
DEPARTMENT OF CHEMISTRY NEWSLETTER

Dedication Ceremony for the Mark Jefferson Science Complex

The dedication ceremony for the completely renovated Mark Jefferson Science Complex was held on Oct. 30, 2012. A variety of dignitaries were present including Congressman John Dingell (D-Dearborn), State Representative David Rutledge (54th District), members of the Board of Regents, President Susan Martin, and about 100 alumni, faculty, administrators and students.

Chemistry student Danielle St. Germaine recounted her experiences in the Chemistry department from the time she spent in the "old" building as an undergraduate student in the Biochemistry-Toxicology program to a Masters student in Chemistry in the new and renovated building. Dani indicated "I'm happy to say that this beautiful complex finally reflects the caliber of education afforded the students by the excellent and dedicated faculty."

The \$90 million project began in November 2008, the new addition was completed in January 2011, the basement, first and second floors were renovated by September 2011, and the third, fourth and fifth floors were completed by September 2012. The Center for Molecular Biology and Biochemistry is a unique feature of the most recent phase of the renovation. It constitutes about one-third of the fourth floor, and is essentially contained in one great room with 21 feet



of linear bench bench/desk space for each of 14 biology and biochemistry faculty; a large room for shared equipment, freezers, autoclaves, and a dishwasher; a tissue culture room; a student office with carrels; and a conference room equipped with projector and screen for scientific presentations and meetings. We thank Chemistry department's Cory Emal for playing a major role as a faculty advisor to the building project.

Meet New Organic Chemistry Faculty -- Ingo Janser

In September, Dr. Ingo Janser joined the Department as an Assistant Professor of Chemistry. He earned a Diploma in Chemistry from the University of Karlsruhe, Germany and a Ph.D. in Chemistry from RWTH Aachen University, Germany. His area of expertise is synthetic organic chemistry. Prior to coming to Eastern Michigan University, he did postdoctoral work at the University of California, Berkeley in the field of organometallic chemistry and was appointed as an Assistant Professor of Chemistry at New Mexico Tech, where he led a research group and taught several courses on the undergraduate and graduate level in general and organic chemistry.



Professor Janser's research interests are the target-oriented synthesis and modification of natural and non-natural bioactive compounds with the goal to find relationships between structure and activity of the corresponding compound. The knowledge gained can be used for rational drug design. Furthermore, Dr. Janser's research is focused on the development of novel chiral and water stable Lewis-acid catalysts for asymmetric Lewis acid catalyzed reactions in aqueous media. This "Green Chemistry" approach will help to

reduce organic solvent waste and make Lewis-acid catalyzed reactions more environmentally benign.

In the rare event that he is not busy with his teaching duties or his research, he enjoys spending time with his lovely wife Romy. They both love exploring National Parks, thereby enjoying the fascinating scenery and taking a lot of pictures. Their favorite places are Yellowstone NP, Bryce Canyon NP, Zion NP, and San Diego Zoo including the Wild Life Park. If he doesn't have a chance to be in nature, he enjoys cooking for his wife, reading a book or two (if time allows), playing the occasional board/card game or spending an evening in the company of friends.

Turning Heads

There was a changing of the guard in the Chemistry department this year. Ross Nord stepped down from the position of Department Head on June 30, 2012. Over the five years as Department Head, Professor Nord provided oversight of the planning and construction of the addition and renovation of the Mark Jefferson Science complex. The project required four move phases, with all labs and offices moving at least once. His other departmental accomplishments included undergoing a successful program review process in 2007-2008, which involved the highest level of faculty participation ever, and a positive 5-year review by the American Chemical Society in 2009-2010. The Department's Faculty Evaluation Document was revised to reflect the high standards held for the department's faculty. Finally, groundwork was laid for future curricular changes, primarily through the accelerated activity of the Assessment Committee on establishing student outcomes, assessing of student learning, and improving safety training.

Steve Pernecky took the position on July 1, 2012 as Department Head after 17 years on the chemistry faculty, where he taught a variety of courses including general chemistry, organic and biochemistry for nursing students, biochemistry,



and toxicology. Steve was most recently the Associate Chair and Undergraduate Coordinator in the department. He is most grateful for the tremendous accomplishments of his predecessor, Ross Nord, who among other things shepherded the Chemistry department through the difficult building phases.

Steve is hoping that the open design of the new building will leverage new ideas for programming, opportunities for growth, and enhanced interactions between faculty and students.



Chemist Serves on EMU Board of Regents, Supports EMU Science

EMU Regent, information scientist and chemist Dr. Beth Fitzsimmons recently pledged support to establish a seminar series for the Summer Science Research Initiative (see enclosed flyer). Her gift will allow us to bring prominent scientists to campus each summer to visit our students, faculty, and facilities and to present research seminars. We are extremely excited about this gift and its potential to help us introduce more students to summer research as well as increase the visibility of science at EMU.



