

SERMACS/SWRM 2025

Revised 10/14/2025

SUNDAY MORNING

ACS ProjectSEED

Harbor B

A. Mallia, D. Masterson, *Organizers, Presiding*

8:00 Introductory Remarks.

8:05 1. ACS project SEED at UNC Charlotte: Chemistry research and impact on students. **M.G. Walter**, K. Afonin, J. Foley, J.C. Poler, C. Bejger, E. Ge, T.J. Adams

8:30 2. Organizing the ACS Project SEED Program at a Primarily Undergraduate Institution. **S. Mwongela, N.Y. Forlemu, A. Mallia**

8:55 3. Providing high school students with authentic research experiences through Project SEED and other efforts in the Snake River Local Section. **D.L. Warner**

9:20 4. Leveraging NSF MPS-high to engage high school students in cyclotide research. Z. Adu, C. Forlemu, S. Nuh, S. Mwongela, **N.Y. Forlemu**

9:45 Break.

10:00 5. Starting a successful ACS project SEED program. **A. Mallia**, D. Masterson

10:25 6. The SEED Scholarship Programs. **J.F. Robinson**

10:50 7. Getting started with Project SEED. **D. Masterson**

11:15 8. Co-mentoring as an effective strategy to maximize the student experience. **D.S. Masterson**, J.H. Broome, T. Masterson

11:40 Closing Remarks.

Advancements in Catalysis for Sustainable Processes

Royal 2

C. J. Koch, H. H. Smith, *Organizers, Presiding*

8:00 Opening Remarks.

8:05 9. Noble-metal free catalysts for ammonia dehydrogenation within permeation membrane.

C.J. Koch, j. Naglic, D. Clairmonte, J. Lauterbach, L. Angelette, T. Guin

8:20 10. Tracking the formation of C₂ products after the photodissociation of CH₃I on crystalline and amorphous TiO₂ surfaces. **K. Blackman**, A. Gupta, A. Daniels, M. Hall, E. Segrest, M.E. Vaida

8:35 11. Uncovering pH effects in nitrate electroreduction on Fe single-atom catalyst. **Z. Meng**, A. PRIYADARSINI, S. Kattel, X. Feng

8:50 12. Surface-passivated high-entropy oxide catalysts for stable dry reforming of methane. **Z. Yang**, Q. Wang, S. Dai

9:05 13. Advancements in abating nitrous oxide emissions: A review of direct catalytic decomposition and selective catalytic reduction reactions. H. Chao, S. Stofik, **M.N. Gordon**, M. Mueller, M. Craps, D. Aidhy, R. Fushimi, J. Lauterbach, D. Rodene

9:20 Break.

9:35 14. Cascade reduction of nitrate to ammonia in neutral electrolyte using nanostructured Cu/Ni(OH)₂ electrocatalyst. **T. Egan**, X. Feng

9:50 15. Efficient and selective dehydration of arylethanols to Arylethylenes using zinc-based Lewis acid catalysts. **O.A. Oladele**

10:05 16. Machine learning-accelerated discovery of single-atom catalysts for hydrogen evolution reaction. **C. Ezeakunne**, S. Kattel

10:20 17. Computational design of single-atom alloy catalysts for electrochemical nitrate reduction to ammonia. **A. PRIYADARSINI**, S. Kattel

10:35 18. Photoredox-inspired electrocatalysis in nonthermal plasma for energy-efficient PFAS degradation. **K.M. Christopher**, I. Alabugin, B.R. Locke, R. Bulusu

10:50 19. Tuning La_yCa_{1-y}FeO₃ (y=0.2, 0.5, 0.8) perovskites on mesoporous silica for selective CO₂ hydrogenation to light olefins. **D. Ghosh**, J. Kuhn

Frontiers in Nucleic Acids

Magnolia B

Y. Gerasimova, M. W. Germann, D. Kolpashchikov, J. Siemer, *Organizers, Presiding*

8:00 Opening Remarks/ Setup.

8:20 20. Cold-driven hybridization: A novel approach for dsDNA detection using all-DNA probes. Y. Gerasimova, M. Stancescu, **D. Kolpashchikov**

8:50 21. Multicomponent deoxyribozyme probes: A versatile tool for detecting genetic signatures down to a single nucleotide. **J. Monsalve**, V. Zavadskaya, S. Veleke, Y. Gerasimova

9:20 22. *In vitro* synthesizing supercoiled circular DNA molecules. **F. Leng**

9:50 Coffee Break.

10:15 23. Challenges in using N¹-methyladenosine as RNA biomarker for quantitative studies and determining its accurate quantity. **N. Chiu**, F. Shnaider, H. Kana, S. Patel

10:45 24. Novel protein-DNA interactions introduced by missense mutations in the transcription factor PU.1. J.R. Terrell, T.N. Vernon, N. Romberg, **G. Poon**

11:15 25. Interactions of a conserved arginine-rich bridge helix of Cas12a with RNA and DNA regulate DNA cleavage competent conformation. **R. Rajan**

11:45 Announcements.

Functional Polymers: Synthetic Methodologies and Applications

Citrus B

M. C. Stefan, N. V. Tsarevsky, *Organizers, Presiding*

8:00 Introductory remarks.

8:05 26. Synthesis of cyclic-cycloolefin polymers. **C. Sever**, G. Rahman, M. Mathew, A.S. Veige

8:35 27. Exploring isotacticity outside of typical polyolefins. G. Guillory, S. Marxsen, K. Tashiro, R.G. Alamo, **J.G. Kennemur**

9:05 28. From polymerization to assembly: harnessing charge patterns to tune aqueous micellar assemblies. **D. Zhang**, E. Tsai, A. Thapa, B. Barrett, M. Zhang, R. Kumar, C. Tung, G. Huang, W. Chen, Y. Liu

9:35 29. Branched polymers containing reactive functional groups: Synthetic methodologies and applications. **N.V. Tsarevsky**

10:05 Intermission.

10:30 30. Amphiphilic polycaprolactone diblock copolymers for drug delivery of anticancer drugs. **M.C. Stefan**

11:00 31. Silyl ethers as key functional groups in degradable polymers. **D.Y. Son**

11:30 32. Hyper crosslinked polyetherimide via Friedel—Crafts acylation and dehydrochlorination. **C. Thompson**, G. Liu, C. Posada

Fun in the Sun with Light Absorbing and Emitting Molecules and Materials

Magnolia C

C. Brown, D. P. Harrison, *Organizers, Presiding*

8:00 Introductory Remarks.

8:05 33. Solar hydrogen production under the Caribbean sun. **J.L. Colacino**

8:30 34. Structural insights into metal ion linked molecular multilayers using polarized spectroscopy. B. Hanks, A. Arcidiacono, B. Çosut, S.S. Saavedra, **K. Hanson**

8:55 Intermission.

9:25 35. New design strategies of near-infrared photothermal conversion organic cocrystals. **Y. Feng**

9:50 36. Functional fungi: Solution-processable, fungal-derived ETLs for organic electronics. **L.S. Ati-Tay**, R.A. Al-Qiam, C.J. Paerce, M.G. Walter, N.H. Oberlies, S. Hematian

10:15 Intermission.

10:45 37. Synthesis of diphenylaminopyridinophane sensors for active detection of amines. **M. Pensenstadler**, E. Hernberg, C.J. Jung, A.B. Brown

11:10 38. Fine-tuning physical and photophysical behavior of iridium terpyridine complexes with 4'-aryl substituents. **D.P. Harrison**, C. Brown, J. Kelly, E. Knorr, R. Gaynor, T. Rohrabough

General Topics in Biochemistry

Nautilus A

C. D. Chouinard, *Organizer*
D. J. Sprague, *Presiding*

8:00 39. Protein identification and characterization via binding based proteomic profiling (BBPP) of fatty acid amides in *Drosophila melanogaster*. **I. McCalla**, R. Feeney, L. Gray, D.J. Merkler, J. Leahy

8:20 40. Benzothiazole sulfones as tools for peptide modification. **C.R. Shugrue**

8:40 41. Membrane interacting proteins are primed for secondary nuclear functions via DNA-interactions. **K.L. Petersen**, R. Signorelli, S. Walters, A.J. Castillo, B. Fuglestad

9:00 42. Development of right-handed helical sulfonyl- γ -AA peptidomimetics as antimicrobial agents against multidrug-resistant bacterial pathogens. **x. zhao**, J. Cai

9:20 43. Accurate thermodynamics for the binding between estrogen related receptor (α) and inverse agonists with theoretical methods. **Y. Wang**

9:40 44. Senescence in aged mice models of type 2 diabetes mellitus. **D.T. Kwitchoff**, A. Ybargollin, C. Wu, Q. Jiang, C. Mathews, L. Cui

10:00 Break.

10:40 45. Spectroscopy and elucidating the etiology of cataracts and dry eye. **D. Borchman**

11:00 46. Substitution of K339 with methionine modulates Zn^{2+} -substrate ionization in D-2-hydroxyglutarate dehydrogenase. **B. Moni**, G. Gadda

11:20 47. Mechanistically distinct fluoride transport pathways in the Fluc homodimer channels revealed by MD. **F. Montalvillo**, K. Mills, H. Torabifard

11:40 48. Development of noncovalent inhibitors by targeting functional, membrane-bound GPx4. **M. Smith**, S. Walters, C. Labrecque, B. Fuglestad

General Topics in Organic Chemistry

Nautilus B

C. D. Chouinard, *Organizer*
L. Mei, *Presiding*

8:00 49. One-pot synthesis of bridge-functionalized pillararenes using cyclic acetals. B. Machireddy, **U. Tyagi**, B. Davis, M. He

8:20 50. Cross carbonyl-olefin metathesis (XCOM) of unactivated olefins. **J. Wu**, M. Vargas-Penalver, T.H. Lambert

8:40 51. Confinement-controlled reactivity of Dispiro-3-Thioxocyclobutanones in a water-soluble molecular cage. **A. Kumar**

9:00 52. A dual-targeting probe for real-time tracking of therapy-induced senescence. **Z. Chen**, S. Anvar, Y. Zhang, L. Cui

9:20 53. The chemistry behind fluorescent probes for carbon monoxide: Is seeing believing?. **D. Liu**, X. Yang, B. Wang

9:40 54. One-pot alkylations of ketones, indoles, and benzofurans with arylmethyl carboxylates. **C.W. Downey**

10:00 Break.

10:20 55. Radical-induced remote boron translocation. **M. Xu**, M. Chen

10:40 56. Diels-Alder reaction between electron-rich partners via Lewis acid catalyst. **M. Qureshi**, S.R. Hussaini

11:00 57. Metalation and capture of heterocycles at remote landscapes. **A.A. Thomas**

11:20 58. Endo-fights: a study of antifungal secondary metabolites from mangrove derived endophytic fungi of the everglades. **E. Cruz-Rosa**, B.J. Baker

11:40 59. Synthesis of value-added carbocycles and heterocycles. **Y. Yuan**

Medicinal Chemistry of Heterocycles and Natural Products: Driving Drug Discovery

Cypress A

S. S. Panda, *Organizer, Presiding*

8:00 Introductory Remarks.

8:05 60. Unlocking bioactive scaffolds: The synergy of heterocycles and natural products in medicinal chemistry. **S.S. Panda**

8:35 61. Tales from the dark side: Antiarrhythmic drug development leveraging the cyclic oligomeric depsipeptide *ent*-verticilide. **J.N. Johnston**

9:05 62. Carbon Monoxide: How much do we know about this smallest organic natural product?. **B. Wang**

9:35 Coffee Break.

9:50 63. Targeting hyaluronic acid for therapy in benign and malignant disease pathologies. K. Aguilar, K. Gupta, C.S. Panda, T. Yang, **V.B. Lokeshwar**

10:20 64. Development of multi-kinase inhibitors for the treatment of non-small cell lung cancer. **S. Murru**, P.A. Addo, A. Siriki

10:50 65. Evaluation of [¹⁸F]F-CNPI in GSK-3 β transgenic mouse model. **M.K. Pandey**

11:20 66. Quests to find safe drugs to cure malignant cancers-potions, spices, apple peels, and by smart medicinal chemists. **B.L. Lokeshwar**, K. Gupta, T. Muthusamy, S. Panda

Novel Bioconjugation Techniques - A Melting-pot for Nanomedicine, Organic Chemistry, and Chemical Biology

Magnolia A

J. Ohata, Q. Wang, *Organizers, Presiding*

8:00 67. Exploiting the tunable reactivity of *N*-aryl peptides in oxidative couplings. **C. Proulx**

8:25 68. Boron chemistry in organic synthesis and bioconjugation. N. Mallampudi, V. Vulupala, D. Gunasekera, Y. Gyasi, S. Nyalata, **S. Xu**

8:50 69. Simplifying peptide chemistry: Minimalist “C1” linkers for lysines. **G. Chen**

9:15 70. Exogenous chemistry used to selectively read sequence-defined oligourethanes that control a Python program. **H. Park**, H. Fargher, K. Song, E.V. Anslyn

9:30 71. Reactive oxygen species (ROS)-sensitive drug delivery: Back to the fundamentals. **S. Bansal**, B. Wang

9:45 Coffee Break.

9:55 72. Phenylalanine-targeting bioconjugation through mechanochemistry. **J. Ohata**

10:20 73. Chemoselective cysteine reengineering. **F. Wang**

10:45 74. Leveraging the unique (photo)reactivity of aromatic cations for chemical biology. **M. Taylor**

11:10 75. Lysine-targeting fluorescent probes enable sensitive detection and proteomic analysis of protein aggregation. **S. Sato**

11:35 76. Development of photoredox labeling technology for PET agent construction. **Z. Li**

12:00 Conclusion Remark.

Undergraduate Research at SERMACS/SWRM

Harbor A

C. D. Chouinard, *Organizer*

B. A. Van Horn, *Presiding*

8:00 77. Multifunctional MOF-polymer composites: From materials design to catalytic detoxification of warfare agents. **A. Rahman**, N.M. Al-Kharji, R. Smaldone

8:15 78. Synthesis and reactivity of an unsaturated organometallic diosmium complex. J.A. Polk, J.D. Trujillo, K.A. Raney, C.B. Powell, **G.L. Powell**

8:30 79. Machine learning regression to predict the formation energy of ternary metal oxides. **N. Belden**, S. Kattel

8:45 80. Nanocrystalline films of iron(III) oxide obtained using Pluronic polymers. **J.A. Markovic**, L. De La Garza

9:00 81. Urolithin B via a Hurler reaction. **E.R. Crabtree**, **R.E. Lee**, A.D. Foote, P.E. Heiple

9:15 82. Thiolate mediated silyl ether exchanges for dynamic polymer synthesis. **A. Vargo**, P. Bombard, H. Chesley-Vogels, J. Vo, B. El-Zaatari

9:30 83. Silyloxyalkylation of 1,3-disubstituted indoles promoted by trimethylsilyl trifluoromethanesulfonate. **E. Zhou**, C.W. Downey

9:45 84. NMR study of the keto-enol tautomerization of 1,3-dicarbonyl compounds. **B. Swing**, C. Alvarez, C. Moreno, T.L. Scott

10:00 Break.

10:30 85. Urolithin A Via Ullmann coupling. **A.D. Foote**, E.R. Crabtree, P.E. Heiple, **R.E. Lee**

10:45 86. Deamidation-inspired N27D substitution modulates A β 42 aggregation kinetics and microglial response. **P. Ramaswamy**, D. Dinakarapandian, M. Griffin, C. Li, L. Wood, A.K. Paravastu

11:00 87. Lipid-like Nanoparticles: Expanding scope and biocompatibility via the Curtius rearrangement. **M. Marmande**, B. Baxter, L. Orr, D. Forbes

11:15 88. Side-chain deamidation affects amyloid-beta 42 aggregation kinetics and modulates cellular response. **S. Song**, D. Dinakarapandian, M. Griffin, C. Li, P. Ramaswamy, L. Wood, A.K. Paravastu

11:30 89. Mu-opioid receptor retains its activation dynamics in aqueous environments. **C. Walls**, E. Agyemang, R. Lamichhane

11:45 90. Arrestin Development: Trp336-targeted ligands exploring tunable β -arrestin signalling in drug molecules. **A. Bluestein**, B. Choudhary, K. Starks

Women in STEM

Cypress B

V. Anagnostopoulos, C. D. Chouinard, A. E. Gorden, *Organizers*
F. C. Liu, *Presiding*

8:00 91. Interfacial hydrophilicity controls mineral transformation outcomes for enstatite and amorphous MgSiO_3 . L. Hardee, Q. Miller, **B. Aguila-Ames**

8:20 92. Design and synthesis of ULK3 inhibitors as chemical probes to study ULK3 driven biology in cancer. **B. Humphrey**, T.H. Tran, G. Mahankali, K. Yang, B. Reichmuth, H. Martinez, M. Tauro, K. Shain, H. Lawrence, C. Lynch, N.J. Lawrence

8:40 93. Calmodulin enhancement of calcium uptake in isolated cardiac mitochondria. **S. Garcia**, A. Neumaier, M. Kohlhass, A. Xu, K. Ermer, A. Nickel, L. Enzner, V. Sequeira, C. Maack, C. Johnson

9:00 94. Re-examining the sulfo-phospho-vanillin assay (SPVA) for total lipid quantification: Evidence for a mechanism that expands lipid detection capabilities. **L. Bailey**, F. Kume, K. Heiden, K.B. Basso

9:20 95. Substrate specificity and mechanism of RNA cleavage by YloC, an endoribonuclease from *B. subtilis*. **E. Jennings**, A. Khan, M. Frazier, M. Forconi

9:40 96. Organocatalyzed addition of masked acyl cyanides to nitroalkenes. F. Kekessie, L. Garman, **J.A. Pigza**

10:00 Break.

10:20 97. Synthesis, characterization and reactivity of Mn and Fe complexes with a n-based pentadentate ligand. **M. Garcia Bermudez**, B. Donnadieu, S. Creutz

10:40 98. Advancing hydrogen storage capabilities in solid-state materials driven by ferroelectricity. **L. Hanna**, K. McDonald, M. Hoover, B. Rai, C. Malone

11:00 99. Elucidating the stability and membrane interactions of disease-causing mutation in GPx4. **S. Walters**, B. Fuglestad

11:20 100. Investigation of Fe spin-crossover complexes for surface deposition. **D. Kumar**, M. Gakiya-Teruya, M. Shatruk

11:40 101. Biocatalytic strategies for selective oxidations. **M.E. Hinze**

Chemistry Education Research: Undergraduate Student Research Symposium

Pelican Room

J. Donnelly, N. Lapeyrouse, *Organizers, Presiding*

8:30 Introduction.

8:35 102. Students' perceptions and engagement with electronic notebooks in a high-enrollment chemistry course. **C. Handfield**, D. Sebastien, N. Lapeyrouse

8:45 103. Item Writing Flaws Evaluation Instrument and forensic chemistry courses: An analysis of instructor-made multiple choice assessments. **G. Rios**, F. Khogali, T. Legron-Rodriguez

8:55 104. Advantages and disadvantages; Students perception of their STEM major. **M. Barnett**, C. Bechard, N. Lapeyrouse

9:05 105. Exploring canvas mastery paths and its impact in general chemistry. **P. Libos**, C. Bechard, N. Lapeyrouse

9:15 106. Peer-assisted learning: Student and learning assistant perspectives from a forensic chemistry course. **L.N. Ghasseminia**, D. Dennis, J. Donnelly, T. Legron-Rodriguez

9:25 Break.

9:35 108. Investigating factors that can impact Engineering students' relationship to their major. **H. Barrineau**, A.T. John, M. Scorpio, C. Bechard, T. Legron-Rodriguez, N. Lapeyrouse

9:45 109. Training learning assistants using AI. **G. Smith**, J. Donnelly

9:55 110. Content analysis of multiple-choice questions in forensic chemistry. **F. Khogali**, G. Rios, T. Legron-Rodriguez

10:05 111. Analysis of body site instrument efficacy for the detection of anxiety through the use of the galvanic skin response. **E. Guerrero**, C. Randles

10:15 Break.

10:25 112. Resources that students use early in their major to learn about becoming a future forensic scientist. **M. Scorpio**, A.T. John, H. Barrineau, C. Bechard, T. Legron-Rodriguez, N. Lapeyrouse

10:35 113. Study of group cohesion in a team-based learning style general chemistry 2 course. **A. R**, J. Donnelly

10:45 114. How does student interaction, facilitated through a shared electronic notebook, influence learning experiences in a large-enrollment STEM classroom?. **D. Sebastien**, C. Handfield, N. Lapeyrouse

10:55 115. Investigating perceptions of disabled students' engagement and motivation in flipped organic chemistry and biochemistry courses. **A.C. Chee-Awai**, L. Sharman, T. Legron-Rodriguez

11:05 116. Resources used in academic and career development for engineering majors enrolled in a Principles of Chemistry course. **A.T. John**, H. Barrineau, M. Scorpio, C. Bechard, T. Legron-Rodriguez, N. Lapeyrouse

11:15 Closing remarks.

Curricular Innovations in Chemistry Education: Integrating Professional Skills and Interdisciplinary Experiences

Harbor C

M. Brooks, J. A. Feducia, G. Rabah, *Organizers, Presiding*

8:30 Introductory Remarks.

8:35 117. ACS guidelines emphasize the cultivation of essential skills for students earning bachelors degrees. **M. Brooks**

8:55 Q&A Transition.

9:05 118. Going beyond content knowledge: Using the ELIPSS skill rubrics to align outcomes, activities, and assessment to promote professional skill development. **J. Lantz**, S.M. Ruder, R.S. Cole

9:25 Q&A Transition.

9:35 119. Scaffolded approach to student support and skills development in the chemistry major: Professional skills, student engagement and retention. **S.A. Wasileski**, A.L. Wolfe, J.M. Schmeltzer

9:55 Q&A Transition.

10:05 120. Bridging organic chemistry teaching labs and real-world research with computing applications. **D. Camp**

10:25 Q&A Transition.

10:35 121. Increasing student understanding and technical skills in instrumental analysis: piloting a student-led instrument deconstruction with a decommissioned ICP-MS. **K. Zimmermann**, R.K. Kalman

10:55 Q&A Transition.

11:05 122. Broad deployment of productive undergraduate research outside of CUREs. **R.M. Stolley**

11:25 Q&A Transition.

Recent Advances in Hybrid Semiconductors

Flamingo Room

V. Klepov, I. Spanopoulos, *Organizers*
A. P. Tiwari, *Presiding*

8:30 123. Granting higher thermal and environmental stability for metal halide semiconductors through a single atom substitution. **A. Azmy**

8:45 124. Spray-deposition of alkylammonium spacer cation advancing the stability and scalability of perovskite photovoltaics. **R. Sahani**, N. Kumar, C. Lai, D. Radu

9:00 125. Designing air- and water-stable tin halide complexes with [2.2.2] cryptand for functional materials. **M. Bagherifard**, I.N. Gkikas, I. Spanopoulos

9:15 126. Development of functional porous magnetic hybrid metal halides. **M. Elolimy**, K. Nassar, D. Khoa Le, A. Azmy, M. Phan, I. Spanopoulos

9:30 Intermission.

9:45 127. Microwave-assisted synthesis of water-stable phosphine-bismuth halide semiconductors with photo-selective antifungal activity. **A.B. Anderson**, A.P. Tiwari, I. Spanopoulos

10:00 128. Synthesis of functionalized cryptands for stable hybrid halide perovskite materials. **N. Tariq**, I. Spanopoulos

10:15 129. Transition metal-based metal halide semiconductors for selective carbon dioxide photoreduction. **K. Nassar**, I. Spanopoulos

10:30 130. Synthesis and host–guest functionality of porous lead iodide metal halides featuring biphenyl amide-Tris ligands. **C. Dean**, M. Bagherifard, I. Spanopoulos

Advancements in Nuclear Chemistry

Nautilus C

V. Anagnostopoulos, *Organizer*

D. A. Penchoff, *Organizer, Presiding*

9:00 Introductory Remarks.

9:05 131. Recent advances in solid post-detonation nuclear forensic benchmarking materials. **J. Cooper**, M. Snow

9:25 132. Iron extraction by crown ethers: Mechanistic insight for nuclear forensic applications. **M. Forbes**, N.A. Wall, B.P. Burton-Pye, L.C. Francesconi, B. Stieferman, D.A. Penchoff

9:45 133. Influence of polymer fiber chemistry on ionization efficiency for plutonium isotope ratio measurements by TIMS. **K. Folkes**, S.M. Husson, B.A. Powell, V. Bliznyuk

10:05 134. Developing preorganized chelators for selective separations of nuclear fission products. **J. Heflin**, T.L. Windus

10:25 Intermission.

10:35 135. Radioisotope production and application of Ac-225 at Oak Ridge National Laboratory. **P.D. Benny**

10:55 136. Actinium and lanthanum complexation for applications in radiotherapeutics. **C. del Barrio**, A. Chee-Awai, D. Ibrahim, C.C. Peterson, R. Harrison, E. Valeyev, P. D. Benny, D.A. Penchoff

11:15 137. Analytical chemistry for isotope separation and impurities for tritium processing. **J.T. Kelly**

11:35 138. Inferring the history of irradiated uranium using intra-elemental ratios. **C.M. Folden**

11:55 Closing Remarks.

Advancing Extraction and Separation Techniques for Food and Environmental Analysis

Majestic Ballroom

N. S. Chong, Y. Foo Wong, *Organizers*

10:00 - 12:00

139. Wastewater-based epidemiology for the estimation of consumption of selected opioids in the City of Cookeville using UPLC-QToF mass spectrometry. **O. Ifedayo**, T.H. Boles, D.N. Koku Hannadige Abeysooriya

140. Optimized sustainable dyeing of wool with *Rubia Tinctorum* L. using ultrasound technology. **O. Chajii**, Y. Chemchame, R. Achahboune, M. Dalal, A. El Bouari

141. Sustainable extraction, spin coating, and characterization of *M. aquifolium* epicuticular wax coatings. **J. Smith**, P. Cameron, R. Middleton

Bioinorganic Chemistry in the Southeast and Southwest Regions of ACS

Majestic Ballroom

J. D. Caranto, *Organizer*

10:00 - 12:00

142. Mechanistic study of the *Mycobacterium kansasii* (*Mka*) HLP NO peroxidase pathway. **S. Jennings**, C. Martin, C. Gekko, K.M. Lancaster, J.D. Caranto

143. Utilizing dinuclear and mononuclear ruthenium(II) polypyridyl complexes as potential photosensitizers for photodynamic therapy. **N. Antoine**, E.T. Papish, D. Muthama, P. Pridemore

144. NO cryophotolysis to trap pathway intermediates of nitrosative stress protection enzymes. **A. Kumar**, T. Albert, S. Jennings, P. Moenne Loccoz, J.D. Caranto

145. Screening for the Biodegradation of 2-(nitroamino)ethanol Using the Protein *Mr N*-nitroglycine Lyase A. **J.D. Dietrick**, J.D. Caranto, K. Strickland, B. Martinez Rodriguez

147. Versatile fluorescence polarization-based probe scaffold for metalloprotein metalation state studies and inhibitor screening. **D.B. Hudson**, E.L. Que

148. Synthesis and application of Ni(II) CNC-pincer catalysts for carbon dioxide photoreduction to renewable energy sources. **M. Ahmed**, L. Whitt, N. Kruse, N. Hammer, E.T. Papish

149. Identification of the NnlA active site that degrades the nitramine natural product, N-nitroglycine. **K. Strickland**, B. Martinez Rodriguez, H. Klautky, J.D. Caranto

150. Label free metal carbonyl complexes for cellular imaging and pH probing using infrared spectroscopy. **D. Muthama**, E. Kuehner, W.J. Andújar-Cruz, D. Lnu, A. Ghosh, Y. Kim, E.T. Papish

151. Anaerobic circular dichroism reveals substrate induced stabilization and active site reorganization upon oxygen activation in *CthEgtB*. **K. Rodriguez**, K.K. Meier

General Topics in Physical Chemistry

Majestic Ballroom

C. D. Chouinard, *Organizer*

10:00 - 12:00

152. Non-equilibrium composition of mixed metal hydroxide membranes grown in flow systems. **M. Cooper**, B. Batista, O. Steinbock

153. Characterizing the response of light-harvesting to growth under red light in *Chaetoceros* diatoms. **K.C. Salaz**, J. Glenn-Millhouse, C. Waldie, A. Slover, S.C. Massey

154. First principles pressure-dependent band gap calculation of cubic metal oxides for thermoelectric materials discovery. **A. Isse**

155. Machine-learning molecular properties using a transferable, physical descriptor. **D. Abadie**, L. Yu

156. Genetic Algorithm for optimizing a function: Application to chemical problems of structure optimization. **J.R. Haigler**, B.K. Dey

157. Differential Scanning Calorimetric (DSC): study to understand Thermal properties of a mixture of polymer with different molecular weight. **K.y. Leverette**

158. Exploring potential energy surface to determine the stationary points and the trajectories connecting these points. **K. Wiley**, B.K. Dey

- 159.** Understanding soft-hard acid-base principle based on quantum mechanical calculations. **A.L. Jones**, B.K. Dey
- 160.** Multi-frequency EPR characterization of spin qubits in molecular magnet frameworks. **S.I. Weaver**, M. Shatruk, S. Hill
- 161.** Vibrational spectra of 2-hydroxylacetonitrile and hydroxylpropanitrile isomers and thermochemistry of the two cyanohydrin molecules. **E. Cummins**, W.K. Gichuhi
- 162.** Automated construction of enzyme active site cluster models from molecular dynamics snapshots with the RINRUS toolkit. **D. Wappett**, N.J. Deyonker
- 163.** Investigation of a particle-in-a-bumpy-box with Excel. **J.W. Hall**, G. Lowke, S. Hutchison
- 164.** Implications of the bending in half-sandwich complexes: Assessing competing models. **B.P. Di Carlo**
- 165.** Theoretical electronic spectroscopy of gas phase transition metal acetylide cations (MCCH^+ , $M = \text{Sc}, \text{Zn}$). **H. Sasi**, N.J. Deyonker
- 166.** PHAST 2.0: Development and applications of an advanced polarizable force field for metal-organic frameworks. **L. Ritter**, A. Hogan, B. Space
- 167.** Symmetry breaking in Hartree-Fock: Non-collinear spins and complex wavefunctions. **M. Ward**, D. Nascimento

