DEPARTMENT OF CHEMISTRY
Illinois State University

BLUE NOTES

February 10, 2023 – Issue 2023-01

SPRING 2023 SEMINAR SERIES

February 10	Adewale Adehinmoye **(3 pm)** *"Enhanced Detection of Illicit Drugs from Plasmonic Papers via Surface Enhanced Raman Spectroscopy Combined with Paper Spray Ionization-Mass Spectrometry"*
February 17	Jordan Witte **(3 pm)** Title: *TBD*
February 24	Ebenezer Bondzie **(3 pm)** Title: *TBD*
March 3	Rosemary Addo **(3 pm) Title:** *TBD*

Seminars are held Fridays at 3:00 pm in JH 225 unless otherwise indicated.

May 5, 2023 Senior Banquet and Awards Ceremony 5:30-8 p.m. Circus Room/Bone Center

May 12-13 Graduation Ceremonies

DATES AND DEADLINES

February 10	Last day to withdraw from a full semester course and receive 25 percent tuition adjustment. There will be no adjustment in charges for full semester course withdrawals after this date.
February 15	Fall 2023 courses viewable on CourseFinder
February 20	Advanced registration for Summer 2023 begins at 8 a.m.
March 1	Last day to withdraw from a first-half semester course. A withdrawal grade of WX will be assigned. Last day to add or remove pass/no pass (pass/fail) option from a first-half semester course. Registration date/time assignments for Fall 2023 available on My.Illinois.State.edu.
March 23	Transfer Day
March 27	Last day to drop a second-half semester course with no withdrawal grade and a full adjustment of charges financial aid may be reduced.

STUDENT, FACULTY and STAFF ACTIVITIES

Publications

Amason, Edith K.; Rajabimoghadam, Khashayar; Baughman, Notashia N.; Ghareeb, Christopher R.; Bourgeois, Samantha K.; Keuk, Channita, Manacsa, Gayle; Popp, Brian V.; Garcia-Bosch, Isaac, **Ferrence, Gregory M.;** Joslin, Evan E. "Synthesis and reactivity of amply-based rutheniou (II) catalysts for transfer hydrogenation of keytones," *Organometallics* **2022,** 41(b), 686-697. DOI: 10.1021/acs.organomet.1c00444.

Bosch, Eric; **Ferrence, Gregory, M.;** Powell, Conrad, J.; Unruh, Daniel K.; Krueger, Herman R., Jr.; Groeneman, Ryan H.; "Cooperative non-covalent interactions and synthetic feed as driving forces to structural diversity within organic co-crystals containing isoteric perhalobenzenes," *CrystEngComm*, **2022**, 24, 3841-3845. DOI: 10.1039/D2CE00360K.

Witte, Jordan M. (G), Service, Jasmine (UG), Addo, Marian Aba(G), Semakieh, Bader (UG), Collins, Erin S. (UG), Sams, Christopher (UG), Dorsey, Timothy R. (UG), Garrelts, Elizabeth (UG), Blumenshine, Cassidy A. (UG), Cooper, Trace A. (UG), Martinez, Moses (UG), **Hamaker, Christopher G., Ferrence, Gregory M.**, and **Hitchcock*, Shawn R.**. "Diastereoselective and enantioselective synthesis of *a-p*-methoxyphenoxy-**β-**lactones: Dependence on the steroelectronic properties of the β-hydroxy-α-*p*-methoxyphenoxycarboxylic acid precursors." *J. Org. Chem.* **2022,** *87,* 9616-9634.

Lash, Timothy D., "Heteroporphyrins and Carbaporphyrins" in *Fundamentals of Porphyrin Chemistry: A 21st Century Approach,* ed. P.J. Brothers and M.O. Senge, Wiley, Hoboken, United States, **2022**, Volume 1, Chapter 8, pp 385-451.

Cramer, Emma K. (G), AbuSalim, Deyaa I(GA), and **Lash, Timothy D.**, Oxyquinoliziniporphyrins: Introduction of a Heterocyclic Dimension to Carbaporphyrinoid Systems. *Organic Letters* **2022**, *24* (29), 5402-5406.