Dr. Fitzsimmons was appointed to the EMU Board of Regents by Governor Snyder in 2011. She earned a bachelor's degree in chemistry from Simmons College, a master's in library science from SUNY (Albany), and a doctorate from the School of Public Policy, George Mason University in science, technology, and information policy.

Fitzsimmons, of Ann Arbor, is president of Information Strategists LLC. For a number of years, she has worked with high-tech companies and government agencies such as the U.S. Patent and Trademark Office, Department of Defense, Office of the President of the United States, National Academy of Public Administration; and CENDI; an Executive Branch interagency working group of scientific and technical information managers. She

was a Presidential appointee to the Advisory Board of the 2nd White House Conference on Libraries and Information Services and chaired the Technology Committee.

In 2003, Fitzsimmons was appointed Chair of the National Commission on Libraries and Information Science by President George W. Bush, a position she held for five years. In addition, she has served on the Department of Commerce NTIS (National Technical Information Service) Advisory Board. She has been a member of the American Chemical Society for over 25 years and served on its Committee on Patents and Related Matters.

American Chemical Society Project SEED

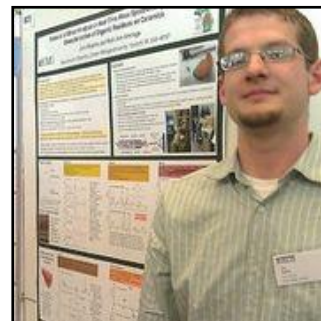
The EMU Chemistry Department and the Huron Valley Local Section of the American Chemical Society again sponsored a high school student to participate in the ACS Project SEED program. The program is designed to give economically disadvantaged high school students a research experience with the hope that they might consider a chemistry career as they plan for college. This summer, we hosted Halle Thomas, a student from Milan High School (Daniel Heikka, high school chemistry teacher).

Halle worked with Professors Maria Milletti and Harriet Lindsay to help synthesize new analogs of a biologically active naturally occurring alkaloid known as lentiginosine. Halle optimized two of the four steps of her total synthesis and worked with Prof. Milletti to better understand the stereochemistry of a particular reaction in the synthesis scheme. Halle has been admitted to Yale, where she will begin her undergraduate work in Fall 2013.



Chemistry Student Wins Top Prize for Poster at International Archaeometry Symposium

John Hopkins, EMU professional chemistry major, was one of two winners of the Martin Aitken Prizes for best student poster presentations at the 39th International Symposium on Archaeometry, held in Leuven, Belgium in May 2012. The prize recognizes the best posters representing the work of students enrolled in programs leading to degrees in science or archaeological science, and is named for Dr. Martin Aitken, the founder of the Symposium and former director of the Research Laboratory for Archaeology and the History of Art at the University of Oxford. Winners of the 200 Euro cash prize are selected by the ISA Standing Committee. John's poster, "Potential of Direct Analysis in Real Time Mass Spectrometry for Rapid Characterization of Organic Residues on Ceramics," was chosen from nearly 100 competitors, primarily MS and Ph.D. students from around the world. John is carrying out undergraduate research with Dr. Ruth Ann Armitage in the EMU Chemistry Department.



Alumnus Kiara Donohoo Shares Her Story of Career Development

This year, we invited Kiara Donohoo, who graduated from EMU with a Biochemistry-Toxicology degree in 2001 to write about her career development. This is her story.

I am Kiara Donahoo, and I wanted to share my story with you of how I went from the Chemistry Stockroom to life science sales. I started my career at EMU with plans to earn my bachelor's degree in Biochemistry and continue on to pharmacy school. However, along the way, my plans shifted from my experience in the Chemistry Department. I started working in the Chemistry Stockroom in my sophomore year prepping general chemistry labs. I learned about chemical safety and proper handling techniques. Working in the stockroom taught me

patience, organization, proper documentation, and how to effectively work as a team. In my junior year, I also began working as a pharmacy technician. The experience taught me about the day to day challenges of a pharmacist. At this point, I began to look at my situation and had to decide if pharmacy was really the career path for me.

During my senior year, an opportunity was presented to me for an internship at Pfizer Global Research and Development in Ann Arbor. At the time, I was not really interested in research and did not even consider this avenue as a career possibility. However, I was open to new experiences. So I decided to participate in the interview process and I was one of the two students chosen for the internship. While at Pfizer, I was introduced to a new world. I was so focused



on my career path of becoming a pharmacist, I did not step back and think about how much I enjoyed my work in the chemistry labs and in the stockroom, which the internship simply expanded on. I went through rotations in three of the departments' labs performing experiments for molecular biology, immunology, and clinical pathology. Our goals were to develop new tests for toxicology screening of new compounds that would be further developed into medicine. This is a world I never knew existed. This internship was a life changing experience. I had found my calling and a few months into the internship, I was recruited for a full time position.