PMSE/POLY Poster Session

Majestic Ballroom

Cosponsored by PMSE and POLY
R. Foudazi, *Organizer*

10:00 - 12:00

- 168.** Development of thermally Reprocessable and self-healing epoxy vitrimer using epoxidized hemp seed oil and dynamic covalent imine bonds. **V.r. Patel**
- 169.** Stepwise synthesis of mononuclear, dinuclear, unprecedented trinuclear rhenium oxo - pyrazolato complex and a 2D polymer. **J.O. Nnamani**, I. Chakraborty, R.G. Raptis
- 170.** Aerogels from polydicyclopentadiene and its copolymers. **J.R. Cravey**, R. Cork, H.J. Schanz

171. ROMP & Roses: A tactical approach to precision polyolefins. **L. Deloso**, G. Guillory, J.G. Kennemur

172. Orthogonal polymerization and characterization of recyclable elastomers from lipoic acid derivatives. **n. whitten**

173. High dielectric constant polyolefins by ADMET polymerization. **E. Cohen**, H. Sun, S. Brown, J. Marquez, Z. Han, K. Treaster, A. Davis, A.M. Evans, R. Bianculli, K. Wagener, Y. Wu

174. Stretchable and conductive thin films of PEDOT:PSS/ionic liquid composite for flexible electronics. **F. Abbas**, T. Le, S.E. Bourdo, F. watanabe, N. Siraj

175. Blending precise polyelectrolytes with PEO for next generation batteries: Miscibility, conductivity, and transference values near unity. **C. Womack**, N. Nguyen, P. Blatt, K. Kim, D. Hallinan, J.G. Kennemur

176. Measuring the tensile strength of cellulose parts printed using room-temperature ionic liquids. J. Borda, **E.R. Duranty**

177. Ultrafiltration membranes from polymerized lyotropic liquid crystals for mAb purification. **S. Tabatabaei**, S. Tahazadeh, F. Talebnia Rowshan, R. Foudazi

178. Visible light 3D printing of polymeric microneedles. **I. Hoffman**, A.R. Lippert

179. Calculation of shielding effectiveness of eight ultraviolet-curable polymers for galactic cosmic rays in the lunar environment. **D.D. Harris**, O.M. Penrose, C.E. Bonner, S.A. Thibeault, K.L. Gordon, J. Kang

180. Toward scalable alpha-olefin production from high-density polyethylene waste. **S. Corbel**, C. Posada, G. Liu

Recent Advances in the Chemistry of Multinuclear Transition Metal Complexes

Majestic Ballroom

M. Stollenz, *Organizer*

10:00 - 12:00

181. New synthetic strategies for diruthenium(II,II) tetra(trifluoroacetate). **G.D. Tisdale**, L. Mangas, J.F. Berry

182. Integration of *p*-Block and *f*-Block Metals into metal atom chain complexes toward the development of single-molecule magnets. **L. Mangas**, J.F. Berry

183. Synthesis and reactivity of Chromium PNP complexes. **R. Mukkera**, S. Creutz

Undergraduate Research at SERMACS/SWRM

Majestic Ballroom

C. D. Chouinard, *Organizer*

10:00 - 12:00

184. Analysis of the adsorptive properties of clay for heavy metals using X-ray fluorescence: Applications in inorganic chemistry and environmental sciences. **R. Huisman**, P.J. Rosado

185. Improving the bioavailability of active pharmaceutical ingredients: X-Ray Diffraction (XRD) and Differential Scanning Calorimetry (DSC) techniques. **J. Williams**

186. Characterization of gold nanostars for microfluidic surface-enhanced Raman spectroscopy (SERS) substrates. **N. Ghiloria**, c. folks, L. Casto

187. Reaction of DNA oligonucleotide duplexes with an oxidized oxo-centered trinuclear Cr(III) carboxylate complex. **E.K. Atkinson**, K. Repke, S.A. Woski, J.B. Vincent

188. Development of a framework to interrogate G protein subtype selectivity at the orexin receptor 2. **A. Drozman**, A. Acheampong, L. Wingler

189. Occurrence and distribution of pharmaceuticals in the Chattahoochee River and its tributaries. **G.W. Stephenson**, K.S. Taylor, E. Klar

190. Investigation on the antibiotic effect of superior-class traditional Chinese medicinal herbs on *Escherichia Coli*. **D. Kassing**, A. Neuman, L. Taliaferro-Smith

191. Synthesis and characterization of poloxamers modified with antioxidants. **A. Dowling**, R. Harris

192. Developing proteolysis-targeting chimeras (PROTACs) for histone deacetylase 8 (HDAC8) degradation: A computation-based drug design approach. **F. Nirob**, T. Kadayat

193. PFAS in environmental media: Applications of Single-Sided NMR. **J. Golding**, T.K. Meldrum

- 194.** Mild and efficient Cs₂CO₃-promoted synthesis of silyl(dithio-)carbamates and silyl(dithio-)carbonates. **C. Lavigne**, P.L. Gray, R. Salvatore
- 195.** Unraveling RNA structural switches in hepatitis C virus: Investigating magnesium-dependent kissing complexes. **D. Williams**, U. Puthumana, B. Vernier, J.D. Evanseck
- 196.** SEM and EDS analysis of surface-modified multi-bore CFMs for neurodegenerative disease research. **V. Guillen Pacheco**, N. Udawaththa, A. Daninger, P. Pathirathna
- 197.** Synthesis of new poloxamers using living ring-opening polymerization of epoxides. **A. Gray**, B. Waters, T.W. Hanks
- 198.** Efficient and size-controlled synthesis of polydiacetylene liposomes. T.W. Hanks, **M. Taylor**, A. Hollingsworth, C. Razanauskas
- 199.** Towards the total synthesis of epoxyacremostrictin. **r. garrrity**
- 200.** Spectrophotometric determination of the chelating behavior of metal ions and EDTA encapsulated in sol-gel matrix. **C.T. Barnes**, C.H. Lisse
- 201.** Synthesis and metathesis polymerization of an acyclic diene ester in the organic chemistry teaching laboratory. **G. Pritchard**, **M. Ranko**, J. Konzelman
- 202.** An analysis of trace metals in coastal surface water samples and ambient particulate matter using ICP-MS. **E. Dominguez**, C. Echols, E. Smerznack, A. Hobbs, M. Shields, A. Deegan, A. Frossard, X. Li, R. Simmons, Y. Guo, Q. Shao, M. Schlueter, W. Huang, K. Zimmermann
- 203.** Synthesis, characterization, and bioactivity of alloxan Benzylthiosemicarbazide (ALL-BTSC) and its palladium complex on topoisomerase IIa. **J. Kypri**, E.C. Lisic, X. Jiang, W. Medawala
- 204.** Aldol condensation synthesis and metathesis polymerization of an acyclic diene in the organic chemistry teaching laboratory. **G. Mizerak**, **L. Durden**, J. Konzelman
- 205.** Synthesis of an acyclic diene diester from PET and metathesis polymerization in the organic teaching laboratory. **C. Perez-Blanco**, J. Konzelman
- 206.** Making a molecule: Synthesis of a key fragment for total synthesis of Acremostrictin. **C. Cornwell**
- 207.** Synthesizing hydrazone macrocycles for antimicrobial investigations. **K. Rowe**
- 208.** Water-based electrolytes for lithium-ion batteries. J. Wu, **L. Gilchrist**, Y. Rodriguez
- 209.** Integrated cyclic voltammetry and atomic absorption spectroscopy for accurate quantification of iron in ferrous sulfate tablets. **F. GARCIA**, I. Agyekum

- 210.** Quantifying bioactive compounds in kombucha using HPLC analysis. **J. Vereen**, D. Budner
- 211.** Dissociation pathways and conformational dynamics of SARS-CoV-2 3CLpro inhibitors. **Q.R. Johnson**, A. Rampey, A. Travis, G. Maddox, M. Alvarez-Paramo, Y. Perez, J. Buxton
- 212.** Synthesis of a C₃-symmetric Fe–Fe bonded EMAC supported by a hexaanionic scaffolded ligand. **A.S. Underwood**, G. Guillet
- 213.** Analyzing pH and total acidity across tea types, SCOBY's, and fermentation periods of kombucha. **A. Morisset**, D. Budner
- 214.** Potential impacts of introducing botanicals to kombucha during secondary fermentation. **Z. Holmes**, S. Brummett, S. Furse, D. Budner
- 215.** Synthesis and characterization of silicate doped titanium oxide solution based thin films. **H. Cregar**
- 216.** An initial analysis of the secondary addition of fruit juices and botanicals in black tea kombucha. S. Furse, S. Brummett, Z. Holmes, **D. Budner**
- 217.** Exploring the impact of fruit juices on the secondary fermentation of kombucha. **S. Brummett**, Z. Holmes, S. Furse, **D. Budner**
- 218.** Design and synthesis of a chiral-supporting ligand for zinc-catalyzed hydroamination. **M. Rivera**, R. Harris
- 219.** Enzymatic activity and velocity of unique nitrating enzyme CYP450 TxtE. **G. Santiago**
- 220.** Synthesizing ortho-functionalized *N*-acyl hydrazones for antimicrobial investigations. **E. Parris**
- 221.** Synthesis and characterization of crystals from Bi(NO₃)₃·5H₂O and tetrafluoroterephthalic acid. **M. Evers**, H. Smith, H. zur Loye, J.G. Kelley
- 222.** DNA half adder based calculator driven by DNA 4J molecular switches. **A. Canizalez**, A. Bardales, D. Kolpashchikov
- 223.** Investigating the photophysical properties of protoporphyrin IX for potential use in renewable energy applications. **F. Steinour**, J. Gaetgens, G.D. Scholes, T.J. Fuhrer
- 224.** Understanding the function of the human copper transporter 1 protein (hCtr1) through N-terminal model peptide mutants. **K. Ruth**, J. Lee, E. Post, J. Pushie, K. Haas
- 225.** Polar potency: Discovering cytotoxic metabolites from the *Rossella* sp. Antarctic glass sponge. **A. Esmaeilian**, E. Cruz-Rosa, B.J. Baker

226. Search for antibacterial cyclic peptides: Characterization and evaluation of the antibacterial properties of protein isolates from hemp, okra, and hibiscus seeds. **K. Renard**, W. Collier, H. Uwamahoro, Y. Davis, G. Kanyairita, E. Abdelazim

SUNDAY AFTERNOON

Advancements in Catalysis for Sustainable Processes

Cypress C

C. J. Koch, H. H. Smith, *Organizers, Presiding*

1:00 227. Commercial process development of enlicitide Eastern fragment. **Q. Li**, T. Wang, Z. Chen, S. Dalby

1:15 228. In-situ growth of 2D ZnIn₂S₄ sheets on 2D Ni-MOF for visible-light-driven rhodamine B degradation and hydrogen evolution. **J.C. Neves**, A. Galdámez-Martínez, V. Berezenko, V. Pankratova, Y. Kayser, T. Li, W. Cao

1:30 229. Reproducible method for controlled metal deposition in Co/SiO₂ eggshell catalysts. **F. Pimenta**, A. V. Godet, B. Joseph, J. Kuhn

1:45 230. Polar paddlewheel complexes for the catalytic hydrogenation of unsaturated substrates. **L.R. Marquez Rios**, M.A. Munoz-Hernandez

2:00 231. Organo iron catalyzed diastereoselective radical cross coupling enabled by chiral vinyl boronate esters. **P. Mukherjee**

2:15 232. Light-driven photo-thermal Cu₂O-Pd hybrid catalyst enabling sustainable Heck coupling. **R. KUMAR**, M. Andiappan

2:30 Break.

2:45 233. Expanding the library and applications of thiazolo[5,4-d]thiazole (TTz) photocatalysts. **T. Perrell**, J. Anderson, M. Kytile, A. Nayar, M.G. Walter, T.J. Adams

3:00 234. Electronic structures of substituted transition metal porphyrins: Applications in electrocatalytic CO₂ reduction. **E. Lane**, M. Kuruće, B.J. McNicholas

3:15 235. Visible-light-driven Sonogashira coupling via Mie-resonant Cu₂O and CuO photo-thermal catalysts. **S. Manna**, I. Spanopoulos, M. Andiappan

3:30 236. Using neutron scattering to investigate important catalysis materials and phenomena. **M. Dolgos**

3:45 237. Visible light-initiated direct C–H functionalization of hydrocarbons mediated by stable Mo(VI) complexes. **D. Ante**, M.B. Chambers

4:00 238. Life cycle assessment of amine-based adsorbents for biogas upgrading to CNG and LNG. **F. Pimenta**, O. Johnson, B. Joseph, J. Kuhn

4:15 Closing Remarks.

Curricular Innovations in Chemistry Education: Integrating Professional Skills and Interdisciplinary Experiences

Harbor C

M. Brooks, J. A. Feducia, G. Rabah, *Organizers, Presiding*

1:00 Introductory remarks.

1:05 239. Aligning chemical education with industry needs: Key insights from a Chemed summit. **G. Rabah**, J.A. Feducia

1:25 Q&A transition.

1:35 240. The new chemistry equation: Skills + innovation = opportunity. **A.B. Mahoney**

1:55 Q&A transition.

2:05 241. Chemistry Unbound at Emory University: Development and assessment of a novel curriculum. **D.R. Mulford**, T.L. McGill, L.C. Williams

2:25 Q&A transition.

2:35 242. Using big data to study learning and inform course design in general chemistry. **D. Yaron**

2:55 Q&A transition.

3:05 Break and Food setup.

3:20 Panel and discussion.

4:35 ideation time and closing remarks.

Florida Organic Faculty

Harbor B

B. Hemric, *Organizer*

R. Salvatore, E. Turos, *Organizers, Presiding*

1:00 Introductory Remarks.

1:10 243. Photochemical release of bioactive molecules for neurological applications and beyond. **N. Nesnas**

1:35 244. Visible-light-mediated Rose Bengal- or $[\text{Ru}(\text{bpy})_3]^{2+}$ -catalyzed radical [4+2] cycloaddition: an efficient route to tetrahydrocarbazoles. **L. Mei**

2:00 245. Formal indolylolation of carbonyl compounds. **Y. Yuan**

2:25 Intermission.

2:45 246. Hydrosilylation of olefins and alkynes using “pseudo-naked” M(II) cations as catalysts. **R. Wehmschulte**, X. Xu, S. Tongdee, S. MUNSHI, S. Dagorne

3:10 247. TEMPO disproportionation: Applications toward electrophilic oxygenation. **B. Hemric**

3:35 248. Catalytic Akermark cyclizations of electron-poor diphenylamines. **A.B. Brown**, A. Link, B.J. Schmeltz, M. Sanders, M. Pensenstadler, E.W. Ziegler, S. Bera

4:00 Closing Remarks.

Frontiers in Nucleic Acids

Magnolia B

Y. Gerasimova, M. W. Germann, D. Kolpashchikov, J. Siemer, *Organizers, Presiding*

1:00 Opening Remarks/Setup.

1:15 249. DNA advanced high-plex imaging for spatial transcriptomics in cells and tissues. **F. Hong**

1:45 250. Spatial organization of silver nanoclusters for antibacterial treatments. **E. Skelly, K. Afonin**

2:15 251. Discovery of selective inhibitors of *Staphylococcus aureus* ribonuclease P by *in vitro* high throughput screening. **M.E. Harris**

2:45 Coffee Break.

3:10 252. Register-shifted structures in uracil:adenine and uracil:guanine base paired DNA. **A. van der Vaart**

3:40 253. Capturing RNA dynamics: From chemical probing to high-throughput genomics. **L. Hagler**

4:10 254. RNA and protein: A match made in the Hadean. **L.D. Williams**

4:55 Announcements .

Fun in the Sun with Light Absorbing and Emitting Molecules and Materials

Magnolia C

C. Brown, D. P. Harrison, *Organizers, Presiding*

1:00 Introductory Remarks.

1:05 255. A new metal-ester covalent bonding motif for Ru(II) sensitizers on metal oxides leads to increased surface loadings. D. Dissanayake, **A.K. Vannucci**

1:30 256. Modeling fluorescence intermittency in Nile Red derivatives for single-molecule nano-reporting. **B. Steinman**, C. Autry, W. Knapp, J. Cooley, E.J. Harbron, K.L. Wustholz

1:55 Intermission.

2:25 257. Tunneling and spin inversion observed as C-H bond activation energy lowering quantum dynamic features in Co^+ mediated chemistry. **D.J. Bellert**

2:50 258. Chasing ruthenium: A titanocene photosensitizer with a microsecond emission lifetime. **P.S. Wagenknecht**

3:15 Intermission.

3:45 259. Predicting photophysical properties of cyclometalated Ir complexes using a ligand-based machine learning model. **C. Brown**

4:10 260. Photochromic materials and application. **Y. Li**

General Topics in Biochemistry

Nautilus A

C. D. Chouinard, *Organizer*

T. Ricks, *Presiding*

1:00 261. Mithramycin 2'-oximes targeting EWS-FLI1: From initial derivatization to potent and selective second-generation analogues for Ewing sarcoma. **A. Shrestha**, L. Ponomareva, Y. Liu, K.A. Shaaban, M.U. Karim, M. Leggas, J.S. Thorson

1:20 262. PFAS recognition by lipid transport proteins: Structural and biochemical insights from FABP4 and SCP2. **A.S. Birchfield**, F.N. Musayev, A.J. Castillo, G. Zorn, B. Fuglestad

1:40 263. Rational design of sulpho- γ -AA peptides as cMyb mimics for disruption of cMyb-KIX interaction. **Y. Win**, J. Cai

2:00 264. Halogen bonding stability in damaged DNA base-pairs. **E. Hebeka**, C.A. Parish

2:20 265. Effects of simulated digestion on the ACE-inhibitory activity and secondary structure of peanut protein hydrolysate. S. Adebayo, **J. Yu**

2:40 266. Regulation of osteoclast differentiation and arthritis inflammation by itaconate and its derivatives. **S. Szabo**, **A. Chand**, L. Clark, C. Martinez, K. Heo, V.V. Mody, S. Taval

3:00 267. Large-scale production of active human heparanase. **D. Scharland**, A. Ybargollin, S. Anvar, T. Bryan, Z. Chen, L. Cui

3:20 Break.

3:40 268. Modeling uncertainty and generative design using acetylcholinesterase machine learning models. **J.S. Harris**, C. Yogodzinski, P. Vignaux, T.R. Lane, T. Jones, S. Ekins

4:00 269. Computational modeling illuminates ion selectivity and transport mechanism in copper transporters. **H. Torabifard**

4:20 270. Selective antibacterial protein-based metal nanoparticles. **J. Cho**, W. Dodson, S. Gipson, L. Sloneker, Y. Qamar, W. Yang, F. Fayed

4:40 271. Transferable skills badging project in pre-nursing GOB courses. **G.E. Rudd**, **M. Ross**

General Topics in Organic Chemistry

Nautilus B

C. D. Chouinard, *Organizer*
T. Adams, *Presiding*

1:00 272. Copper (II)-sensitive dimeric heptamethine cyanine fluorophores: Synthesis, optical characters, and metal sensing studies. **T.E. Ahmed**, M. Henary

1:20 273. Stereoselective aziridine desymmetrization with carbon nucleophiles. **J.B. Morgan**

1:40 274. New avenues in cyclase phase total synthesis. L. Wu, H. Yin, L. Nguyen, **A. Schuppe**

2:00 275. Synthesis of biologically important Enamino Carbonyl compounds via Ball milling : A mechanochemistry approach. **M. Ndlovu**, S.R. Hussaini

2:20 276. Highly divergent synthesis of 4-hydroxy-2-pyridone natural products. **R.L. Cruz**, W.M. Wuest

2:40 277. The divergent total synthesis of drimane sesquiterpenoids. **A. LeBlanc**, J. Smith, W.M. Wuest

3:00 Break.

3:20 278. Contaminate-tolerant conversion of polyethylene waste to α -olefin. **C. Posada**, G. Liu

3:40 279. Organic chemistry of the hookah pipe. **J.H. Lauterbach**

4:00 280. Using a packed-column gas chromatograph as a fixed-bed flow reactor. **M. Wilson,**
C.M. Garner, A. Doyle

4:20 281. Modular narrow bandgap donor-acceptor-donor diradicaloids based on a strongly
electron-deficient acceptor. **T. Smith,** J. Azoulay

4:40 282. Comparison of structure-property relationships of thermal and rheological properties
of molecular gels derived from N-phenyl and N-phenylalkyl Octadecanamides. **A. Mallia**

Recent Advances in Hybrid Semiconductors

Flamingo Room

V. Klepov, *Organizer*

I. Spanopoulos, *Organizer, Presiding*

A. B. Anderson, *Presiding*

1:00 283. Two-dimensional hybrid perovskite materials: Fundamentals and applications. **L. Dou**

1:30 284. Perovskite solar cells with rapid photonic annealing. **D. Li**

1:55 285. Design of 0D hybrid metal chlorides with efficient emission: Chemical control via
long hydrocarbon chains and head shape Engineering. **K. McCall**

2:20 Intermission.

2:35 286. Ionic liquid-assisted synthesis of hybrid heavy metal zero-dimensional semiconducting
cluster compounds with thermochromic properties. **S. Baranets,** G. Samarakoon Mudiyansele

3:00 287. Porous metal halide semiconductors for efficient water splitting. **A. Tiwari,** A. Azmy,
I. Spanopoulos

Undergraduate Research at SERMACS/SWRM

Harbor A

C. D. Chouinard, *Organizer*

M. Gilliland, *Presiding*

1:00 288. Structural and biochemical characterization of YloC, a novel bacterial endoribonuclease. **A. Khan**, E. Jennings, M. Jackson, M. Forconi, M. Frazier

1:15 289. Role of variations in amino acid and nucleotide sequences on AT-hook•DNA complex formation. **A. Kline**, R. Ward, J. Broadus, M. Greene, K.L. Buchmueller

1:30 290. Computational prediction of lipophilicity for drug-like molecules. **C. Biaku**, C.A. Parish

1:45 291. Synthesis and biological evaluation of cystobactamid-507 derivatives. **A.B. Simpson**, S.J. Post

2:00 292. Characterizing *Pseudomonas aeruginosa* biofilms using single-sided NMR. **S. Akolatse**, I. Taylor, T.K. Meldrum

2:15 293. Global analysis of newly synthesized proteins in monocyte and macrophage response to bacterial infection. **T. Arslanbekov**, L. Fu, R. Wu

2:30 294. Expanding the EndoUniverse: Structural and biochemical characterization of gamma-coronavirus endoribonuclease Nsp15. **A. Graf**, E.J. Daquilanea, M. Frazier

2:45 295. Analyzing the structural effects of magnesium in carbon mineralization using FT-IR spectroscopy. **S. Kadari**, B. Aguila-Ames

3:00 Break.

3:30 296. Developing an electrochemical metabolite sensor for fetal membrane-on-a-chip applications. **B. Steinfeldt**, S. Calvez, D.E. Cliffl

3:45 297. Mineral identification and critical mineral exploration through field deployable Raman spectroscopy. **R. Perez Castro**, **J. Dunne**, Q. Miller, B. Aguila-Ames

4:00 298. PFAS contamination in soils from distinct waste disposal practices: Comparative case study of Ibiasoegbe, Nigeria and Statesboro, USA. **K. Ezeanii**, J. He

4:15 299. Investigating transformation efficiency of PFAS by dissolved black carbon-derived reactive species. **G. Drummonds**, J. He

4:30 300. The effect of aluminum sulfate on water toxicity and a comparison of alternative coagulants to remove phosphorus from wastewater. **B.R. Carnell, R.E. Lee**

4:45 301. Transforming Florida STEM education: Exploring Singaporean information literacy strategies. **H. Le, C. Randles, M. Lam**

Medicinal Chemistry of Heterocycles and Natural Products: Driving Drug Discovery

Cypress A

S. S. Panda, *Organizer, Presiding*

1:10 302. Rational design of CDK12/13 inhibitors as molecular glues for degradation of cyclin K. **A. Monastyrskyi, T. Pandurangan, P. Ghosh, L. Sun, E. Schonbrunn, D. Duckett**

1:40 303. Novel boron chemistry to access diverse boron-containing drug-like scaffolds. V. Vulupala, D. Gunasekera, N. Mallampudi, Y. Gyasi, S. Nyalata, **S. Xu**

2:10 304. Delivery of inhibitors of *Streptococcus mutans* cariogenic biofilms using polymer vesicles. **S.E. Velu**

2:40 305. Mitochondrial uncouplers: Increasing energy expenditure as anti-obesity therapy. **W.L. Santos**

3:10 Coffee Break.

3:25 306. Advancing synthetic strategies: Development and bioactivity profiling of promising natural and marine-derived therapeutics. **S. Bhagat**

3:55 307. Combination effect of antihypertensive drugs with antioxidants for the management of cardiovascular diseases. **K.K. Pradhan**

4:25 308. Enhancement of the microwave-assisted flavonoid and phenolic extraction method from *Datura metel* (L.) leaves using Taguchi L9 orthogonal design. **R. Samanta**

Functional Polymers: Synthetic Methodologies and Applications

Citrus B

M. C. Stefan, N. V. Tsarevsky, *Organizers, Presiding*

1:15 Introductory remarks.

1:20 309. Water-responsive thiol-ene shape memory polymers for biomedical applications: From synthetic design to 3D-printed functionality. R. Pittala, **M. Ecker**

1:50 310. Bioactive electrospun polycaprolactone films incorporating gallic acid-loaded mesoporous silica nanoplatelets for seed germination enhancement. **C. An**, S.A. Oyon, F. Zhang, H. Na, J. Carrier, D. Radu, C. Lai

2:20 311. Hierarchical pore engineering: Advancing biopolymer networks for extracellular vesicle capture. **E. McDowell**, K. Burton, J.R. Alston, K. Dellinger

2:50 Intermission.

3:20 312. Synthetic insoluble organic polymers for mechanically strong and durable cements. **E. Contreras**

3:50 313. Tunable photochromism in thiazolothiazole-based polymer films: Reversible behavior and photochromic control using a radical scavenger. **N. Tumpa**

4:20 314. Activated ester polymers as a platform for studying structure–property relationships in functional polymers. **P.R. Calvo**

Novel Bioconjugation Techniques - A Melting-pot for Nanomedicine, Organic Chemistry, and Chemical Biology

Magnolia A

J. Ohata, Q. Wang, *Organizers, Presiding*

1:15 Open Remark.

1:20 315. Cyclopropanols as bioorthogonal warheads for bioconjugation and biological applications. **Q. Wang**

1:45 316. Boron enabled bioconjugation chemistries. **J. Gao**

2:10 317. Aqueous-compatible peptide cyclization: Toward residue- and site-selective reactivity. **A.G. Roberts**

2:35 318. Vinyl sulfone-based platforms: Advancing targeted radionuclide therapy for prostate cancer. **z. wu**

2:50 Coffee Break.

3:00 319. Covalent probes for capturing protein–biomolecule interactions: A systematic comparison study of various covalent functional groups. **B. Yu**

3:25 320. Advancing covalent ligand discovery beyond cysteine. G. Kim, J. Grams, **K. Hsu**

3:50 321. Selective X–H coupling for peptide and protein chemistry. **Z.T. Ball**

4:15 323. Optimization of labeling reagents and acid catalysts for tryptophan-selective bioconjugation in fluoroalcohols as nonaqueous media. **M. Nuruzzaman**, B. Colella, I. Cho, E. Gross, M. Hoff, E. Joyner, J. Ohata

4:30 Morning session conclusion.

Advancements in Nuclear Chemistry

Nautilus C

V. Anagnostopoulos, *Organizer*

D. A. Penchoff, *Organizer, Presiding*

1:30 Introductory Remarks.

1:35 324. Designing neutron irradiation fixtures for advancing radiochemistry research. **A. Johnsen**, N. Kemper, E. Hisahara, B. Kovacevic, S. Lee

1:55 325. Tracing transition metal signatures in uranium dioxide synthesized using a tube furnace: Advancement of nuclear forensics for radiological threats. **D. Rai II**, L. Hunley, V. Anagnostopoulos

2:15 326. Laser-induced formation and analytical profiling of surrogate nuclear explosion debris. **A. Burns**, M. Klosterman, G. Hull, V. Anagnostopoulos

2:35 327. Multi-stressor effects of light stress and uranium chemotoxicity on the marine microalgae species, *Isochrysis galbana*: An examination of uranium sorption and physiological response. **A. Gonzales**, E. Fix, S. Estes, D. Montgomery, S. Donaher, P. van den Hurk, N. Martinez

2:55 Intermission.

3:05 328. Crystal clues of transition metal signatures in hydrothermal synthesized uranium dioxide. **L. Hunley**, D. Rai II, V. Anagnostopoulos

3:25 329. Studies of uranium redox chemistry using functionalized Titania as photoanodes. **M. Morales Duque**, J. Gonzalez Moya, C. Dares

3:45 330. Radiation-induced polymerization of styrene as a tool for environmental monitoring of ^{137}Cs . **D. Dan**

4:05 331. Guiding the optimization of transition metals separations in nuclear forensics: A computational study. **B. Stieferman**, M. Forbes, D. Nguyen, O. Rivera-Martinez, R. Wood, N.A. Wall, L.C. Francesconi, B.P. Burton-Pye, P. Monte, C.C. Peterson, D.A. Penchoff

4:25 Closing Remarks.

