

# Chemistry Department News 2016-2017

## Professor Brittany Albaugh is the Recipient of a Major Grant from the NSF

Dr. Albaugh's project, titled *Collaborative Research: Molecular and Structural Mechanism of Histone Binding by the Epigenetic Regulator UHRF2*, was recently selected for funding by the National Science Foundation. The grant is in the amount of \$359,776. A description of the proposed work follows:



Posttranslational modifications (PTMs) on histones represent a form of epigenetic regulation. Mounting evidence suggests that inappropriate binding of PTMs by histone reader proteins underlie the development of a host of human diseases, particularly cancer. Histone binding proteins engage epigenetic modifications and play a central role in the regulation of many nuclear processes such as transcription, DNA replication and DNA repair. The molecular mechanisms by which many of these proteins mediate histone recognition remain unknown; thus this represents a major gap in our current understanding of how these proteins impart specificity and regulate the epigenetic apparatus. This study will provide general mechanistic insights as to how similar histone reader proteins distinguish and engage their cognate PTMs. The knowledge gained from this proposal will advance our fundamental understanding of epigenetic regulation.

- Posted 7/26/17 (Original Source: ORDA Monthly Awards Report)

A more in-depth article about Dr. Albaugh and the grant work is found in the [Office of Graduate Studies and Research eNewsletter for Fall 2017 \[PDF\]](#).

Posted 7/26/17.

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## Jim Grinias Receives Alumni Association Award

The EMU Alumni Association has recognized Dr. James Grinias as recipient of the Outstanding Young Alumni Award at this year's awards ceremony. Dr. Grinias received his bachelor's degree in Professional Chemistry from EMU in 2009. He is currently an Assistant Professor at Rowan University in Glassboro, NJ. [Read more about Dr. Grinias.](#)



Posted 6/30/17.

## Professor Albaugh Gives Birth to a Baby Girl

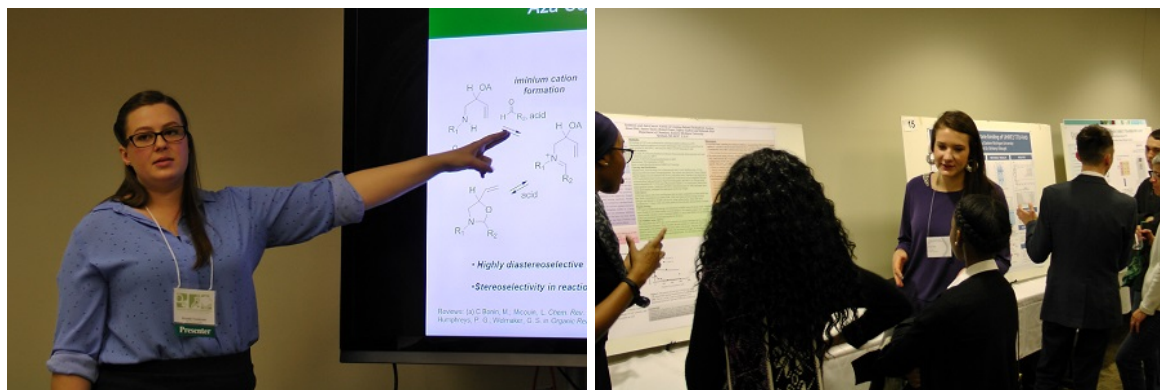
The Chemistry Department celebrates the growth of our department family via the birth of Raegan Eun "Rae" Albaugh. Rae was born on May 8th at 9:50 p.m. and came in at 6 lbs, 9 oz and 21 inches. Our congratulations go to the happy parents, Brittany and Travis. All are doing well.

Posted 6/1/17.



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## 54 Chemistry Students Present at the Graduate Research Conference and the Undergraduate Symposium



The 2017 EMU Graduate Research Conference was held at the Student Center on Friday, March 24. The program included 10 presentations sponsored by the Chemistry Department representing the work of 11 chemistry students. See pictures and a listing of all of the [Chemistry Department Graduate Research Conference presentations \[PDF\]](#).

The 37th annual undergraduate symposium was held at the Student Center on Friday, March 31. The Chemistry Department faculty sponsored 33 of the presentations involving a total of 43 students. See pictures and a listing of all of the [Chemistry Department presentations at the Undergraduate Symposium \[PDF\]](#).

Updated 5/19/17.

## SSRI Schedule Announced

This year's Summer Science Research Initiative (SSRI) will kick off on May 16 with a series of brief student presentations describing the work that the students will be pursuing this summer. [Download the full schedule of SSRI events this summer \[PDF\]](#). Alternately, visit the [SSRI facebook page](#).