I spent the next six years with Pfizer in the Immunotoxicology Department where I received two promotions and also completed my MBA. When Pfizer departed the Plymouth Road facility, I was fortunate to find a new opportunity in the Ann Arbor area with Aastrom Biosciences where I

switched gears from research to manufacturing. Eleven months into this position, the company went through a major downsizing and I took off the summer to re-evaluate my career path. With the state of the economy, I knew I wanted to stay in the Ann Arbor area and to do so I needed to not only differentiate myself, but also find a company and position with stability. I landed on my feet with a position at Enzo Life Sciences (formerly Assay Designs) in product development as a production and research associate, starting as a temp and then became a full-time employee. During my time with the company, a unique opportunity opened up for me to continue my research and development responsibilities, while dedicating 20% of my time to inside sales. Again, I wanted to explore another facet of the organization and have a new experience. I had found a new challenge in sales. I enjoyed this challenge and was successful, in part because I had the technical background to connect with the scientists. After close to a year, I was offered a full-time inside sales position. About four months later, I transitioned to a field sales position with another company, VWR International, as a life science specialist. In this position, I not only sell to scientists, but I also help train the local representatives how to identify life science opportunities. I have found a career that marries science, sales, training, and my love of working with people.

All in all, if it had not been for my experience in the stockroom, which led to my recruitment for the toxicology internship at Pfizer, I may not have found a career that is fulfilling and also perfectly suites the lifestyle I want to lead. So I say to anyone who is on a strict career path, explore all opportunities that are presented to you because in this life, you don't have to decide definitively what you want to do when you grow up. You only have to decide what you are going to do first. I thank Joe Mason and Dr. Pernecky for believing in me and also giving me the opportunity to experience something new and different.

STUDENT AWARDS, 2012

Ian M. Pendleton, The Peet-Mayor Endowed Chemistry Award

Danielle St. Germaine, ACS Huron Valley Section Undergraduate Award

Stephanie M. Daniels, Grace Simmons Gregory Scholarship

Elizabeth P. Miguet, Maurice Decoster Endowed Chemistry Scholarship

Hector E. Figueroa, **Elyssa M. Rautiola**, **Erika M. Van Goethem**, Collins' Endowed Scholarships in Chemistry

Amanda L. Dewyer, Sandra J. Lobbstaal Chemistry Endowed Scholarship

Joseph G. Suspeck, Elva Mae Nicholson Organic Chemistry Endowed Scholarship

Erika M. Van Goethem, John Sullivan Endowed Scholarship

Benjamin C. Sharp, James G. and LeAnn K. Emal Scholarship in Chemistry

Christopher Fairchild, Hypercube Scholar Award

Hector E. Figueroa and **Ian M. Pendleton**, Biochemistry Achievement Award

Elyssa Rautiola, Toxicology Achievement Award

John R. Hopkins, ACS Division of Analytical Chemistry Award

Nicholas J. Anagnostou, CRC Press Chemistry Achievement Award

Antonios M. Chionis and **Amanda K. Waggamon**, Perry S. Brundage Scholarships

Ryan D. Huntington, Donald B. Phillips Memorial Endowed Scholarship

Ian M. Pendleton, 25th Anniversary Undergraduate Symposium Endowed Scholarship

Ian M. Pendleton, Symposium Undergraduate Research Fellow

William C. Joesten and **Ian M. Pendleton**, University Honors Program Graduates and Honors Senior Thesis Awards

Nicholas J. Anagnostou, **Betsy P. Huan**, **William C. Joesten**, **Mary Beth Kalvaitis**, **Elizabeth P. Miguet**, and **Ian Pendleton**, Honors Undergraduate Fellowships

Bryan S. Harmon, **John R. Hopkins**, **Joshua C. Hunt**, **Mary Beth Kalvaitis**, **Benjamin C. Sharp**, **Jennelle D. Shaw**, **Lois C. Vasquez**, **Alyssa E. Winkler**, and **Michael V. Zielinski**, Undergraduate Research Stimulus Awards

Mayank Srivastava, David A. Berry Excellence in Organic Chemistry/Biochemistry Endowed Scholarship

Christina A. Varney, Martin and Antoinette Gorski Endowed Scholarship in Radio and Nuclear Chemistry

Christina A. Varney, EMU Chemistry Department Teaching Assistant Award

Hasina Y. Saraha, EMU Chemistry Department Research Award

Gregory A. Abernathy, ACS Huron Valley Section EMU Outstanding Graduate Student Award

