

DEPARTMENT OF CHEMISTRY NEWSLETTER

The Mark Jefferson Science Complex

Construction is nearly complete on the state-of-the-art Mark Jefferson Science Complex, which has been undergoing a \$90 million transformation since November 2008. January



2011 saw the opening of the new addition, which added 80,000 square feet to the existing 180,000-square-foot Mark Jefferson building. The new addition houses exceptional teaching laboratories for the Departments of Chemistry, Biology, and Geology & Geography.



In September 2011 the renovated basement, first and second floors of the existing building were reopened. The basement houses phenomenal new research space for the Chemistry Department, as well as the chemistry stockroom. The first floor holds technologically advanced lecture spaces, as well as the new Eagle Café. Construction is now underway on the existing building where the third, fourth, and fifth floors are slated to be completed by the end of August 2012.

Chemistry Department Faculty Receive Distinguished Awards

In March 2011, two faculty members received 2010 Ronald W. Collins Distinguished Faculty Awards. These awards are an opportunity for the EMU community to recognize outstanding faculty who excel in their professional academic life. The awards are granted in the categories of teaching, research, service, and creative activity and are meant to encompass the diverse ways in which

faculty at EMU may be recognized and rewarded for their exceptional work.

Professor Ruth Ann Armitage was the 2010 winner of the Ronald W. Collins Distinguished Faculty Award in the Research II category. She was recognized for her global research in archaeological chemistry.



"Archaeological chemistry is chemistry in the service of understanding what people did in the past," Armitage says. "It's figuring out what they did, and why. Where did they get their materials? What technologies did they use?"

Armed with a piece of analytical equipment called the DART-MS (Direct Acquisition in Real Time Mass Spectrometer) she acquired through landing a \$203,000 grant from the National Science Foundation, the instrument helps her determine more about fragile and finite archeological samples than just their age. This quest for knowledge provides exciting collaborations, including one with the Detroit Institute of Arts looking at dyes in textiles and residues on ceramics. At the ceremony, Professor Armitage was presented with the Research II award by the 2009 Research II award-winner, Professor Deborah Heyl-Clegg from the Department of Chemistry.

Professor Amy Flanagan Johnson was the 2010 winner of the Ronald W. Collins

Distinguished Faculty Award in the Teaching I category. She was recognized for her excellence and innovation in the



world of chemical education. Her primary focus at EMU is Chemistry 101: Chemistry for Elementary Teachers, but she has developed three more classes at EMU to prepare future elementary teachers: 1) Chemistry 312: Teaching Elementary

Chemistry; 2) Chemistry 315: Green Chemistry and the Environment for Elementary Teachers; and 3) Chemistry 407: Nature of Science for Elementary Teachers. In her award nomination letter, her students said, "Professor Johnson had a way of explaining things so that people with different learning styles could understand. She would lecture, use visuals and props, go over the homework, ask questions, listen to our answers, hop up and down on the stairs ... everything in her power to make sure we understood what was being taught. It was actually fun. I looked forward to learning about chemistry."

Assessment Award

Our very own Professor Steven Pernecky has been selected as one of ten recipients of the inaugural EMU Assessment Leadership Award. This award recognizes individuals across campus who have made major contributions to academic assessment. These individuals have contributed numerous hours in their department, school or college and provided exemplary assessment models to share university-wide. Most importantly, these individuals have provided outstanding leadership and guidance to their fellow faculty, staff, and administration in the effort to improve the quality of general education, disciplinary programs and the learning experiences for students. Professor Pernecky is currently serving as the co-leader of the faculty and staff team responsible for updating EMU's Systems Portfolio in preparation for the 2012 report to the Higher Learning Commission of the Academic Quality Improvement Project that supports how programs in Academic Affairs, Student Affairs and those directed out of the President's office help students learn at EMU. This nine-month project will provide support for the upcoming accreditation of EMU.

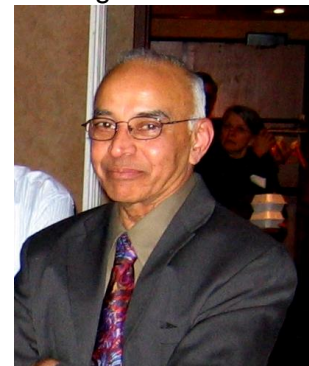


Professor Rengan Retires

After forty-two years of service to EMU, Professor Rengan retired at the end of fall semester. Rengan received his Ph.D. from the University of Michigan in 1966 and joined EMU in 1970 after spending a number of years in the

Radiochemistry Division at the Bhabha Atomic Research Centre in Trombay, India.