Posted 5/10/17.

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## Professor Amy Johnson Interviewed on the Importance of STEM

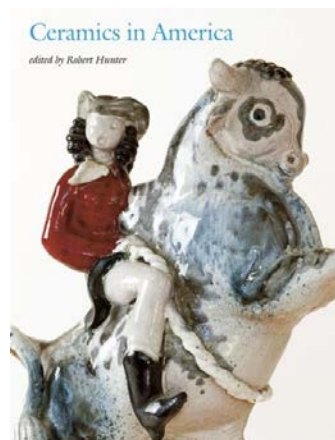
Dr. Amy Flanagan Johnson (Chemistry) and Dr. Katherine Ryker (Geography and Geology) were recently [interviewed on WEMU](#). Topics discussed included the importance of science, science funding, and the role of women in STEM fields.

Posted 4/27/17.

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## 18th-Century Glues Analysis Published in Prestigious Book

Professor Ruth Ann Armitage and colleagues have been analyzing historic glue residues on ceramics excavated from Ferry Farm, the boyhood home of George Washington in Fredericksburg, Virginia. Results of this project were recently published in the well-respected and widely read book *Ceramics in America* as the chapter titled “Mary Washington’s Mended Ceramics: A Study of Eighteenth-Century Glues” with co-authors Mara Kaktins and Melanie Marquis of the George Washington Foundation, and Daniel Fraser of Lourdes University. This collaborative research project will be shared with visitors to Ferry Farm through an interactive experience where living history interpreters will make glues from historic recipes and mend pottery with the public in the newly reconstructed Washington house there.



Posted 4/27/17.

## April 7, 2017 News Briefs

- Mariah Brito (Guthrie) was awarded travel funds from the Dean's Office for travel to Pittcon in Chicago, Illinois.
  - Nate Hendrickson (Heyl-Clegg/Evans) was awarded travel funds from the Dean's Office to attend the American Society for Biochemistry & Molecular Biology Conference in Chicago, IL.
  - Ahmed Mohamed (Albaugh) was awarded travel funds from the Honors College to attend the American Society for Biochemistry & Molecular Biology Conference in Chicago, IL.
  - Omid Hajihassani (Vites) was awarded travel funds from the Dean's Office for travel to the American Chemical Society Meeting in San Francisco, CA. His poster earned an award for content and presentation at the meeting.
  - Ruth Ann Armitage, Cory Emal, and Hedeel Evans received Faculty Research Fellowships for the 2017-18 academic year.
  - Amy Johnson was nominated by a student to be honored at the Celebration of Excellence Convocation of The College of Education.
  - Larry Kolopajlo received notice of the acceptance of a manuscript on green chemistry. He was also named co-editor of a green chemistry education book series.
  - Amy Johnson, Ingo Janser, Ross Nord, and Vicki Paulissen, were all nominated by their students in the "Thank a Teacher" program.
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## **Professor Ross Nord is selected as Honors College Distinguished Faculty of the Year**

Each year the Honors College students identify two professors whom they would like to honor as their Distinguished Faculty of the Year. Dr. Nord was presented with his award at the Honors College Awards Ceremony on March 28. Accepting the award, he noted that he taught his first Honors class in 1988, before most of today's students were born. He also spoke about how it is the EMU students who continue to motivate him to be the best instructor he can be.

Posted 4/3/17.



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## **March 3, 2017 News Briefs**

- Brittany Albaugh was one the first-ever recipients of a James H. Brickley Award to facilitate faculty professional development and innovation.
- Celeste Rousseau (Guthrie) was awarded travel funds from the Dean's Office for travel to Pittcon in Chicago, Illinois.
- Larry Kolopajlo, assisted by Hexiya Yong, hosted the Dexter Winter Science Camp for 23 6th graders on February 21 to 24.

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## February 10, 2017 News Briefs

- Jim Grinias was named as the recipient of this year's EMU Young Alumnus Award.
- Ahmed Mohamed (Albaugh), Daniel Esckilsen (Evans/Heyl-Clegg), Margaret Champion (Evans/Heyl-Clegg), Tim Petzhold (Albaugh), and Adam Baraka (Evans/Heyl-Clegg) were awarded travel funds from the Dean's Office for travel to the American Society for Biochemistry Conference in Chicago, Illinois.
- Alyssa Winkler (Albaugh) was awarded travel funds from the Graduate School for travel to the American Society for Biochemistry Conference in Chicago, Illinois.
- Bridget Kennedy (Backues) was awarded travel funds from the Dean's Office for travel to the Keystone Autophagy Conference in Colorado.
- Amy Johnson was awarded a Campus Dialogue Grant from Bringing Theory to Practice along with EMU colleagues John Koolage, Kate Curley, and Christine Deacons.
- Sharon Vance was nominated for the 2016 EMU-FT Part-time Lecturers Distinguished Teaching Award.
- Harriet Lindsay received a Summer Research Activity Award.