Naga S. Guntaka, Ronald M. Scott Memorial Scholarship

GRADUATE RESEARCH FAIR, March 2012

Himabindu Anumala – Professor Cory Emal, sponsor. “Design, Synthesis, and Evaluation of Non-Symmetric Small Molecules for the Enhanced Inhibition of PAI-1”

Architha Ellenki – Professor Deborah Heyl-Clegg, sponsor. “The Effect of Incorporated Cholesterol on Disruption of Model Membranes by hIAPP”

SaiDeepthi Illendula – Professors Lynn Shetron and Steven Pernecky, sponsors. “Short-Chain Fatty Acid Production by Microbial Organisms in a Bioreactor”

Anupama Jasthi – Professors Deborah Heyl-Clegg and Hedeel Evans, sponsors. “Using Peptides to Examine an Interface Between Two Pyrimidine Pathway Enzymes in *Aquifex Aeolicus*”

Theodora Katsika, **Santita Campbell**, **Jacinda Lisi**, and **Ebaa Saad** – Professors Ellene Contis and Jose Vites, sponsors. “The CSIE program at EMU: Positive Impact in Recruitment and Retention of STEM Students”

Norosha D. Perera – Professor Hedeel Evans, sponsor. Purification of FAM129B, a Currently Identified Protein that Is Important for Cell Invasion, in *E. Coli*”

Steve R. Spaulding – Professor Maria Milletti, sponsor. Computational Study of PAI-1 and Some of its Inhibitors”

Christina A. Varney – Professor Ruth Ann Armitage, sponsor. “Characterizing Organic Colorants in a 15th Century Iranian Timurid Qur’an by Direct Analysis in Real Time Time-of-Flight Mass Spectrometry”

UNDERGRADUATE SYMPOSIUM, March 2012

Nicholas Anagnostou – Professor Timothy Friebe, sponsor. “A Shot in the Dark: The Hunt for a Fluorescent Biomarker”

Antonios Marios Nickolaos Chionis – Professor Maria Milletti, sponsor. “Modeling the Lewis-acid Mediated Ring Opening of an Oxazolidine to the Iminium Cation”

Christian Chiroasca – Professor Larry Kolopajlo, sponsor. “Videos to Promote Effective Learning in General Chemistry II”

Lauren Crisman – Professor Deborah Heyl-Clegg, sponsor. “Fighting Bacterial Resistance: Modifying the Antimicrobial Peptide Tachyplesin”

Sarah Davis – Professor Deborah Heyl-Clegg, sponsor. “Membrane Disruption by Human Islet Amyloid Polypeptide: Attraction to Various Head-groups”

Amanda Dewyer – Professor Maria Milletti, sponsor. “Computational Modeling of Activation Energies for C-C Bond Rotations in an Iminium Cation”

Hector Figueroa – Professor Deborah Heyl-Clegg, sponsor. “Running Interference on Protein Aggregation: The Effects of Non-specific Peptide Inhibitors”

Sherif Hassanien – Professor Harriet Lindsay, sponsor. “Using Protecting Group Size to Control Stereochemistry in the Aza-Cope Rearrangement-Mannich Cyclization”

John Hopkins – Professor Ruth Ann Armitage, sponsor. “Potential of DART-MS for Rapid Characterization of Organic Residues on Ceramics”

Betsy Huang – Professors Hedeel Evans and Deborah Heyl-Clegg, sponsors. “Investigating Functional Interactions of the DHO-ATC Complex Using a Synthesized Peptide”

Joshua Hunt – Professor Jeff Guthrie, sponsor. “Method Development for the Selection of DNA Aptamers Using Quantum Dots and Capillary Electrophoresis”

William Joesten – Professor Deborah Heyl-Clegg, sponsor. “Lipid Membrane Disruption by Amylin in Type 2 Diabetes Mellitus: Effect of Head Group Loss”

Brittani Rae Mack and Lindsay Daschner – Professors Steven Pernecky and Steve Francoeur, sponsors. “Microcystis in Ford Lake”

Elizabeth Miguet – Professor Harriet Lindsay, sponsor. “A Memory of Chirality Test: Asymmetric Induction in the Catalytic Aza-Cope Rearrangement-Mannich Cyclization”

Ian Matthew Pendleton – Professor Harriet Lindsay, sponsor. “Computational and Experimental Investigation of the Catalytic Aza-Cope Rearrangement-Mannich Cyclization”

Elyssa Rautiola – Professors Steven Pernecky and Daniel Clemans, sponsors. “Short Chain Fatty Acid Production by Probiotic Organisms in the Gut”

Benjamin Charles Sharp – Professor Gregg Wilmes, sponsor. “Synthesis and Modification of Copolymers for an Effective Drug Delivery System”

Jenelle Denise Shaw – Professor Jamie Scaglione, sponsor. “Characterization of Verrucospora: An Antimicrobial-producing Actinomycete”

Danielle St. Germaine – Professor Harriet Lindsay, sponsor. “Substituent Effects in the Aza-Cope Rearrangement-Mannich Cyclization”

CHEMISTRY FACULTY ACTIVITIES

Grants and Awards

Nina Contis: Appointed by President Martin to Women’s Commission.