Professor Rengan is a distinguished scholar with more than 60 publications in peer-reviewed journals. He has served as Associate Editor of the Journal of Radioanalytical and Nuclear Chemistry for the past twenty-four years. He is a recipient of the EMU Distinguished Faculty Research and Publication Award in 1987 and the Michigan Association of Governing Boards Distinguished Faculty Award in 1991. He was elected as a fellow of the American Association for the Advancement of Science in 1990.



Professor Rengan has also been a dedicated professor within the classroom who is known for how very deeply he cares about his students and their education. He served as Graduate Coordinator for the department for more than fifteen years and was the first-ever recipient of the EMU Graduate School's Advising Award.

Dave Berry Passes Away

The Chemistry Department lost a dear friend this past summer when Dave Berry passed away due to injuries sustained in an accident.

Dave was an alumnus of our department having received the Peet Award as outstanding undergraduate student in 1976 and he later also earned his Master's Degree at EMU. His company, Berry & Associates, has been a major benefactor to our department providing generous donations including annual contributions to support our banquet.



ACS Project SEED

During the summers of 2010 and 2011, the Huron Valley Local Section of the American Chemical Society and the EMU Chemistry Department sponsored two high school students 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. We were able to host two students again this past summer:

•Myrtes Moore, a graduate of Lincoln High School, Ypsilanti, MI (Kyla Gurganus, high school chemistry teacher) worked with Prof. Jamie Scaglione to help discover a new strain of bacteria isolated from Detroit River and analyzed it to determine its capability in producing antibiotics. Myrtes is now a freshman at Ball State University.



•Crystal Smith, a graduate of Pioneer High School, Ann Arbor, MI (Karen Fox, high school chemistry teacher) worked with Profs. Maria Milletti and Harriet Lindsay on a computational and experimental project in which she designed, modeled and synthesized chiral catalysts for a tandem organic chemistry reaction. Crystal is currently a freshman at DePaul University.

In addition to their research, the Project SEED students along with EMU's chemistry undergraduate research students, participated in a number of activities, including tours of NSF International in Ann Arbor, the art restoration labs at the Detroit Institute of Arts, Pfizer's process facility in Portage, and Zingerman's Creamery. Students also heard talks on careers in chemistry from industrial chemists and a patent attorney.

New Chemistry Scholarships

The Chemistry Department gratefully acknowledges the creation of four new scholarships:

The David A. Berry Excellence in Organic Chemistry/Biochemistry Endowed Scholarship will be given to an outstanding graduate student who excels in research, teaching, and classroom performance. It is given in memory of Dave Berry who received the Bert W. Peet Scholarship Award in 1976 and also earned his M.S. from EMU. He was a great friend and supporter of the Chemistry Department.

The James G. and LeAnn K. Emal Scholarship in Chemistry is awarded to a non-traditional student who has a demonstrated commitment to chemistry. This award was established as a memorial to the parents of Professor Cory Emal in honor of their lifelong commitment to education.

The Martin & Antoinette Gorski Endowed Scholarship in Radio & Nuclear Chemistry is awarded to recognize outstanding achievement in radiochemistry, nuclear chemistry, or analytical chemistry.

The Grace Simmons Gregory Scholarship is a need-based award given to a nontraditional student at the junior level. This scholarship was created to memorialize Grace Simmons Gregory, who was a 1920 chemistry graduate of Michigan State Normal College (EMU) who went on to teach high school science in Dearborn, Michigan.

Chemistry Student to Present on Capitol Hill

Senior Professional Biochemistry major Ian Pendleton was selected as one of the 74 presenters from a field of over 850 undergraduate applicants to present his research at the Council of Undergraduate Research's annual Posters on the Hill event on April 24th. The event will honor the research achievements of 75 undergraduate students from more than 50 colleges and universities nationwide. Ian will be presenting data from his organic chemistry research project that involves certain aspects of "green" chemistry. He has conducted this work under the direction of Professor Harriet Lindsay. The two have been working together for nearly four years thanks to sponsorship from a DTE-funded Symposium Undergraduate Research Fellowship, several Honors College fellowships, a Division of Organic Chemistry Summer Undergraduate Research Fellowship, and Professor Lindsay's external grants. At the event, Ian will present a poster detailing his research to the members of Congress, congressional staff members, federal government officials and others in attendance.