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## New Initiative for STEM Outreach to the Ypsilanti Community

EMU and the Ann Arbor Hands-On Museum have formed a partnership to develop STEM activities geared toward elementary-aged children and their families. Professor Amy Johnson is leading this new and exciting initiative to provide informal science education opportunities to the Ypsilanti community. [Read the full article.](#)

Posted 1/24/17.

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## January 13, 2017 News Briefs

- Ronith Chakraborty (Backues), Alexis Marsh (Janser), and Tim Petzhold (Albaugh) received Undergraduate Research Stimulus Awards. Only eight were awarded university-wide.
- Alyssa Winkler (Albaugh) was awarded travel funds from the Dean's Office for travel to the American Society for Biochemistry Conference in Chicago, Illinois
- Mishka Repaska (Armitage) was awarded travel funds from the Dean's Office for travel to the 2017 Pittcon Conference and Expo in Chicago, Illinois.
- Bridget Kennedy (Backues) was awarded travel funds from the Graduate School for travel to the Keystone Autophagy Conference in Colorado.



- Adam Baraka (Evans and Heyl-Clegg) and Jesse Smith (Backues) were awarded travel funds from the Honors College for travel to the ASBMB Annual Meeting in Chicago, Illinois.
  - Amy Johnson and Katherine Ryker were awarded a Winter 2017 FDC Program Grant entitled “Thank-a-Teacher” by the Faculty Development Center.
  - Cory Emal and Daniel Lawrence, his collaborator at the University of Michigan, were awarded a patent.
  - Larry Kolopajlo was selected as an AP reader.
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## December 9, 2016 News Briefs

- Mitchell Meyer, Zachary Spearin, and Carson Zois (Backues) were awarded travel funds from the Dean's Office for travel to the American Society for Biochemistry Conference in Chicago, Illinois.
  - Hedeel Evans, Jeff Guthrie, Gavin Edwards, and Ingo Janser were awarded Provost's Research Support Awards.
  - Adam Baraka (Evans and Heyl-Clegg), Jesse Wotring (Janser), Mitchell Meyer and Jesse Smith (Backues), Mishka Repaska and David Bailey (Armitage), and Caitlin Keif (Lindsay) received Honors Undergraduate Fellowships
  - Hayley Cawthon and Carson Zois (Backues) received Honors Senior Thesis Fellowships.
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## Alumni Profile: Dr. Brian Cummings, a 1994 EMU graduate.

Dr. Cummings, who was a double major in biochemistry and toxicology at EMU (and recipient of our Toxicology Achievement Award in 1994), is currently an Associate Professor in the College of Pharmacy at the University of Georgia, where he also serves as director of the university's Interdisciplinary Toxicology program. His profile was recently featured on the University of Georgia's website. [Read about Dr. Cummings](#), his current position, and his research.

Posted 11/29/16.



## November 11, 2016 News Briefs

- Hayley Cawthon (Backues) and Carson Zois (Backues) were awarded travel funds from the Honors College for travel to the Keystone Symposium "Autophagy Network Integration in Health and Disease" in Harrisburg, Pennsylvania.
  - Hedeel Evans had a paper accepted in Journal of Biochemistry entitled, "Activation of latent dihydroorotase from *Aquifex aeolicus* by pressure," based on work with EMU M.S. student Roshini Fernando and collaborators in France and at Wayne State University.
  - Nina Contis had a book chapter "Water: Global Issues, Local Solutions" published in the ACS Book Series "Chemistry without Borders: Careers, Research, and Entrepreneurship."
  - Amy Johnson, along with Nichole Wright from the Ann Arbor Hands-On Museum, received a Partnership Champions: SENCER-ISE and Professional Development Through Mentoring to Enhance Learning Environments sub-award, funded by the Institute of Museum and Library Services and The National Center for Science and Civic Engagement (NCSCE).
  - Dave Nickell was chosen as an MVP (Most Valued Professor) by the EMU Volleyball Team.
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## Professor Steven Backues Receives Major NSF Grant



Steven Backues, an assistant professor in the department, was the principal investigator on a \$297,384 RUI grant from the National Science Foundation entitled "Scaffold or Assembly Line: How Does Atg11 Organize its Binding Partners for the Initiation of Selective Autophagy?" This grant has the dual purpose of enhancing undergraduate education in the department and advancing humanity's fundamental understanding of the medically relevant process of Autophagy.