Women in STEM

Cypress B

V. Anagnostopoulos, C. D. Chouinard, A. E. Gorden, *Organizers*
K. B. Basso, *Presiding*

1:30 332. What can you really do with a chemistry degree? Exploring innovative paths in analytical chemistry and the nuclear security enterprise. **C. Crandell**, F. Stanley

1:50 333. Setting the stage for one-electron bonding between boron and carbon. **P. Castro Castro**, W. Liu, F.P. Gabbai

2:10 334. Leveraging PCET activation for intermolecular *O*-functionalization of alkoxy radical intermediates. **D. Kim**

2:30 335. Mechanistic basis of the voltage-sensitivity of thiazolothiazole dyes. **P. Chakraborti**

2:50 336. Dissecting transcriptional regulation of alternative carbon metabolism in *Candida glabrata*. **M.E. Breen**

3:10 Break.

3:30 337. Strategic incorporation of molecular photoswitches into FDA-Approved Kinase inhibitors. **A.N. Colon**, S. Kell, C. Slavov

3:50 338. Gas diffusion in polyethylene: A molecular radii limitation. **S.M. Neidhart**

4:10 339. Cobalt based ^{19}F magnetic resonance imaging agents for redox selective signaling. **K. Scott**, E.L. Que

4:30 340. Chemical synthesis in space: advances from (photo-)electrochemical water-splitting and CO_2 reduction in reduced gravitation. **K. Brinkert**

Forensic Science

Majestic Ballroom

M. Baudalet, C. Bridge, E. Hanson, T. Legron-Rodriguez, *Organizers*

2:00 - 4:00

341. Analysis of legal high drugs and other gas station drugs: Determination of drug components and their relative concentrations. **K. Abdelhay**, A. Bodner

342. Characterization and targeted recovery of DNA-containing touch deposit human cells for single-cell forensic genetic analysis. **V.B. Martinez**, A. Maura, J. Ballantyne

343. Comparative analysis and identification of silicone based lubricants. **C. Braun**, C. Bridge

344. Evolution of VOC profiles during early animal decomposition. **F. Whaley**, **S.L. Dominguez**, J. Fuentes Carrasco, E. Millan, L. DeGreeff

345. Quantitation of heavy metals in $\Delta 8$ -THC products using ICP-OES. **A. McCarthy**, A. Burkhart

General Topics in Analytical Chemistry

Majestic Ballroom

C. D. Chouinard, *Organizer*

2:00 - 4:00

346. Analytical Chemistry for Tritium. **J.T. Kelly**

347. Analytical Research & Development at Merck: Leveraging diverse expertise to be partners in problem solving. **E. Schwalm**

348. Enhancing disease diagnostics: Development of a sensitive, targeted cellular blood assay via dual phase nanoparticle-mediated separation and atomic emission spectroscopic analysis. **M. McKay**, D. Pappas

349. Release of elements from disposable aluminum cookware during conventional cooking with water. **A. Akhdhar**, M.S. Binkadem, D. Abd El-Hady, A.M. Alowaiifeer, M.A. Almutairi, K.K. Alnabati, K.Z. Elwakeel, F.M. Zainy, H.M. Baeissa, S. Alhayyani, H.M. Albishri, A.S. AlBogami, J. Feldmann

350. Microfluidic paper based fluorescent sensing device using citric acid derived carbon dots tungsten sulfide spheres for onsite detection of secnidazole. **s. Arif**

351. Enhancing mobility assessment: Improving OECD TG 121 for Log K_{oc} determination of fragrance ingredients. **D.M. Sriyarathne**, M. Collard

352. Monitoring the reaction networks of acetaldehyde oxide and glycolaldehyde oxide Criegee intermediates formed in the ozone assisted-oxidation of crotyl alcohol. **M. Pierre Louis**, A. DeCecco, Y. ZHAI, Z. Clarke, N. Hansen, D.M. Popolan-Vaida

353. Enabling structural and functional characterization of AprL aminotransferase: Optimized cofactor reconstitution for antibiotic biosynthesis research. **O.O. Ajayi**

354. Electrochemical sensing of cortisol with gold nanoparticle modified CFMs. **R. Page**, G. Matthews, P. Pathirathna

355. Detecting amyloid beta oligomers in human cerebrospinal fluid with rapid, inexpensive, single molecule counting buoyant-antigen-magnetic assays. **z. karimpourkalou**, C. Wang, K. L. Viola, W. L Klein, J.N. Anker

356. Catalyst synthesis via nanodroplets for electrochemical urea decomposition: Application in resource reuse. **P.N. Llera**

- 357.** Evaluation of a new approach for principal component analysis application in metabolomics studies. **M. Mayonu**, B. Wang, S. Babaee, D. Wilson, L. Jiang
- 358.** Interrogation of toxic metal content in chalksticks and their potential to impact human health. **T. Alaye**, W.A. Alexander
- 359.** Photochemical generation of singlet oxygen from tire wear particles in aquatic environments: direct quantification using furfuryl alcohol and high-performance liquid chromatography (HPLC). **C.T. Pascal**
- 360.** Thermal melting of DNA at gold electrodes with square-wave voltammetry (SWV) and atomic force microscopy imaging (AFM) to confirm Bowtie biosensor integrity and structure. **U.D. Nwankpa**, M. Mazumder, M.Z. Hashemi, C.J. Easley
- 361.** Improving Zn-ion battery performance using CoNiPdPt catalysts. **A.S. Duran**, N. De Jesus, A. Martinez, J. Reyes Morales
- 362.** Development of an electrochemical biosensor for the detection of serotonin in sweat using metallic alloys. **J. Pinto Ruiz**
- 363.** Ionic and non-ionic surfactants direct Zn electrodeposition behavior on graphite electrodes: A fundamental approach to interface control in aqueous Zn-Ion systems. **E. Reyes Morales**
- 364.** Aptamer-functionalization of gold-modified nanopipettes for the multiplexed electrochemical biosensing of serotonin and dopamine neurotransmitters. **L. Haroun**, A. Ramirez, R. Lazenby
- 365.** Using QSRR modeling for predicting the identity of emerging contaminants by LC-MS/MS. **C. Canicatti**, J. Zuniga, A. Garcia, M.J. Beazley
- 366.** 3D-printed modular microfluidic devices for passive aqueous-in-oil droplet formation, storage, and imaging. **H.M. Pham**, S. Dangol, C.J. Easley
- 367.** Advancing 3D-printed modular microfluidic devices to study non-esterified free fatty acid (NEFA) uptake by adipose tissue. **S. Dangol**, J.Y. Seow, C.J. Easley
- 368.** Towards enhancement of reusability and real-time sensing with the electrochemical bowtie sensor. **E. Lwamba**, M. Mazumder, C.J. Easley
- 369.** Electrochemical-aptamer based (E-AB) biosensors for single cell imaging. **M. Kuttikkat**, D. Sen, R. Lazenby
- 370.** Ion mobility separation of steroid isomers via *N*-acyl imidazole derivatization enabled on a MALDESI source. **P. Zerebinski**, R.T. Kurulugama, S.M. Stow, R.A. Yost, T.J. Garrett, B.M. Prentice

371. Development of a training module for Raman and surface enhanced Raman spectroscopy in field-portable applications. **C. Obietikponah**, D.E. Thompson

372. Thermal desorption chamber for amine detection in soil contamination analysis. **A. Cortez**, S. Martinez, D.E. Thompson

373. Polysulfide uv-vis spectroscopy: Investigating inter-operator variance and hemoglobin interactions. **E. Zohne**, H. Huynh, M. Richardson, F. Esterellas Marquina, D.E. Thompson

374. Mass spectrometry-based assay for mouse IgG N-glycan screening in biofluids. **A.E. Stratton**, H. Moussa, Y. Guo, J.M. Ellenburg, C. Atkinson, B.M. Prentice

375. Fabrication of gold nanotriangle arrays and LSPR characterization for biosensing applications. **K. RIVERA**, N. Uduwela, C. Johnson, C.L. Berrie

376. Enhanced automation of lithium iron phosphate cathode materials preparation. **K. Wiederin**, A. De Anda, C. Kresko, S. Preston-Eto

377. GC-MS analysis of the hydrocarbons produced by the conversion of animal feed by microbiomes extracted from the gastrointestinal track of porcine and cattle. **B. Miburo**

Glycomaterials for a Sustainable Future

Majestic Ballroom

A. Esker, M. Roman, *Organizers*

2:00 - 4:00

378. Guided generation and flavor scoring of novel sweet molecules. **J. Petri**

379. Investigation on the thermal and rheological properties of highly substituted dextran esters. **z. springer**, H. Yoon, M. Roman

380. Hydroxypropyl cellulose-based polymeric micelles for controlled release of hydrogen sulfide. **S. Kearns**, I. Sarkar, J.B. Matson

381. Optimization of building block synthesis via automated flow chemistry. **O. Mont**, S.S. Khan, M. Roman

382. Molecular dynamics simulations of heparan sulfate in neuronal cell membranes. **A.M. Caraus**, M.Q. LoPresti, A.M. Brown

383. Synthesis of glycopolymers containing silver-salts to increase potency and novelty for combatting antibiotic resistance. **B. Zorn**, C. McMillian, M.D. Schulz

384. Enzymatic degradation of starch acetate/poly(d,l-lactic acid) composites. **J.M. Trexler**, R. Rousan, J.E. Thompson, I.T. Coutinho, N.F. Pietra, L.A. Madsen, K.J. Edgar, R.B. Moore, A. Esker

385. The synthesis and efficacy of glycosylated resorcin[4]arene cavitand catalysts. **R. Rands**

Undergraduate Research at SERMACS/SWRM

Majestic Ballroom

C. D. Chouinard, *Organizer*

2:00 - 4:00

386. Preserving latent prints for forensic use through debris testing: Collaborative project with Bureau of Investigation. **S.j. Thrower**, A. Schmitz, G.W. Stephenson, K.S. Taylor

387. Synthesis of nitramines for the inhibition of mycobacterial metabolic enzymes. **A. Casanova**, B. Rathman, J.D. Caranto

388. Discovery and impact of the birth control pill: A literature study. **A. Rahman**, C. Dang, J. Hoang

389. Evaluation of synthetic routes to Phenpropylamines. **H.E. Ford**, E.S. Galgano, T.J. Barker

390. Enhancing solar cell efficiency through the alteration of mediator coordination geometry. **K. Wilf**, Z. Shi, A.J. Morris

391. Determining the alcohol content in foodstuffs using a Vernier Mini GC. **R. Thomas**, V.A. Mativo

392. Mechanistic insights into transpersulfidation and hydrogen selenide release in mixed chalcogen compounds using density functional theory. **L. Liu**, J. Yi, R. Presti, R. Tripathi, W. Ding, J.C. Lukesh

393. Development of Thienopyrimidinone-based positive allosteric modulators of the *N*-methyl-D-aspartate receptor. **M.C. Cirvello**, H. Lee, P.J. Arcoria, K.W. Pugh, N.S. Akins, R.G. Fritzemeier, S. Paladugu, E.Z. Ullman, J.P. Allen, R. Sheikh, K.A. Nocilla, J. Maguire, P. Antonoudiou, M.P. D'Erasmus, P.W. Bartsch, S. Sharma, S. Traynelis, D. Liotta

- 394.** Synthesis of 2-phosphino-1H-pyrroles via pyrrolide intermediates. **S. Kaydos-Daniels**, M.W. Johnson
- 395.** Study of catalytic hydroboration of unsaturated molecules using proazaphosphatranes. **J. Hoskins-Harris**, M.W. Johnson
- 396.** Chalcogen polarization and bonding between X_2E-Z complexes: From dative to bridged. **J.E. Findley**, K. Donald
- 397.** Using SPME GCMS to study the impact of a secondary fermentation on volatile and semi-volatile compounds in kombucha. **E. Muja**, D. Budner
- 398.** Comparative analysis of 1,2-Bis(diphenylphosphino)benzene for nickel-catalyzed C-N cross-coupling reactions. **U. Kulmatova**, **I. Strauss**, M.W. Johnson
- 399.** Nucleophilic additions of beta-Silylallenes and beta-Borylallenes to aldehydes and imines. **G.W. Adams**, T.J. Barker
- 400.** Thermodynamic and structural characterization of AT-hook•DNA complexes. **R. Ward**, A. Kline, K.L. Buchmueller
- 401.** Synthesis and structural characterization of bifunctional naphthalene derivatives featuring antimony and carbenium moieties. **A. Reynolds**, P. Castro Castro, F.P. Gabbai
- 402.** Dual-targeted nanoparticle based approach addressing lipid accumulation in atherosclerosis to suppress cancer proliferation and enhance chemotherapeutic outcomes. **D. Polkowski**, F. Yantani Coto, S. Sarkar, A. Ashokan, S. Dhar
- 403.** Simulation-based characterization of two selective JAK3 inhibitors with reversible covalent mechanisms. **S. Herndon**
- 404.** Computational chemistry investigation of antioxidant activity in phytochemicals from *Morinda citrifolia*. M.M. Prabani, **J. Smith**, C.R. De Silva
- 405.** Expression and reactivity of Baeyer-Villager Monooxygenases from *Thermobifida fusca* and *Aspergillus flavus*. **S. Walbridge**, M.E. Hinze
- 406.** Investigating the tautomerization of symmetrical β -diketones in different solvents. **D. Almaatouk**, M. Shannon
- 407.** Synthesis of Efavirenz analogs via cycloalkyl side chain modification and ring cyclization. **R. Vargas**, K. Brooks, R. Salvatore
- 408.** Structure-activity relationships of novel anthelmintic pyrazole derivatives for treating neglected tropical diseases. **D.C. Barth**, S. Park, C.M. Rohr, J.S. Marchant, D.J. Sprague

- 409.** Isolation of nickel(II) complexes with a flexible, bis-carbene ligand. **C. Rodriguez**, M. Mamta, S. Yruegas
- 410.** Mechanistic investigations of triboluminescent europium and copper complexes. **w. whitfield**, **E. DeVries**, R.M. Meier
- 411.** Palladium-catalyzed synthesis of aryl azetidines. **A. Forster**, J.B. Morgan
- 412.** Synthesis, post-synthetic modification and characterization of Cu@MOF-808 derivatives. **M. Vuong**, J. Carrier, C. Buzzi, A. Pereira, S. Rodriguez, D. Radu, C. Lai
- 413.** Retrofitting PMMA with a thermal trigger for efficient depolymerization. **M. Patel**, R. Hughes, B.S. Sumerlin
- 414.** Synthesis and characterization of amylase modified Au nanoparticles. **H. Pierce**, **L. Suplita**, G.A. Giles
- 415.** Evaluating the antimicrobial properties of hemp, okra, and hibiscus seed oils for cosmetic applications. **Y. Davis**, K. Renard, W. Collier, H. Uwamahoro, G. Kanyairita
- 416.** Interaction of heme A synthase with electron transport chain complex III. **A.J. Craft**, **C.A. Collenberg**, M.M. Meeks, J.L. Fox
- 417.** Expression and Reactivity of Baeyer-Villiger Monooxygenases from *Thermothelomyces thermophilus* and *Pseudomonas fluorescens*. **N. Salmeron**, M.E. Hinze
- 418.** Targeting breast cancer: Enhanced antitumor potential of resveratrol analogues. **M.W. Camina**, **S.K. Wiedmar**, D. Paull
- 419.** Synthesis and characterization of iron polypyrazylborate complexes for application in long-lived charge-separated state photoanodes. **O. Cogswell**, T. Cheng, A.J. Morris
- 420.** Tuning material properties through depolymerization. R. Hughes, **L.M. Baker**, P.M. Keown, M. Patel, T. Maity, B.S. Sumerlin
- 421.** Biocatalytic amination reactions with a silver artificial metalloenzyme. **L. Trivett**, E. Reynolds
- 422.** Hydroxyl-yne click chemistry as a post-polymerization strategy for dynamic covalent networks. R. Hughes, **P.M. Keown**, T. Maity, L.M. Baker, I.S. Zastrow, M. Patel, B.S. Sumerlin
- 423.** Solid-phase synthesis and characterization of peptides with noncanonical residues. **J.E. DeMauro**, E.T. Parker, M.W. Giuliano, J.G. Forsythe
- 424.** Lactoperoxidase as a catalyst in the oxidation of estradiol and its effects on DNA. **B. Melchor**, K.M. Matera

- 425.** Expression and purification of the recombinant TDP-43 ALS gene. **G. Mieles**, A. Felix, J.M. Meyers
- 426.** Comparison of boron nitride-based nanocomposites for oxyanion removal. **H. Schonhoff**, J.G. Clar
- 427.** Thermodynamic characterization of Red Fluorescent Protein folding using UV-Vis spectroscopy. **W. Bailey**, A. Felix, J.M. Meyers
- 428.** Recombinant production of Preptin analogs through targeted DNA mutagenesis. **S. Collins**, A. Felix, J.M. Meyers

SUNDAY EVENING

ACS ProjectSEED

Majestic Ballroom

A. Mallia, D. Masterson, *Organizers*

7:00 - 9:00

- 429.** AI-mediated computational analysis of RNA-based aptamers targeting the CD133+ glioblastoma cells. **S. Talamas**, G. Sharma
- 430.** Quantum mechanical stability and druggability assessment of potential candidate inhibitors targeting Acetylcholinesterase for Alzheimer's Disease. **A.A. Choudhary**, **R. Ganzorig**, S. Silayi
- 431.** Enabling robust single-molecule fluorescence heterogeneity measurement of BODIPY chromophores with high-throughput single-molecule spectroscopy. **J. Wang**, Y. Zhang
- 432.** Structure-based simulation of CD8 $\alpha\beta$ receptor blockade to protect melanocytes from autoimmune cytotoxicity in vitiligo. **N. Kattela**, G. Sharma
- 433.** Diazotization of C0 and C8 alkyl chain amines: A sustainable synthetic approach using alginic acid. **K. Agyemang**

- 434.** Modifying solid-phase peptide and Azapeptoid synthesis procedures using green solvents and coupling reagents. **T.L. Favatella**, M.E. Helton, C. Proulx
- 435.** Effects of *Bortezomib* on mitochondrial proteins. **L.D. Argueta**
- 436.** Extraction and biological evaluation of *Hypericum walteri*. **I. Pesina Castillo**
- 437.** Structure-based virtual screening of dihydrolipoyl transacetylase (DLAT) inhibitors as therapeutic leads in pediatric medulloblastomas. **S. Prabhu**, G. Sharma
- 438.** Investigating spectral heterogeneity in fluorescent dyes using single molecule super resolution microscopy. **M. Boone**
- 439.** Computational design of bispecific DuoBody antibodies targeting CD40 and 41-BB receptors for T cell-mediated immunotherapy in non-small cell lung cancer (NSCLC). **D. Singh**, G. Sharma
- 440.** Targeting CD5 in B-cell malignancies: A computational evaluation of scFv constructs for CAR T cell therapy. **A. Khungar**, G. Sharma
- 441.** Investigating time-dependent microwave-assisted extraction of cyclotides as potential biopesticides. **Y. Chen**, N.Y. Forlemu, S. Mwongela, A. Mallia
- 442.** Impact of sodium dodecyl sulfate (SDS) on nitrate concentrations in water. **C. Park**, N.Y. Forlemu, S. Mwongela, A. Mallia
- 443.** Investigating ionic surfactant-nitrate interactions on the surface tension and critical micelle concentration. **S. Dini**, N.Y. Forlemu, S. Mwongela, A. Mallia
- 444.** Temperature dependent microwave-assisted extraction of cyclotides from Australian violet as potential biopesticides. **M. Diep**, N.Y. Forlemu, S. Mwongela, A. Mallia

Advancements in Catalysis for Sustainable Processes

Majestic Ballroom

C. J. Koch, H. H. Smith, *Organizers*

7:00 - 9:00

- 445.** Fabricating high entropy metal nanoparticles on carbon fibers. **Q. Le**

- 446.** Utilizing defect engineering to influence the stability of single platinum atoms and clusters on ultrathin cerium oxide films. **S. Cimino**, K. Blackman, E. Segrest, A. Rodriguez, M. Birks, M.E. Vaida
- 447.** Electrocatalytic CO₂ reduction with Atom-precise Cu₁₄ clusters: Role of core geometry, hydrides, and noble metal doping. **A. SARKAR**, M. Ahamed, S. ELHAJJ, B. Bashir, S. Gozem, X. Li, G. Wang
- 448.** Ligand-directed tuning of terpyridine-based earth-abundant molecular catalysts for CO₂ reduction. **M. ALAM**
- 449.** Resolution of lipase transesterification of 1-phenyl-1-propanol using CAL-B. **J. Pruett**, R. Brookshire, W. Medawala, R. Okoth
- 450.** Photothermal modulation of coordination geometry and catalytic performance in Ru(II) complexes for green olefin hydroarylation. **K.G. Musso**, B.P. Quillian, C.W. Padgett
- 451.** Oxidized Overlayers of ruthenium and iridium as electrocatalysts for anodic reactions: Modifying materials for a new energy future. C. Soderstedt, Y. Yuan, A. Vigil, **H.H. Ford**, M. Fratarcangeli, Z. Lin, J. Chen, I.A. Moreno-Hernandez
- 452.** Facet-engineered Cu nanocatalysts for enhanced nitrate electroreduction to ammonia. **S. Kildare**, Z. Meng, X. Feng
- 453.** Spin-selective photoelectrochemical oxygen evolution utilizing magnetic metal oxide nanoparticles. **K. Morgan**, N. Wijerathne, W.D. Wei
- 454.** LaNiO_{3-δ} based perovskite catalysts on mesoporous silica for efficient CO₂ methanation. **D. Ghosh**, J. Kuhn
- 455.** Designing non-innocent ligands featuring second-coordination sphere interactions to enhance transition metal catalysts for CO₂ reduction. **N. Akter**
- 456.** Reduction of atmospheric CO₂ to oxalate by a dinuclear copper catalyst. **S. Anto**, E. Mollinedo, I. Chakraborty, A.M. Mebel, R.G. Raptis

Chemistry Education Research: Undergraduate Student Research Symposium

Majestic Ballroom

J. Donnelly, N. Lapeyrouse, *Organizers*

7:00 - 9:00

457. ACS student chapter volunteers led Grade 6–8 scientists through themed chemistry activities. **M. Abukar, B. Rogers, E. Vega, C. Pollydore, N. Magliochetti, M. Toliver, V. Sublett Breeden, G.E. Rudd**

458. Analysis of body site instrument efficacy for the detection of anxiety arousal states through the use of the galvanic skin response. **E. Guerrero, C. Randles**

459. Building bonds: How interlocking toy blocks and organic chemistry are more alike than you think. **J. Steenborg, P. Michalowski, A. Forsythe, R. Dabke, K.S. Taylor**

460. Carbohydrase enzymatic experiments for the organic chemistry laboratory. **A. Knight, M.R. Korn**

461. Mapping the conversation: Using discourse analysis to portray ULA's instructional decision-making. **E.R. Dolcine, E.R. Richards, E. Saitta**

462. Evaluation of science identity in student workers. **M. Nguyen, G. LeBlanc**

463. Extraction and characterization of curcuminoids compounds in turmeric: A “green” organic chemistry lab experiment. **K. Rowe, A. Boroujerdi, B. Yarbrough**

464. Connecting the Amazing World of smell to STEM education. **J. Zyzak, M. Hardy, A. Shivel, J. May, L. Zyzak**

465. Survey of polariton candidacy of several organic molecules. **M. Buskill, A. Naegele, T.J. Fuhrer**

466. Recent activities and advancements in Claflin University's ACS student chapter. **Z. Shepherd, C.B. Mojekwu, A. Boroujerdi, B. Yarbrough**

467. Preparation and use of metal clay in the undergraduate laboratory. **J. Cooper, A. Hitzel**

468. Using pre- and post-activity assessments to measure student achievement in organic chemistry I through collaborative learning jigsaw activities. **N. Reyes, B. Quarles, P.B. Nolibos**

469. Using a single swimming pool chemistry scenario to connect general chemistry II topics to everyday life. **S. Lampe, B. Sigdel Regmi, P.B. Nolibos, A. Thomas**

470. Exploring the link between semantic language and anxiety in organic chemistry students. **J. Parrilla**, C. Randles

Ultrafast and Nonlinear Spectroscopy

Majestic Ballroom

B. Kudisch, P. E. Ohno, S. T. Roberts, *Organizers*

7:00 - 9:00

471. Design and construction of a time-correlated single-photon counting microscope for characterization of materials. **W. Chooi**, S. Ullrich

472. Ultrafast dynamics of carbon–carbon bond formation in photoinduced reactions on amorphous silicon oxide surfaces. **A. Gupta**, K. Blackman, E. Segrest, A. Daniels, M. Hall, M.E. Vaida

473. Effects of aza-substitution on the ultrafast excited-state dynamics in 8-azaadenine investigated by Time-resolved photoelectron spectroscopy. **M. Hasan**, M.R. Chudali, S. Ullrich

Undergraduate Research at SERMACS/SWRM

Majestic Ballroom

C. D. Chouinard, *Organizer*

7:00 - 9:00

474. Linking cationic hexapeptides through a β -turn to improve antibacterial activity. **N. Phan**, A. Felix, J.M. Meyers

475. The mechanism of oxidation of lipids by anesthesia: A proposed explanation for memory loss. **E. Pierman**, K.M. Matera

476. Exploring cosmetic formulations using novel hydrogels. D. Camp, **A.G. Dixon**

- 477.** Sustainable development of bio-based raw materials for cosmetic enhancement. **N.N. Wisdom**, D. Camp
- 478.** Insights into the role of sulfur precursors in PbS quantum dot synthesis through reaction byproduct analysis. **A. Camp**, M.R. McPhail
- 479.** MALDI-TOF mass spectrometry of model prebiotic reactions in high saline environments. **E.C. Herndon**, K.A. Dzurilla, L.M. Barge, J.G. Forsythe
- 480.** Changes in triethylene glycol linker length influence hybridization kinetics of localized DNA four-way junctions. **M. Roth**, A. Bardales, D. Kolpashchikov
- 481.** Exploring the kinetics and reaction dynamics of peroxy radical unimolecular decay. **M.A. Cannon**, R. Caravan, S.J. Klippenstein, M.F. Vansco
- 482.** AI-driven selection of neuropeptides for membrane affinity study. **W.A. Vandergrift**, S. Parnham, M.W. Giuliano
- 483.** Pulsed laser ablation of ferromagnetic targets in organic solvents under inert gas. **S. Arnold**, S. SURIAL, O. Nachtigall
- 484.** Solution-phase synthesis and MS/MS characterization of peptides with noncanonical residues. **A.K. Peterson**, E.T. Parker, J.G. Forsythe, M.W. Giuliano
- 485.** ELARA: A sounding rocket based radio telescope array for measuring the neutral hydrogen spectral line. **S. Arnold**, A.J. Shipp, J. Pallini, K. Powell, B. Lynn, C. Stevens, M. Chytka
- 486.** Electrochemically induced depolymerization of poly(methyl methacrylate). **N. Izadi**, G. Gilchrist, R. Hughes, T. Maity, J. Marquez, S. Gitter, A.M. Evans, B.S. Sumerlin
- 487.** Derivatization and mass spectrometry detection of peptides with canonical and noncanonical residues. **A.L. Zow**, **J.A. Randall**, M.W. Giuliano, E.T. Parker, J.G. Forsythe
- 488.** Exploring stilbene cancer therapeutics: Optimizing resveratrol analogue synthesis for triple-negative breast cancer treatment. **C. Okapal**, **M. Topness**, D. Paull
- 489.** Evaluation of the antibacterial properties of Ag@MOF-808 toward *E. coli* and *S. aureus*. **C. Buzzi**, J. Carrier, M. Vuong, S. Rodriguez, D. Radu, C. Lai
- 490.** Cellulose nanocrystals as an additive in poly(ethylene terephthalate) aerogel composites to increase mechanical strength. **K.J. Wood**, K.R. Baugh, R.B. Moore
- 491.** Promotion of ROS by diclofenac and Its effect on NAD⁺ metabolism. **J.A. Fitch**, M.E. Migaud, F. Hayat, B. English

- 492.** High-fidelity modeling of covalent reversible JAK3 inhibitors via CGenFF and ffTK parameterization. **R. Davis**
- 493.** Simultaneous degradation-depolymerization of bioderived comb copolymers. M. Lott, **L. Magliaro Aburaya**, R. Hughes, L. Mann, J. Young, C. Eades, F. Merlino, C. Su, B.S. Sumerlin
- 494.** Crystal growth of metal borates using the mild hydrothermal methods, supercritical hydrothermal conditions and hydroflux methods. **S. Stachowiak**, H. Smith, H. zur Loye
- 495.** Release of copper nanoparticles from pressure treated lumber. **J. Kempf**
- 496.** Phenpropyl and phenethylamine synthesis and evaluation of SERT inhibition. **E.S. Galgano**, T.J. Barker
- 497.** Forensic detection of accelerants in fire debris using ATR spectroscopy. **S. Floyd, T. Harrell**, J. Gause
- 498.** Alternative Synthesis of Octyl 4-Methoxycinnamate. **M. Grant**, R. Okoth
- 499.** Removal of emerging 6PPD-Q from water: A combined batch and column study. **K. Moore**, J. He
- 500.** Synthesis of isotactic poly(propylene succinate) with functional end-group fidelity. **J. Valan**, M. Bonacci, M. Becker
- 501.** Metal-free Alpha-oxygenation of ketones using TEMPO. **M. Chupela**, J. Williamson, B. Hemric
- 502.** Study on the oxidation of alcohols using TEMPO. **S. Byrne**, B. Hemric
- 503.** Investigating the generality of the metal-free 1,2-dioxygenation of 1,3-dienes using TEMPO disproportionation. **A. Gagarin**, B. Hemric
- 504.** Two photo-driven methods toward oxidation of alcohols. **B. Hemric**
- 505.** Photoacid Generators for the synthesis of dynamic polymers enabled by silyl ether exchanges. **M.P. Rothenberg**, M. McLaughlin, D. Davydenko, G. Tarasidis, N. Bullo, P. Plaehn, B. El-Zaatari
- 506.** qNMR and metabolic profiling of turmeric tissues reveal curcumin content. **K. Hubbard**, B. Yarbrough, A. Boroujerdi
- 507.** XMCD analysis of Gd & procedure documentation. **J.A. rodriguez, j. Reyes Morales**

- 508.** Determination of museum bird collections (Owl, Hawk, and Falcon) feather morphology and composition by optical microscopy, FTIR spectroscopy, and ICP-OES. **K. Owens**, S. Fakayode, C. Kleider
- 509.** Alternative synthetic methodologies for Prussian blue analogs. **N. Parek**, **R. Arnold**, A. Ellis, B.J. McNicholas
- 510.** Advancing zinc-ion battery technology through the synthesis of HEAs using nanodroplet-mediated electrodeposition. **F. Mayol-Lopez**, J. Rodríguez-Arroyo, G. Rosado-Falcón, A. Santiago-Maldonado, J. Reyes Morales
- 511.** Exploring poly(ethylene terephthalate)-nanoclay aerogel composites. **A. Gonzalez-Arellano**, K.R. Baugh, R.B. Moore
- 512.** Synthesis, structure, and properties of rare earth sulfates. **S. Floyd**, L. Weragoda Masachchi, H. zur Loye
- 513.** Exploring secondary metabolites from endophytic fungi for the treatment of Candidiasis. **R. Zwatschka**, e. Cruz Rosa, B.J. Baker
- 514.** Examining the synergistic effects of etoposide and ICRF-193 against topoisomerase II α . **L.G. Simpson**, B.D. Wade, M.M. Lampley, X.L. Falkenheim, J. Deweese
- 515.** Preparation and analysis of ancient DNA samples using Oxford Nanopore sequencing. **E.A. Chumley**, E.D. Vance, O.K. White, B.C. Smith, L.G. Simpson, J.L. Sullivan, A.K. O'Brian, J.T. Moore, T. Mahlaha, J. Brown, A.J. Fabich, C. Shipman, S. Taylor, J. Deweese
- 516.** Computational study of polyaromatic hydrocarbon formation via sequential Bergman cyclization. **D. Kim**, C.A. Parish

MONDAY MORNING

Chemical Biology Innovations for Therapeutics

Cypress B

Y. Ding, Y. Zheng, *Organizers, Presiding*

8:00 Opening Remarks.