New Environmental Chemistry Program at EMU

The Interdisciplinary Environmental Science and Society (IESS) program is new to EMU in winter 2012. This interdisciplinary program is designed to provide broad knowledge of the interaction between humans and the environment from various points of view. Students can tailor their curriculum by following one of several concentrations, including Environmental Chemistry, to gain a deeper understanding of environmental issues. Students choosing the Environmental Science concentration learn the concepts needed to understand the "Grand Challenges in Environmental Science" as identified by the National Academies of Science including biodiversity and ecosystem functioning, climate variability, hydrologic forecasting, land-use dynamics, and biogeochemical cycles.

Students completing the program will be competitive to enter careers such as environmental technician, environmental advocate, hydrologist, resource manager, and environmental lobbyist. Additionally, the program is designed to prepare students to enter a graduate degree or graduate

certificate program in a specific environmental science, such as atmospheric science.

Summer Research Program

Chemistry Department faculty have developed an interdisciplinary summer program to enhance the scientific development of undergraduate, graduate, and high school (ACS Project SEED) students who work on research projects during the spring and summer. This past year, we created a calendar of events designed to bring together research students and their faculty mentors across seven science departments, including Biology, Chemistry, Computer Science, Geology and Geography, Mathematics, Physics and Astronomy, and Psychology. The Chemistry Department had twelve students and six faculty members participate. Our programming included a kick-off event featuring 3-minute presentations by eleven students on their research projects, two panel discussions on careers in science and applying to graduate school in science, a picnic, a tour of the Great Lakes Environmental Research Laboratory, a Detroit River guided nature cruise, and an end-of-the-summer poster session.

STUDENT AWARDS, 2011

Tiffany M. Micyus, The Peet-Mayor Endowed Chemistry Award

Edward C. Grimley, ACS Huron Valley Section Undergraduate Award

Ian M. Pendleton, Maurice Decoster Endowed Chemistry Scholarship

Bryan S. Harmon and William C. Joesten, Collins' Endowed Scholarships in Chemistry

Elyssa M. Rautiola, Sandra J. Lobbestael Chemistry Endowed Scholarship

Hector E. Figueroa, Elva Mae Nicholson Organic Chemistry Endowed Scholarship

Payge A. Shelton, John Sullivan Endowed Scholarship

Lois C. Vasquez, James G. and LeAnn K. Emal Scholarship in Chemistry

Mace Mattieson, Martin & Antoinette Gorski Endowed Scholarship in Radio & Nuclear Chemistry

Christopher Fairchild, Hypercube Scholar Award

Danielle St. Germaine and Betsy P. Huang, Biochemistry Achievement Award

Danielle St. Germaine, Toxicology Achievement Award

Jordyn L. Geiger, Wiley Organic Achievement Award

Davin Rautiola, ACS Inorganic Award

Paul R. North, John J. Contario Analytical Chemistry Award

Mary Beth Kalvaitis, ACS Division of Analytical Chemistry Award

Eric W. Kiturkes, CRC Press Chemistry Achievement Award

Brittany M. Berger, Amanda L. Dewyer, Daniel H. Lee, and Jacquelyn N. Wilson, Perry S. Brundage Scholarships

Kari L. Wetzel, Donald B. Phillips Memorial Endowed Scholarship

Shannon R. Barth and Jacinda M. Lisi, Huron Valley Publishing Scholarship

Gregory A. Abernathy and **Kevin S. Kawchak**,
Symposium Undergraduate Fellowship Awards

Ian M. Pendleton, Elwood J. Kureth Scholarship

Tiffany M. Micyus, 25th Anniversary Scholarship
Series

Connor M. Dodenhoff and **Ian M. Pendleton**,
Symposium Undergraduate Research Fellows

Adewunmi O. Adetayo and **Tiffany M. Micyus**,
University Honors Program Graduates

Michelle A. Altenburg, **Anna M. Bauman**,
William C. Joesten, **Tiffany M. Micyus**, and **Ian M.**
Pendleton, Honors Undergraduate Fellowships