This grant will enhance undergraduate education in the department by helping support mentored undergraduate and master's level research as well as bringing this research into the undergraduate biochemistry lab in the form of a "Course Associated Undergraduate Research Experience (CURE)." Studies have shown that the most effective way for students to learn science is by participating in authentic scientific research, and these efforts are in line with innovations undertaken by other professors teaching the biochemistry lab.

The specific subject of the research that this grant will support is selective autophagy, a cellular clean-up and recycling process used by animals, plants and fungi to maintain cellular health. Selective autophagy targets damaged or unwanted cellular components, such as toxic protein aggregates or malfunctioning mitochondria, and delivers them to the vacuole/lysosome where they are destroyed and their constituents recycled. Defects in selective autophagy in humans leads to neurodegenerative diseases such as Parkinson's disease, as well as some cancers. Dr. Backues's research focuses on understanding the basic mechanisms of selective autophagy in the model organism baker's yeast. One of the key proteins that guides the process of selective autophagy is Atg11, which interacts with a number of other autophagy proteins and organizes them into a functional protein complex. This research will explain how Atg11 organizes this complex by determining the characteristics of Atg11's interactions with its protein partners. Specifically, it will determine whether Atg11 can bring together all of its partners at once, in the manner of a scaffold, or whether it interacts with them one at a time, in the manner of an assembly line. This information will help us to understand how selective autophagy actually occurs, not only in yeast but also many other organisms that share a similar machinery, including humans.

Posted 10/24/16.

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## **October 7, 2016 News Briefs**

- Don Snyder received funding from the CAS Dean's Office for travel to his upcoming conference in Portugal.
- Cory Emal was elected by Faculty Senate to the Transferable Technology Committee for a 3-year term.
- Beka Buzrukov (Janser) and Asil Zayed (Janser) were awarded travel funds from the CAS Dean's Office for travel to the ACS National Meeting in Philadelphia.
- Ruth Ann Armitage had a conference paper published in Textile Specialty Group Postprints.

## **Professor Johnson Facilitates the Scholarship of Teaching and Learning at EMU**



As part of a Faculty and Development Center initiative to engage more faculty and lecturers in the Scholarship of Teaching and Learning (SoTL), Amy Flanagan Johnson (Chemistry) and Katherine Ryker (Geography and Geology) will be leading a SoTL group this academic year. The group will meet every three weeks or so to support each other in designing and carrying out a SoTL study, the results of which could be presented on campus, at a conference, or via publication in a professional journal. Posted 9/12/16.

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## September 9, 2016 News Briefs

- Amy Johnson was promoted to full professor.
- Steven Backues was awarded a three-year research grant from NSF-RUI for his project entitled "Scaffold or Assembly Line: How Does Atg11 Organize its Binding Partners for the Initiation of Selective Autophagy?"
- Larry Kolopajlo had a manuscript "Green Chemistry Pedagogy" accepted for publication as a chapter in the upcoming book "Sustainable Green Chemistry" and in the Physical Sciences Reviews journal.
- Amy Johnson was selected to attend the 2016 Project Kaleidoscope Summer Leadership Institute.
- Steven Backues received a Provost's Research Support Award.
- Mariah Brito (Guthrie), Daniel Eskilsen (Evans), Omid Hajihassani (Vites), Murali Jujjavarapu (Guthrie), Margaret Macknick Champion (Heyl-Clegg), Justin Powers (Vites), and Celeste Rousseau (Guthrie) were awarded travel money from the CAS Dean's Office at attend the ACS Central Regional Meeting in Covington, KY.
- Diamond Jones (Milletti) was awarded travel money from the CAS Dean's Office at attend the ACS National Meeting in San Diego, CA.
- Amy Markowitz (Janser) received travel funds from the CAS Dean's Office for travel to the Graduate Student Symposium in Buffalo, NY.
- Alyssa Winkler (Albaugh) received travel funds from the CAS Dean's Office and the Grad School for travel to the Midwest Epigenetics & Chromatin Meeting in Grand Rapids, MI.
- Mitchell Meyer (Backues), Damien Sheppard (Backues), Jesse Smith (Backues), and Jesse Wotring (Janser) received Fall 2016 Honors Undergraduate Fellowships.
- Ruth Ann Armitage, Steven Backues, Heather Holmes, Ingo Janser, Harriet Lindsay, Debbie Heyl-Clegg and Hedeel Evans who were all nominated by their research students for the William Fennel Symposium Faculty Mentor Award.
- Corissa Lamphear-Gilmer gave birth to her son, Bennett, born on May 29.