Cory Emal: Sabbatical, Fall 2011.

Gavin Edwards: Awarded tenure and was promoted from Assistant to Associate Professor

Amy Johnson: \$3621 plus a 1/4 release (Fall ’12) for 2012 Dean’s Program Development Initiative funding for the project "Aligning EMU's Elementary Science Education Courses with the National Research Council's A Framework for K-12 Science Education: Practices, Crosscutting Concepts, and Core Ideas."

Deborah Heyl-Clegg: \$2,950 for a Faculty Research Fellowship

Larry Kolopajlo: Promotion from Associate to Full Professor. \$3,450 by the American Indian Higher Education Consortium from TARDEC: National Defense Education Funding for a middle school summer science camp.

Harriet Lindsay: Promotion from Associate to Full Professor. \$5,000 awarded for American Chemical Society Project SEED (with Maria Milletti).

Maria Milletti: \$18,500 for a Jean Dreyfus Boissevain Lectureship for Undergraduate Institution (co-PI Harriet Lindsay). \$5000 for Dean's PDI funding for the project "Building a Community of Scholars from a Summer Science Research Program (with H. Lindsay).

Presentations

EMU student presenters are underlined.

"Your Questions about Vitamins, Drugs and Your Health," **Ruth Ann Armitage**, Philanthropic Educational Organization, Milan Chapter, Milan, MI (January 2012)

"Creative Science Inquiry Experience in Organic Chemistry and Quantitative Analysis" **Amy Flanagan Johnson, Harriet Lindsay, and Ruth Ann Armitage**. Biennial Conference on Chemical Education, State College, PA (July 2012).

"Chemical Characterization of the Pictographs of Cueva la Conga, Nicaragua" **Ruth Ann Armitage**, R. Li, C. Selvius DeRoo, and S. Baker. In session "Dating and chemical analysis of rock art," presented by M. W. Rowe (session organizer). IFRAO-SIARB International Congress on Archaeology and Rock Art, La Paz, Bolivia (June 2012)

"Cueva La Conga: First karst cave archaeology in Nicaragua" S. Baker and **Ruth Ann Armitage**. In session "Rock art and archaeological cultures of present-day Central America: a link between Mesoamerica and the Andean region," presented by M. Strecker (conference organizer). IFRAO-SIARB International Congress on Archaeology and Rock Art, La Paz, Bolivia (June 2012)

"Direct Analysis in Real Time Mass Spectrometry for Identification of Organic Dyes" **Ruth Ann Armitage, J. Geiger**, and C. Selvius DeRoo. ACS Central Regional Meeting, Dearborn, MI (June 2012)

"Identification of Heme in Aged Blood by Direct Analysis in Real Time Mass Spectrometry" D. Fraser and **Ruth Ann Armitage**. ACS Central Regional Meeting, Dearborn, MI (June 2012)

"Characterizing Organic Colorants in a 15th Century Iranian Timurid Qur'an by Direct Analysis in Real Time-Time of Flight Mass Spectrometry" C. Varney, **Ruth Ann Armitage**, and C. Selvius DeRoo, 39th International Symposium on Archaeometry, Leuven, Belgium (May 2012)

"Direct Analysis in Real Time Mass Spectrometry for Identification of Organic Dyes" **Ruth Ann Armitage, J. Geiger**, and C. Selvius DeRoo, 39th International Symposium on Archaeometry, Leuven, Belgium (May 2012)

"Potential of Direct Analysis in Real Time Mass Spectrometry for Rapid Characterization of Organic Residues on Ceramics" J. Hopkins and **Ruth Ann Armitage**. 39th International Symposium on Archaeometry, Leuven, Belgium, (May 2012)

"Identification of Heme in Aged Blood by Direct Analysis in Real Time Mass Spectrometry" D. Fraser and **Ruth Ann Armitage**. 39th International Symposium on Archaeometry, Leuven, Belgium, (May 2012)

"Creative Scientific Inquiry Experience (CSIE) Program: Developing Integrated Science Curriculum", **Ellene Tratras Contis, Jose Vites, T. Katsika, J. Lisi, E.Saad, and S. Campbell**, presented at the NSF PI meeting, Washington DC, (March 2012)

"Sustainability", D. Allen, **Ellene Tratras Contis**, and M. Georgiopoulos, facilitators for STEP SIG at the NSF STEP PI meeting, Washington DC, (March 2012).