Tiffany M. Micyus, Honors Senior Thesis Award

Gregory A. Abernathy, **Raneem A. AlKhatib**,
Jennifer N. Bates, **Joao P. Costa**, **Chris D.**
Fairchild, and **Mary Beth Kalvaitis**,
Undergraduate Research Stimulus Awards

Hasina Saraha, EMU Chemistry Department
Teaching Assistant Award

Badrinath Dhakal, EMU Chemistry Department
Research Award

David Arnold, ACS Huron Valley Section EMU
Outstanding Graduate Student Award

Gregory Abernathy, Ronald M. Scott Memorial
Scholarship

Architha Ellenki, University Fellowship in
Chemistry

GRADUATE RESEARCH FAIR, March 2011

Greg Abernathy - Professor Cory Emal, sponsor.
“Pyrrolidine Core Improves Binding Affinity and Potency
of PAI-1 Inhibitors”

David J. Arnold and **Kevin Kawchak** - Professor Gregg
Wilmes, sponsor. “The Effect of Chain Rigidity on
Reversible Block Copolymer Micellization Observed by
NMR Relaxation”

Sunisha Chalasani - Professor Timothy Brewer,
sponsor. “Fluorescence Study of Gold and Silver Nano
Particles by Single Photon Emission Measurements”

Badrinath Dhakal - Professor Ruth Ann Armitage,
sponsor. “Chromatography—Mass Spectrometric
Characterization of Carbohydrates in Archaeological
Materials”

Reshma Kankanala - Professor Hedeel Evans,
sponsor. “Characterizing the Oligomeric structure of the
Dihydroorotase and Aspartate Transcarbamoylase from
the bacterium, *Bacillus anthracis*”

Mahalakshmi Kotichukkala - Professor Hedeel Evans,
sponsor. “Probing the Interaction of Enzymes Involved in
Pyrimidine Biosynthetic Pathway in *Aquifex aeolicus*”

Jacinda M. Lisi - Professor Corey Emal, sponsor. “The
Design of Sulfur-based Third Generation Synthetic
Plasminogen Activator-1 Inhibitors”

Kevin S. Kawchak and **David Arnold** - Professor
Gregg Wilmes, sponsor. “Kinetic Determination and
Chain Length Variation Dependency of Amphiphilic
Block Copolymers by RAFT and ATRP Controlled
Radical Polymerizations”

Srikanth Maddali - Professor Harriet Lindsay, sponsor.
“Progress Towards Syntheses of Indolizidine,
Pyrrolizidine, and Quinolizidine Alkaloids”

Hasina Y. Saraha - Professors Maria Milletti and Cory
Emal, sponsors. “Conformational Analysis of Asymmetric
Ring-Based Inhibitors of PAI-1”

Elli Spiterly - Professor Lawrence Kolopajlo, sponsor.
“Analysis of Animations Used in High School Chemistry
Classes”

Priyanka Tumuluru - Professor Deborah Heyl-Clegg,
sponsor. “Synthesis of an Uncharged Analogue of hIAPP
(1-19)”

Chirag G. Vaghela - Professor Corey Emal, sponsor.
“Modified Third-generation Synthetic Inhibitors of
Plasminogen Activator Inhibitor-1”

Anila Waris - Professor Donald Snyder, sponsor. “Study
of the Comparison between “Impedance Resonance”
and Standard Impedance Spectroscopy Using
Interdigitated Electrode Arrays in Metal Ions Solutions”

UNDERGRADUATE SYMPOSIUM, March 2011

Michelle A. Altenburg, Professor Maria Milletti,
sponsor. “Computational Analysis of a Lewis Acid
Catalyzed Tandem Aza-Cope Mannich Reaction”

Anna M. Bauman, Professor Cory Emal, sponsor.
“Organic Synthesis of Potential PAI-1 Inhibitors”

Joe Costa and **Bryan Harmon**, Professor Cory Emal,
sponsor. “Exploration of a New Class of Synthetic

Inhibitors of Plasminogen Activator Inhibitor-1”

Connor Dodenhoff, Professor Maria Milletti, sponsor.
“Computational Modeling of Insulin-Like Inhibitors of
Islet Amyloid Polypeptide”

Christopher Fairchild, Professor Maria Milletti,
sponsor. “Conformational Analysis of Small
Polyphenolic Inhibitors of PAI-1”

