapter activities. Dan is planning on going to dental school after graduation.

Martin Sharum is the current President of the UCA student chapter of ACS. He helped coordinate travel for 12 research students within the department to travel to the National American Chemical Society meeting in San Francisco, CA, where Martin also presented a research poster. Every week, Martin helps with on-campus tutoring. He also assisted with National Chemistry Week at the Museum of Discovery, and engages other students in chapter activities. Martin is planning on working in an industrial or government laboratory within the state after graduation.

DJ Martin is the current Vice-President of the UCA student chapter of ACS. He was the liaison to UCA's student government for the chemistry club and his fund-raising efforts allowed 12 research students to present their work at the National American Chemical Society meeting in San Francisco, CA. DJ has excelled in his chemistry classes, while conducting research for both Dr. Nolan Carter in the chemistry department and Dr. Noyes in the biology department. He has presented his research at both regional and national meetings, including the National American Chemical Society meeting in San Francisco. DJ will be attending chemistry graduate school at Texas A&M University in the Fall.

Elizabeth Schiefer has been conducting research for Dr. Perry in the Chemistry Department for 2 years. She presented a poster over this work at the National American Chemical Society meeting in San Francisco, CA in March 2010. Liz actively participates in student chapter activities and has also excelled in her coursework. Liz is innately curious and has a love for science that is a joy to watch. She will be attending chemistry graduate school at Georgia Tech in the Fall, focusing on theoretical studies.

Chemistry Students Present at Poster Session

The Annual Poster session sponsored by the UCA College of Natural Science and Mathematics was held on Friday, April 23, 2010. The UCA chemistry department was represented with 13

posters based on their undergraduate research efforts. The posters listed 30 different student authors and 11 different faculty mentors.

Seniors excel on exit exam

Ten senior chemistry majors took the 2010 Education Testing Service's Major Field Test in Chemistry. The total scores as well as sub-scores in physical chemistry, organic chemistry, inorganic chemistry, analytical chemistry, biochemistry, and critical thinking were in the 85-90 percentile, indicating that UCA chemistry students scored better than 85-90% of students in the nation who took the same exam.

Alumni establish travel fund endowment

Dr. Joe and Laura Allison of Bartlesville, Okla., in partnership with their employer, ConocoPhillips, have established an endowed travel fund through the University of Central Arkansas Foundation for students studying in the UCA Department of Chemistry. Through a matching gift partnership, the couple has committed to contributing \$30,000 to the Joe and Laura Allison Department of Chemistry Travel Fund over the next three years.

According to fund guidelines, chemistry students will be awarded funds annually to attend recognized scientific meetings and present the results of their research. Meetings may be local, regional or national and shall be appropriate to provide professional interaction and networking opportunities to the students. Joe and Laura, who are 1979 UCA graduates in chemistry, cited travel to scientific meetings as undergraduates as an important part of their professional development.

Nolan Carter wins Teaching Excellence Award



Nolan Carter received the UCA Faculty Teaching Excellence Award for the 2008-2009 academic year. The plaque and a cash award were presented to Nolan at the annual UCA Service Awards Ceremony. Nolan, who joined the UCA faculty in 2003, received his B.S. from UAFayetteville and his PhD from Colorado State University. He and his wife, Liz, have two boys, Barrett and Dilan. Previous UCA chemistry faculty who have received this award are Michael Rapp (1990), Paul Krause (1995), Patrick Desrochers (2002), and Lori Isom (2005).

Dr. Robert Mauldin accepts chair position



Dr. Robert Mauldin has accepted the position as chair of the UCA Department of Chemistry effective July 1, 2009. Dr. Mauldin received a B.S. in Chemistry from the University of Tennessee at Martin and a Ph.D. in analytical chemistry from The University of Tennessee Knoxville. Dr. Mauldin taught at Georgia Southern University for four years before accepting a teaching position at Shawnee State University where he achieved the rank of Professor and also served as the director of their General Education Program from 1997 to 2008.

Most recently he has served as Academic Dean at Bethel College in McKenzie, TN. Dr. Mauldin will be replacing Dr. William Taylor who will return to full-time faculty status in the department.

Students present research at national meeting.

Fifteen students presented the results of their research efforts at the ACS National Meeting in Chicago (spring, 2007). The students (faculty sponsors) presenting were Nick Gleason (Rick Tarkka), Leah Thompson (Rick Tarkka), Akhil Mehta (Nolan Carter), Amanda MacMillan (Karen Steelman), Ashley Evans (Rick Tarkka), Emily Malcolm (Melissa Kelley), Tori Green (Nolan Carter), Adam Phelan (Rick Tarkka), Lindsay Read (Kyle Felling), Jake Smith (Nolan Carter), Jacque Dupriest (Karen Steelman), Tamara Binyon (Rick Tarkka), Tori O'Bannon (Lori Isom), Mikaela Stewart (Lori Isom), and Chris Sutton (Patrick Desrochers)

Lori Isom receives Teaching Excellence Award



Biochemist Lori Isom was named the recipient of the UCA Faculty Teaching Excellence Award for the 2005-2006 academic year. The plaque and a cash award were presented to Lori at the annual UCA Service Awards Ceremony. Lori joins the following UCA chemistry faculty who have received faculty excellence awards in the past.

Teaching Excellence Award: Michael Rapp (1990), Paul Krause (1995) and Patrick Desrochers (2002)

Research, Scholarship and Creative Activity Award: William Taylor (2001) and Patrick Desrochers (2004)

Public Service Award: Michael Rapp (1997) and Jerry Manion (1999)