Lash, Timothy D., "Recent Developments in the Chemistry of Heteroporphyrins and Heterocarbaporphyrins" in *Advances in Heterocyclic Chemistry,* Volume 138, ed. E.F.V. Scriven and C.A. Ramsden, Elsevier, **2022**, Chapter 4, 243-334.

Lash, Timothy D., Coordination Chemistry of Modified Porphyrinoid Systems (Invited Chemical Reviews Highlight). *Chemical Reviews* **2022**, 122, 7987-7989.

Yawson, Gideon(G); Will, Mark (UG); Huffman, Samantha (UG); Strandquist, Evan(G); Bothwell, Paige(G); Oliver, Ethan(UG); Apuzzo, C.(G); Platt, David(GA); **Weitzel, Christopher; Jones, Marjorie; Ferrence, Gregory; Hamaker, Christopher,** Webb, Michael. "A Dual-Pronged Approach: A Ruthenium (III) Complex that Modulates Amyloid-β Aggregation and Disrupts Its Formed Aggregates". *Inorganic Chemistry,* **February 2022.** 61:2733-2744.

Brown, H.M.; McDaniel, T.J.; West, C.P.; Bondzie, Ebenezer H.(G); Aldeman, M.R.; Molnar, B.T.; **Mulligan, Christopher C.,** Fedick, P.W.; Charicterization and Optimization of a Rapid, Automated 3D-Printed Cone spray Ionization Mass Spectrometry Methodology. *Int. J. Mass Spectrom,* **2022**, *474,* 116781. **Invited *Submission to the "Recent Developments in Ambient Ionization" Special Issue.***

Stelmack, A.R[(GA)]; Mukta, S.; Fatigante, William L. [(GA)]; Clowser, Phoebe C. [(UG)]; Holtz, Jessica M. [(UG)]; **Mulligan, Christopher C.;** Assessing the Environmental Ruggedness of Paper Spray Ionization (PSI) Coupled to a Portable Mass Spectrometer Operated Under Field Conditions. *Int. J. Mass Spectrom.,* **2022**, *472,* 116776. ***Invited Submission to the "Portable, Fieldable, and Miniaturized Mass Spectrometry" Special Issue.***

Kazimi, S.G.T.; Iqbal, M.S.; **Mulligan, Christopher C.;** Baseer, M.; Rehman, A.U.; Farooqi, F.; Person, J. R Mechanochemical Synthesis of Six Cu (II) Complexes with Selected Thiols, Their Physiochemical Characterization and Interaction with DNA. *J. Molec. Struct.,* **2022,** *1265,* 113436.

Hou, J.; Egemole, Franklin [(G)]; Eyimegwu, Pascal N. [(G)] Yun, J.; [(ISU visiting scholar)]; Jang, W.; [(ISU visiting scholar)]; Jang, W.; [(ISU visiting scholar)]; Byun H.; Hou, J.; **Kim, Jun-Hyun*;** "Experimental Selection of Bases for Colloidal Gold-Polymer Composite Catalyst in Homocoupling Reactions" ChemistrySelect, **2022**, 7, e202202370.

Jang, W.; [(ISU visiting scholar)] Yun, J.; [(ISU visiting scholar)] Eyimegwu, Pascal N. [(G)]; Hou, J.; Byun Hl; Hou, J.; **Kim, Jun-Hyun*,** "Controlling the Formation of Encapsulated Gold Nanoparticles for Highly Reactive Catalysts in the Homocoupling of Phenylboronic Acid" *Catalysis Today,* **2022,** *388-389,* 109-116.

Egemole, Franklin[(G)]; Eyimegwu, Faith M. [(G)]; Yun, J.; [(ISU visiting scholar)]; Jang, W. [(ISU visiting scholar)]; Byun, H.; Hou, J.; **Kim, Jun-Hyun*** "Effects of Crosslinking Density on line In Situ Formation of Gold-Polymer Composite Particles and Their Catalytic Properties", *Colloids and Surfaces A: Physicochemical and Engineering* **2022**, 640, 128409.