Betsy Huang, Allesha Cutlip, and Raneem AlKhatib, Professors Deborah Heyl-Clegg and Hedeel Evans, sponsors. "Synthesis of Small Peptides to Probe Oligomeric Enzyme Structure in Pyrimidine Blosynthesis"

Jonathan Hurt, Professor Harriet Lindsay, sponsor. "Widening a Synthetic Bottleneck: Stereoselective Synthesis of a Key Amino Acid"

Sean Hussey, Professor Gavin Edwards, sponsor. "Measurements of Air Quality on the EMU Campus"

William Joesten, Professor Timothy Friebe, sponsor. "Exploration of an Acid-Catalyzed Robinson Annulation: An Unexpected Turn of Events"

Tiffany M. Micyus, Professor Harriet Lindsay, sponsor. "Optimizing the aza-Cope Rearrangement—Mannich Cyclization in Conformationally Mobile Systems"

Oluwatobi Omobonike Odeleye, Professor Jeff Guthrie, sponsor. "Selection of an Aptamer for ATP Using Capillary Electrophoresis"

Davin Rautiola, Professor Jamie Scaglione, sponsor. "Structural and Biochemical Characterization of a Thioesterase from *Streptomyces platensis*"

Ian M. Pendleton, Professor Harriet Lindsay, sponsor. "Microwave-Assisted Synthesis of β -proline Using a Tandem Reaction"

Payge Shelton, Professor Ruth Ann Armitage, sponsor. "Identifying Organic Pigments with Direct Analysis in Real Time Mass Spectrometry"

Landrea Standfield, Professor Ruth Ann Armitage, sponsor. "Analysis of Food Residues on Ceramics by Direct Analysis in Real Time Mass Spectrometry (DART-MS)"

FACULTY ACTIVITIES

Grants and Awards

- Maria Milletti:** Recipient of a \$65,000 ACS PRF grant for "A Computational Exploration of the Stereoselective Synthesis of Substituted Pyrrolodines", a Spring/Summer 2011 Faculty Research Fellowship, and, together with **Harriet Lindsay**, received a \$5,000 award from the College of Arts and Sciences Dean's Program Development Initiative for \$5000 for our Summer Science Research Program.
- Gavin Edwards:** Recipient of a \$37,000 grant from the Environmental Research Institute of Michigan and the U.S. Council on Automobile Research to study vehicle interior air quality
- Harriet Lindsay:** Recipient of a \$65,000 ACS PRF grant for "Development of a catalytic, asymmetric aza-Cope rearrangement—Mannich cyclization", \$600 Travel Award from the ACS Division of Organic Chemistry for Outstanding Undergraduate Faculty, and \$2,980 spring 2011 Faculty Research Fellowship
- Ruth Ann Armitage:** Promoted to full professor
- Gregg Wilmes:** Tenured and promoted to associate professor
- Amy Johnson:** Tenured and promoted to associate professor and primary author of a successful Dean's Program Development Initiative proposal for \$5,000 to support realignment of the elementary education science offerings
- Jamie Scaglione:** \$1,970 EMU eFellow Award for "Evaluating Clickers to Increase Success in Chemistry 120"
- Jeff W. Guthrie:** \$3,000 winter 2011 Faculty Research Fellowship
- Deborah Heyl-Clegg:** \$2,950 fall 2011 Faculty Research Fellowship
- Patsy Coleman:** 2011 ANACHEM Lifetime Service Award and 2011 Distinguished Service Award from The Federation of Analytical Chemistry and Spectroscopy Societies (FACSS)
- Cory Emal:** Awarded a fall 2011 sabbatical leave award for "Design and Development of Novel Depsides as Inhibitors of Plasminogen Activator Inhibitor-1 (PAI-1)". He carried out this work in the laboratory of Professor David H. Sherman at the University of Michigan Life Sciences Institute

Presentations

EMU Student presenters are underlined.

