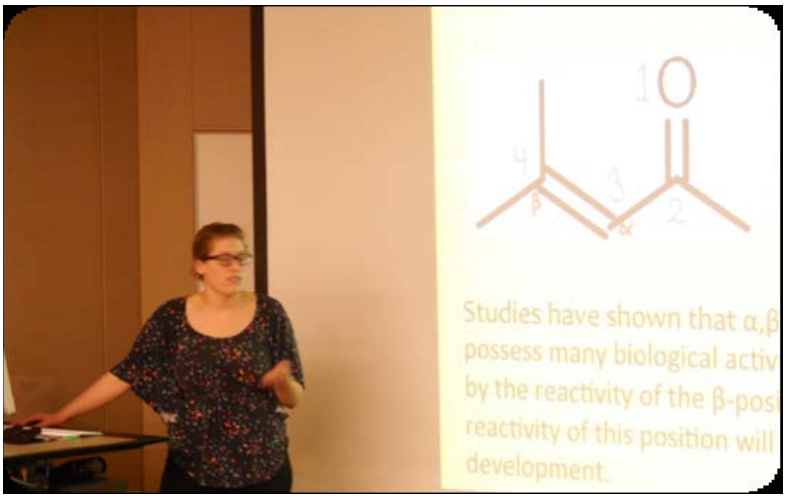
Chemistry Department News 2015–16

Summer Science Research Initiative



This year's Summer Science Research Initiative (SSRI) is getting underway. The first event is a series of short student presentations and a picnic on Thursday, May 12 at 11:00 am and more student presentations on Friday, May 13 at 11:00 am (both in room 152 Science Complex). The SSRI is a series of supplemental activities for science and technology students who are on campus working on research projects with their faculty mentors during the summer months. Here is the link to the 2016 schedule of SSRI activities.

Posted 5/6/16.

April 15, 2016 News Briefs

- Alan Fried (Janser), Caitlin Keif (Lindsay), Ahmed Mohammed (Albaugh), Michaela Repaska (Armitage), Celeste Rousseau (Guthrie), and Zach Spearin (Backues) were granted Undergraduate Research Stimulus Awards for Summer 2016.
- Nina Contis gave an invited plenary presentation “Water: Global Issues, Local Solutions” to the University of Management & Technology (UMT) International Conference on Pure and Applied Science at UMT in Lahore, Pakistan. She also opened and participated in the Global Chemistry Code of Ethics Workshop in Kuala Lumpur, Malaysia.
- Brittany Albaugh, Maria Milletti, and Gregg Wilmes received Faculty Research Fellowships for 2016-2017.
- Brittany Albaugh, Ruth Ann Armitage, Jeff Guthrie, and Gregg Wilmes received Provost’s Research Support Awards.

- Bridget Kennedy (Backues) and Brandie Yambrosic (Lindsay/Wilmes) received Graduate Summer Research Funding from the James Beach and Clark & Avis Spike funds.
- Bekhzodkhon Buzrukov (Janser), Alan Fried (Janser), and Jesse Wotring (Janser) who received travel funds from the Dean's Office for travel to the Central Regional ACS Meeting in May.
- Gregg Wilmes was interviewed on WJR on April 7 (National Beer Day) about the new Fermentation Science program.
- Ruth Ann Armitage was mentioned on *Science Friday* on March 25 regarding analyses she had done on Peruvian pottery.
- Sohail Rana (Janser), Courtney Gorrell (Holmes) and Alexa Salsbury (Holmes) who completed their Senior Honors theses.

Fifty-Two Chemistry Students Present at the Undergraduate Symposium

The 36th EMU Undergraduate Research Symposium was held at the Student Center on Friday, April 1, 2016. The program included 42 presentations sponsored by the Chemistry Department representing the work of 52 chemistry students. This is the most Chemistry Department presentations and students involved in the history of the symposium (and the second most by any department in the history of the symposium). See pictures and a listing of all of the Chemistry Department presentations [PDF].

Posted 5/22/17.

March 18, 2016 News Briefs

- Larry Kolopajlo was elected to the executive board of the Michigan Science Teachers Association.
- Tim Friebe was awarded a one-semester sabbatical leave for Fall 2016.

2016 Newsletter Available

The 2016 Chemistry Department Newsletter [PDF] is now available. This year's newsletter is now available online. Click here to link directly to this year's newsletter. See newsletters from previous years.