Corrie, Seth I. [(G)]; Pearce, Aaron C. [(UG)]; Grabowski, Jacob P. [(G)]; Randolph, Kee A.; Guo, W.; Tantillo, D.J.; **Mitchell, T. Andrew;** Boron-tethered oxidopyrylium-based [5+2] cycloadditions. *Tetrahedron Lett.* **2022**, *154094.*

Apuzzo, Chris F. [(GA)] and **Jones, Marjorie A.** Chapter 4 "Palm Trees and Fruits Residues' Usage for Human Health" in Palm Trees and Fruits Residues: Recent Advances for Integrated and Sustainable Management; Jeguirim, Meidi; Khiari, Besma; and Jellali, Salah. **Sept. 2022.**

Riley, McKenzie B. [(G)]; Strandquist, Evan[(G)]; **Weitzel, Christopher S.**, and **Driskell, Jeremy D.,** "Structure and activity of native and thiolated α-chymotrypsin absorbed onto gold nanoparticles" *Colloids and Surfaces B: Biointerfaces*, **2022**, *220,* 112867.

Platt, David C. [(GA)]; Apuzzo, Chris [(GA)]; C. Fiore, **Jones, Marjorie A.,** Cedeno, David L., and Vallejo, Ricardo, "Development of a C6 Glioma Cell Model System to Assess Effects of Cathodic Passively Balanced Electrical Stimulation on Responses to Neurotransmitters: Implications for Modulation of Intracellular Nitric Oxide, Chloride, and Calcium Ions". **2022,** *Brain Sciences,* 12 (11): 14 pages open access. DOI 10.3390/brainsci12111504.

Presentations

1. **Ferrence, Gregory M.;** Bosch, Eric; Groeneman, Ryan H. "Determination of a rate constant for pedal motion disorder using Single Crystal X-Ray Diffraction data," presentation, Crystal Engineering Gordon Research Conference, Sunday River, Newry, ME, June 2022.

2. Ferrence, Linda and **Jones, Marjorie A.** abstract (poster) II entitled "Effects of rocking motion on *Leishmania tarentolae"* presented at the National meeting of the ACS, Chicago, IL August 21, 2022.
3. **Driskell, Jeremy D.,** Okyem, Samuel(G) and Awotunde, Olatunde(G), "Adsorption Behavior of Chemically/Charged Modified Antibody on Gold Nanoparicles" ACS Spring 2022 National Meeting, San Diego, CA, **March 21, 2022.**
4. Molnar, B.T.; Bondzie, Ebenezer H.(G).; Carmany, D.; Brown, H.M.; Addo, Rosemary(G); West, C.P., Mach, P.; Dhummakupt, E.; **Mulligan, Christopher C.,** Fedick, P.W. 3D-Printed Cone Spray Ionization Portable Mass Spectrometry for the Detection of V-Series Chemical Warfare Agents. *264th ACS National Meeting and Exposition, Chicago, IL* **Fall 2022.**
5. Platt, David C. (GA); Apuzzo, Chris F. (GA); **Jones, Marjorie A.**; Cedeno, D.L. and Vallejo, R. North American Neuromodulation Society (NANS) 26th annual meeting; "Electrical Stimulation of Glioma Cells: Effect on Neurotransmitters and Intracellular Nitric Oxide, Chloride, and Calcium"; selected as an oral presentation, **January 12, 2023,** Los Vegas, NV.
6. Bondzie, Ebenezer H.(G); Brown, H.M.; Addo, Rosemary(G); McDaniel, Trevor J. (GA); West, C.P.; Molnar, B.T.; Aleman, M.R.; Fedick, P.W.; **Mulligan, Christopher C.;** "Rapid, Fieldborne Processing of Bulk Samples with a 3D-Printed Cone spray Ionization-Mass Spectrometry (3D-PCSI)" Autosampler Platform. *70th ASMS Conference on Mass Spectrometry and Applied Topics, Minneapolis, MN* **2022.**
7. Addo, Rosemary (G); Mukta, S.; **Mulligan, Christopher C.;** "Temporal and Spatial Profiling of Priority Soil Pollutants Using Filter Cone Spray Ionization – Mass Spectrometry (FCSI-MS)." *70th ASMS Conference on Mass spectrometry and Applied Topics, Minneapolis, MN*. **2022.**
8. Taylor, J.L.; Bondzie, Ebenezer H.(G); McDaniel, Trevor J. (GA); **Mulligan, Christopher C.** "Establishing the Total Analytical Efficiency of Substrates Employed for Surface Swabbing PSI-MS Protocols." *70th ASMS Conference on Mass spectrometry and Applied Topics, Minneapolis, MN.* **2022.**
9. Graybeal, Alexis A. (UG) and **Lash, Timothy D.**, "Utilization of the "3 + 1" methodology to synthesize 2,4-quiniporphyrins" presented at the American Chemical Society Illinois Heartland Section Awards Banquet and Poster Session, Peoria, IL., **April 13, 2022**.