"Selection of Aptamers for Small Molecules Using Quantum Dots and Capillary Electrophoresis", **Jeff W. Guthrie** and Oluwatobi Odeleye, The Pittsburgh Conference, Atlanta, GA (March 2011)

"Development of a Capillary Electrophoresis-SELEX Method for the Selection of Aptamers for Small Molecules", **Jeff W. Guthrie**. Joint International Conference on Analytical Science and Spectroscopy/Canada-China Analytical Chemistry Conference, Toronto ON, Canada (Aug 2011)

"The use of Antibodies and Aptamers as Affinity Reagents in Bioanalytical Applications", **Jeff W. Guthrie**, Grand Valley State University, Grand Valley, MI (March 2011)

"Archaeological Chemistry: Analyzing the Past", **Ruth Ann Armitage**, Huron Valley Chapter of the Michigan Archaeological Society, Ann Arbor, MI (November 2011)

"Archaeological Chemistry: Analyzing the Past", **Ruth Ann Armitage**, Saginaw Chapter of the Michigan Archaeological Society, Saginaw, MI (October 2011)

"DART-MS Applications for Analysis of Cultural Heritage Materials", **Ruth Ann Armitage**, Art and Chemistry Symposium, ACS Central Regional Meeting, Indianapolis, IN (June 2011)

"A Chemist's Adventures Outside the Lab: Chemistry and Archaeology of Rock Paintings", **Ruth Ann Armitage**, ACS Detroit Local Section/Canadian Institute of Chemistry Awards Banquet, Detroit, MI (May 2011)

"A Chemist's Adventures Outside the Lab: Chemistry and Archaeology of Rock Paintings", **Ruth Ann Armitage**, Illinois Institute of Technology Sigma Xi Research Day Speaker, Chicago, IL (April 2011)

"A Chemist's Adventures Outside the Lab: Chemistry and Archaeology of Rock Paintings", **Ruth Ann Armitage**, ACS Huron Valley Local Section, Eastern Michigan University, Ypsilanti, MI (April 2011)

"Characterizing Organic Colorants in a 15th Century Iranian Timurid Qur'an by Direct Analysis in Real Time Time-of-Flight Mass Spectrometry", C. Varney, **R.A. Armitage**, and C. Selvius DeRoo, Anachem Symposium, Livonia, MI (November 2011)

"Characterizing Organic Dyes in a Textiles by Direct Analysis in Real Time Time-of-Flight Mass Spectrometry", J. Geiger, **R.A. Armitage**, and C. Selvius DeRoo, Anachem Symposium, Livonia, MI (November 2011)

"Characterizing Organic Residues on Ceramics by Direct Analysis in Real Time Time-of-Flight Mass Spectrometry", J. Hopkins and **R.A. Armitage**, Anachem Symposium, Livonia, MI (November 2011)

"Development of GC-MS and DART-MS Methods for the Qualitative and Quantitative Analysis of Carbohydrates in Rock Paintings", B. Dhakal and **R.A. Armitage**, ACS Central Regional Meeting, Indianapolis, IN (June 2011)

"Characterizing Archaeological Residues by Direct Analysis in Real Time Mass Spectrometry", **R.A. Armitage**, The Pittsburgh Conference, Atlanta, GA (March 2011)

"Development of GC-MS and DART-MS Methods for the Qualitative and Quantitative Analysis of Carbohydrates in Rock Paintings", B. Dhakal and **R.A. Armitage**, The Pittsburgh Conference, Atlanta, GA (March 2011)

"Inhibition of Human Islet Amyloid Polypeptide Aggregation and Membrane Damage in β -Islet Cell Mimics", **Deborah L. Heyl** and Brenan Wilson (2011) In *Peptides: Building Bridges: Proceedings of the 22nd American Peptide Symposium*, Michal Lebl, ed., 368-369.

"Small Peptides as Probes for DHOase-ATCase Oligomeric Structure in Pyrimidine Biosynthesis", Betsy Huang, Allesha Cutlip, Raneem AlKhatib, Mahalakshmi Kotichukkala, **Hedeel Evans** and **Deborah L. Heyl**, (2011) In *Peptides: Building Bridges: Proceedings of the 22nd American Peptide Symposium*, Michal Lebl, ed., 266-267.