"Progress towards the use of 1,2,4-triazoles as inhibitors of plasminogen activator inhibitor-1" G.A. Abernathy, M. Warnock, D.A. Lawrence, **Cory D. Emal**, (MEDI-199) 243th American Chemical Society National Meeting and Exposition, San Diego, CA (March 2012)

"Design, synthesis, and evaluation of non-symmetric small molecules for the enhanced inhibition of plasminogen activator inhibitor-1" H. Anumala, J.M. Lisi, N.C. El-Ayache, M. Warnock, D. A. Lawrence, **Cory D. Emal**, (1311). 2012 Central Regional Meeting of the American Chemical Society, Dearborn, MI (June 2012)

"Progress towards heterocycles as inhibitors of plasminogen activator inhibitor-1" G.A. Abernathy, M. Warnock, D.A. Lawrence, **Cory D. Emal**, (1310). 2012 Central Regional Meeting of the American Chemical Society, Dearborn, MI (June 2012)

"Conformational and binding analysis of non-symmetric ring-based inhibitors of plasminogen activator inhibitor-1" H.Y. Saraha, **Cory D. Emal**, **Maria C. Milletti**, (1336). 2012 Central Regional Meeting of the American Chemical Society, Dearborn, MI (June 2012)

"Box Modeling of HOx Chemistry at a Remote Field" **Gavin D. Edwards**, P. Stratton, B. Marthambadi, B. Harless and S. Manthena (A51A-0118), American Geophysical Union Fall Meeting, Moscone Convention Center, San Francisco, CA (December 2011)

"Air Quality in the Detroit Urban Area" S. H. Hussey and **Gavin D. Edwards**, ACS Midland section, Fall Scientific Meeting (October 2011)

"Our shot in the dark: The search for a fluorescent biomarker", **Tim L. Friebe**, N. Anagnostou, 43rd Central Regional Meeting of the American Chemical Society, Dearborn, MI (June 2012)

"General Considerations when Dealing with Biological Fluid Samples", **Jeff W. Guthrie**, In Comprehensive Sampling and Sample Preparation, Editor-in-Chief: Janusz Pawliszyn, Academic Press, Oxford, Pages 1-19 (2012)

"Mechanistic Investigation of the Formation of Benzo[a]pyrene Induced DNA Adducts in the Presence of Arsenic" **Jeff W. Guthrie**, J. Lee, M. Weinfeld, X.C. Le, The Pittsburgh Conference, Orlando, FL, USA (March 2012)

"Mechanistic Investigation of the Formation of Benzo[a]pyrene Induced DNA Adducts in the Presence of Arsenic" **Jeff W. Guthrie**, J. Lee, M. Weinfeld, X.C. Le, Canadian Society for Chemistry Conference, Calgary, AB, Canada (May 2012)

"Using peptides to examine the interface between two pyrimidine pathway enzymes", A. Jasthi, **Deborah L. Heyl**, and **Hedeel Guy Evans**, 44th Central Regional American Chemical Society Meeting, Dearborn, MI (June 2012)

"Effect of Incorporated Cholesterol on Disruption of 7:3 DOPC/DOPS Model Membranes by hIAPP", A. Ellenki and **Deborah L. Heyl**, 44th Central Regional American Chemical Society Meeting, Dearborn, MI (June 2012)

"Membrane Disruption by Human Islet Amyloid Polypeptide: Attraction to Various Head-groups", S. Davis and **Deborah Heyl-Clegg**, 44th Central Regional American Chemical Society Meeting, Dearborn, MI (June 2012)

"Derivatization of Short-Chain Fatty Acids (SCFA) Using 1-Pyrenyl-Diazomethane (PDAM) on Polyacrylate", M.B. Kalvalitis and **Heather Holmes**, ANACHEM Conference, Livonia, MI (November 2011)

"Determination of feline leukemia viral and proviral loads using real-time polymerase chain reaction", D. Van Strien, P. Bodette, H. Ali, and **Heather L.S. Holmes**, ACS National Meeting in Philadelphia, PA (August 2012)

"Synthesis of 1-pyrenyldiazomethane for use as a derivatizing agent for short-chain fatty acids", M.B. Kalvaitis, **Heather L.S. Holmes**, and **Timothy Friebe**, ACS National Meeting in Philadelphia, PA (August 2012)

"Testing efficacy of a constructed wetland to filter common water pollutants through ion chromatography", L. Vasquez, **Heather Holmes**, and Kristin Judd, ACS National Meeting in Philadelphia, PA (August 2012)

"Factors that influence students' attitudes towards chemistry", O. Odeleye and **Amy Flanagan Johnson**, 43rd American Chemical Society Central Regional Meeting, Dearborn, MI (June 2012)