8:05 517. Ketone bodies-mediated cysteine modifications discovered by chemical proteomics. **Z. Wang**

8:30 518. A distinct molecular signature of neuroendocrine prostate cancer based on transcriptomics and protein–protein interactions. **J. Wan**

8:55 519. Edman sequencing evolved: Precise native peptide *c*-terminal ligation. **A. Omere**, C.J. Heyl, J.A. Buonomo

9:10 520. Pharmacophore-based design of small molecule inhibitors of protein arginine methyltransferases for cancer therapy. **Y. Zheng**

9:35 Break.

9:55 521. Autophagy receptor-inspired antibody-fusion proteins for targeted intracellular degradation. **Z. Jiang**

10:20 522. Biotin-mediated drug delivery: Does the biotin transporter mediate uptake of biotin conjugates?. **B. Wang**

10:45 523. Combination effect of antihypertensive drugs with antioxidants for the management of cardiovascular diseases. **K.K. Pradhan**, P. Banerjee

11:05 524. Structure-activity relationship of PROTACs targeting CDK8/CDK19 Mediator kinases and insights into degradation complex formation using AlphaFold 3. **J. Zheng**, L. Zheng, I. Roninson, M. Chen, **C. McInnes**

11:20 525. Investigation of HIV-1 reverse transcriptase as a neosubstrate for targeted protein degradation. **T. Snowden**, G.D. Clements, F. Amanor, A.F. Howard, D. Soto Martinez, R. Khurshid, R.C. Reynolds, S. Schuerer, C. Ochsenbauer

11:45 Closing Remarks.

Frontiers in Nucleic Acids

Magnolia B

Y. Gerasimova, M. W. Germann, D. Kolpashchikov, J. Siemer, *Organizers, Presiding*

8:00 Opening Remarks/Setup.

8:20 526. Predictability unraveled: The complexity beneath canonical quadruplex patterns in orthoflaviviruses. **J. Siemer**, T. Le, J.R. Terrell, A. Paul, M. Brinton, W. Wilson, M.W. Germann

8:50 527. Deciphering genomic patterns near tRNA genes. **C. West**, L. Dineen, A.L. LaBella

9:20 528. Formation of left-handed G4s and their interactions with a traditional G4 ligand, N-methylmesoporphyrin IX. **L.A. Yatsunyk**, E. Xing, A. Hendrickson, E. Coyle, K. Pule

9:50 Coffee Break.

10:15 529. Nucleic acid nanoparticles for biomedical applications. **K. Afonin**

10:45 530. Insights in to the G-Triplex DNA binding by nucleic acid ligands. M.K. Das, M.W. Myhre, **S.M. Kerwin**

11:15 531. Revisiting sequence-specificity of nucleic acid binding dyes. **Y. Gerasimova**

11:45 Closing Remarks.

General Topics in Analytical Chemistry

Flamingo Room

C. D. Chouinard, *Organizer*

P. Pathirathna, *Presiding*

8:00 532. Implementation of Benchtop qNMR in Undergraduate Laboratories. **J. Araneda**, S. Riegel, M. Leclerc

8:20 533. Functional deep eutectic solvents to boost antioxidant synergism in edible fats. **E. Dike**, I. Ayres, T. Benavidez, J. Barroso, V. Bezerra dos Santos, C.D. Garcia

8:40 534. Novel coumarin hydrazide probes for selective ion pair recognition and sensing applications. **F. Khalili**, M. Bonizzoni, K.J. Wallace

9:00 535. Chemical characterization of Verbenaceae essential oils using modern analytical methods and chemometrics. **A.N. Hilliard**, H.Z. Msimanga

9:20 536. Lack of significant association between nail trace elements and urinary KIM-1 biomarker among residents of Addis Ababa, upper Awash Basin, Ethiopia: A cross-sectional

study. B. Dessie, B. Mehari, M. Osman, S. Gari, A. Desta, **S.M. Abegaz**, T. Alamirew, M. Goodson, C. Walsh, G. Zeleke, A. Mihret

9:40 537. Determination of some heavy metals in human nails by slurry sampling graphite furnace atomic absorption spectrometry (SS-GF-AAS). **J. Mierzwa**

10:00 Break.

10:20 538. Impact of different commercially available SCOBY compositions on the fermentation of kombucha. **D. Budner**, V. Jordan, B. Di Pillo, B. Normandin, C. Hodges, M. Cook, A. Morisset, R. Maley

10:40 539. Constraining the low-temperature oxidation mechanism of *n*-hexanol through the detection and identification of C₆ elusive intermediates. **Y. ZHAI**, A. DeCecco, A. Jasper, N. Hansen, P. Dagaut, G. Villalobos, D.M. Popolan-Vaida

11:00 540. Analysis of Cabo Verdean grogue and other alcohol samples using ICP-OES, GC/MS and UV/vis spectrometer. **S. Kelley**, B. Williamson, E. Briggs, B. Lundy, W. Zhou

11:20 541. Enhancing toxicological risk assessment of environmental contaminants using liquid chromatography mass spectrometry (LCMS) quality control tools to support the development of non-animal test methods. **J. Zuniga**

11:40 542. Analytical methods based on liquid chromatography tandem mass spectrometry for the detection of nitrosamine impurities. **P. Satti**, B. Vallamkonda

General Topics in Physical Chemistry

Nautilus B

C. D. Chouinard, *Organizer*
R. Bangle, *Presiding*

8:00 543. Density functional theory and machine learning study of bulk properties of bimetallic carbides. **A. Thapa**, S. Kattel

8:20 544. The effect of SARS-COV-2 protein fragments on the dimerization of α -Synuclein. **L. Coleman**, U. Hansmann

8:40 545. Polarization and the nature of reaction barriers and halogen bonding tendencies in main group halides. **K. Donald**

9:00 546. Insights on the electronic and quantum tunneling effects in 8-methylquinoline via Fourier transform microwave spectroscopy. **C. Miller**, T. Jayasekara, R. Padikoralage, R. Rajapaksha, A. Davies, **J. Samuel**, G.S. Grubbs, R.M. Gurusinghe

9:20 547. Investigations of uranium hexafluoride chemistry on organic surfaces. **W.A. Alexander**, K.N. Knight, K. Charbonnet, G.M. Delisio, M.E. Bennett, C. Launier

9:40 548. Atoms-in-molecules investigation of coordinate-covalent bonding in transition metal complexes. **D.A. Clabo**

10:00 Break.

10:00 549. APEC-F 2.0: An automated QM/MM model for flavoproteins: Application on spectral tuning of iLOV and redox potential calculations. **S. ELHAJJ**

10:20 550. Simulating resonant inelastic x-ray scattering of Ru model complexes using time-dependent density functional theory. **M.A. DADA**, D.R. Nascimento

10:40 551. Quantum tunneling and mechanistic insights into the Ni(+)-mediated C–H activation of acetic acid. **G. Pinto**

11:00 552. Modulation of A β ₁₋₄₂ aggregation by the SARS-COV-2 derived viral fragment FI10. **M.B. Premathilaka**, U. Hansmann

11:20 553. Vibrational signatures of tritiation in the water-dimer cation. **D. Whitman**, J. Talbot

Medicinal Chemistry of Heterocycles and Natural Products: Driving Drug Discovery

Cypress A

S. S. Panda, *Organizer*

S. Murru, *Presiding*

8:00 Introductory Remarks.

8:05 554. Drug discovery efforts at UNF: Synthesis, bioassay, and computational docking studies of novel curcuminoids (CURs). **K.K. Laali**

8:35 555. Characterization and selectivity alteration of the homologation enzyme for L-tyrosine and L-phenylalanine, HphA. R.M. Lang Harman, L.E. Stewart, G. Blackstone, F.O. Aruna, S.L. Owens, M. Shin, R.K. NeSmith, S.R. Ahmed, S.R. Patel, D.B. Dickson, **S. Mori**

9:05 556. Targeting ER-resident protein disulfide isomerase PDIA1, in multiple myeloma: Amino acid conjugates for ‘hit’ to ‘lead’. **A.D. Tiwari**, R. Khan, E. Ujoatu, M. Sumi, Y. Zhang, L. Williams, B.K. Jha

9:35 Coffee Break.

9:50 557. Chemical investigation of antimicrobial Floridian mangrove endophyte. **S. Osei Bobbie**

10:10 558. Phytochemical profiling and antioxidant activity of *Acalypha wilkesiana*. **v.C. johnson**, L. Potter, H. Gavigan, N. Nesnas

10:30 559. Novel colchicine binding site inhibitor overcomes taxol resistance in metastatic melanoma *In vivo* via dual apoptosis and necroptosis pathways. **C.J. Clark**, S. Waddell, C. Womack, Y. Xie, M. Endraws, C. Huddleston, K. Pulis, J. Thammathong, K. Tanas, B. Jangir, K. Bicker, A. Weissmiller, W. Li, S. Banerjee

10:50 560. Synthesis and antimicrobial profiling of purpurides as a stepping stone for drug discovery. **J. Smith**, A. LeBlanc, B. Wuest

11:10 561. Structure-based discovery and synthesis of gain-of-function oligoadenylate synthetase 1 (GoF-OAS1) inhibitors. D. Dey, **L. Jeremia**, E. Ayamga, K.B. Miller, T. Marecheau-Miller, A. Shelby, W.M. Wuest, G.L. Conn

11:30 562. Design, synthesis, antibacterial evaluation, and molecular modelling studies of 1,2, 3-triazole-linked coumarin-vanillin hybrids as potential DNA gyrase and topoisomerase IV inhibitors. **A. Khanna**, P. Singh Bedi

PMSE/POLY Symposium: Recycling, Upcycling and Bio-based Polymers

Magnolia A

Cosponsored by PMSE and POLY
R. Foudazi, *Organizer, Presiding*

8:00 Intermission: Meet & Greet .

8:05 563. End-of-life barriers and solutions for single-use technology. **X. Dong**

8:30 564. Chemical upcycling of post-consumer plastics towards separation of high-value chemical feedstocks. **J. Bowman**, I. Popovs

8:50 565. Upcycled composite derived from polyacrylonitrile and elemental sulfur: Thermomechanical properties and microstructural insight. **S. Wijeyatunga**, R.C. Smith

9:10 566. Chitosan as a sustainable polymer platform for agricultural and environmental applications. **P.R. Calvo**, D. Dassanayake, V. Knight

9:35 567. Tuning dispersion of nanocellulose fibers for polymer composites through multi-scale MD simulations. **S. Jayaraman Rukmani**, Y. Yu, M. Goswami, K. Copenhaver, S. Ozcan, J. Smith

9:55 Intermission: Coffee Break.

10:15 568. Mechanical metamaterials built from natural polymers: Auxetic behavior in cellulose nanomaterial networks. F. Rubaiya, L. Tao, L.M. Garten, **M. Shofner**

10:40 569. Sustainable fluorescent epoxy resins from biomass-derived coumaric and ferulic acids with enhanced thermo-mechanical properties. **S. Bhardwaj**, A. Becker, M.J. Forrester, E.W. Cochran

11:00 570. Poly(δ -pinene) and derivatives: New discoveries and opportunities from a bio-derived and all-hydrocarbon plastic. **N. Moody**, K. Kinner, G. Guillory, J.G. Kennemur

11:20 571. Brown grease as a precursor to polyol monomer for polyurethane synthesis. **Y. Ksor**, R.C. Smith

11:40 572. Utilizing flexible biobased polymers of triboelectric nanogenerators for greener energy harvesting. **K. Abdelrahman**, K. Crawford

Prof. Donald Kurtz Celebration of Retirement

Cypress C

J. D. Caranto, Z. J. Tonzetich, *Organizers, Presiding*

8:00 Opening Remarks.

8:10 573. A role for histidine in NiSOD maturation. **M.J. Maroney**, P. Basak, D.E. Cabelli, P.T. Chivers, E.R. Farquhar

8:40 574. Spectroscopic studies of nitric oxide reactions with nonheme iron proteins. **P. Moenne Looco**

9:10 575. Mechanisms of oxidative nitric oxide chemistries mediated by metalloenzymes. **J.D. Caranto**, S. Jennings, A. Kumar, K. Baez, C.P. Martin, Y. Ding

9:40 576. Heme vs. cobalamin, iron vs. cobalt – and beyond: Rationalization of differing reactivity in redox and coordination. **R. Silaghi-Dumitrescu**

10:10 Coffee Break.

10:30 577. Role of thiolates in creating more reactive iron dioxygen intermediates. D. Malik, S. Bhatia, M.N. Blakely, **J. Kovacs**

11:00 578. The biothermodynamics of metal ion coordination to a γ -carbonic anhydrase from *P. furiosus*. **J. Emerson**

11:30 579. Transferrin and protection from thrombotic complications in sickle cell disease. **J.M. Nocek**, B. Shah, L. Hsu, V. Gordeuk

REACH: Rare Earths and Actinide Chemistry Symposium

Magnolia C

A. E. Gorden, K. Johnson, *Organizers, Presiding*

8:00 Introductory remarks.

8:05 580. Evaluating the performance of solid sorbents for volatile radioiodine capture. **K. Johnson**, C.C. Cobble, J. McFarlane

8:25 581. Bipolar complexants for minor actinide extraction: design, validation, and application. **J.D. Carrick**, K.P. Gnyawali, D.A. Dixon

8:55 582. Transplutonium coordination chemistry and separations. **C. Celis**, A. Harvey, T. Vogt

9:15 583. Complexing carbon: Pursuing rare carbon-actinide bonding motifs. **S. Fortier**

9:45 Coffee.

10:15 584. Electrochemically-assisted solvent extraction for scalable lanthanide separations. A. Goodenough, D. McDonald, A. Spigel, O. Ajibade, J. Wozny, **K.R. Di Bona**, **C. Hill**

10:45 585. Harnessing polyoxometalate coordination chemistry to stabilize lanthanides and actinides in the +4 oxidation state. P. Subintoro, G. Benthin, B. Lottes, F. Pereiro, A. Jordan, S. Greer, B.W. Stein, S.A. Kozimor, N. Mahieu, A. Brown, J. Woods, J.N. Wacker, **K. Carter**

11:05 586. Structural trends in f-element terpyridyl and diglycolamide systems. **F.D. White**, B. Schrage, M. Simms

11:25 587. Understanding reactions with uranium hexafluoride. **L.E. McNamara**, A.L. Dorris, A. Waldron, J.T. Kelly

11:45 588. Rapid microwave synthesis and characterization of europium and terbium-doped nanomaterials. **C.R. De Silva**

Recent Advances in the Chemistry of Multinuclear Transition Metal Complexes

Harbor A

M. Stollenz, *Organizer, Presiding*

8:00 Opening Remarks.

8:05 589. Development of C3 symmetric, scaffolded ligands for the stabilization of EMACs of Fe. **G. Guillet**

8:35 590. Metal-metal bonded electrocatalysts for ammonia oxidation. **J.F. Berry**

9:05 591. Chalcogen-bridged nickel(I) dimers: Formation, redox behavior, and reactivity. **J.P. Sadighi**, J. Bacsá, M. Song

9:35 592. Bimetallic photosensitizers: Synthesis, characterization, electronic structure and photoproperties. **M.K. Karunananda**, O. Jinarathne, R. Ranjan, D. Niedzwiedzki, A. Khoury, J. Rajamoni

10:05 Coffee Break.

10:25 593. Multinuclear coinage metal complexes of fluorinated *N*-heterocycles. **R. Dias**

10:55 594. Carbon monoxide, dinitrogen, and nitrite activation by polynuclear iron complexes. **L.J. Murray**

11:25 595. Homoleptic Cu^I synthons in flexible bis(amidinate) moieties. **M. Stollenz**, T. Kruczyński, S. Dutta, K. Dowling, N. Bhuvanesh

Structures and Properties of Photoactive Materials

Harbor C

T. Hopper, D. Zhang, S. Zou, *Organizers*

B. Gautam, E. Pieri, *Presiding*

8:00 596. Plasmon-generated hot holes in water oxidation. **W. Wei**

8:25 597. Interrogating the structure, optical response, and dynamics of semiconducting polymer–electrolyte interphases. **C. Risko**

8:50 598. The fascinating photophysics of linearly-fused aromatic compounds: Structure-property relationships. **J.E. Anthony**

9:15 599. Improving bandgap determination by optical spectroscopy: Comparative evaluation of ISARS, UV-Vis, and diffuse reflectance. **H. Pham**

9:30 Coffee break.

9:45 600. From data to devices: machine learning-guided exploration of high-performance inorganic phosphors. **J. Brgoch**

10:10 601. Citrate-based synthesis of an inorganic chromophore: Structural and optical property investigation. **C. MOUKHFI**, A. Chakir, Y. GHANDI, S. BELAAOUAD

10:25 602. Bridging the gap between computational modeling and experimental optical spectrum measurement. A. Martinez, A. Wang, **S. Zou**

10:50 603. Untangling proton-coupled photodynamics in biliverdin through multiscale simulation. K. Tong, E. Mainas, N. Abdelrahman, **E. Pieri**

11:15 604. Photoactive antimicrobial materials targeting ESKAPE pathogens for combat and clinical wound care. **D. Alvarado**, R. Ghiladi

Ultrafast and Nonlinear Spectroscopy

Nautilus C

B. Kudisch, P. E. Ohno, S. T. Roberts, *Organizers, Presiding*

8:00 Opening Remarks.

8:05 605. Role of strong confinement and electronic coupling in perovskite quantum dots: From hot electron emission to superradiance. **D. Son**

8:35 606. Lattice symmetry guided spin dynamics in supramolecular assemblies. **X. Ma**

9:05 Break.

9:15 607. Deciphering spin relaxation pathways in two-dimensional lead halide perovskites via ultrafast spectroscopy. **L. Wang**

9:35 608. Advancing ultrafast optical probes in pump-probe microscopy–spectroscopy: Mapping nanoscale photophysics. **E. Ghadiri**

10:05 609. Understanding ultrafast terahertz conductivity in materials for a sustainable future. **J. Neu**

10:35 Break.

10:50 610. Photoexcited polaron dynamics reveal morphology-dependent formation of mobile polarons in chemically oxidized conducting polymers. **A. Umar**, C. Grieco

11:10 611. Controlling light-driven molecular motion: Connectivity, coupling, and coherence in ultrafast photoisomerization. **C. Slavov**

Advances in Electrochemistry and Bioelectrochemistry

Harbor B

S. Martic, O. Simoska, *Organizers*
I. A. Moreno-Hernandez, *Presiding*

8:15 Welcome and Introduction.

8:20 612. Advances in scanning probe electrochemistry microscopy. **S. Pan**

8:50 613. Polymer functionalized single nanopipettes as conductance imaging nanoprobes and memristors. **G. Wang**, D. Baram, G. Tang, R. Yang

9:20 Intermission.

9:40 614. Leveraging in situ characterization across spatiotemporal domains to activate oxygen electrocatalysis. **I.A. Moreno-Hernandez**

10:10 615. Electrooxidation of alkenes in water using a graphite anode decorated with ruthenium oxide nanoparticles. **S. Hosseini**

10:40 Intermission.

11:00 616. A molecular graphite for charge storage. J. Lee, **M. Jackson**

11:30 617. Electrodeposition of films, assemblies, and junctions containing metal nanoclusters and nanoparticles. **F.P. Zamborini**, B. Thapa, F. Bin Halim

Contaminants of Emerging Concern: Analytical Methods, Environmental Processes, and Remediation Strategies

Citrus B

J. He, D. Wang, *Organizers, Presiding*

8:15 Introductory Remarks.

8:20 618. Machine learning reveals spatio-temporal drivers of PFAS in soils. **K. Deliz**, S.E. Santiago Borres

8:40 619. Integrated machine learning models for assessing plant uptake and translocation of emerging contaminants. **M. Bagheri**, A. Velazquez, Y. Liu

9:00 620. Surface behavior of CeO₂ and ZnO nanoparticles in the presence of PFOA and root exudates: Implications for PFAS remediation. N. Easmin, **H. Sharifan**

9:20 621. Abiotic and biotic transformation of FOSA in oxic-anoxic transition zones under wetting-drying cycles. **C. Wang**, Y. Zhu, J. Hudson, D. Fan, Y. Men, P.G. Tratnyek, D. Wang

9:35 622. Interaction of PFAS compounds with DREAM: Implications for neurotoxicity. **A. Imu**, J. Miksovska

9:50 623. Effects of biochar on PFAS destruction by advanced reduction process. **C. Fouraker**, I. Radwan, D. Wang

10:05 Session Break.

10:15 624. Advanced characterization of pharmaceutical degradants in the environment using ion mobility-tandem mass spectrometry (IM-MS/MS). **H. Sabatini**, W. Cory, C. Chouinard

10:30 625. Synergistic adsorption of lead from water using calcined biochar-bentonite clay hybrid. **A. Abdul-raheem**, T. Mlsna

10:45 626. Hausmannite-modified Douglas fir biochar for the adsorption and redox-transformation of As (III) to As (V). **O. Olabode**, A. Abdul-raheem, D.O. Oguntuyi, N. Gaur, T. Mlsna

11:00 627. Developing sustainable CO₂ adsorbents via zeolite-modified biomass Hydrochars. **S. Saha**, M. Reza

11:15 629. Nature and transformations of nanomaterials as a result of wildland-urban interface fires. **M. Baalousha**

11:35 Closing Remarks.

Ion Mobility-Mass Spectrometry: New Frontiers in Structural Analysis and Separations

Nautilus A

T. G. Nguyen, *Organizer*

C. Bleiholder, F. Fernandez-Lima, *Presiding*

8:30 630. Linker H1 histone direct top-down proteoform analysis. **F. Fernandez-Lima**, M. Alam, C. Fuller

8:50 631. Characterization of protein conformational space using complementary vT-nESI, HDX and TIMS-MS/MS. **M.A. Carter**

9:05 632. Rapid characterization of new psychoactive substances using gas-phase ionization techniques coupled to ion mobility-mass spectrometry dielectric barrier discharge ionization. **b.B. garrison**, C. Johnson, C. Chouinard

9:20 633. Using 4D-Lipidomics on a timsTOF Pro 2 to understand the reproductive cycle non-native Burmese Pythons infesting the Florida Everglades. **K.B. Basso**, L. Bailey

9:40 634. Rapid, accurate biomarker analysis for the diagnosis of Alzheimer's disease using high-resolution ion mobility mass spectrometry. **K. Kartowikromo**, I. Jerin, A.M. Hamid

9:55 Break.

10:25 635. Duplicated insulin genes: Proteoforms, isoforms, and the fine line between nature's errors and ingenious design. **T. Do**, A. Antevska, S. Hirschbeck, E. Lindberg, G. Lu, L. Li

10:45 636. Rapid multi-omics for diagnostic microbiology using ion mobility-mass spectrometry. **K.M. Hines**

11:05 637. Extracellular vesicle lipidomics using acoustic sampling coupled with differential mobility spectrometry. **T.G. Nguyen**

11:25 638. Top-down proteoform analysis of core histone H2A in non-annotated *Ae. aegypti* strains. **A. Ramirez Torres**, C. Fuller, L. Valadares Tose, K. Jeanne Dit Fouque, R.M. Searfoss, F. N.L. Vitorino, B.A. Garcia, F. Fernandez-Lima

Chemistry Education Research in the South-East Region

Pelican Room

C. Randles, *Organizer*

E. Saitta, *Organizer, Presiding*

9:00 Introductions.

9:05 639. Exploring students' epistemic modeling across general chemistry and organic chemistry. **M. Balabanoff**

9:25 640. Analyzing access to undergraduate research experiences: Findings from a multi-institutional study. **E.A. Boyd**, K.B. Lazar

9:45 641. High cost in organic chemistry and its impact on academic and personal outcomes. **J. Bui**, J. Wright, L. Larson, G. Rocabado, S. Mooring

10:05 642. Variations in utility value perceptions among general chemistry students. **S.E. Lewis**

10:25 Break.

10:40 643. Defining science, shaping success: Exploring the link between science definitions, STEM attitudes, and chemistry performance. **O. Odeleye**, O. Agunbiade, L. Afolabi

11:00 644. Using social network analysis to explore the development of the Interactive Online Network of Inorganic Chemistry (IONiC) community of practice: Co-authorship as a means for community evaluation. **J.R. Raker**, S.J. Frost

11:20 645. Does specifications grading improve students' affective experiences in organic chemistry? A difference-in-differences analysis. **B.J. Yik**, J.D. Houck, E.D. Nacs

11:40 Closing Remarks.