Posted 3/9/16.

March 4, 2016 News Briefs

- Ruth Ann Armitage had an article published “Sequencing Analytical Methods for Small Sample Dating and Dye Identification of Textile Fibers: Application to a Fragment from Seip Mound Group, Ohio” in the Midcontinental Journal of Archaeology (2016). http://dx.doi.org/10.1179/2327427115y.0000000009
- Brittany Albaugh, Steven Backues, Cory Emal, and Gregg Wilmes received Summer Research/Creative Activity Awards for Summer 2016.
- Hedeel Evans and Debbie Heyl-Clegg (along with co-author Peggy Liggit) had an article “Team-Base Learning, Faculty Research, and Grant Writing Brings Significant Learning Experiences to an Undergraduate Biochemistry Laboratory” accepted for publication in the Journal of Chemical Education.
- Cory Emal and Gregg Wilmes made a well-received presentation of the Fermentation Science program to the Board of Regents, who approved the new program.
- Larry Kolopajlo received a grant from Oakland Schools for Mentoring Services for Aspiring Modeling Facilitators.

Chemistry Department receives continued approval from the American Chemical Society (ACS)

Every five years, the Chemistry Department undergraduate program is reviewed by the ACS Committee on Professional Training. This is an extensive process requiring the submission of materials addressing all aspects of our program. We have just received the results of the most recent evaluation indicating continued approval of our program. The review states "**The very thoughtful and thorough summary of department activities reflects a vibrant department that is making significant improvements in curriculum and scholarly activity .**" Additionally, they cited

"... the recent renovation and expansion of departmental space, which has enhanced both instructional and research activity."
"The increased number of student presentations at professional meetings and student co-authorship on faculty publications... ."
"... the emphasis placed on the assessment of student learning outcomes, the new approach to evaluating lab work, and the efforts to develop students' writing skills."

Posted 2/15/16

New Fermentation Science program approved by the Board of Regents

At today's Board of Regents meeting, final approval was given for a new major in Fermentation Science. See the University's Press Release. This program has been designed to bring together subjects from multiple disciplines and frame them in the context of the science of fermentation and its practical application. Go to the Fermentation Science page.

Posted 2/5/16.

Chemistry faculty assist with Digital Divas program

Digital Divas is an annual day-long program for middle-school and high-school-aged girls. Its primary focus is encouraging them to pursue careers in the science, technology, engineering, and mathematics fields. For the past several years, Dr. Larry Kolopajlo, assisted by Sharon Vance and a number of student volunteers, has run sessions during the program.

During the most recent program, in November 2015, their session was entitled “Secret Messages” and the girls used disappearing ink, acid/base Hydrogen Balloons - April 2015indicators, and UV pens to write and read secret messages. They also used disappearing paper that would dissolve in water. In addition, they learned about detecting counterfeit currency and taking fingerprints. Finally, there were some fun demonstrations including “elephant toothpaste” and blowing up hydrogen-filled balloons.

Posted 1/20/16.

January 15, 2016 News Briefs

- Ruth Ann Armitage received a $3000 grant from Women in Philanthropy for her project “Dating and Chemical Analysis of Textile Fragments from Seip Moud Group.”
- Harriet Lindsay received a $5000 grant from Women in Philanthropy for her project “Enhancing ACS Project SEED by Partnering with McNair Scholars.”
- Brittany Albaugh received a Provost’s New Faculty Award for $5000 for her project entitled "Mechanism of cancer drug inhibition to the protein called UHRF".
- Tim Brewer, Hedeel Evans & Heather Holmes, Debbie Heyl-Clegg, Ingo Janser, Larry Kolopajlo, and Don Snyder received Provost’s Research Support Awards.
- Hokyung Shin (Janser) received an Undergraduate Research Stimulus Award for winter semester.
- Alexa Salsbury (Holmes) received a Senior Thesis/Project and Symposium Award
- Cory Emal was part of a successful proposal “Develop a Preclinical Data Package for a Small Molecule Inhibitor of PAI-1” submitted by his collaborator, Daniel Lawrence, to the University of Michigan’s Michigan Translational Research and Commercialization (MTRAC) for Life Sciences Program.
- Nina Contis was appointed the new Chair of the International Activities Committee of the ACS.
- Gavin and Kimberley Edwards welcomed their new son Lucas Gabriel Edwards. He was born 9:25 a.m. on Wednesday. He was 8 lb 1 oz and 21.5 inches. Both mom and baby are fine.