"Curricular and co-curricular partnership for academic success", L. Vasquez, and **Amy Flanagan Johnson**, 43rd American Chemical Society Central Regional Meeting, Dearborn, MI (June 2012)

"Examining Equilibrium Concepts Throughout the Undergraduate Chemistry Curriculum", **Tim Friebe**, **Maria C. Milletti**, **Ross Nord**, **Steven Pernecky**, **Jose Vites**, and **Amy Flanagan Johnson**, Biennial Conference on Chemical Education, University Park, PA (July 2012)

"Creative Science Inquiry Experience in Organic Chemistry and Quantitative Analysis", **Ruth Ann Armitage**, **Harriet Lindsay**, & **Amy Flanagan Johnson**, Biennial Conference on Chemical Education, University Park, PA (July 2012)

"Reaction Kinetics between Bipyridine and Ni(tren)⁴⁺", **Lawrence H. Kolopajlo**, N. Hollis, and I. Pendleton, ACS 43rd American Chemical Society Central Regional Meeting, Dearborn, MI (June 2012)

"Attitude and Mathematics Assessments in General Chemistry II", **Larry Kolopajlo**, Michigan Academy of Science Arts and Letters, Alma College, (March 2012)

"Technology in the College Chemistry Classroom", **Larry Kolopajlo**, Michigan College Chemistry Teachers Association, Olivet College (November 2011)

"Toward a 'Greener' Chemical Reaction for Producing Chemical Building Blocks for Pharmaceuticals and Catalysts", I. M. Pendleton and **Harriet A. Lindsay**, Posters on the Hill, Washington, D.C. (April 2012)

"Toward a catalytic, asymmetric aza-Cope rearrangement – Mannich cyclization", **Harriet A. Lindsay** and I. M. Pendleton, 243rd National ACS Meeting, San Diego, CA (March 2012)

"Memory of chirality test: Asymmetric induction in the catalytic aza-Cope rearrangement – Mannich cyclization" **Harriet A. Lindsay** and E. Miguët, 243rd National ACS Meeting, San Diego, CA (March 2012)

"Substituent effects in the aza-Cope rearrangement – Mannich cyclization" **Harriet A. Lindsay**, and D. St. Germaine, 243rd National ACS Meeting, San Diego, CA (March 2012)

"Quinolizidine and indolizidine alkaloid synthesis via an intramolecular pinacol coupling", **Harriet A. Lindsay**, S. Maddali, 243rd National ACS Meeting, San Diego, CA (March 2012)

"The effect of structural modifications on the binding between PAI-1 and its inhibitors" S.R. Roghani Esfahani and **Maria C. Milletti**, 43rd ACS Central Regional Meeting, Dearborn, MI (June 2012)

"Computational study of PAI-1 and some of its inhibitors", S. Spaulding and **Maria C. Milletti**, 43rd ACS Central Regional Meeting, Dearborn, MI (June 2012)

"Substituent effects in the ring opening reaction from an oxazolidine to an iminium cation", A.M.N. Chionis and **Maria C. Milletti**, 43rd ACS Central Regional Meeting, Dearborn, MI (June 2012)

"Analysis of activation barriers to C-C bond rotations and their effect on stereoselectivity in a series of iminium cations", A. Dewyer and **Maria C. Milletti**, 43rd ACS Central Regional Meeting, Dearborn, MI (June 2012)

"Substituent effects in an aza-Cope Mannich reaction leading to substituted acylpyrrolidines", A. Winkler and **Maria C. Milletti**, 43rd ACS Central Regional Meeting, Dearborn, MI (June 2012)

"Computational study of PAI-1 and its interactions with an inhibitor", S. Spaulding and **Maria C. Milletti**, 244th ACS National Meeting, Philadelphia, PA (August 2012)

"Computational analysis of activation barriers to C-C bond rotations for an iminium cation", A. Dewyer and **Maria C. Milletti**, 244th ACS National Meeting, Philadelphia, PA (August 2012)

"Computational analysis of a ring-opening reaction from an oxazolidine to an iminium cation", A.M.N. Chionis and **Maria C. Milletti**, 244th ACS National Meeting, Philadelphia, PA (August 2012)

"Substituent effects in a Lewis acid catalyzed aza-Cope Mannich tandem reaction", A. Winkler and **Maria C. Milletti**, 244th ACS National Meeting, Philadelphia, PA (August 2012)

"Microbial Natural Products: Biosynthesis and Discovery", **Jamie Scaglione**. Invited seminar speaker at Adrian College Chemistry Department (September 2011) and at University of Toledo, College of Pharmacy and Pharmaceutical Science, Department of Pharmacology (February 2012)

"Micellization of acrylate-based amphiphilic block copolymers as a function of hydrophobic core chain length: An investigation into the effects of chain rigidity and molecular weight on self-assembly", K.S. Kawchak and **Gregg M. Wilmes**, 243rd ACS National Meeting, San Diego, CA (March 2012)

"Synthesis and modification of block copolymers as potential drug delivery systems", B.C. Sharp and **Gregg M. Wilmes**, 43rd Central Regional Meeting of the American Chemical Society, Dearborn, MI (June 2012)

Publications

EMU student co-authors are underlined.