Awards

Presented at the **American Chemical Society Illinois Heartland Section Awards Banquet and Poster Session, Peoria, IL, April 13, 2022**

Congratulations to:

Alexis Grabeal (UG) for winning a Collegiate Scholars award.
Quyen Lai (UG) for winning a Collegiate Scholars award.
Johanna Ehlbeck (G) for winning the George Inglett Graduate Student Scholars award.

Graduating Senior Anna Criswell won one of the **2021-2022 CTE Student Recognition of Excellence Award** on April 22, 2022.

Dr. Marjorie A. Jones was elected to the Academic Freedom, Ethics and Grievance Committee for the **2022-2025** term of the Academic Senate.

Congratulations to **Dr. Gregory Ferrence** and the Chem Club for receiving an **Honorable Mention** from the ACS Student Chapter.

Congratulations to **Dr. Susil Baral** and **Dr. Bhaskar Chilukuri** for their successful application to the NFIG and PFIG internal grant programs.

Grants

Dr. Shawn R. Hitchcock "A Curtius Rearrangement Driven Dehomologation from Carboxylic Acids Bearing Alpha-Leaving Groups to Aldehydes and Ketones." The Petroleum Research Fund as administered by the American Chemical Society. Awarded $70,000, 2022-2025.

Dr. Shawn R. Hitchcock "A new direction for an old reaction: A Curtius Rearrangement driven Dehomologation from carboxylic acids to aldehydes and ketones." University Research Grant, Illinois State University. Awarded $7,000.00, 2022-2023.

Dr. Jeremy D. Driskell "Enzyme-Mediated Site-Specific Conjugation of Antibodies to Nanoparticles." National Institutes of Health – NIGMS. Awarded $369,921 09/2022-08-2025.

Dr. Jeremy D. Driskell "RUI: Chemically Modified Enzymes to Control Absorption on Gold Nanoparticles for Enhanced Structure/Function." National Science Foundation (MSN). Awarded $376,872 09/2022-08/2025.

NEW GRADUATE STUDENTS

The Chemistry Department welcomes the following new graduate students for the Fall 2022 and Spring 2023 semesters:

Anthony Amissah *(Kwame Nkrumah University of Science & Technology – Ghana)*
Thomas Arndt *(Illinois State University)*
Francis Awa *(Michael Okpara University of Agriculture – Nigeria)*
Emmaneul Boafo *(Kwame Nkrumah University of Science & Technology – Ghana)*
Jonathan Chilaka *(Michael Okpara University of Agriculture – Nigeria)*
Seth Corrie *(Illinois State University)*
Kwabena Darko *(Kwame Nkrumah University of Science & Technology – Ghana)*
Joy Odeh *(Ambrose Alli University – Nigeria)*
Kwame Osei *(Kwame Nkrumah University of Science & Technology – Ghana)*
Sudarshana Patra *(Jadavpur University – India)*
Russell Piontek *(Illinois State University)*
Sivanujan Suthaharan *(University of Jaffna – Sri Lanka via IIT – Chicago)*