"Oriental Lacquer: Art & Chemistry of the Original High-Tech Coating", **D. Snyder**, ACS Toledo Section, Toledo, OH (March 2011)

"Kinetic determination in optimization of chain length, hydrophobicity, and chain rigidity of amphiphilic block copolymers by RAFT controlled radical polymerization", Kevin S. Kawchak, David J. Arnold, and **Gregg M. Wilmes**, ACS Central Regional Meeting, Indianapolis, IN (June 2011)

"Microbial Natural Products: Biosynthesis and Discovery", **Jamie B. Scaglione**, Adrian College, Adrian, MI (September 2011)

"Density Functional Analysis of the Interaction between hIAPP and a Series of Insulin-based Inhibitors", E.M. Reid, C. Dodenhoff and **M.C. Milletti**, ACS National Meeting, Anaheim, CA (March 2011)

"Computational Analysis of a Lewis-Acid Catalyzed aza-Cope Mannich Tandem Reaction", M.A. Altenburg and **M.C. Milletti**, ACS National Meeting, Anaheim, CA (March 2011)

"Conformational Analysis of Small Polyphenolic Inhibitors of PAI-1", C. Fairchild, H. Saraha, P. Spoutz and **M.C. Milletti**, ACS National Meeting, Anaheim, CA (March 2011).

"Chemiluminescence catalyzed by Ag/Au Nanoparticle alloys" Saqib Abideen and **Timothy Brewer**, ACS Central Regional Meeting, Indianapolis, IN (June 2011).

"Fluorescence Quenching Study of Gold and Silver Alloy Nanoparticles" Sunisha Chalasani and **Timothy Brewer**, ACS Central Regional Meeting, Indianapolis, IN (June 2011).

Publications

EMU Student co-authors are underlined.

Weisener, C.G., **Guthrie, J.**, Smeaton, C., Paktunc, D. and Fryer, J. "Effects of Ca-Fe-As coatings on microbial leaching of metals in arsenic bearing mine waste" *Journal of Geochemical Exploration*, 2011, 110, 23-30

J. Guthrie, Book Chapter "Section 3 - Extraction Techniques and Applications: Environmental/Forensics | Introduction to Extraction Techniques and Applications: Biological/Medical | 3.1 General considerations dealing with biological fluid samples" in "Comprehensive Sampling and Sample Preparation."

Selvius DeRoo, C.; **Armitage, R. A.**, Direct Identification of Dyes in Textiles by Direct Analysis in Real Time-Time of Flight Mass Spectrometry. *Analytical Chemistry* 83, (18), 6924.

"A Creative Scientific Inquiry Experience in Organic Chemistry and Quantitative Analysis: Pharmaceuticals in the River Raisin" **R.A. Armitage**, J. Bates, **A. Flanagan Johnson**, and **H. Lindsay**. In *It's All in the Water: Studies of Materials and Conditions in Fresh and Salt Water Bodies*, Benvenuto, M. A.; Roberts-Kirchhoff, E. S.; Murray, M. N.; Garshott, D. M., Eds. American Chemical Society: Washington, DC, 2011, pp. 51-60.

R. S. Hornbrook, J. H. Crawford, **G. D. Edwards**, O. Goyea, R. L. Mauldin III, J. S. Olson, and C. A. Cantrell; "Measurements of tropospheric HO₂ and RO₂ by oxygen dilution modulation and chemical ionization mass spectrometry", *Atmos. Meas. Tech.*, 4, 735-756, 2011

G.D. Edwards et al., "A Disjunct Eddy Accumulation System for the Measurement of BVOC Fluxes: Instrument Characterizations and Field Deployment" *Journal of Atmospheric Measurement Techniques*, 2012 in press.

Yang, Y.; Samas, B.; **Kennedy, V.O.**; Macikenas, D.; Chaloux, B.L.; Miller, J.A.; Speer, R.L.; Protasiewicz, J.; Pinkerton, A.A.; Kenney, M.E. " Long, Directional Interactions in Cofacial Silicon Phthalocyanine Oligomers", *J. Phys.Chem. A*, 2011, 115, 12474-12485.

Chen, S.; **Guy Evans, H.**; Evans, D.R.; "FLASH knockdown sensitizes cells to Fas mediated apoptosis", *PLoS ONE*, 2012 in press.

Wilmes, G.M.; Arnold, D.J.; Kawchak, K.S.; "Effect of chain rigidity on block copolymer micelle formation and dissolution as observed by ¹H-NMR spectroscopy", *Journal of Polymer Research* (2011) 18, 1787-1797.

John Nelson co-authored a chapter in *Volume 9: Green Processes-Designing Safer Chemicals*, a multivolume set that comprises *Handbook of Green Chemistry*. The set is published through Wiley and is to be released in 2012.