"Identification of Organic Dyes by Direct Analysis in Real Time-Time-of-Flight Mass Spectrometry" Geiger, J.; Armitage, R. A., Selvius DeRoo, C. In *Collaborative Endeavors in the Chemical Analysis of Art and Cultural Heritage Materials*; Lang, P. L.; Armitage, R. A., Eds. American Chemical Society: 2012; Vol. 1103, pp 123-129.

"Characterizing Organic Residues on Ceramics by Direct Analysis in Real Time Time-of-Flight Mass Spectrometry" Hopkins, J.; Armitage, R. A. In *Collaborative Endeavors in the Chemical Analysis of Art and Cultural Heritage Materials*; Lang, P. L.; Armitage, R. A., Eds. American Chemical Society: 2012; Vol. 1103, pp 131-142.

"New Developments in the 'Non-destructive' Dating of Perishable Artifacts Using Plasma-Chemical Oxidation" Armitage, R. A.; Ellis, M. E.; Merrell, C. In *Collaborative Endeavors in the Chemical Analysis of Art and Cultural Heritage Materials*; Lang, P. L.; Armitage, R. A., Eds. American Chemical Society: 2012; Vol. 1103, pp 143-154.

"Characterization of the Binders and Pigments in the Rock Paintings of Cueva la Conga, Nicaragua" Li, R.; Baker, S.; Selvius DeRoo, C.; **Armitage, R.A.**, In *Collaborative Endeavors in the Chemical Analysis of Art and Cultural Heritage Materials*; Lang, P. L.; Armitage, R. A., Eds. American Chemical Society: 2012; Vol. 1103, pp 75-89.

"Calcium Oxalate AMS ¹⁴C Dating and Chronology of Post-Paleolithic Rock Paintings in the Iberian Peninsula. Two Dates from Abrigo de los Oculados (Henarejos, Cuenca, Spain)" Ruiz López, J.F.; Hernanz, A.; **Armitage, R.A.**; Viñas, R.; Gavira-Vallejo, J.M.; Rowe, M.W.; Rubio, A.; Gavrilenko, E; Guilderson, T. *Journal of Archaeological Science* **39(8)**, 2655–2667 (2012).

"A Disjunct Eddy Accumulation System for the Measurement of BVOC Fluxes: Characterization and Field Deployment" **Edwards, G.D.**; Martins, D.K.; Starn, T.; Pratt, K.; Shepson, P.B. *Atmos. Meas. Tech.*, **5**, 2115-2132 (2012).

"Modeling the interface between islet amyloid polypeptide and insulin-based aggregation inhibitors: Correlation to aggregation kinetics and membrane damage", Figueroa, H.; Peddi, D.; Osborne, J.M.; Wilson, B.M.; Reddy, R.; Pesaru, Kurva, B.; Ramaraju, S.; **Milletti, M.C.**; **Heyl, D.L.** *Journal of Chemical Information and Modeling*, **52**, 1298-1307 (2012).

"Kinetics of the Reaction between Ni(tetren)²⁺ and Bipyridine" **Kolopajlo, L.H.**; Holiss, N.K.; Pendleton, I. *Journal of Student Research*, **2**, 39-45 (2012).

"A Density Functional Study of the Relative Stability of Intermediates in a McMurry Coupling Reaction", Livingston, A.J.; **Lindsay, H.A.**; **Milletti, M.C.**; *J. Coord. Chem.* **65**, 1484-1492 (2012).

"Long, Directional Interactions (LDI) in Oligomeric Cofacial Silicon Phthalocyanines and Other Oligomeric and Polymeric Cofacial Phthalocyanines", Yang, Y.; Kennedy, V.O.; Updegraph, J.B.; Samas, B.; Macikenas, D.; Chaloux, B.; Miller, J.A.; Van Goethem, E.; Kenney, M.E., *J. Phys.Chem. A*, **116**, 8718-8730 (2012).

"Modeling the interface between islet amyloid polypeptide and insulin-based aggregation inhibitors: Correlation to aggregation kinetics and membrane damage", Figueroa, H.; Peddi, D.; Osborne, J.; Wilson, B.; Pesaru, R.; Kurva, B.; Ramaraju, S.; **Milletti, M.C.**; **Heyl, D.** *J. Chem. Inf. Model.* **52**, 1298-130 (2012).