Colloids, Surfactants, Interfaces and Nanomaterials

Majestic Ballroom

A. Mallia, *Organizer*

10:00 - 12:00

646. Chitosan-alginate nanoparticle conjugates: An effective oral protein delivery system with enhanced gastric stability. **K. Matthis**, T.W. Hanks, **S. Jain**

647. Rapid isolation and label-free protein biomarker characterization of exosomes from human blood plasma. **H. Ambrosius**, Q. Huo, D. Hernandez, P. Hernandez

648. Determination of conformation change and orientation of specific residues in the Oligomer of α -Syn(61–95) in monolayer by p-Polarized multiple angle incidence resolution spectrometry (pMAIRS). **T.K. Akinleye**, **O. Fabusiwa**, C. Wang

649. Insights into nanoparticle surface bonding and coating architecture via multinuclear NMR. **J.D. Aubrey**, J. Gibson, J.T. Leman, B.M. Yeh, P.J. Bonitatibus

650. Designing targeted brain cancer therapies using engineered plant extracellular vesicles. **H. Moloudian**, I. Lutfullaev, N. Nassiri Koopaei, B. Reynolds, L. Zhai

651. Identifying compositional effects of multimetallic nanoparticles for catalysis. **J. Mathew**, M.R. Knecht

652. Emulgel as a promising substitute for cocoa butter in the chocolate application. **J. Matamoros**, L.C. Alegro, R. Silva

- 653.** Innovative pectin-structured emulgel: a clean-label solution for saturated fat reduction in processed meats. **S. Talukder**, L.C. Alegro, R. Silva
- 654.** Investigating amine capture in Cu-BDC metal organic frameworks with electron paramagnetic resonance. **R. Augustine**, C. Kerpel, L. Jarocho, M.E. Anderson
- 655.** Green synthesis of silver sulfide nanoparticles. **R.A. Britton**
- 656.** Constructing resilient elastomeric materials using materials binding peptides. **S. Thomas**, M.R. Knecht, T. Walsh
- 657.** Synthesis and characterization of chitosan nanoparticles for successful entrapment and delivery of cationic antimicrobial peptides. **N. Boyd**, **K. Matthis**, **J. Cleave**, **L. Mitchell**, **A. McGill**, M. Liao, V. Dennis, T.W. Hanks, **S. Jain**
- 658.** Thermal stability and alloying behavior of bimetallic Au@M (M = Ag, Pd, Pt) nanobipyramids on TiO₂ support: Implications for plasmonics. **T. Egan**, Z. Ren, X. Feng, G. Chen
- 659.** Synthesis of efficient alginate-chitosan Nanoconjugates for enhanced peptide delivery and bacterial combat. **N. Boyd**, T.W. Hanks, **S. Jain**
- 660.** Next-Gen wound care: Green synthesis of BSA-stabilized silver-chitosan nanoconjugates for superior antimicrobial performance. **J. Cleave**, T.W. Hanks, **S. Jain**
- 661.** Assessment of biological and physicochemical properties of stabilized curcumin-borate complexes through nanoparticle loading. **U. Mohammad**, J. Pereira, S. Santra
- 662.** Electrospray combined with phase inversion for controlled drug release. **M. Ullom**, J. Wu
- 663.** Comparison of antiviral activities of carbon dots with nano-carbon/organic hybrids and implications. C. Rodriguez, A. Adcock, B. SINGH, **S. Yerra**, Y. Sun, L. Yang
- 664.** Automation of β -Ga₂O₃:Cr nanowires optical cavities simulations using *Python* and *OptiFDTD*. **M.S. Pagan-Gavillan**, O. Cakiroglu, B. Rodriguez, B. Mendez, E. Nogales, D.I. Torres-Padilla
- 665.** Synthesis of Zn₂GeO₄ nanomembranes by vapor-solid method. N. Velazquez, B. Rodriguez, **D.I. Torres-Padilla**, P. Hidalgo

Emerging Trends in Bio-based Polymers: A Pioneering Perspective and Advancements

Majestic Ballroom

C. Bodhak, M. Chaudhary, R. K. Gupta, *Organizers*

10:00 - 12:00

666. Enhancing the thermal, mechanical, and chemical properties of bio-based polyurethane adhesives: The influence of pentaerythritol crosslinking in Castor and soybean oil polyols. **P.M. Dodiya**, M. Chaudhary, R. Patel, R.K. Gupta

667. Ultrasound-assisted functionalization of lignocellulosic biomass ingredients for bioplastic development. **S. Mirmohammadsadeghi**, M. Aghajohari, A. Osakwe, J.J. Locklin, B. Urbanowicz, S. Minko

668. Development of bio-based polyurethane coatings via multifunctional crosslinkers and hydrophobic silane additives. **K. Chaudhari**, R. Patel, M. Chaudhary, R.K. Gupta

669. Incorporation of Schiff base diols for enhanced performance of soy-based polyurethane adhesives. **Y.N. Patel**, M. Chaudhary, R. Patel, R.K. Gupta

670. Structurally engineered bio-based polyurethanes: exploring the interface of flexibility, strength, and sustainability. **J. Joshi**, M. Chaudhary, R. Patel, R.K. Gupta

671. Castor oil-based UV curable acrylate/methacrylate resins for Digital Light Processing (DLP) 3D printing technology. **S. Chaudhary**, C. Bodhak, R.K. Gupta

672. Curing characteristics of eugenol-based epoxy thermosets modified with diamine cross-linkers. **H. Patel**, C. Bodhak, R.K. Gupta

673. Sustainable production of bio-based polyurethane adhesives using cellulose derived from paper towels. **Y. Patel**, R. Patel, M. Chaudhary, R.K. Gupta

Innovations in Inorganic Materials from Nanocrystals to Bulk Crystal Growth

Majestic Ballroom

V. Klepov, T. T. Salguero, *Organizers*

10:00 - 12:00

674. Control of molecular structure in the reaction of Cu(pdc) with azines. Y. Mohamed, M.E. Mikhael, D.J. Sanabria, M.B. Bush, A.J. Thomas, O. Hietsoi, **A.C. Friedli**

675. Synthesis and investigation of a novel orthophosphate compound Ba(Sb_{0.5}Al_{0.5})(PO₄): corrosion inhibition resistance and optical properties. **S. Kadimi skalli**, R. Fakhreddine, B. Mehdaoui, A. El Bouari

676. Ferromagnetism and superstructure formation in Kagome metal CaFe₆Ge₆. **V. Li**, M. Shatruk, S. Kamali-Moghaddam, Z. Gai

677. Formation of highly nitrogen doped porous carbon by templating in zeolite nanochannels for ORR and CO₂ adsorption. **I. Ivanov**, J.W. Harris, M.G. Bakker

678. Synthesis of high entropy metal sulfide nanocrystals from Prussian blue analogues for HER catalysis. **S. Bell**, I. Bertini

679. Examination of chemical environments in manganese-based phosphors using x-ray photoelectron spectroscopy. **J. Garcia**, X. Mansoura, T.T. Salguero

680. Microwave synthesis of high entropy alloy nanoparticles for catalysis. **M.N. Gordon**, M. Craps

681. Thermally-induced twisting of 1D Nb₂Se₉ nanoribbons. **C. Mantz**, C.F. Rowe, E. Formo, T.T. Salguero

682. Correlation of alcohol adsorption with changes in electrical impedance of microporous Cu₂(BDC)₂DABCO crystals. **H. Matherne**, G. Szulczewski

683. From magic size to atomic precision: Facile synthesis of a CdTe semiconductor nanocluster. **S.A. Mech**, J. Gibson, F. Ma, L. Dobrzycki, C. Zeng

684. Synthesis of Cr-Intercalated 5d Transition Metal Ditellurides Cr_xMTe₂ (M = Ta). **D. Saakov**, G. Sasi Kumar, M. Shatruk

685. Near-infrared emitting blue pigments: From synthesis to applications. **A. Yegane**, I. Salguero, X. Mansoura, M. Alexander Ajo-Nehring, J. Garcia, S. Rai, S. Sharma, T.T. Salguero

686. Magnetic topological materials with 1D hypervalent Bi²⁺ chains. **K. Wu**, V. Klepov

Undergraduate Research at SERMACS/SWRM

Majestic Ballroom

C. D. Chouinard, *Organizer*

10:00 - 12:00

687. Theoretical model of protein-porphyrin binding for low-cost detection of PFAS in water. **N. Dinh**, O. Annunziata

688. Density-functional investigations into the interaction energetics between a tetrol cavitand and metal ions in the lanthanide series. **Z. Stanfield, K.A. Beran**

689. Using an octaamine resorcinarene derivative as an extraction framework to isolate metal ions in the lanthanide series from a variety of phases: A DFT investigation. **S. Zipp**, K.A. Beran

690. Determining the amounts of caffeine in foreign black teas: Investigating the amounts of caffeine (mg) in foreign black teas from India, Kolkata (Brooke Bond Taj Mahal Black Loose Tea Granules); England, Yorkshire (Taylors of Harrogate Black Tea); China, Tanyang Village, Fu'an, Fujian Province (Golden Sail Brand China Lichee Black Tea); Turkey, Rize Province (Caykur, 42 No'lu Tirebolu Cayi); and Yeman, Taiz City (Al-KBous Tea Fine Black Tea), using liquid-liquid extraction (solvent extraction) method. **A. Kandula**

691. Quantification of secondary metabolites in cacao nibs sourced from different geographical regions and microclimates. **A. Dow**, S. Hazen, H. Lawson, E.D. Niemeyer

692. Removing zinc from aqueous solutions utilizing cotton bush waste. **R. Rush**, A. Rizzuti

693. Determination of total phenolic content, antioxidant properties, and anthocyanin concentrations within heirloom and hybrid red lettuce cultivars. **I.J. Becher, S.J. Rivers**, H. Lawson, E.D. Niemeyer

694. Optimization of a Wittig experiment for the organic II laboratory. **C. Connolly**, E.D. Blue

695. Behavior of liquid metal polymer composites: Investigating droplet size and dielectric behavior during deformation. **M. Mesfun**, A. Hoang, A. Koh

696. Geochemical reconstruction of a late-Cretaceous ecosystem using paleoclimate proxy analysis. **G.I. Armstorff**, J. Cotton

- 697.** Synthesis of luminescent rare earth compounds using terpyridine ligands. **W.D. Viator**, E. Fatila, M. Pink
- 698.** Exploring international information literacy strategies: A scoping review on Singapore. **H. Le**, C. Randles, M. Lam
- 699.** Preliminary results of the trends in the microfiber and metal content of Lake Allatoona sand. **D. Farris**, M.C. Koether
- 700.** Ca, Cd, Cr, and Pb levels in Alabama cave water samples. **K. Johns**
- 701.** Thiazolidinedione derivatives for diabetes. **S. Thomas**, J.U. Alexander
- 702.** Optimization of polysulfone-based adsorptive membranes for heavy metal ion removal from water. **B. JONES**, R. Edegbe, W.A. Phillip
- 703.** Plants vs. plaques: Investigating flavonoid interference with amyloid-beta aggregates in the fight against Alzheimer's disease. **M. McConnell**
- 704.** Voltammetric investigation of the kinetics of heavy metal ion adsorption and desorption. **S.V. Peterson**, K.M. Mullaugh
- 705.** Advancements in liquid crystals and technological applications. A. Rahman, **M. Chen**
- 706.** Laser-beam shaping using a neural network to improve chemistry-driven 3D printing. **A.A. Hakim**, A. Cockerham, S.M. Kuebler, X. Yu
- 707.** Molecular characterization and phylogenetic analysis of a non-canonical nuclear localization signal within the Merkel cell polyomavirus small tumor antigen. **R. Borges de Oliveira Leal**
- 708.** Unsymmetrical heptamethine cyanines prevent aggregation. **E. Gomez**, S.M. Usama
- 709.** Outstanding electrochemical performance of nickel Hexaaminobenzene and nickel Hexaaminotriphenylene 2D MOFs asymmetric supercapacitors fabricated by electrophoretic deposition. **D. Settles**, F. Amir
- 710.** Adsorptive cathodic stripping analysis of xylazine within fouling-resistant and nanomaterial-enhanced modified electrode sensors. **C. Sheppard**, **J. Stern**
- 711.** Evaluating thermal behavior of thioridazine-derived double salt ionic liquids for improved drug formulation. L. Knight, C.E. Rust, **O.A. Cojocaru**
- 712.** Material systems for fabricating biodegradable microneedles by multiphoton lithography. **N. Jaisankar**, A. Cockerham, S.M. Kuebler

- 713.** Role of toxic dopamine metabolite 3,4-Dihydroxyphenylacetaldehyde (DOPAL) in Parkinson's Disease: Synthesis and implication for Parkinson's Disease pathogenesis. **J. Joven**, S. Page, T. Davis, R. Salvatore
- 714.** Incorporation of proton transport pathways in Ru-UiO-67 for improved water oxidation. **L. Prince**, S. Basak, A.J. Morris
- 715.** Synthesis of aryl diketone scaffolds and investigation of Baeyer-Villiger oxidation outcomes. **K. Bush**, E.H. Bloss, M.E. Hinze
- 716.** Modified nanomaterials engaging in halogen bonding toward explosive detection interfaces for sensor development. **B. Edelman**, L. Chuidian, C. Sheppard, A. Vinnikov, C.A. Parish, K.W. Kittredge, M.C. Leopold
- 717.** Synthesis of peptidomimetic scaffold: Combating BCL-2 cancer complexes. **L. Assaad**, R. Salvatore
- 718.** Determination of anionic detergents and arsenic concentrations in water. **P. Zamar**
- 719.** Measuring the extraction efficiency of a neonicotinoid pesticide from river water using a non-ionic surfactant. **C. Boles**, K.N. Johnson
- 720.** Povarov reactions of chiral 4-isoxazolines with nitrones. **A. Johnson**, C.W. Downey
- 721.** Generation of congested aldol products through a one-pot enol silane-formation-Mukaiyama aldol reaction. **S. Dulam**, **O. Miller**, C.W. Downey
- 722.** Net carbonyl ene reactions of alpha-methylstyrene with aldehydes. **A. Mock**, C.W. Downey
- 723.** One-pot alkylation of amides with allyl propionates: Regio- and chemoselectivity. **R. Graff**, M. Hussein, C. Jalbert, J. Coyle, C.W. Downey
- 724.** Synthesis and antimicrobial activity of N,N'-bis-substituted triazolium salts with lipophilic substituents. **A. Forsythe**, V. Hardy, S. Kingsley, M. Frazier, K.S. Taylor
- 725.** Investigation of a simple procedure for the bromination of Benzocaine for incorporation into a multi-step undergraduate organic laboratory synthesis. C.W. Lethgo, B.P. LaVigne, **B. Tutkowski**
- 726.** Side chain fluorination of poly(oxazolidinone)s towards high dielectric materials. **O.M. Vickers**, E.G. Rogan, J.R. Lamb
- 727.** Mechanochemical aldol condensation of a cyclic dipeptide through liquid-assisted grinding. **K. Barron**, J. Ohata, J. Thuan

MONDAY AFTERNOON

Advances in Electrochemistry and Bioelectrochemistry

Harbor B

S. Martic, O. Simoska, *Organizers*
R. Lazenby, *Presiding*

1:00 Welcome and Introduction.

1:05 728. The power of high information content voltammetry for electrochemical, functional nucleic acid sensors. **R.J. White**

1:35 729. Aptamer-functionalized nanopipettes for high resolution chemical sensing. **R. Lazenby**, A. Ramirez, Y. Muhammed

2:05 Intermission.

2:20 730. Innovating carbon-based materials for subsecond monitoring along the gut-brain-immune axis. **A.E. Ross**

2:50 731. Real-time voltammetric co-detection of electroactive and non-electroactive neurochemicals at single recording sites in rat striatum. **L.A. Sombers**, K.M. Turner, K.A. Linder, J. Todorov, G.S. McCarty

3:20 732. Electrochemical detection of biomarkers and pharmaceutical compounds. **A. Chen**

3:50 Intermission.

4:05 733. Magnetic bead electrochemical sandwich assays (MBESA) to investigate inflammatory cytokines in organs-on-a-chip platforms. **D.E. Clifffel**, H. Richards, S. Calvez, P. Saad, V. Federico

4:35 734. Effect of SAM chain length on mediated amperometric detection of glucose. **A.C. Suroviec**

Chemical Biology Innovations for Therapeutics

Cypress B

Y. Ding, Y. Zheng, *Organizers, Presiding*

1:00 Opening Remarks.

1:05 735. Exploring the rich natural products chemistry of deep-water marine habitats. **A. Wright**, E.A. Guzmán, P.L. Winder, J.C. Roberts, T. Peterson

1:30 736. Unexpected terpenoid alkaloids from millipede secretions. **E. Mevers**

1:55 737. Discovery and biosynthesis of a novel 5/5/5/5-tetracyclic diterpene glycoside from myxobacteria. **J. Rudolf**

2:20 738. Lost on the cutting room floor: spirocyclic β -lactone polyketides editing spliceosome function. **B.O. Bachmann**

2:45 Break.

3:05 739. Gatorator: A tool for lead optimization and application in developing heparanase inhibitors. **Y. Zhang**, Z. Wang, Z. Chen, J. Liu, G.M. Seabra, A. Ybargollin, C. Li, L. Cui

3:20 740. GPCR-based sensors for biomedical applications. **P. Peralta Yahya**

3:45 741. *N*-nitroglycine: Widespread biosynthesis and biodegradation of a bacterial nitramine. **J.D. Caranto**, G. Padilla, B. Martinez Rodriguez, B. Rathman, K. Strickland, D.E. Graham

4:10 742. Development of synthetic biology approaches for natural product research. **Y. Ding**

4:35 Closing Remarks.

General Topics in Physical Chemistry

Nautilus B

C. D. Chouinard, *Organizer*

S. L. Estes, *Presiding*

1:00 743. Spectroelectrochemical characterization and vibrational structures of glycolonitrile and other selected cyanohydrins. **W.K. Gichuhi**, E. Cummins

1:20 744. Light-controlled modulation of JAK2 signaling through photoswitchable ligand design. **S. Kell**, C. Slavov

1:40 745. Exploring binary ionic liquids on a molecular level. **S. Dutta**

2:00 746. Development of methods for single-molecule studies of membrane proteins in their native environment via force spectroscopy. **A. Ayangbemi**, D. Jacobson

2:20 747. Effective approaches in teaching physical chemistry. **A. Sengupta**

2:40 Break.

2:40 748. Quantum mechanics MP2 identification of coordinate quasi-double bonds in cobalt(II) complexes as single molecule magnets. **Y. Liu**

3:00 749. Molecular mechanism of doxorubicin and paclitaxel interactions with neuronal calcium sensors. **J. Miksovska**

3:20 750. Effect of the CN group on the reversible isomerization of 9H-fluorene into 1H-fluorene: Photodetachment spectra and computational thermochemistry. **W. Tunstall**, W.K. Gichuhi

3:40 751. Variational quantum algorithm for non-Markovian quantum dynamics. **F. Wang**

4:00 752. D-Retro-Inverso peptide inhibitors for mouse serum amyloid A3 aggregation. **A.D. Chesney**, U. Hansmann

Plasmonic Nanoparticles and Applications--Mechanistic Studies

Cypress A

Y. Wang, *Organizer*

Z. Zhang, S. Zou, *Presiding*

1:00 753. Spectroelectrochemistry and electrocatalysts of plasmonic nanoparticles. **S. Pan**

1:25 754. Quantifying steady-state plasmon-generated hot carriers. **W. Wei**

1:50 755. Plasmonic heating induced phase transition and melting of oxide. **Z. Zhang**

2:15 756. Mechanistic study of energy transfer between emitters and metallic nanoparticles under varying conditions. A. Martinez, A. Wang, **S. Zou**

2:40 coffee break.

3:10 757. Plasmon-driven bond cleavage in molecular adsorbates. **H. Wang**

3:35 758. Nanoparticle-on-mirror cavities for fundamental studies of light-matter interactions. **R. Bangle**

4:00 759. Magneto-plasmonic nanomaterials: Unraveling the potential for enhanced optical modulation in Cd/Sn/O nanocrystals. **A. Pazoki**, G.F. Strouse, S. McGill

PMSE/POLY Symposium: Synthesis and Characterization in Sustainability

Magnolia A

Cosponsored by PMSE and POLY

R. Foudazi, *Organizer, Presiding*

1:00 760. Beyond the polymer itself - how the chemistry of monomer and polymer synthesis enables chemistry. **D.S. Germack**

1:25 761. PolyCrit: An open-access database for streamlining polymer characterization via liquid chromatography at critical conditions. B.K. Eldridge, **D.T. Baker**, Y. Wang

1:45 762. Shaping the future of soft matter characterisation: Synchrotron X-ray scattering at the molecular scale. **P. Wasik**

2:05 763. Micellization and lyotropic liquid crystal formation of block copolymers in solvent mixture. **S. Tabatabaei**, R. Foudazi

2:25 764. Photo-crosslinkable block polymer micelles with “universal” solvent compatibility. **C.S. Collins**, M. Zhang, C. Sturgill, C.X. Ruff, B. Melton, M. Stefik

2:45 765. Using α -lipoic acid to synthesize degradable nanocarriers via PISA. **C.B. Eades**, D.E. Cabrera, M.K. Vereb, S. Han, B.S. Sumerlin

3:05 Intermission: Coffee Break.

3:20 766. Unraveling the linear-to-bottlebrush transition by linear viscoelastic response to increasing side chain length. **J. Jang**, C. Leo, P. Santiago, J.G. Kennemur

3:40 767. Quantifying hydrophilicity in polyelectrolytes and polyzwitterions. **N. Abou Hamad**, J. Akintola, J. Schlenoff

4:00 768. DSC scans of composites can lead to misleading conclusions. **F.D. Blum**

4:25 769. Immiscible polydimethylsiloxane and polybutadiene vitrimer Blends. N. Torres, D. Barzycki, **R. Ricarte**

4:50 770. RoboMapper: An automated platform for thin film fabrication using conjugated polymers. **T. Muthumali**, I. Krajewski, J. Mauthe, R.C. Chiechi, A. Amassian

Prof. Donald Kurtz Celebration of Retirement

Cypress C

J. D. Caranto, Z. J. Tonzetich, *Organizers, Presiding*

1:00 771. Great fun exploring oxidation's by nonheme iron centers in biology. **L. Que**

1:30 772. Towards the phosphoester hydrolase mimics: Synthesis, characterization and catalytic activities of cobalt(II) complexes in aqueous media. K. Tyus, H. Arman, **G.T. Musie**

2:00 773. A fresh look at how heme enzymes oxidize aromatic amino acids. **A. Liu**

2:30 774. Reduced metallocorroles: New motifs for coordination chemistry and catalysis. **Z.J. Tonzetich**

3:00 Coffee Break.

3:20 775. Photoinduced electron transfer: Past, present and future. **K.S. Schanze**

3:50 776. Radical-SAM enzymes *nature's choice to initiate radical reactions*. **B.M. Hoffman**

4:20 777. From chemistry to biochemistry (and back again): Snapshots from a forty year journey. **F. Bonomi**, S. IAMETTI

4:50 Closing Remarks.

Recent Advances in the Chemistry of Multinuclear Transition Metal Complexes

Harbor A

M. Stollenz, *Organizer, Presiding*

1:00 778. Magnetic and quantum properties of a new class of single-molecule magnets: 'Molecular nanoparticles' of magnetic iron oxides. **G. Christou**, A. Singh, C. Bailey, M. Schülze, W. Wernsdorfer

1:30 779. Ligand effects in cation-responsive polymerization catalysts. D.D. McCool, L. Ruiz De Castilla, D.D. Pinto, N. Taylor, L.H. Do, **T.P. Brewster**

2:00 780. Group 14-substituted phosphine ligands grafted onto MOF materials and other solid supports for selective Si and B functionalization of unsaturated compounds. **V. Montiel-Palma**

2:30 781. The intricacies of the bonding situation of Ni-ML_n (M = Al, Ga, In) complexes and their catalytic activity in the hydrogenation of styrene and hydrogen evolution from NH₃BH₃. **M.A. Munoz-Hernandez**

3:00 Coffee Break.

3:20 782. Post-synthetic modification of trimetallic extended metal atom chains. **R. Walde**, J.F. Berry

3:40 783. Partial reduction of aromatic N-Heterocycles by heterobimetallic transition metal-group 13 complexes. **M.C. Vazquez**, G. Sanchez Lecuona, V. Montiel-Palma

4:00 784. Catalytic investigation of pentacoordinated platinum complexes featuring polydentate phosphine ligands with Si and Ge. **C. Secrist**, V. Montiel-Palma

4:20 785. Polar paddlewheel complexes for catalytic hydrogenation of unsaturated substrates. **L.R. Marquez Rios**, O.J. Garcia, M.A. Munoz-Hernandez

4:40 786. Synthesis, characterization and applications of rhodium *tris*-(oxypyridine)borate complexes. **G.A. Matas**

Structures and Properties of Photoactive Materials

Harbor C

T. Hopper, D. Zhang, S. Zou, *Organizers*
B. Gautam, *Presiding*

1:00 787. Investigating interlayer charge-transport in 2D lead-halide perovskites. **J. Kretchmer**

1:25 788. Hot-carrier trapping preserves high quantum yields but limits optical gain in InP-based quantum dots. **T. Hopper**

1:50 789. Radiation-driven phase and surface modifications in Mo₂Ti₂C₃T_x MXenes. **B. Gautam**, N. Patel Makani, B. Rai

2:15 790. Using in situ analysis to design ex situ solid-state syntheses of nanocrystalline spinel targets. **B. Guiton**

2:40 791. Innovating fluorescent thiazolo[5,4-d]thiazole dyes for photocatalysis, photochromism, and biosensing applications. **M.G. Walter**, N. Tumpa, P. Chakraborti, T. Perrell, T.J. Adams, J. Anderson, N. Shuchi

3:05 Coffee break.

3:25 792. Integrated spectrophotometer for UV-vis and fluorescence measurements with extended linear dynamic range. **C.J. Yoler**, H. Qiang, P. Wathudura, D. Zhang

3:40 793. Doping heptazine-based g-C₃N₄ structures for photocatalysis: how to improve chemical stability and electron donor/acceptor properties: A computational study. **H. Lischka**, L.C. Faria, A.N. Raju, J.C. Chagas, A.J. Aquino, R. Nieman, F.B. Machado, L.U. Tsuyoshi, L.F. Ferrao

4:05 794. Size-transferable prediction of excited state properties for molecular assemblies with machine-learned exciton model. F. Ren, X. Chen, **F. Liu**

Ultrafast and Nonlinear Spectroscopy

Nautilus C

B. Kudisch, P. E. Ohno, S. T. Roberts, *Organizers, Presiding*

1:00 795. Tracking molecular behavior at the bacterial interface: Adjuvant effects revealed by second harmonic scattering. **T.R. Calhoun**

1:30 796. Finite volume effects in nanodroplets characterized using vibrational sum frequency scattering spectroscopy. **S. Pullanchery**, L. Zhang, S. Roke

1:50 797. Increasing excited state lifetimes of Cu(I) coordination complexes via strategic surface binding. H.C. London, J. Chen, D. Pattadar, E.A. Fosu, Z. Firestone, E.C. Lambert, J.M. Smith, E. Jakubikova, S.S. Saavedra, **K. Hanson**

2:10 Break.

2:30 798. Comparing second harmonic generation and two-photon fluorescence from plasmonic nanoparticles and quantum materials. **L.H. Haber**, S.C. Peterson, D.A. Babayode, M. Dehghani

3:00 799. Concurrently monitoring ultrafast surface and gas-phase dynamics in solid–gas interfacial reactions. **E. Segrest**, K. Blackman, G. Turner, K. Machamer, A. Gupta, M. Khan Pathan, S. Berriel, P. Banerjee, M.E. Vaida

3:20 800. How do deadly bacteria react to being skinned alive? A second harmonic scattering study. **K. Pulver**, T.R. Calhoun

Xray Crystallography - Solving Chemical Problems

Magnolia B

W. E. Lynch, C. W. Padgett, *Organizers, Presiding*

1:00 Opening Remarks.

1:05 801. Crystal structures and properties of phenyl sulfonium and phosphonium salts. **W.E. Lynch**, C.W. Padgett

1:30 802. X-ray crystallography and DFT calculations at a primarily undergraduate institution. **M. Yousufuddin**

1:55 803. Complex structural disorder as a mechanism for achieving charge balance, semiconducting behavior, and tunable transport in thermoelectric Zintl-like materials. **S. Baranets**

2:20 804. Super-systems of crystallography: Halogen bonding in dimethylpyridine vs. dimethylpyridine-N-oxide cocrystals: Are we obsessing or observing?. **M. Ritzer**, M. Lankford, B. Garrett, S. Bennett, L. Hicks, C.D. McMillen, W.T. Pennington

2:45 Intermission.

3:05 805. X-ray crystallographic analysis of lanthanide heteroaromatic *N*-oxide complexes. **C.W. Padgett**, W.E. Lynch

3:30 806. Synthesis, structure, and bonding of phenylated ruthenium complexes supported by 4,4'-di-tert-butyl-2,2'-dipyridyl (*t*-bipy) and 4',5,5''-tri-tert-butyl-2,2':6',2''-terpyridine (*t*Bu₃-terpy) ligands. **B.P. Quillian**, K. Musso, E.C. Teixeira Arantes, C.W. Padgett

3:55 807. Expecting the unexpected: Using XRD to solve chemical problems in the coordination chemistry of new heterocyclic chalcogenones. **D. Rabinovich**

4:20 808. Solvent-dependent dimerization in copper(I)-TMPA complexes: Structural origins of distinct redox behavior. **S. Hematian**

4:45 809. Synthesis, crystal structure, optical, and dielectric properties of new orthophosphate compounds Sr(Ti_{1-2x}Sb_xFe_x)(PO₄)₂ (x₁=0.1, x₂=0.2) with yavapaiite type structure. **S. Kadimi skalli**, B. MEHDAOUI, R. Fakhreddine, A. El Bouari

Chemistry Education Research in the South-West Region

Pelican Room

C. Randles, *Organizer*

M. Atkinson, *Organizer, Presiding*

1:15 Opening Remarks.

1:20 810. Using the math-up skills test (MUST) as an early assessment of arithmetic automaticity for general chemistry. **T.E. Alivio**, C.E. Galloway, B. Mamiya, V.M. Williamson

1:40 811. Impact of introducing the learning cycle to chemistry students: A longitudinal study across multiple chemistry courses. **B. Mamiya**, H. Arman, S.K. Thomas, J. Velasco, S. Oerther, M. Davidson, T. Shobogun, C. Mimms, J. Macalling

2:00 812. Using conflicting atomic-level models to deepen chemical understanding. **A. Villalta-Cerdas**

2:20 813. A socio-cognitive perspective on activating productive conceptual resources in the context of chemical equilibrium. **E.L. Day**

2:40 Break.

3:00 814. Enabling general chemistry students to take part in experimental design activities. J. Scoggin, **K.C. Smith**

3:20 815. A new kind of bond: A pilot study of faculty ambassadorship. **M. Herridge**

3:40 816. The challenges of transgender and nonbinary graduate students in chemistry: A qualitative study on trans identity, science culture, and institutional support using reflexive thematic analysis. **P. Vincent-Ruz**, M.M. Nolan, I. Blythe

4:00 817. Leveraging chemistry education research to lead change: Support for vulnerable populations. **Z.S. Wilson-Kennedy**

4:20 Closing Remarks.

Contaminants of Emerging Concern: Analytical Methods, Environmental Processes, and Remediation Strategies

Citrus B

J. He, D. Wang, *Organizers, Presiding*

1:15 Introductory Remarks.

1:20 818. Role of natural ions in activating ferrate(VI) to enhance abatement of micropollutants in water. **V.K. Sharma**

1:40 819. Ammonia electrosynthesis from nitrate contaminants: A promising path to closing the nitrogen cycle. Z. Ren, **X. Feng**

2:00 820. Optimizing neonicotinoid pesticide removal using Nanobiochars: Insights into sorption performance, kinetics, mechanisms, and reusability. **I. Radwan**, C. Wang, D. Wang

2:20 821. Towards environmentally sustainable photocatalytic composites for ammonia mitigation under visible light irradiation. **A. Al Fahim**, **M. Ezazi**, M. Quazi

2:35 822. Addressing near shore pollution via *in situ* nutrient sinks in Mobile Bay, Alabama. **S. Rice**, I. Radwan, H. Kramer-Dew, P. Waters, D. Wang

2:50 Session Break.

3:00 823. Particle size-dependent partitioning of phosphorus in aquaculture pond and estuarine systems. **X. Kong**, C. Wang, I. Radwan, S. Rice, D. Wang

3:15 824. Recalcitrant organic phosphorus: A hidden source of bioavailable phosphorus to fuel harmful algal blooms in freshwater systems. **I. TASNIM**, F. Cubas

3:30 825. Systematic study of various Mg^{2+}/Al^{3+} layered double hydroxide formulations for phosphate and nitrate removal from water. **P. Kitzel**, N. Materer, C. Kelley

3:45 826. Fluorogenic and chromogenic Cu-dansyl complexes as probes for organophosphorus nerve agent detection. **B.F. Ogunyemi**, B. Day, A. Darko

4:00 827. Surface engineering and modification of metal-organic framework for wastewater remediation. **o. Raji**, J. Ling

4:15 828. Solvothermal liquefaction of food waste: Process liquid recirculation for enhanced biocrude oil production and solvent recovery. **R. Bhowmick**, M. Reza

4:30 829. Matrix effects on ZNR adsorption of PFAS. **M. Clark**, A. Rodriguez, J.C. Poler

4:45 Closing Remarks.