From Biochemist to Environmental Scientist: Dr. Ermelinda Harper Reflects upon her Academic and Professional Career

Ermelinda Harper is a 1998 graduate of EMU with a professional biochemistry degree. As a student, she received numerous honors. Among them, she

- was awarded Third Team status in USA TODAY's All USA College Academic Team. At the time, she was the only EMU student to have received this honor.
- was named a Barry Goldwater Scholar. The purpose of the Foundation is to provide a continuing source of highly qualified scientists, mathematicians, and engineers by awarding scholarships to college students who intend to pursue research careers in these fields
- received the 1998 Bert W. Peet Award winner. This award goes to top graduating EMU Chemistry/Biochemistry major.
- was the student emcee at the 1998 Undergraduate Symposium. She was the third student ever selected for this position.

Below, in her own words, Dr. Harper tells the story of her academic and professional career.

I changed majors at least a dozen times in my first year of undergraduate! I finally selected a major that stuck and decided upon a pre-medical track. Everything was finally set, and then in walked Dr. Elva Nicholson and organic chemistry.

At the time, I did not have a lot of confidence in my academic abilities. This – combined with the horror stories I had heard about organic chemistry – had me literally shaking in my shoes. For the entire semester, I thought about almost nothing but organic chemistry. When the semester ended, I found myself actually looking forward to the next organic chemistry class in the sequence. I was shocked and flattered when Dr. Nicholson began asking questions about my educational and career goals.

Over the next year, I found myself thinking about chemistry a lot, and more and more chemistry classes crept into my schedule. This coincided with my spending more time in the laboratory of a chemistry professor, Dr. Michael Brabec, who I still regard as my most important mentor. Spending the summer at Eastern Michigan University working with Dr. Brabec in a National Science Foundation Research Experiences for Undergraduates position "sealed the deal", and I changed my major one more time: to professional biochemistry.

After being graduated from Eastern Michigan University, I lived in Beijing, China, teaching for a year and then working at an environmental consultancy for another year. During this time, I saw firsthand the environmental challenges and degradation that developing countries face. The encouragement that I received in science – combined with my experience in China – ultimately coalesced into my decision to pursue graduate studies with an environmental focus.

I was graduated with a master of science degree in civil engineering from Northwestern University. With the support of a National Science Foundation Graduate Research Fellowship, I pursued further graduate work at Yale University. At Yale, I completed two master's degrees along the way to my PhD in engineering and applied science. As a doctoral student, I studied the element tungsten, determining quantitative estimates for how the United States has used it and traded it, in all of its forms, for a 25-year period, and the ultimate fate of the products that remained in the United States (i.e., estimates of how much was recycled versus discarded in landfills). The results illuminated how the United States uses tungsten, and what recycling potentials might exist.

My work as a research scientist at Yale University shifted to studying metals use, recycling, and resources. This work has become increasingly important in light of emerging technologies (e.g., solar panels and smart phones) that employ metals whose supply may be uncertain, and it has received wide attention from academia, industry, and the general public. So far, I have co-authored 16 peer-reviewed publications throughout my education and career.

The guidance and support so generously, continuously, and graciously given by extremely talented Chemistry Department faculty members was invaluable and, quite honestly, the best I ever received. The didactic and laboratory training at Eastern was rigorous, comprehensive, and inspiring. I firmly attribute every success that I have had to the mentorship that I received at

Eastern Michigan University, both as a member of the Honors Program and as a chemistry student. My decision to change my major one last time was one of the best decisions I ever made.

Posted 1/05/16.

December 4, 2015 News Briefs

- Nina Contis and Nirit Glazer had their application selected as the EMU internal awardee for the competition NSF: Partnerships for Innovation: Building Innovation Capacity.
- Ruth Ann Armitage published an article on Gas Chromatography in the Encyclopedia of Geoarchaeology.
- Jose Vites received a College of Arts and Sciences Dean's Program Development Initiative for his proposal "Study of STEM student retention at EMU."
- Andrew Durden (Milletti), Jamie Reder (Lindsay), Sohail Rana (Janser), Damien Sheppard (Backues), Brianna Sohl (Holmes), and Carson Zois (Backues) received winter 2016 Honors Undergraduate Fellowships.