REACH: Rare Earths and Actinide Chemistry Symposium

Magnolia C

A. E. Gorden, K. Johnson, *Organizers, Presiding*

1:20 Introductory Remarks.

1:30 830. Exploring the nature of f-element soft donor interactions using electronically tunable Azolate ionic liquids. **R.D. Rogers**

2:00 831. Molecular-level understanding of transition metal separations for nuclear forensics applications. **N.A. Wall**, B.P. Burton-Pye, M. Forbes, L.C. Francesconi, P. Monte, D.A. Penchoff, C.C. Peterson, B. Stieferman, N. Uhnak, R. Wood

2:20 832. Enhanced methods for thorium and rare-earth element extraction from metal mixtures. **E.J. Werner**, V.D. Pacanowski, T. Vomund

2:40 833. Recycling uranium: Approaches for used nuclear fuel disposition. **R.T. Mayes**, K. Johnson, C. Graham, L.R. Martin

3:00 Coffee.

3:40 834. Stabilizing expanded redox behaviors in f-element complexes with strong field ligands. **A.B. Altman**, P. Reuel, S. Chowdhury, C. Belk, C. Setzler, N. Hill, Y. LNU, B. Moskovitz

4:10 835. Utilizing magnetic susceptibility for enhanced extraction of paramagnetic ions. **B. Lake**, T. Siegrist, M. Humayun, J. Ali

4:30 836. Schiff bases as Soft Donor Ligands for f-element coordination in separations and upconversion. **A.E. Gorden**, P. Dogra, B. Guragain, B. Bouley

How to Start a Startup, a Roundtable

Flamingo Room

M. Johnson, *Organizer*

R. CAAMANO, B. Easter, *Presiding*

1:30 Introduction.

1:35 837. Importance of intellectual property for startups. **R.W. Sabnis**

1:55 838. Leveraging incubation business programs as a launchpad for scientific entrepreneurship. **R. CAAMANO**

2:15 839. The accidental entrepreneur's journey: Tips for company survival. **B. Easter**

2:35 840. Advice for starting a start-up: the Collaborations Pharmaceuticals, Inc. experience. **S. Ekins**

2:55 841. How to start a start up rountable. **R. CAAMANO, B. Easter**

3:25 Networking Break.

Ion Mobility-Mass Spectrometry: New Frontiers in Structural Analysis and Separations

Nautilus A

F. Fernandez-Lima, *Organizer*

C. Bleiholder, T. G. Nguyen, *Presiding*

1:30 842. Year long assessment of the MOBILion MOBIE system: An overview of platform advances and a perspective outlook on high-resolution ion mobility. **J. Dodds**, A. Solosky, S. Disselkoben, K. Joseph, E.S. Baker

1:50 843. Acoustic ion manipulation: An electric-field-free approach to control and separate ions at atmospheric pressure. **J.T. Shelley**, J. Danischewski, J. Hufgard, Y. You, J. Riedel

2:10 844. Strain-level differentiation of microorganisms using high-resolution ion mobility mass spectrometry and machine learning. O. Olajide, J. Pizzo, K. Kartowikromo, I. Jerin, **A.M. Hamid**

2:30 845. Native top-down characterization of proteoforms and their complexes in breast cancer cells. **F.P. Gomes**

2:50 Break.

3:20 846. Exploring multispecific antibody-antigen interactions through tandem-trapped ion mobility spectrometry (tandem-TIMS). T. Pedrete, J. Booth, H. Gunawardena, C. Bleiholder, **F.C. Liu**

3:40 847. Protein solution structures in the absence of solvent: Rugged energy landscape and glass-like behavior. **C. Bleiholder**, F.C. Liu, T. Pedrete

4:00 848. Detection of RNA modifications and isomers by UPLC-ion-mobility MS. **C. Silva Sanchez**, L. Bailey, C. Vallejos, K.B. Basso

4:20 849. Development of a portable SLIM-Based ion-mobility platform for trace-level detection. **V. Gandhi**, K. Kartowikromo, G. Anderson, A. Prabhakaran, I. Jerin, A.M. Hamid

Advancements in Nuclear Chemistry

Majestic Ballroom

V. Anagnostopoulos, D. A. Penchoff, *Organizers*

2:00 - 4:00

850. Experimental subcritical assembly design using HALEU fuel. **O. Rivera-Martinez**, S. Bogetic, J. Hutchinson, D.A. Penchoff

851. The controlled capture and release of f-elements using photochemical input. **B.E. Garcia**, A. Ruiz, C. Dares

852. Development of base-stabilized ligand modified electrodes for nuclear material reprocessing. **I. Cordoba**, C. Dares

853. Ligand modified TiO₂ electrodes for actinide studies. **R. LACAU**, **J. Gonzalez Moya**, C. Dares

854. Evaluation of nano-indentation on etched samples of aluminum 6061-T6, steel 316L, and of copper. **J. Henderson**

855. Development and characterization of functionalized photoanodes for the spectroscopic and electrochemical sensing of f-elements. **B. Hack**, C. Dares

856. Exploring cerium compounds as effective training tools for competency development in radioactive material handling. **C. Crandell**, D.L. Cook, C. Hilton, F. Stanley

857. Complex formations of lanthanide and hydroxamate siderophores: Spectroscopic and titration studies. **J.M. Lee**, V. Anagnostopoulos

858. Sludge batch 11 compilation at the Savannah River Site. **J. Dekarske**

859. Complexation of americium for applications in nuclear fuel separations. **V. Espinosa Canon**, C. Greenwald, G.S. Spillman, O. Rivera-Martinez, N.M. Marks, C.C. Peterson, R. Harrison, E. Valeyev, S. Bogetic, D.A. Penchoff

860. Structural and thermochemical evaluations of uranium binding. **E. Willis**, K. Nguyen, H.S. Chewning, C.L. Greenwald, J. Poston, J. Stanley, C.C. Peterson, H.L. Hall, D.A. Penchoff

861. Structural and thermochemical evaluations of molybdenum binding. **K. Nguyen**, E. Willis, H.S. Chewning, C.L. Greenwald, J. Poston, J. Stanley, C.C. Peterson, H.L. Hall, D.A. Penchoff

862. Thermal ionization mass spectroscopy metadata exploration for performance optimization. **G.S. Spillman**, K. Samperton, A. Riche, J.D. Auxier, D.A. Penchoff

863. Structural and thermochemical evaluations of yttrium complexation. **A.C. Chee-Awai**, C. del Barrio, D. Ibrahim, P. D. Benny, C.C. Peterson, E. Valeyev, R. Harrison, D.A. Penchoff

864. Structural and thermochemical evaluations of technetium complexation. **S. Kishore**, C. del Barrio, A. Chee-Awai, D. Ibrahim, P. D. Benny, C.C. Peterson, R. Harrison, E. Valeyev, D.A. Penchoff

865. Investigation of thermodynamic properties of americium and curium complexation. **N.M. Marks**, C.L. Greenwald, V. Espinosa Canon, O. Rivera, G.S. Spillman, C.C. Peterson, R. Harrison, E.F. Valeev, S. Bogetic, D.A. Penchoff

866. Ionization energies of thorium and cerium: Relativistic effects in f-block modeling. **H.S. Chewning**, E. Willis, C.C. Peterson, R. Harrison, E. Valeyev, D.A. Penchoff

867. Machine learning methodologies for predicting binding and separation characteristics in complex molecular systems. **J. Poston**, C.C. Peterson, D.A. Penchoff

Frontiers in Nucleic Acids

Majestic Ballroom

Y. Gerasimova, M. W. Germann, D. Kolpashchikov, J. Siemer, *Organizers*

2:00 - 4:00

868. Re-purposing a dapoxyl-binding aptamer for modular thioflavin T-based bioanalytic systems. **S.S. Alazmi**, Y. Gerasimova

869. Two-color multicomponent deoxyribozyme probe assay for differentiation of NANOG and NANOGP8 in glioblastoma exosomal DNA. **S. Veleke**, J. Monsalve, Y. Gerasimova

870. Modulating small molecule recognition by aptamers using triplex-forming oligonucleotides. **H. Kapidzic**, J. Hong, Y. Gerasimova

871. Conserved G-quadruplex structures in the RNA genomes of orthoflaviviruses. Potential therapeutic targets?. **T. Le**, J. Siemer, A. Paul, W. Wilson, M. Brinton, M.W. Germann

872. Mixed DNA sequence binding compounds make “undruggable” DNA targets “druggable”. **A. Paul**, A. Farahat, G. Poon, D.W. Boykin, W. Wilson

General Topics in Environmental Chemistry

Majestic Ballroom

C. D. Chouinard, *Organizer*

2:00 - 4:00

873. The effects of the prescence of polypropylene microplastics on sea water droplet evaporation. F. Jones, T. Shaw, F. Morris, **E.R. Duranty**

874. Understanding the cloud condensation nuclei activity of fresh and aged phenolic acid aerosol particles. **M. Tran**, B. Osorto, R. Harper, D.M. Popolan-Vaida, E. Nortmann, A. Geogiev, B. Khe, C.A. Haddan

875. Identifying emerging indoor pollution sources linked to air fryer and deep fryer cooking practices. **K. Bui**, A. Geogiev, M. Tran, D.M. Popolan-Vaida

876. Cloud condensation nuclei activity of fresh and aged syringic acid aerosol particles. **R. Harper**, E. Nortmann, M. Tran, B. Khe, A.M. Floyd, D.M. Popolan-Vaida

877. Targeted quantification of carbohydrates in seawater matrices: Integrating ion-exchange resin with GC-MS/MS analysis. **C. Wilson**, Z. Ritter, W. Johnson, R.N. Mead

878. Adsorption of PFAS on amino-functionalized porous organosilica materials. E. Kabutey, E. Tocholke, E. Gardner, N. Ellison, R. Mohseni, **A. Vasiliev**

879. Nutrient remediation in Florida soils compared to a commonly used soil amendment. **S. Parker**, C. Nitsch, K. Goos, N. Cheek, A. Patel, J. Volk, M. Blow, N.A. Young, K.M. Kibler, L.G. Chambers, M.J. Beazley

880. Sustainable removal of ofloxacin from water using NADES-ionic liquid-enhanced alginate hydrogel beads. **T.T. Bakare-Abidola**

881. Mapping the reaction networks of Criegee intermediates formed in the ozone-assisted oxidation of acyclic and endocyclic C₆ alkenes. **Z. Clarke**, A. DeCecco, A.M. Floyd, Y. ZHAI, A. Jasper, N. Hansen, D.M. Popolan-Vaida

882. Mitigating arsenic contamination from fertilizers using goethite and magnetite nanoparticles: A sustainable remediation approach. **B. Perry**, G.M. Chiarella, R. Smith, A. Rollins

883. Sponges as bioindicators: A longitudinal study of water and sediment quality in southeastern Louisiana (2023–2025). **F. Abbasinohoji**, M. Miller, S. Archer, P. Zito

- 884.** Fluorinated organic linker modification for the synthesis and characterization of metal–organic frameworks: Application in the remediation of PFAS-impacted waters. **E. Radill, I. Hussein**, A. Perez, J. Ocheje, M. Leon, D. Lima, Y. Katsenovich, P.K. Thallapally, N. Quinete, K. Kavallieratos
- 885.** Essential trace and macromineral distribution in 80 avocado cultivars of the USDA germplasm collection. **A.R. Reed**, S. Eltaher, B. Freeman, G. Ali, M.J. Beazley
- 886.** Palladium-assisted hydrothermal carbonization of loblolly pine for high-performance CO₂ adsorbents. **S. Saha**, M. Reza
- 887.** Green iron-titanium mixed nanoparticles for enhanced dye degradation. **H. Fernando**, S. Hewage, C. Byas, V. Salazar, D. Davis
- 888.** Investigating site selection methods and UAV integration for watershed monitoring. **D. Basnet**, W.A. Alexander
- 889.** Modeling environmental oxidations of lignin using Bobbitt’s salt. **K. Vargas**, S. Weierbach, J. Burdette, K.M. Lambert
- 890.** Fate and transport of microplastics in groundwater. **C.M. Myers**, H.A. Stretz, R. Sanders
- 891.** Remediation of PFAS-contaminated water with zirconium-based MOFs: An evaluation of adsorption efficiency. **J.O. Ocheje**, K. Kavallieratos, N. Quinete, Y. Katsenovich, I. Hussein, A. Perez, M. Leon, D. Lima
- 892.** Catalyzing plastic degradation: Novel mechanochemistry treatment for sustainable plastic waste management. **J. Zhang**
- 893.** Target, suspect, and non-target screening of per- and poly-fluoroalkyl substances (PFAS) in wastewater treatment plant effluent using ion mobility spectrometry–mass spectrometry. H. Yun, **K. Zoh**
- 894.** Synthetic DNAzyme sensor for cadmium detection using a hydrogel-based fluorescent platform. **K. Burton**, K. Dellinger, S. Anand
- 895.** Role of environmental factors in the aquatic environment on the adsorption and desorption behavior of 1,4-Dioxane onto microplastics. **L.B. Tidwell**, D.N. Koku Hannadige Abeysooriya, O. Ifedayo, K. Landrem, T.H. Boles
- 896.** Influence of different microplastic surface aging conditions on the sorption and transport mechanisms of 1,4- dioxane in aqueous media: Isotherm and kinetic studies. **K.B. Landrem**, D.N. Koku Hannadige Abeysooriya, O. Ifedayo, L.B. Tidwell, T.H. Boles

Undergraduate Research at SERMACS/SWRM

Majestic Ballroom

C. D. Chouinard, *Organizer*

2:00 - 4:00

897. *De-toxic tilt test*: Developing a greener, safer, and cost-effective salivary assay for human stress biomarkers. K.L. Hayden, **S. McCreery, J. Toone**

898. Synthesis and characterization of branched lipoic acid-functionalized poloxamers for enhanced cell protection under oxidative stress. **A. Verma**, R. Harris

899. Kinetics and mechanism of nucleophilic aromatic substitutions of trifluorobenzonitrile with thiols. M. Forconi, K. Sok, **K. Matera**

900. Employing XRF (X-ray fluorescence) to discover the elemental evolution of image replication lithography. **C. Hodek**

901. Photoswitchable glycans: Using molecular dynamics simulations to investigate conformational sampling of polysaccharides. **B. Reid**, E. Mohammadi, A. Goodberlet, J.A. Lemkul

902. Investigation of the Lewis basicity of small organics interacting with uranium hexafluoride. **G.M. Delisio**, K. Charbonnet, W.A. Alexander

903. Quantum chemistry characterization of pyrrole diradicals. **J. Burke**, C.A. Parish

904. GC–MS and DFT investigation of the pyrolysis of acetic anhydride in the gas phase. **D. Lamour-Johnson, I. Agyekum**

905. Analysis of the effects of UV weathering on military coatings on 1008 steel and 2024 aluminum substrates. **S. Norris**, J.D. Keene

906. The minimum amount of zinc required to galvanize steel. **J. Tisdale**

907. Effect of polyethylene glycol-based solvents and precursor salts on zinc oxide nanoparticle formation under microwave irradiation. **T. Adams**, J. Supik, C.R. De Silva

908. Exploring the aryl side chain of nintedanib: Synthetic strategies to access novel derivatives. C. Massaro, **K. Moody, M. Bridges**

909. Accessing acremostictin: Synthetic scale up and reaction discovery. **A.F. Clark**, A. Armaly

- 910.** Structural and functional characterization of ToV nuclease nsp12. **H.O. Abercrombie**, J. Fleming, A. Hubbard, P. O'Reilly, M. Frazier
- 911.** Progress towards the Hofmann rearrangement of heteroaryl carboxamides to afford heteroaryl amino complexant synthons. **S.G. Wood**, J.D. Carrick
- 912.** Investigations into microwave-assisted ring-opening polymerizations of epsilon-caprolactone for polymer synthesis and curriculum development. **A.R. Polvino**, C. Brunson, **K.F. Bidema**, B.A. Van Horn
- 913.** Design and computational investigation of an aminotroponimate supported zinc catalyst designed to promote intermolecular hydroamination. **J.M. Bolinger**, R. Harris
- 914.** Development of a miniature mass spectrometer to detect volatile organic compounds. **A. Rodriguez**, S.E. Smith, A.M. Rowland, M. Gilliland
- 915.** Controlled flow synthesis of polydopamine via 3D printed resin microfluidic devices. **M. Sanchez**, **A. Arwood**, M. Gilliland
- 916.** Development of BTEX monitoring with APPI-MS using gas phase dilution apparatus with sorbent tube for gas capture/release. **E.F. Vandergriff**, D. Maglich, A. Vincent, A.M. Rowland, M.E. Anderson, M. Gilliland
- 917.** Most efficient wood grit to filter microbial present water. **L. Nguyen**, K. Zhou, D. Babalola, M. Romero-Reyes
- 918.** Viscosity analysis of thermally responsive phospholipids for microfluidic space applications. **R. Nasco**, c. folks, B. Roth, L. Casto
- 919.** Solar photodegradation of minoxidil in simulated natural water samples. **M. Armes**, W. Cory
- 920.** Preparation and complexation assays of a polythiourea host for halides. **G. Cull**, C.R. Johnson
- 921.** Fused ring poly(arylene vinylene)s via ROMP. **W. Rodriguez**
- 922.** Merkel Cell Polyomavirus small T antigen localizes to the nucleus via a noncanonical hydrophobic nuclear localization signal independent of classical or proline/tyrosine motifs. **N. Zinn**
- 923.** Investigating β -lactam prodrug selectivity. **H. Armstrong**, S.S. Angle, K.J. Franz
- 924.** Method development for the simultaneous analysis of kavalactones and flavokavains in traditional and commercial kava products. K. Coetzee, V. Lescano, **M.T. Griffin**

925. Mediation of charge transfer from CdSe quantum dots to methylene blue by cucurbit[n]uril. **K. Pierce, M. Thompson, M.R. McPhail**

926. Transition metal Heliphyrin complexes as electrocatalysts for CO₂ reduction. **E. Cameron, H. Grace, B.J. McNicholas**

927. Synthesis and characterization of glycosylated self-assembling multi-domain peptides. **T. Adesanya**

928. Solid phase peptide microwave synthesis and analytical characterization of opioid peptide derivatives containing cyclizations via Sonogashira linkages. **A. Dove, K. Feldheim, A. Odler, T. Crowley, L.A. Ramirez Jaime, B.C. Boone, K.R. Wilson**

929. Probing light- versus dark-state preferential binding of a microbial sensory photoreceptor to its transducer: Connecting structural models to signaling mechanisms. **D. Palmer, V. Trivedi**

930. Forming bonds: Expanding our ACS student chapter through outreach and opportunity. **M.G. Donahue, M. Goupalova, M. Moore, T. Khanom**

931. Cell-permeant degrader based on a PRL3 nanobody, NB91. **G. Bliss, G. Bennett, M. dela Cerna**

932. Novel cellulose ethers esters for photodegradable plastics. **L. Narby, C. Friday, K.J. Edgar**

933. Structural analysis of saccharides using the AMOEBA polarizable force field. **R. Ophof, L. Newman, V. Vaissier Welborn**

934. Transition metal doped TiO₂ nanoparticles for optimized drug delivery systems. **C. White, M. Thomas**

935. Characterization of cytosolic abundant heat-soluble G protein through preservation of alcohol dehydrogenase activity under heat stress. **A. Dixit, D. Ilkilic, C. Rigas, B.E. Christian**

936. Carbon dot synthesis and characterization using hydrophobic DES solutions. **J. Vanterpool, W. Collier, J. Jackson**

937. Synthesis and electrochemical characterization of an extended family of pyrazolato-based octanuclear iron complexes. **J. Enriquez, L. Lee, E. Lopez, P. Manfredi, A. Perez, J. Rodriguez, J. Ronquillo, L. Yantani, A.J. Rodriguez**

MONDAY EVENING

Chemistry Education Research General Program

Majestic Ballroom

T. Legron-Rodriguez, C. Randles, *Organizers*

7:00 - 9:00

938. Investigating student motivation and anxiety in traditional and active learning chemistry classrooms. **E. Negron**, C. Randles

939. A multi-channel data analysis of the relationship between test anxiety, test performance, and working memory. **M. Roshandel**, A. Evans, C. Randles

940. Can AI case studies improve lab experience for students?. **M. Veige**

941. A simple, quick experimental determination of Planck's constant. **D. Zuidema**, P. Hoobler, M.B. Kytle

942. A study on pre-service and in-service teachers' understanding of chemistry learning elements in the revised Korean national elementary science curriculum (II). **K. Young Tae**

943. A comparative analysis of the new junior high school science textbooks in Korea and Japan: Focusing on the chemistry domain and the Science and Society domain. **K. Young Tae**

944. Broaching science information ethics with K-12 students through hypothetical scenarios. **M. Lam**, A. Lebleu, C. Randles

945. A comparison of self-confidence and future outlook between forensic science students. **C. Bechard**, A. Castillo, T. Legron-Rodriguez, N. Lapeyrouse

946. Very large-scale organic chemistry lab reform. **J.D. Edwards**, J. de Gruyter Michaudel, E. Lee, C. Serrano Lugo

947. How mentors and role models convey implicit science norms to first-generation college students across three universities. **K. Hosbein**, T.T. Mafe, A.S. Boyd, E.M. Boyd, P. Vincent-Ruz, J.E. Nardo

948. Empowering the next generation of environmental stewards: A case study of the Alabama youth action for Sustainability Summit (AL-YASS). **K.L. Hayden**, R. Holifield, K. Williamson, C. Niklas

949. Twelve months of Green Chemistry at Georgia Gwinnett College. C.M. Woodbridge, **V. Sublett Breeden**, **K. Zimmermann**, J. Sloop, o. villanueva

950. Taking a magnifying glass to instructional and assessment practices at two-year postsecondary institutions: A national survey. **K. Zammit**, M. Connor, J.R. Raker

Fun in the Sun with Light Absorbing and Emitting Molecules and Materials

Majestic Ballroom

C. Brown, D. P. Harrison, *Organizers*

7:00 - 9:00

951. Approaches to a single-bridged carbazole-pyridine sensor molecule. **S. Bera**, B.J. Schmeltz, E.W. Ziegler, A.B. Brown

952. Effect of steric rigidity on the structural and photophysical properties of titanocenes. **E. McCallum**, M. Barker, R. Golden, C.D. McMillen, P.S. Wagenknecht

953. Investigating arylalkynyltitanocenes: Effect of arylalkynyl ligand electron density on excited-state character. **S. Walter**, M. Barker, J.H. Zimmerman, C.D. McMillen, P.S. Wagenknecht

954. Dual pH and fluorescence modulation with a monolithic photoacid. **R. Choudhury**

General Topics in Inorganic Chemistry

Majestic Ballroom

C. D. Chouinard, *Organizer*

7:00 - 9:00

955. Synthesis, characterization, and biomedical applications of Zn (II) Schiff base complexes. **M.K. Genamo**, A. Geremew, L. Carson

956. Synthesis, structure, and characterization of lanthanide iron sulfates. **C. Jones**

- 957.** Mixed-valent and homovalent trinuclear triangular oxovanadium complexes supported by pyrazolate ligands. **C. Gonzalez**, I. Chakraborty, R.G. Raptis
- 958.** Various non-evaporable hydrogen getters response to low hydrogen concentrations and possible contaminants for fusion applications. **H.H. Smith**, D. Clairmonte, G. Larsen, L. Angelette
- 959.** Triclinic polymorph of $(PPN)_2[Cu_2(m-Cl)_2Cl_4]$ and its thermally-controlled reversible transformation to the monoclinic one. **A. Gonzalez**, I. Chakraborty, R.G. Raptis
- 960.** Energetics of “PtPOP” cooperative oligomerization via self-stacking or “metal-INORGANIC framework” formation. **N. Davange**
- 961.** Overcoming aurophilic constraints to assemble a gold(I) dinuclear cluster from a gold(II) precursor featuring dissimilar N, N- and C, C-donor ligands. **D.Y. Melgarejo**, G.M. Chiarella, J.P. Fackler
- 962.** Survey of the expanded trinuclear iron-oxo pyrazolato series: X-ray crystal structures, spectroscopy, and electrochemistry. **J.R. Boedicker**, R.G. Raptis, I. Chakraborty
- 963.** Tetrameric Bis-L-Histidine–Bis-Salicylaldehyde Di-Copper(II) complex: A green route to chiral di-copper complexes with metalloenzyme-like properties. **G.M. Chiarella**, D.T. Toole
- 964.** Rational design of a yne-ol ligand enables access to a double-tethered metallacyclobutadiene catalyst for cyclic polymer synthesis. **V. Chakravorty**, C. Sever, I. Ghiviriga, A.S. Veige
- 965.** Investigating solvent and anion effects on the (spectro-)electrochemical properties of tert-butyl substituted cobalt phthalocyanine. **B. Muldowney**, H. Grace, B.J. McNicholas, V. Nemykin
- 966.** Photocatalytic dye degradation via TiO_2 hexaniobate nanopeapods. **L.A. LeBan**, C. Rutter, M. Kelch, P. Zito, J.B. Wiley
- 967.** Investigation of spin clock transitions in $Ni(II)$ $S=1$ complexes. **r.M. perez**, M. Gakiya Teruya, M. Shatruk
- 968.** Transition metal coordinates of a bulky weakly coordinating anion. **C. Avento**, R. Wehmschulte
- 969.** Electrolyte effects in Prussian blue analog-based batteries. **A. Ellis**, R. Arnold, N. Parek, B.J. McNicholas
- 970.** Investigation of the oxidation kinetics of $Cu(I)$ bound to model peptides with hyperactive Ctr1-14 mutants. **E. Post**, **K. Ruth**, J. Lee, **J. Pushie**, **K. Haas**

- 971.** Characterization of f-element isotopes using an ionic liquid resin. **M. Simms**, B. Schrage, F.D. White
- 972.** Investigation of trigonal bipyramidal iron(II) and octahedral vanadium(III) complexes as candidates for molecular quantum clock transition qubits. **B.O. Wilkins**, R. Nabi, M. Shatruk
- 973.** Ligand-to-ligand charge transfer LL'CT transitions in square-planar metal-bipyridyl complexes of heteroatom-substituted maltol derivatives. **M. Usman**, P.J. Farmer, M. Omary, K.L. Shuford
- 974.** Photophysical characterization and ligand release of a photoactive bipyridyl ruthenium(II)–nicotinamide complex within polyhedral zinc metal organic frameworks. **D. Sellers**, R.W. Larsen
- 975.** Photophysical studies of MOF encapsulated ruthenium polyimines for light activated drug delivery. **M. Senn**, R.W. Larsen
- 976.** Carbene ring expansion and decarbonization mediated by magnesium. **M. Mamta**, S. Yruegas
- 977.** Schiff base transition metal complexes as symmetric redox flow battery electrolytes. **W. McDearmon**, B.J. McNicholas
- 978.** Investigation of the structure of water in salt solutions with beta radiation. **J.W. Hall**, B.P. LaVigne, G. Thompson
- 979.** Spectroscopic characterization of equine skeletal muscle myoglobin mineralized in a zeolitic imidazolate framework. **B. Wolfe**, R.W. Larsen
- 980.** Systematic design of Schiff-base ligands for transition metal complexes: Synthesis and characterization. **C. Crockem**, D. Lomax, D. Cooper, L. Freeman-Jordan, T. Citizen, M. Gembicky, P. Baran, Z. Baranova
- 981.** Developing synthetic routes to cycloquinquepyridine ligands. **M. Gajula**, S.G. Towolawi, C.R. Knust, C. Bejger, T.A. Schmedake
- 982.** Investigation of aromatic isocyanides as ligands for all-ferrous iron-sulfur clusters. **T. Tsung**, T. Sullivan, C. Bejger
- 983.** Coordination chemistry of BODDI ligands with aluminum: Structural and spectroscopic insights. **B. Khatri**, J.D. Gorden

Undergraduate Research at SERMACS/SWRM

Majestic Ballroom

C. D. Chouinard, *Organizer*

7:00 - 9:00

984. Atoms-in-molecules survey of the nature of bonding in homoleptic transition metal methyl molecules. **J. Edwards**, D.A. Clabo

985. Synthesis and characterization of silver/alkali-metal Dion-Jacobson double-layered perovskite solid solutions, $\text{Ag}_{1-x}\text{A}_x\text{LaNb}_2\text{O}_7$ ($\text{A} = \text{Na}, \text{K}, \text{Rb}; 0 \leq x \leq 1.0$). **M. Kelch**, R. Bhuvan, J. Gomez, J.B. Wiley

986. Environmental friendly highly efficient disinfectant in health care facilities: Iron-based ferrate molecule. **M. Nadagouda**, C. Jinadatha, V.K. Sharma

987. Chain length effects on acid-catalyzed silyl ether exchange dynamics in covalent adaptable networks. **H. Touloukian**, B. El-Zaatari, K. Lee, V. Pete, C. Middleton, M. Corkey

988. Synthesis and characterization of a series of para-substituted-4-phenyl-1H-pyrazoles. **N. Pino**, **F. Benitez-Elcadi**, **N. Robinson**, **J. Rodriguez**, **A. Syed**, A.J. Rodriguez

989. Designing redox-responsive polymer nanoparticles by encapsulating therapeutic proteins. **B. Duke**, R.S. Hikkaduwa Koralege

990. Mimicking the active site of nitric oxide reductase: A novel system for studying the reduction of nitric oxide. **N.S. Chandler**, A. Awasthi, G.B. Wijeratne

991. Synthesizing aluminum oxide titanium aqueous solutions to create dielectric thin films. **M. Cruz**, H. Cregar, M. Thomas

992. Method development for the determination of carbohydrate ratios in honey using optical activity. **A. Fernandez**, **S. Rodriguez-Santiago**, M. McAlpine, A.J. Rodriguez

993. Synergistic nanocomplexes: Green synthesis of silver nanoparticles and their encapsulation in chitosan-alginate nanocomplex for wound healing and targeted drug release. **L. Mitchell**, T.W. Hanks, **S. Jain**

994. Chitosan/Alginate encapsulated ZnO nanoparticles: Synthesis, characterization, and diverse applications. **A. McGill**, T.W. Hanks, **S. Jain**

995. Investigation of the impact of tea and sugar type on kombucha fermentation products. **M. Cook**, D. Budner

- 996.** Observations of rosette and broccoli-like formations on titanium microfibers. **C. Urquhart**, M. Korn, H. Medina
- 997.** Preparation of phenylated ruthenium complexes supported by 4',5,5''-tri-tert-butyl-2,2':6,2''-terpyridine (tBu₃-terpy): Structure, reactivity and characterization. **E.C. Teixeira Arantes**, B.P. Quillian, C.W. Padgett
- 998.** Utilizing UV-Vis spectroscopy to detect and quantify ionizing radiation in water. **M.W. Simmons**
- 999.** Iron-based metal-organic frameworks for the separation of lanthanides. **M. Patterson**
- 1000.** Utilizing isorecticular metal-organic frameworks for lanthanide separations. **X. Pike**
- 1001.** Employing MIL series of metal organic frameworks for the separation of lanthanides. **S. Hodge**
- 1002.** Expanding the separation capabilities of ion mobility-mass spectrometry using novel derivatization methods. **S. Fernandez**, H. Sabatini, C. Chouinard
- 1003.** Crystallographic and electrochemical investigation of europium complexes with curcumin and ascorbic acid. **C.T. Connell**
- 1004.** In silico design of anti-inflammatory peptides to mitigate oxidative stress-induced neuroinflammation. **K. Brunson**, **D.R. Major**
- 1005.** Selective estrogen receptor modulators (SERMS): differentiating geometric isomers with ion mobility-mass spectrometry (IM-MS). **K.S. Ludwigsen**, H. Sabatini, C.D. Chouinard
- 1006.** Computational analysis of active site modifications in [NiFe] hydrogenase for enhanced biomimetic catalysts using density functional theory. **J.S. Dodd**, **A.E. King**, M.E. McGreal
- 1007.** Structure and function of surfactant decorated air/liquid interfaces in direct air capture of carbon dioxide. **S. Decatur**, U. Premadasa, Y. Ma, B. Doughty
- 1008.** [Ni-Fe] hydrogenase: A computational study of modifications around the Ni center and the effect on the active site and reactivity of the enzyme. **P.N. Keshi**, M.E. McGreal
- 1009.** Developing side chain engineering strategies to allow conjugated polymers processability in green solvent. **A. Wold**, R. Miller, J.J. Rech
- 1010.** Chemical modulation of stress resilience: The effects of Fe²⁺ and Mn²⁺ on D. radiodurans. **J. Chung-Samuels**, M. dela Cerna
- 1011.** Proton-driven phosphoryl transfer in β -phosphoglucomutase. **G. Camp**, J. Liang, V. Vaissier Welborn

- 1012.** Computational analysis of the dissociation kinetics of the intrinsically disordered protein containing NTAIL-XD complex of the measles virus through the lens of collective variable selection. **R.J. Lee**, D. Shrestha, O. Valsson
- 1013.** Novel synthesis of a cellulose based nano-resins (CNR). **A. Pham**, J. Dong, R. Gade, J.C. Poler
- 1014.** Structure-guided development of next-generation PP5 inhibitors. **L.A. Orr**, B. Baxter, H. Lawley, M. Marmande, K. Mayeaux, D. Forbes
- 1015.** Detection of nitroaromatic explosives using fluorescent porphyrins entrapped in silica sol-gel matrix. **S. Meere**, C.H. Lisse
- 1016.** Thermal destabilization of a synthesized mitoxantrone-DNA duplex. **S.M. Jenkinson**, M.P. Stone, N. Abo Omar
- 1017.** Next generation lipid-like nanoparticles: Application of traceless solid-phase chemistry. **C.G. Lippold**
- 1018.** Purification of the O-methyltransferase encoded by the *spd7* gene from *Pseudopithomyces chartarum* involved in the biosynthesis of sporidesmin. **J. Grillo**, J.J. Reddick
- 1019.** Assessing the activity of a novel poly(aspartic acid) hydrolase and its ability to cleave oligo(aspartic acid). **S. Song**, T. Black, M. Weiland
- 1020.** Science behind the glow: Educating the public on skin care chemistry. **B. Dassow**, S. Meere, C.H. Lisse
- 1021.** Analysis of geographical origin of honey through antioxidant potential. **K.G. Clemens**
- 1022.** Exploring computational folding of the unstructured C-terminal domain topoisomerase II β by AlphaFold3. **X.L. Falkenheim**, J. Deweese
- 1023.** Synthesis of macro molecules for DNA sequencing applications. **C. Chirombe**, S. Fang, F. Razzaq, M. Perrera
- 1024.** Rapid identification and quantitation of arecoline in betel nut extracts via HPLC-UV. **C. Fisher**, V. Lescano, T. Griffin
- 1025.** Electrochemical studies of cobalt and nickel deposition. **M. Simmons**, G. Andres, V. Sundaresan
- 1026.** Investigating photo-ionic responses in the mixed ionic-electronic conductors $\text{Pr}_{0.05}\text{Ce}_{0.95}\text{O}_{2-x}$ and $\text{SrTi}_{0.85}\text{Co}_{0.15}\text{O}_{3-y}$. **L. Liu**, V. Woo, H. Huang, N. Perry

TUESDAY MORNING

Advances in Electrochemistry and Bioelectrochemistry

Harbor B

S. Martic, O. Simoska, *Organizers*
M. Jackson, *Presiding*

8:00 Welcome and Introduction.

8:05 1027. Numeric analysis of the bioenergy production potential of agricultural wastes using a microbial fuel cell coupled with anaerobic digestion. **S. CHAKRABORTY**, L. Wang

8:25 1028. Observation of bioelectric potentials of microorganisms via microbial fuel cell. **D. Bing**

8:45 1029. Disorder-driven conductivity: Mixed-anion engineering of Li_2HfCl_6 for advanced solid-state electrolytes. **T. Dikella Gamaralalage**, Y. Hu, B. Ogbolu

9:05 Intermission.

9:20 1030. Tuning nonaqueous electrochemical CO_2 reduction using the steric control of proton sources. **W. Guo**

9:40 1031. How do cations promote CO_2 reduction at the electrochemical interface. **X. Feng**

10:00 1032. Structure evolution of Cu_2S into microneedles $\text{Cu}(\text{OH})_2/\text{Cu}_x\text{O}$ as highly stable and active HER catalyst. **M.A. Ramirez Ubillus**, Z. Mohayman, A. Kushima, Y. Yang, L. Zhai

10:20 Intermission.

10:40 1033. Simultaneous voltammetric measurements of serotonin and glucose dynamics at a single site in real-time. **K. Turner**, J.M. Berger, G.S. McCarty, L.A. Sombers

11:00 1034. Bioelectrochemistry of intrinsically disordered proteins. **S. Martic**

11:20 1035. Enhancing sensitivity and selectivity in neurotransmitter sensing with Nafion coated double bore electrodes. **A. Daninger**, P. Pathirathna

11:40 1036. Co-detection of DA and glutamate on an enzyme-modified microbiosensor using fast scan cyclic voltammetry in rat striatum. **K. Linder**, J.M. Berger, L. Kimble, E. Scardina, G.S. McCarty, L.A. Sombers

Advances in Microscale Bioanalysis

Magnolia C

C. Baker, L. Casto, *Organizers, Presiding*

8:00 Introduction.

8:05 1037. Modeling and design of pneumatic circuits for plug-and-play microfluidic flow control. **C.J. Easley**, J.Y. Seow

8:35 1038. Design of thermally-responsive nanocomposites for advancements in microfluidic surface-enhanced Raman spectroscopy applications. **c. folks**, N. Ghiloria, L. Casto

8:55 1039. Bubble perfusion brain slice culture with single-droplet stimulus delivery in a 3D printed microfluidic device. **G. Gutierrez**, R. Ortiz, V. Norman, R. Prosser, C. Baker

9:15 1040. Fourier transformation-based detection for trace analysis of biosignatures in microfluidic systems. **N. Alsharid**, L. Casto

9:35 1041. Fluorescence lifetime assay for glucagon on a microfluidic device. **N. Pazos**, M.G. Roper

10:05 Break.

10:10 1042. Paper-in-polymer-pond (PiPP) hybrid microfluidic microplates for Ultrasensitive colorimetric detection of multiple cancer biomarkers. S. Sharma, **X. Li**

10:40 1043. Development of a multi-detector approach to Taylor dispersion analysis: High precision molecular sizing. **H. Bourger**, C. Baker

11:00 1044. Characterization of smart plasmonic nanocomposites. **B. Roth**, c. folks, R. Nasco, L. Casto

11:20 1045. Modulation of negative differential resistance through conical nanopipette configurations for ionic memristor applications. **Y. Balogun**, R. Yang, G. Wang

11:40 1046. Segmented injection patterning for microfluidic fourier transform detection. **M. Suchi**, **L. Casto**

Bioinorganic Chemistry in the Southeast and Southwest Regions of ACS

Nautilus B

J. D. Caranto, *Organizer*

S. Hematian, G. B. Wijeratne, *Presiding*

8:00 Opening Remarks.

8:10 1047. Kinetic and spectroscopic study of tetrahydrodipicolinate *N*-succinyltransferase (DapD) from *Serratia marcescens* and its inactivation by Cu²⁺. **C.M. Johnson**, B. Hayes, M. Zuelzke, E. Olson, H. Hollingsworth, M.M. Lockart

8:30 1048. Molecular basis for peptide nitration by a heme enzyme in RiPP biosynthesis. **Y. Wang**

8:50 1049. Heme peroxo intermediates: A missing piece in comprehending heme mediated biological transformations. S. Rajapakse, S. Jayawardana, P. Mondal, D. Udukhalage, **G.B. Wijeratne**

9:10 1050. X-ray spectroscopy methods to study selenoenzymes. **K. Rush**, L. Hall, E. De Souza, S. Short, J. Cáceres, B. Greene

9:30 1051. Copper(II) complexes based-phenolate as potential chemotherapeutic agents in the fight against cancer. **S.S. Massoud**, F. Louka

9:50 Coffee Break.

10:10 1052. Quantifying antioxidant activity of hydrophobic compounds using metal-mediated DNA damage. A.A. Gaertner, N. Perron, H. Gordhan, D.C. Whitehead, **J.L. Brumaghim**

10:30 1053. Design of new N-Salicylidene alanine transition metal Schiff-base complexes with Zn(II), Mn(II), Fe(II), and Fe(III): Synthesis, preliminary characterization, toxicity, and computational studies of the potential metal-ligand binding sites. **J.T. Titah**

10:50 1054. Drug delivery using layered zirconium phosphate nanomaterials. **J.L. Colaoacute;n**

11:10 1055. Cytotoxic activity of new silver complexes with N-heterocyclic thiones and selones. **D. Rabinovich**

11:30 Closing Remarks.

Colloids, Surfactants, Interfaces and Nanomaterials

Harbor A

A. Mallia, *Organizer, Presiding*

8:00 Opening Remarks.

8:05 1056. Solvent-driven non-catalytic formation of polyethylene-based quantum dots with tunable optical properties. **B. Naumann**, M. Reza

8:25 1057. Engineering resilin-like peptides conjugated with gold-binding domain for nanomaterial synthesis and characterization. **J. Jose**, M.R. Knecht, T. Walsh

8:45 1058. Acidic zeolite-driven porosity engineering in organic bases via surface sacrifice. **Z. Yang**, L. Qiu, S. Dai

9:05 1059. RAFT aqueous emulsion polymerization observed by liquid cell transmission electron microscopy. **M. Lott**, N.D. Rosenmann, C.B. Eades, J. Bowman, F. Merlino, N.C. Gianneschi, B.S. Sumerlin

9:25 1060. Novel synthesis of rare-earth alloyed/ doped La_2S_3 nanocrystals. **M. Gamamada Liyanage**, A. Regan, S. Creutz

9:45 Break.

10:00 1061. Synthesis and characterization of silver nanoparticle embedded MOF-808 and assessment of broad-spectrum antibacterial activity. **J. Carrier**, L. Biswal, C. Buzzi, S. Rodriguez, M. Vuong, A. Pereira, D. Radu, C. Lai

10:20 1062. Surfactant-polymer complexes for stabilizing blast furnace slag-based drilling fluid. **G. Jian**, A. Santra, K. Johnson, R. Martinez

10:40 1063. Photolytic-fuel driven dissipative self assembly of hydrogel networks. **D. Conrad**, A. Pineda Hernandez, A. Rosales, D.J. Milliron, E.V. Anslyn

11:00 1064. Probing evaporation-induced crystal emergence in reactive nanofluids *via in situ* synchrotron X-ray diffraction. **P. Wasik**, W.H. Briscoe

General Topics in Environmental Chemistry

Nautilus A

C. D. Chouinard, *Organizer*

M. Brown, *Presiding*

8:00 1065. Sustainable recovery of phytic acid from wheat bran via aqueous extraction. **L. Fronchetti Guidugli**, M. Reza

8:20 1066. Synthesis of alginate-chitosan films with antimicrobial agents for food package applications. **D. Sanchez-Rivera**

8:40 1067. Cytotoxicity of freebase nicotine and its analogs using cellular and statistical methods. **K.L. Griffin**, T. Jefferis, D. Pruss, R.X. Sturdivant, R.M. Strongin, C.M. Sayes

9:00 1068. Temperature-swing solvent extraction of fracking produced water: Efficiency and viability. **W. Den**, P. Vicaria, H. Chen

9:20 1069. Sustainable methods for upcycling plastic waste into quantum dot-based polymers. **B. Naumann**, M. Reza

9:40 1070. Substitution of natural gypsum by raw phosphogypsum in CPJ 45 cement: Mechanical and environmental assessment. **M. ADEL**

10:00 Break.

10:20 1071. Tracking the reaction networks of acetaldehyde oxide and glyoxal oxide Criegee intermediates in the ozone-assisted oxidation of crotonaldehyde. **A. DeCecco**, A.R. Conrad, A.M. Floyd, N. Moody, A. Jasper, N. Hansen, P. Dagaut, D.M. Popolan-Vaida

10:40 1072. Portable mass spectrometry for VOC monitoring. A.M. Rowland, S.E. Smith, A. Rodriguez, E.F. Vandergriff, D. Maglich, A. Vincent, K.P. Schultze, M.E. Anderson, **M. Gilliland**

11:00 1073. Development of fluorescence probe spectroscopy to study the phase state, viscosity, and pH of aerosols. **A. Gibbons**, V. Cover, P.E. Ohno

11:20 1074. Analysis of the ashes of the peels of bananas grown in Burundi, Africa. **B. Miburo**

11:40 1075. In-depth literature review focused on PFAS (per- and poly-fluoroalkyl substances) chemicals and PCB's (polychlorinated biphenyls). **S. Begum**

General Topics in Inorganic Chemistry

Pelican Room

C. D. Chouinard, *Organizer*

T. P. Brewster, *Presiding*

8:00 1076. A machine learning approach to co-crystal synthesis. **L.A. Garcia**, C.D. McMillen, W.T. Pennington

8:20 1077. MXene/graphitic carbon nitride-supported metal selenide for flexible supercapacitor. **B.P. Bastakoti**

8:40 1078. Beyond classical directing groups: A transient strategy for C-H functionalization with traditional protecting groups. **A.E. Lobos**

9:00 1079. Lewis acid effects in axially-substituted transition metal phthalocyanines. **K. Tuggle**, B.J. McNicholas

9:20 1081. A comparative study of the structure, optical, dielectric, and alternating current ionic conductivity of A₂B₃B'O₈ oxides synthesized by solid-state reaction. **D. Doughri**, A. El Bouari, B. Mehdaoui

9:40 Break.

9:40 1082. Hydroboration of carbonyl compounds with a cobalt(II) complex featuring a non-trigonal phosphorus center. **P. Weerasuriya**, E. Hill

10:00 1083. Synthesis and reactivity study of carbene-metaphosphate adducts. **F. Zhai**

10:20 1084. Triangular, trinuclear oxo-pyrazolato transition metal complexes. **R.G. Raptis**

10:40 1085. *d*-orbital participation in alkaline earth complexes with NH₃ and PH₃. **E. Alvarez**, A. Vela

11:00 1086. Phospho-vanadate glasses with dual ionic-electronic conduction as potential cathode materials. **F. LAHNINE**, L. Ouachouo, I. Chaiboub, A. Chakir, L. Bih, A. El Bouari

Innovations in Inorganic Materials from Nanocrystals to Bulk Crystal Growth

Flamingo Room

V. Klepov, T. T. Salguero, *Organizers, Presiding*

8:00 1087. Evolution of magnetic ordering in intercalated transition metal dichalcogenides, $V_{1.2-x}Cr_xTe_2$. **M. Adams**, G. Ciani, A. Mila, C. Huang, M. Shatruk

8:15 1088. $Eu_3Zn_2As_4$ - a new Zintl phase exhibiting complex transport properties and magnetic anisotropy. **O. Pokhvata**, S. Baranets, M. Ishtiyak

8:30 1089. Placing Eu^{3+} in a chiral polar lattice for quantum memory candidates. **U.V. Chinaegbomkpa**, E.E. Oyeka, X. Huai, R. Kamadurai, M. Liang, H. Sanabria, T.T. Tran

8:45 1090. Structures, magnetic behavior, and thermoelectric properties of silicide Zintl phases in the $(Eu/Yb/Mg)_2Si$ system. **O.S. Araoyinbo**, K. Wei, S. Lattner

9:00 1091. Chemical stabilization of cubic halide perovskites. **V. Klepov**

9:20 1092. Coulomb energy density of bonds and superconductivity. **S. Benjamin**

9:40 1093. Structure-property relationships of metastable semiconductors at the synthetic frontiers. **P.A. Maggard**

10:00 Intermission.

10:10 1094. Does anion mixing influence the structure and optical properties of materials?. **R.T. Macaluso**

10:30 1095. Crystal growth controlled by melt/solution structure. **J.D. Martin**

10:50 1096. Unusual magnetic and transport properties in the novel Eu-bearing Zintl phases. **S. Baranets**, O. Pokhvata

11:10 1097. Structural and magnetism insights into a dy-containing i-MAX $(Mo_{2/3}Dy_{1/3})_2AlC$. **B. Rai**, C. Mizzi, L. Breton, A. Bretana, C. Housley, B. Maiorov, B. Gautam, M.D. Frontzek, S. Calder

11:30 1098. Unraveling crystal growth dynamics through neutron scattering. **M.D. Frontzek**, S. Chen, M. Ceretti, A. Marsicano, W. Paulus

11:50 1099. Anthracene as a reactant for the metal flux growth of new intermetallic carbides and hydrides. **S.E. Lattner**

PMSE/POLY Symposium: Separation and Long-term Sustainability

Magnolia A

Cosponsored by PMSE and POLY

R. Foudazi, *Organizer, Presiding*

8:00 1100. Polymer membranes for large-scale energy conversion and storage. **M.A. Hickner**

8:25 1101. Inter-crosslinked membranes for efficient organic solvent separations exhibiting unprecedented stability. L.C. Condes, M.S. Tavera Villamizar, A. Gali, **M. Galizia**

8:50 1102. Flexible fluorine-free alternatives to Nafion for next generation fuel cell membranes. C. Leo, S. Chinnadurai, W. Neary, A.L. Frischknecht, K.I. Winey, **J.G. Kennemur**

9:15 1103. Cyclic polyolefins: Insights and applications. **G.I. Pedro**, J. Marquez, A. Tamura, R. Yadav, B.S. Sumerlin, A.M. Evans, A.S. Veige

9:35 1104. High molecular weight linear Poly-dicyclopentadiene (LPDCPD) and its copolymers. **H.J. Schanz**, F. Knotzsch, C.G. Lewis

9:55 1105. Polyolefin innovations for industrial decarbonization. **Z. Qiang**

10:20 Intermission: Coffee Break.

10:35 1106. Thiocracking as a mechanism for the chemical recycling of thermosetting plastics. **C. Shivers**, R.C. Smith, A. Tennyson

10:55 1107. Designing sulfur-rich composites from brown grease: Esterification as a tool for enhancing homogeneity and upcycled mass economy. **B. Guinati**, S. Wijeyatunga, A.D. Smith, A. Tennyson, R.C. Smith

11:15 1108. Dynamic thiol-ene polymers based on bifunctional silyl ether exchanges. **B. El-Zaatari**

11:35 1109. Modeling powder consolidation during polymer selective laser sintering. **S.M. Neidhart**

11:55 Intermission: Poster Awards.

Ultrafast and Nonlinear Spectroscopy

Nautilus C

B. Kudisch, P. E. Ohno, S. T. Roberts, *Organizers, Presiding*

8:00 1110. Spectroscopic approaches for characterizing lipid-protein interactions. **A.W. Smith**, R. Villaber, P. Singh

8:30 1111. Measuring depth-dependent rigidity of a lipid bilayer interior and interfacial region with FTIR and 2DIR spectroscopies. M. Islam, S.U. Nawagamuwage, S.S. Efty, **I.V. Rubtsov**

9:00 Break.

9:15 1112. New advances in 2D spectroscopies and microscopies for studying exciton dynamics in thin films and devices. **M.T. Zanni**

9:45 1113. Quantifying protein secondary structure with transition dipole strength analysis. **A. Cao**, L. Weissman, L.E. Buchanan

10:15 Break.

10:30 1114. Using triple bonds and ultrafast IR spectroscopy to study the structure and dynamics of molecularly heterogeneous liquids. L. Sepulveda, S. Deshmukh, **D.G. Kuroda**

11:00 1115. Probing energy transfer through low-energy states in photosynthetic cyanobacteria and diatoms. **S.C. Massey**

11:30 1116. Ultrafast X-ray imaging of coherently controlled molecular dynamics in real space and time. **T. Hopper**, A. Natan

Chemical Biology Innovations for Therapeutics

Cypress B

Y. Ding, Y. Zheng, *Organizers, Presiding*

8:15 Opening Remarks.

8:20 1117. Discovery of positive allosteric modulators of Guanylyl cyclase B for targeting cardiac fibrosis and cardiovascular disease. **S. Peddibhotla**, X. Ma, J.C. Burnett Jr, S. Malany, J.S. Sangaralingham

8:40 1118. Fragment-based drug design to optimize an antibacterial prodrug. **S.S. Angle**, A. Duda, C. Villalobos, L. You, K.J. Franz

8:55 1119. Structural and functional characterization of nsP2 protease inhibitors targeting alphaviruses. **J. Ojobor**, O.S. Adeyinka, D. Metibemu, O. Crown, I.V. Ogungbe

9:10 1120. Novel caffeic acid derivatives inhibit in vitro osteoclastogenesis of murine macrophage cell line RAW 264.7. **L. Clark**, S. Szabo, C. Martinez, A. Chand, K. Heo, V.V. Mody, S. Taval

9:25 1121. Targeting 2', 3'-cyclic nucleotide signaling for the antimicrobial and anticancer drug development. **S.S. Chauhan**

9:45 Break.

10:05 1122. Unlocking new anthelmintic targets: Characterization of a novel serotonin-responsive GPCR from *Schistosoma mansoni*. E. Bistran, C.M. Rohr, A.M. Bland, J.S. Marchant, **D.J. Sprague**

10:25 1124. Preclinical investigations of non-structural protein 2 (nsP2) protease inhibitors as therapeutics for alphavirus infections. **I.V. Ogungbe**, **O.S. Adeyinka**, C. Ojobor, T. Hampton, O. Crown, D. Metibemu

10:45 1125. DMS-MAPseq with error analysis. **E. Osei-Frempong**, M. Mansfield, L. Moore, T. Nguyen, L. Hagler

11:00 1126. mAb production using Ambr® 250 high-throughput bioreactors: DoE guided optimization of critical process parameters and mapping. **A. Bordoloi**, F. Talebnia Rowshan

11:20 Closing Remarks.

Plasmonic Nanoparticles and Applications--Synthesis and Characterizations

Cypress A

Y. Wang, S. Zou, *Organizers*

J. Hao, G. F. Strouse, *Presiding*

8:15 1127. Precise control over the spatial arrangement of copper selenide on au nanobipyramids by site-selective growth for dual plasmonic nano-architectures. A. Nguyen, **H. Jing**

8:40 1128. Nano-plasmonics in layered van der Waals heterostructures. **G. Ni**

9:05 1129. Patterning wet-chemical synthesized nanoparticles for plasmonic metamaterials. **N. Chiang**

9:30 1130. Synthesis and application of one-dimensional colloidal plasmonic nanocomposites. **G. Chen**

9:55 coffee break.

10:15 1131. Influence of wall thickness on thermal stability of silver-gold alloyed nanocages. **S. Shao**, X. Sun, J. Zhou, X. Xia

10:40 1132. n-type Cd₂SnO₄ Nanocrystals: an antisite driven plasmonic semiconductor nanocrystal. **G.F. Strouse**

11:05 1133. Impact of size on plasmonic behavior in Cd₂SnO₄ nanospinels. **S.D. Bennett**

11:25 1134. Defect modulation in Cd₂SnO₄ nanomaterials: Exploring thermal and chemical routes to plasmonic control. **M.A. Amane**, G.F. Strouse

Structures and Properties of Photoactive Materials

Harbor C

T. Hopper, D. Zhang, S. Zou, *Organizers*

P. Li, C. Schaack, *Presiding*

8:30 1135. Semiconductor artificial atoms: Programming with atomic precision. **C. Zeng**

8:55 1136. Geometrically flexible 3D nanocarbon. **P. Li**

9:20 1137. Copper tetrathiovanadate (Cu_3VS_4) based absorbers: A solution-processed route to next-gen solar devices. **L. Biswal**, N. Kaur, C. Lai, D. Radu

9:35 1138. Readily accessible, versatile, and adaptive biaxially chiral chromophores. **C. Schaack**

10:00 Coffee break.

10:15 1139. Enhancing the capability of ISARS spectroscopy for quantifying UV-Vis absorption and scattering extinction in solutions. **J. McEachin**, P. Wathudura, D. Zhang

10:30 1140. In-situ optical monitoring of molecular self-assembly using a multitrack linearly polarized spectrometer: TSPP as a model system. **R. Yan**

10:45 1141. Intermolecular interactions in hybrid halide compounds and their influence on the optical properties. **V. Klepov**, S. Novikov

11:10 1142. Advances and challenges in characterization of photoactive materials: From absorption and scattering to emission. **D. Zhang**

Advancing Extraction and Separation Techniques for Food and Environmental Analysis

Cypress C

N. S. Chong, *Organizer*

Y. Foo Wong, *Presiding*

9:00 Opening Remarks.

9:05 1143. Levels of per- and polyfluoroalkyl substances (PFAS) in the Elk River watershed, Tennessee. **M. Hamilton**, O. Ailsworth, R. Chauhan, D. Gouni, T. Kanagasabai, N. Chong, P. Nde, S. Hunyadi Murph, A. Shanker, A. Ramesh

9:25 1144. Co-solvothermal liquefaction of food waste for sustainable biocrude oil production. **R. Bhowmick**, M. Reza

9:45 1145. Green chemistry in action: Solvent screening and kinetic modeling for sustainable soybean oil extraction. **S. Dharmarajan**, S. Ketyarath, D. Hoffman

10:05 Break.

10:20 1146. Dispersive liquid-liquid microextraction coupled with high-resolution separation techniques for analyzing fatty acids and phenolic compounds in complex food matrices. **Y. Wong**, A. Al Wade, A. Zaid, N. Chong, P.J. Marriott

10:40 1147. Automated sample preparation and analysis of cannabis samples. **S. Neihardt**, D. Reed, C. Kresko, K. Wiederin

11:00 1148. Highly efficient extraction protocol for metabolic profile analysis of avocado mesocarp samples using LC-MS. A. Altomare, N. Anyiam, **Q. Huo**, B. Freeman, S. Eltaher, G. Ali

11:20 1149. Enhancement of the microwave-assisted flavonoid and phenolic extraction method from *Datura metel* (L.) leaves using Taguchi L9 orthogonal design. **R. Samanta**

Chemistry Education Research General Program

Magnolia B

T. Legron-Rodriguez, C. Randles, *Organizers, Presiding*

9:00 Intro.