Five 2015-2016 Presidential Scholars are Future Chemists

Twenty incoming students were selected to receive Presidential Scholarships in 2015-2016. These four-year scholarships are arguably the most prestigious awarded to incoming EMU students. Five of the twenty recipients are planning to major in Chemistry or Biochemistry. A brief profile of these five students follows.

Hannah Armstrong, from Port Huron, Mich., is a chemistry major. During her time at EMU she hopes to play volleyball, join community service-based organizations and study abroad. "[T]his

scholarship really gave me the opportunity to enjoy college and find out who I truly am and what I want to do in life," Armstrong said.

Marisa Gilliam, from Monroe, Mich., is earning a double-major in biochemistry and biological anthropology. She was in a college theater group, Archaeology Club and the International Studies Club in high school. "The [Presidential Scholarship] made it so that I had to step out of my comfort zone [...]," Gilliam said.

Michael Hillegass, from Wadsworth, Ohio, is studying biology and chemistry. At EMU he hopes to play in intramural sports, join the Pre-Dental Club, study abroad, and conduct research. "I am beyond blessed to have this opportunity to become a Presidential Scholar," Hillegass said. "And, I'm extremely excited to see how far my fellow peers and I go in life."

Mitchell Meyer, from Dearborn, Mich., is a biochemisty major. He would like to join student organizations, play intramural sports and study abroad at EMU. Meyer said he will use the money saved for graduate or medical school, now a "much more realistic goal."

Jesse Wotring, from Clinton, Mich., is a double major in biology and chemistry. He volunteered at Saint Joseph Mercy Hospital, tutored and was a Chemistry Olympiad in high school. "I have benefited from the scholarship [because it has made] life easier for my parents and myself financially," Wotring said.

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Posted 12/4/15.

November 13, 2015 News Briefs

- Ruth Ann Armitage was a featured speaker at this Fall's Midland ACS section meeting. Here talk was entitled "Colors of the Past: Archaeological Chemistry of Natural Dyes".
- Larry Kolopajlo presented a talk on fuel cells at the Metropolitan Detroit Science Teachers Association on November 7.
- Amy Johnson was appointed to the Distinguished Faculty Awards Committee.

October 30, 2015 News Briefs

- Ruth Ann Armitage and Calvin Day had two articles published in *Science and Technology of Archaeological Research*. One titled, "Direct Analysis in Real Time-Mass Spectroscopy for Identification of Red Dye Colorants in Paracas Necropolis Textiles" and

the other entitled, "Identification of Anthraquinone Dye Colorants in Red Fibers from an Ohio Hopewell Burial Mound by Direct Analysis in Real Time Mass Spectrometry".
- Hedeel Evans was part of the faculty team that successfully presented the new interdisciplinary Neuroscience program at the Board of Regents Meeting on October 13.

Former Professor Bruce West Passes Away

Dr. Bruce West passed away on September 23, 2015. He was 80 years old. Dr. West received his Ph.D. in biochemistry from the University of Wisconsin. He joined the EMU Chemistry Department faculty in 1969 and retired in 1991. Dr. West was greatly respected by his colleagues. He was a brilliant chemist, an excellent teacher, and a devoted mentor to his research students.

September 11, 2015 News Briefs

- Jeff Guthrie received tenure and was promoted to Associate Professor.
- Cory Emal was promoted to full professor.
- Joshua Hunt (Lindsay), Jamie Reder (Lindsay), Ahmed Oudeif (Lindsay), Brandie Yambrosic (Lindsay) were awarded travel money from the CAS Dean’s Office at attend the ACS National Meeting.
- Gavin Edwards gave an invited presentation at the ACS meeting in a special section on “Creative Advances in Environmental Science and Technology”.
- Cory Emal was named on two patents that were granted covering the PAI-1 inhibitors developed through his collaboration with Dan Lawrence’s lab at the University of Michigan.

- Deborah Heyl-Clegg and Hedeel Evans had the article “Deciphering the Mechanism of Humanin: A Neuroprotective Peptide” accepted for publication in Protein & Peptide Letters.
- Gavin Edwards and Christopher Haskin set up a crowdfunding page via Experiment.com and raised $2180 to fund their research.