9:05 1150. Elevating faculty development: The power of live student focus groups. **M. Romero-Reyes**, A. Campbell

9:25 1151. International perspectives on student partnership: transferable principles for STEM belonging from UK higher education. **T. Ritchie**, I. Hide-Wright, A. Alcock

9:45 1152. Adoption of a variety of modalities for effectively teaching inorganic chemistry lab. **B. Sigdel Regmi**, C.J. Ohrenberg

10:05 1153. Assessing student understanding of experimental errors using a simple and sustainable water measurement experiment. **D. Dennis**, C. Disney, T. Legron-Rodriguez

10:25 1154. Green chemistry in practise: Zero hazardous waste laboratory exercise for undergraduate laboratories developed in cooperation with undergraduates. **R. Brosky**

10:45 1155. Reductive amination through a greener lens: A DCM-free undergraduate lab experiment. **J.E. Dannatt**

11:05 1156. Redesigning the biochemistry lab into a full-semester experience: Engagement, alignment, lessons learned, and next steps. **M. Shannon**, J. Simmons

11:25 1157. Inorganic lab sequence development: Mimicking the creation, characterization, and structural determination of new metal complexes in a research environment. **C.J. Ohrenberg**, B. Sigdel Regmi, D. Guven

11:45 1158. A laboratory module for differentiating absorption, scattering, and fluorescence in UV-Vis spectroscopy. **C.T. Jurgenson**, D. Zhang, P. Wathudura

Functional Polymers: Synthetic Methodologies and Applications

Majestic Ballroom

M. C. Stefan, N. V. Tsarevsky, *Organizers*

10:00 - 12:00

1159. Preparation and cement bonding performance of hydrogel-resin. **E. Contreras**

1160. Cyclic olefin copolymer based anion exchange membranes for fuel cells and water electrolysis. H. Park, J. Jeon, P. Nellopalli, D.P. Leonard, S.Y. Kang, Y. Kim, C. Bae, **A. McKnight**

1161. Low-catalyst-concentration atom transfer radical copolymerization of lipoates with methacrylates. **L. Garcia, H. Kim**, A. Su, N.V. Tsarevsky

1162. 3D UV printing of polymeric ionic liquids with gold nanoparticle. **S. Ferrufino Amador**

1163. Adsorption and kinetic analysis of zeolite graft polymers. **J.P. Coleman, R. Perla Benitez**, J.C. Poler

1164. Kinetic and adsorption performance analysis of zeolite nanoresins (ZNRs). J. Coleman, **R.M. Perla**, J.C. Poler

1165. Detection of heavy metals through the use of Tetra hydroxyphenyl porphyrin-doped silica sol-gels. **M. Collins**, K.C. McGill, C.H. Lisse

1166. Porous organometallic polymers via iClick. **N. Campbell**, A. Veige

General Topics in Biochemistry

Majestic Ballroom

C. D. Chouinard, *Organizer*

10:00 - 12:00

1167. Conjugation of NAD-like Species with glyceraldehyde 3-phosphate dehydrogenase. **B. English**, L. Jayasena

1168. Novel generation of trimethoxychalcone-based pyrazolo[3,4-d]pyrimidines: Design, synthesis and biological evaluation as potent EGFR and VEGFR-2 dual inhibitors. **M. Mahnashi**

1169. An outer-sphere threonine residue is critical for NO-dependent tryptophan nitration by the cytochrome P450, TxtE. **K. Baez**, C.P. Martin, Y. Ding, J.D. Caranto

1170. Metabolomic profiling of Taraxacum kok-saghyz reveals tissue-specific bioactive compounds with therapeutic potential. **M. Tan**, D. Swiger, C. Jeffrey

1171. Exploring the structure and bioactivity of naturally secreted bacterial peptidoglycan fragments. **Y. Liang**

1172. Design and synthesis of Diarylpiperidinone conjugates as potential therapies for skin cancer. **F. Ferguson**, S.S. Panda

1173. Development of a benzothiazole-sulfone cleavable linker for peptides. **Z.D. Ruighaver**, C.R. Shugrue

1174. Dynamic and thermodynamic characterization of Ca^{2+} recognition by EF hands in NCS proteins. **M. Reyes**, D. Cuervo, M. Alam, J. Miksovská

1175. Role of nuclear localization in the transformative properties of the Merkel cell polyomavirus small tumor antigen. **R. Hufstetler**

1176. Peroxisome proliferated-activated receptor (PPAR) delta agonist as promising treatment for non-alcoholic fatty liver disease. **X. Luarasi**, G. Brekke

1177. Probing the stability of water coordination to the ferric heme of NnIA—a nitramine-degrading enzyme—by cyanide and nitric oxide binding studies. **G. Oliveira**

1178. Characterization and bioactivity of akermanite ceramics derived from Moroccan dolomite and perlite. **Y. EL MAAKOUL**, A. Harrati, Y. ARKAME, C. SADIK

- 1179.** Chemical properties and cellular access: Psychedelics as novel neuroplastic agents via intracellular 5HT2A receptor activation. **M.M. Bogan**
- 1180.** Senescence, an index to monitor cancer therapy response. **S. Anvar**, Z. Chen, J. Somers, Y. Zhang, C. Maharjan, W. Zhang, L. Cui
- 1181.** Selective oxidation of tryptophan residues using sodium periodate. **A.L. Moore**, C.R. Shugrue
- 1182.** Characterization of immobilized LDH enzyme. **C. Oxendine**
- 1183.** Mechanisms of transport and Biochemical conversion of 4-pyridone-3-carboxamide-ribose: Insights into a noncanonical nucleoside's Metabolism. **J. Cortez**, M.E. Migaud
- 1184.** A conformational, ligand-controlled switch alters SCP2 interactions with PEX-related localization machinery. **R. Signorelli**, K. Cang, A.S. Birchfield, F.N. Musayev, B. Fuglestad
- 1185.** Modeling of the potential anti-migraine activity of bioactive molecules using molecular orbital computations and artificial neural networks. **M. Shaver**, K. Adetula, J.A. Darsey
- 1186.** Structure-based virtual screening of nigella sativa compounds as potential anti-lung cancer agents targeting PI3K α . **H.M. Baeissa**
- 1187.** Expression analysis of integrin and laminin genes across healthy and tumour tissues using GTEx and TCGA datasets. **.. Urvashi**
- 1188.** Optimization of protein purification and sortase-A mediated conjugation of nanobodies and invertase. **S. De Silva**, G. Sah
- 1189.** Boosting the efficacy of salicylic acid using ethosomal delivery systems to target acne. **L. Artime**, W. Medawala, I. Nicholas
- 1190.** Utilizing a non-native enzyme as a redox mediator in *Shewanella oneidensis* MR-1 biocatalysis. **A. Holwerda**, J. Wang, Y. Gao, Y. Lu, B. Keitz
- 1191.** Exploring oxidized NAD⁺ analogues: Impact on metabolism, cell redox, and inflammation. **J.T. Deason**, B. English, J. Cortez, A. Hernandez, N. Gassman, F. Hayat, M.E. Migaud
- 1192.** Synthesis and metabolic analysis of quorum sensing signals in *Chlamydomonas reinhardtii*. **A. Bach**, A.B. Brown, A.G. Palmer
- 1193.** Itaconate anhydride inhibits the RNA-dependent RNA-polymerase (RdRp) enzymatic activity of SARS-CoV-2. **D. Taval**, K. Heo, P. Selvaraj, V.V. Mody

- 1194.** Hybrid α /sulfonyl- γ -AA peptides inhibitors towards melanoma-differentiated associated gene 9/synthenin as potential anti-cancer therapeutics. **J. Fontaine**
- 1195.** Exploring β -bromo ketone-containing small molecules as electrophilic probes for the MDM2 RING domain. **X. Lian**, S. Hu, Q. Wang
- 1196.** Design and synthesis of MDM2-based PROTACs for the targeted degradation of CDK4. **H. Yu**, Y. Cui, M. Yin, j. chen, J. Cai
- 1197.** Mimosine inhibits neuropeptide amidation in vitro. **T. Holets**, A. Hawley, I. McCalla, N. Johnson, D.J. Merkler
- 1198.** Design and development of sulfonyl- γ -Aapeptide-based Bac8c analogs for enhanced stability and antimicrobial activity. **R. MATHURI**, J. Cai
- 1199.** Greenhouse-based production of fungal-derived medicines in plants. **S. Jayasundara**, S. Rajendran, G. Emilie Antoine, P. Whitehead, Y. Lin, Y. Cai, A. Rawoof, H. Dornberger, S. Mall, A. Alonso, K. Chapman, E. Skellam
- 1200.** Develoment of bioconjugations to afford multivalent bioconjugates using non-canonical amino acids. **D.D. Young**
- 1201.** Novel isatin conjugates for pain and inflammation management: A pharmacological and computational study. **A. Khadanga**, S.S. Panda
- 1202.** Effect of peptide –polyphenol interactions on allergenic potential of peanut protein hydrolysate. M. Eghbali, S. Adebayo, **J. Yu**
- 1203.** Nutrient composition and physicochemical properties of shortbread cookies fortified with hydrolyzed peanut flour. W. Kwarteng, M. Farooq, **J. Yu**
- 1204.** Acetaminophen and reactive oxygen species: Exploring the antioxidant properties of alkylated nicotinoyl compounds. **B. English**
- 1205.** High throughput dynamics of adenosine deaminase acting on RNA (ADAR) Editing in diverse cellular environments. **L. Ruemmele**
- 1206.** Analysis of the properties of the Alzheimer's peptide (Amyloid-Beta-42) and other bio-engineered mutations. **S. Jaiswal**, T. Chiu, D. Dinakarapandian, T. Rao Sudarshan, A. Moore, A.K. Paravastu
- 1207.** Ursolic acid-derived hybrids: A rational approach to cancer therapeutics. **A. Natalini**, S.S. Panda
- 1208.** Characterization studies on rationally designed homeodomain against natural variants. **O. Sistos Barron**, M. dela Cerna

- 1209.** Advancing breast cancer therapy through Diarylpiperidinone-derived hybrid molecules: Design, synthesis, and biological evaluation. **H. Dinkins**, S.S. Panda
- 1210.** Biodetoxification of Ochratoxin A contaminated grape pomace by fermentation using lactic acid bacteria. **J. Yu**, E. Aning-Dei, S. Ibrahim
- 1211.** Utilizing directed evolution to create adaptor specific binding domains within the CD28 cytoplasmic tail. **J. Sharp**, J. Ezagui, A. Tang, L.A. Stern
- 1212.** Spectroscopic studies of oxygen's role in modulating protonophore impact on small molecule transport across bacterial membranes. **E. Campbell**, **T.R. Calhoun**
- 1213.** Investigating the role of Sip4p in alternative carbon metabolism in *Candida glabrata*. **R.J. Galloway**, A.J. Walgren, Y.M. Naeem, M.E. Breen
- 1214.** Merkel cell polyomavirus small T protein localizes to the nucleus via Transportin 1 binding. **J. Catha**, R. Hufstetler
- 1215.** Mechanism of action of OXi8007 in 786-O human renal cancer cells and mouse xenograft model. **W.K. Rathnayake**, H.I. Wanniarachchi, L.M. Bueno, K.B. Hamal, C.I. Pavlich, K.G. Pinney, L. Liu, R.P. Mason, M.L. Trawick
- 1216.** Elucidating the biosynthesis of *N*-nitroglycine from oxidation of Hydrazinoacetic acid. **B. Martinez Rodriguez**
- 1217.** Identifying target proteins in *Drosophila melanogaster* via binding-based proteomic profiling (BBPP) for palmitoyl amide characterization studies. **L.N. Gray**, I. McCalla, R. Feeney, J. Leahy, D.J. Merkler
- 1219.** Design and synthesis of shortwave infrared (SWIR) probes for bioimaging. **E. Ankomah**, C.N. Scott
- 1220.** Development of novel antimicrobial drugs targeting orphan protein tyrosine phosphatase in *Streptococcus pyogenes*. **P.H. Ouedraogo**, M. dela Cerna, A. Aagbowuro
- 1221.** Viscosity-sensitive Cy3 fluorophores for cell membrane labeling. **M. KODISANA**
- 1222.** Computational modeling of bispecific T-cell engagers (BiTE) targeting EGFRvIII in glioblastoma multiforme. **V. Sharma**, G. Sharma
- 1223.** Unraveling nonradiative decay in DsRed via molecular dynamics, QM/MM, and machine learning. **J. Subasinghe**, A. Walker, S. Hebert, M. Grougan
- 1224.** Oxygen attachment dissociation for the structural characterization of lipids involved in pancreatic cancer. **D.D. Carlton**, E. Armitage, A. Barnes, E. Correa, S. Takeda, W. Chung, N. Loftus

- 1225.** Investigation of putative poly(aspartic acid) hydrolase homologs from PahZ2KT-1. **C. Nguyen**, T. Black, R. Kimmel, M. Weiland
- 1226.** Thiazolothiazole membrane dyes for photodynamic inhibition of intracellular bacteria and biofilms. **L. Danai**, P. Chakraborti, K. Afonin, M. Walter
- 1227.** Functional comparison of full-length palladin to isolated actin binding domain. **S. Albraiki**
- 1228.** Computer-aided design of neurological pain medicine candidates. J. Shim, **J. Enriquez**, **I. Raya**
- 1229.** Adenosine deaminase: Simplified enzyme kinetics and inhibition. **K.V. Ransom**, B. English, R. Cork, A. Alberts, D. Rabren, I. Baker, M.E. Migaud
- 1230.** Conserved arginine mutant residue disrupts NnlA activity. **H.K. Klautky**
- 1231.** Stabilization of alcohol dehydrogenase by tardigrade-specific cytosolic abundant heat-soluble protein A (77580). **I. Sinha**, i. Mandal, s. vuppala, B.E. Christian
- 1232.** Exploring alternative dyes for enhanced sensitivity and specificity in the Bradford protein assay. **B. Mckenzie**, J.O. Boles
- 1233.** New benzofuran–pyrazole-based compounds as promising antimicrobial agents: Design, synthesis, DNA gyrase B inhibition, and in silico studies. **S.H. Abdelwahed**
- 1234.** Plant proteins for designing drug delivery nanoparticles: Controlling surface charge and composition. **M.A. Quadir**, P. Ghosh
- 1235.** Cyclopropanol: A caged dual-functional warhead for selective electrochemical bioconjugation. **S. Hu**, A.K. Vannucci, Q. Wang
- 1236.** Stabilization of alcohol dehydrogenase by the tardigrade-specific cytosolic-abundant heat soluble protein S. **S. Vasan**, A.G. Palermo, G. Satyavolu, B.E. Christian

REACH: Rare Earths and Actinide Chemistry Symposium

Majestic Ballroom

A. E. Gorden, K. Johnson, *Organizers*

10:00 - 12:00

1237. Variation of tripodal CMPO-based ligand structure and liquid-liquid extraction protocol parameters for enhanced f-element separations. **T. Matter**, V.D. Pacanowski, S.M. Biros, E.J. Werner

1238. Hydrophobic deep eutectic solvent-based extraction and modeling of light and heavy REEs from water. **L. Fronchetti Guidugli**, M. Reza

1239. Selective binding and crystallization of Lanmodulin variants with rare-earth metals: A protein-based approach for separation. **S. SURIAL**, O. Nachtigall, M. Pusey

1240. Structural and spectroscopic characterization of porphyrinoid ligands as Ln(III) complexes. **B. Guragain**, P. Dogra, H. Mahler, A.E. Gorden

1241. Redox-active metalloligands for cerium based photocatalysts. **L. Arya**, Y. LNU, O. Nachtigall

1242. Synthesis, characterization, and probing reactivity of surface organometallic chemistry (SOMC) supported group 3 materials. **A. Stant**, K. Searles

1243. Tuning the UV-Vis absorption of erbium and ytterbium bimetallic complexes. **J. Carvalho**, P. Dogra, A.E. Gorden, H. Lischka

1244. Dissolution studies of SIMFUEL using novel solvent systems: Towards efficient recovery of rare earths and actinides. **S. Bhattacharya**, J. Fortner, D. Abrecht, K. Johnson, L.R. Martin

1245. Utilizing UiO metal organic frameworks for lanthanide separations. **J.M. Brame**

1246. Rhamnolipids as a multifunctional platform for REE detection, extraction and separation. **R.M. Stolley**

Revolutionizing Science Communication: Innovations, Insights, and Impact

Majestic Ballroom

H. Cheng, R. E. Hunter, G. Wiedman, *Organizers*

10:00 - 12:00

1247. Science communication in transition: Selected recent trends. **H. Cheng**

1248. A science communication Conference that empowers young women. **J. Thammathong, T.K. Akinleye**, S. Perna, J.M. Iriarte-Gross

TUESDAY AFTERNOON

Bioinorganic Chemistry in the Southeast and Southwest Regions of ACS

Nautilus B

J. D. Caranto, *Organizer*

S. Hematian, G. B. Wijeratne, *Presiding*

1:00 Opening Remarks.

1:05 1249. Nickel and cobalt CNC pincer catalysts for photocatalytic carbon dioxide reduction. **E.T. Papish**, S.Y. Manafe, M. Ahmed, W. Yao

1:25 1250. A versatile environment-sensitive turn-on scaffold for detection of metalloenzymes. **S. Price**, E.L. Que

1:45 1251. Tailored framework designs for improved catalytic efficiency of proteins. **R. Ravanfar**

2:05 1252. Mechanistic investigation of heme catalyzed carbene cyclopropanations via enzymatic activation of pyridyltriazoles. X. Zhao, J. Chu, **Y. Zhang**

2:25 1253. Leveraging biomimetic membrane architectures to study heme binding and protein dimerization in full-length progesterone receptor membrane component 1. **K.K. Meier**, P. Badve, O. Isaac

2:45 Coffee Break.

3:05 1254. Expanding the copper enzymology toolbox: From peptide cyclization to selective halogenation. **S. Hematian**

3:25 1255. Bioinorganic computational enzymology with the residue interaction network residue selector (RINRUS) software package. **N.J. Deyonker**

3:45 1256. Structural factors contributing to redox activity of zinc fingers: A molecular dynamics perspective. **C.A. Bayse**, P.B. Lutz

4:05 1257. The effect of metal on hydrolysis of Phosphoester Bonds: experimental and computational study. **O. Makhlynets**

4:25 Closing Remarks.

Forensic Science

Magnolia A

M. Baudelet, C. Bridge, E. Hanson, T. Legron-Rodriguez, *Organizers, Presiding*

1:00 Session 1 Introduction: Student Session.

1:05 1258. Determination of bullet caliber using ICP-OES for forensic applications. **C. Cary**, R. Montgomery

1:25 1259. Testing of a validation method for standardization of non-detonable training aids. K.D. Castro, **R. Echevarria**, L. DeGreeff

1:45 1260. New evidence in traffic homicide investigation: Rubber particles from tire marks – from their collection, to their isolation and analysis. **J. McAleer**, J. Lucchi, M. Baudelet

2:05 1261. Towards assessing the integrity of canine training aids. **K.D. Castro**, L. DeGreeff, R. Bridges, T. Roberts, M. Lopez

2:25 1262. Enhancing IMS-based, non-contact fentanyl detection using a novel vapor pre-concentrator. **G.L. Jayawardana**, L. DeGreeff, A.C. Fulton, B. Giordano

2:45 Closing Remarks.

2:50 Break.

3:05 Session 2 Introduction.

3:10 1263. Effects of experimental conditions on the interpretation of forensic fire debris data. **A. Burkhardt**, B. Capistran

3:30 1264. Uncovering experimental clues through the role of chemistry in combining the analysis of latent fingerprints and arson investigations. A. Schmitz, T. Clarkson, P.C. Simmons, S. Thrower, G.W. Stephenson, **K.S. Taylor**

3:50 1265. Nucleobase sensing associated with the porphyrinic metal-organic framework PCN-222. **J.T. DeMatteo**, R.W. Larsen

4:10 1266. Recovery of probative STR profiles from micromanipulated sperm cells in challenging sexual assault samples. **M. Peters Grim**, K. Huffman, J. Ballantyne, E. Hanson

4:30 Closing Remarks.

General Topics in Inorganic Chemistry

Pelican Room

C. D. Chouinard, *Organizer*
K. K. Meier, *Presiding*

1:00 1267. Electronic structures of and electrocatalytic CO₂ reduction using substituted transition metal corrole complexes. **H. Grace**, B.J. McNicholas

1:20 1268. Synthesis of NHC-Zr organometallic complexes with emissive properties via a free Dicarbene method. **S. Juarez Escamilla**, A. Hopkins, B. Donnadieu, C.E. Webster, K. Hollis

1:40 1269. Molecular nanoparticles of birnessite-type MnO₂ via reductive aggregation. **A.R. Hale**, K.A. Abboud, G. Christou

2:00 1270. Progress toward synthesizing cyclic (alkyl)(amino)carbene ligands to stabilize low-valent metal-oxo complexes. **C. Ledbetter**, E. Hill

2:20 1271. Biphosphinemonoxide ligands for polar olefin copolymerization: A quantitative approach to late-transition metal catalyst design. **D.D. Pinto**

2:40 1272. Non-trigonal phosphorus ligands towards Fe^{II} and Zn^{II} complexes: Theoretical and experimental cooperative chemistry. **W. Hollingsworth**

3:00 Break.

3:00 1273. Enhanced room temperature phosphorescence of Pd(II) tetra(N-methylpyridyl) porphyrin (PdTMPyP) encapsulated within the metal organic framework HKUST-1(Zn); PdTMPyP@HKUST-1(Zn). **R.W. Larsen**, L. Wojtas

3:20 1274. Effect of oriented external electric fields in catalysis using immobilized metalloporphyrins. **H. Haq**, E. Hill

3:40 1275. Structural studies of metal complexes derived from Bis-Hydrazinylpyridine. **A.K. Das**

4:00 1276. Improving the quality of plaster of paris from selected local gypsum samples through modification with additives. **A.S. Shehu**

4:20 1277. From Cyclopropenyl cation to the structural chemistry of Boron. **E.J. Jemmis**

Innovations in Inorganic Materials from Nanocrystals to Bulk Crystal Growth

Flamingo Room

V. Klepov, T. T. Salguero, *Organizers, Presiding*

1:00 Introduction.

1:05 1278. Highly anisotropic magnetism in LnCrGe₃ ferromagnets (Ln = La, Ce, Pr). **S.A. Adegboyega**, S. Karullithodi, L. Balicas, M. Shatruk

1:20 1279. Copper-antimony-sulfide nanoparticles: Synthesis and characterization for thermoelectric and photovoltaic applications. **M.E. Anderson**

1:40 1280. Harnessing sulfide chemistry for environmental cleanup: From toxic metals to legacy nuclear waste. **S. Islam**

2:00 1281. Melt crystal growth of inorganic halide scintillators for x-ray radiography. **M. Zhuravleva**, K. Pestovich, L. Stand, E. van Loef, C. Melcher

2:20 Intermission.

2:30 1282. Discovery of heteroleptic 2D perovskite Cs₂CdI₂Cl₂ with 3D electron transport character: synthesis, structure, and optical characterization. K. Thanabalasingam, M.S. Singh, D.H. Fabini, M. Abeykoon, **K. McCall**

2:50 1283. Porous hybrid metal halide semiconductors for energy and environment-related applications. **I. Spanopoulos**

3:10 1284. Understanding the emergence of intrinsic chirality in copper and palladium chloride materials. Z. Zhang, S. Biswas, M. Montemore, **D.B. Straus**

3:30 1285. Order, disorder, and atomic structure evolution of Li-ion Battery electrode materials. **M.M. Butala**, J. Langhout

3:50 Intermission.

4:00 1286. Pressure driven structural changes in rare-earth systems. **A.B. Altman**, H. Jemison, P. Marshall, R. O'Shea

4:20 1287. Formation, phase behavior and properties of fluoroperovskites with helium on their A-sites. **A.P. Wilkinson**, S. Ma

4:40 1288. Characterizing and controlling structural phase transitions in battery materials. **J.D. Bocarsly**

Lessons and Inspiration from the History of Chemistry

Cypress B

N. V. Tsarevsky, *Organizer, Presiding*

1:00 Introductory remarks.

1:05 1289. From beakers to battlefields: An interdisciplinary opportunity in chemical education. **J.A. Feducia**, D. Bolger

1:35 1290. Mid-century discovery of acetaminophen: A drug metabolite becomes a new analgesic/antipyretic drug. **A. Haddy**

2:05 1291. Technology and chemistry of spirits: A brief history. **N.V. Tsarevsky**

2:35 1292. A philatelic history of nanotechnology. **D. Rabinovich**

3:05 Intermission.

3:30 1293. Philosophy of Antoine Lavoisier: Author of the world's first textbook of physical chemistry. **A. Cherbonneau**

4:00 1294. Lisa Meitner's legacy and lessons for contemporary science. **W.A. Alexander**

4:30 1295. Recent history (1971-2024) of chemistry and science at U. T. El Paso demonstrates the application of successful "WOKE" ideas and funding as catalysts to increase diversity in national Ph. D. science graduates and entry of UTEP into the Carnegie R1 category (the only open access University within that group). **K.H. Pannell**

Advances in Electrochemistry and Bioelectrochemistry

Harbor B

S. Martic, O. Simoska, *Organizers*
S. Hosseini, *Presiding*

1:15 Welcome and Introduction.

1:20 1296. Hydroquinone-directed electrodeposition of microneedles of gold nanoparticles. **F. Halim**, F.P. Zamborini

1:40 1297. Electrochemical deposition of metal nanoparticles on carbon ultramicroelectrode arrays. **O. Simoska**, C.J. Weber

2:00 1298. Size-dependent electrochemical behavior of polyelectrolyte templated platinum nanoparticles. **F. Khalili**, M. Bonizzoni, S. Street

2:20 Intermission.

2:40 1299. Mechanistic insight into tyrosine oxidation at carbon-fiber microelectrodes revealed by fast-scan cyclic voltammetry. **J. Todorov**, G.S. McCarty, L.A. Sombers

3:00 1300. Enhancing cadmium detection using cadmium-specific ionophores and ITIES-based sensors. **O. Zubak**, P. Pathirathna

3:20 1301. Multi-analyte sensing with surface-modified four-bore CFMs: A step toward future in vivo neurodegenerative disease research. **N. Udawaththa**, A. Daninger, B. Romero, V. Guillen, P. Pathirathna

3:40 Intermission.

4:00 1302. Electrochemical Co-detection of methylene blue and dopamine on carbon fiber microelectrodes. **B.R. Melluso**, J. Todorov, G.S. McCarty, L.A. Sombers

4:20 1303. Engineering the temporal response to enhance the performance of DNA monolayer-based electrochemical sensors and enable multiplexing in time. **M. Mazumder**, A. Gurukandure, C.J. Easley

4:40 1304. Ultra-fast synthesis of a glassy superionic oxyhalide solid electrolyte with a unique compositional space – $\text{Li}_2\text{Zr}_x\text{Ta}_{1-x}\text{OCl}_{5-x}$. **T. Dikella Gamaralalage**, Y. Hu, B. Ogbolu

Chemistry Education Research General Program

Magnolia B

T. Legron-Rodriguez, C. Randles, *Organizers, Presiding*

1:30 Session 1 Introduction.

1:35 1305. Investigating the efficacy of self-selected weekly study groups for at-risk students in General Chemistry 1 (CHM2045): A continuation study. **S.M. Harris, M. Sumner**, J. Mastrogiovanni, A. Thomas, R. Bailey

1:55 1306. Integrating experiential learning and critical thinking in general chemistry through the EXACT program. **M. Romero-Reyes**, V. Sublett Breeden

2:15 1307. An augmented reality application for teaching conformational analysis in undergraduate organic chemistry. **S. Ramasamy**, A. Rodarte, D. Myers

2:35 1308. Shared spaces of learning: co-constructing instruction with undergraduate Learning Assistants. **K. Hosbein**, M. Zakariyah

2:55 Break.

3:10 1309. Factors impacting K-12 science educators' confidence implementing information literacy instruction. **M. Lam**, C. Randles

3:30 1310. Exploring the long-term impact of informative utility value intervention. **P. Nayyar**, O. Teran, S.E. Lewis

3:50 1311. Investigating the impact of item position on student performance for different types of questions in general chemistry exams. **O. Teran**, P. Nayyar, S.E. Lewis

4:10 1312. A comparative analysis of the new elementary science textbooks in Korea and Japan: Focusing on the domain of Chemistry and Science and Society. **K. Young Tae**

4:30 Closing Remarks.

Colloids, Surfactants, Interfaces and Nanomaterials

Harbor A

A. Mallia, *Organizer, Presiding*

1:30 Opening Remarks.

1:35 1313. *In situ* study of Ruthenium deposition and the role of molecular structure. **T. McNealy-James**, X. Kang, J.M. Johnson, L. Tomar, S. Berriel, T. Currie, T. Jurca, L. McElwee-White, P. Banerjee

1:55 1314. Pushing the limits of ultrasmall PbSe magic-sized clusters. **P. Puri**, C. Zeng

2:15 1315. Molecular weight-dependent, chitosan-assisted recovery of bovine milk-derived extracellular vesicles. **K. Burton**, K. Dellinger

2:35 1316. Nanorobot interactions and collective behaviors. **S. Ahmed**, T. Afsari

2:55 1317. Characterization of interfacial electrostatic properties of nanoscale lipid vesicles by EPR of lipid-based molecular pH probes. N. Nguyen, M. Voinov, A. Smirnov, **T. Smirnova**

3:15 1318. Development of akermanite-rich bioceramics from local dolomite and perlite: structural characterization and bioactivity evaluation. **Y. EL MAAKOUL**, **A. Harrati**, **Y. ARKAME**, **C. SADIK**

Glycomaterials for a Sustainable Future

Nautilus A

A. Esker, M. Roman, *Presiding*

1:30 Opening Remarks.

1:35 1319. GlycoMIP: An NSF-funded resource for researchers studying natural and engineered glycomaterials. **M. Roman**

2:05 1320. Fenton degradation of amylose films. **R. Rousan**, A. Esker

2:35 1321. Arabinoxylan: Derivative synthesis, film formation and degradation. **E.D. Mensah**, K.N. Knight, R. Rousan, N. Samadiani, A. Esker

3:05 Intermission.

3:20 1322. Application of QCM-D to lignocellulose challenges. **A. Esker**

3:50 1323. Guided generation and flavor scoring of novel sweet molecules. **J. Petri**

4:10 1324. Synthesis of glycopolypeptides for influenza inhibition. **M. White**, Z. Shi

Nanoformulated Agrochemicals for Crop Management

Magnolia C

J. Pereira, S. Santra, *Organizers, Presiding*

1:30 Introductory remarks.

1:35 1325. Mesoporous silica nanocarriers for controlled micronutrient delivery and in-plant tracking with synchrotron X-ray techniques. **X. Gao**, C. Henkel, E. Kristensen, S. Husted, R. Mokso, S. Ghoshal

2:05 1326. Using hydrophobic shells to control the release of agrochemicals from polysaccharides. **H. Fairbrother**, S. Phillips, S. Brake, C. Deng, D.E. Martinez, J.C. White, M.S. Peresin

2:35 1327. Plant proteins for designing drug delivery nanoparticles: Controlling surface charge and composition. **M.A. Quadir**

3:05 Coffee Break.

3:20 1328. Molecular simulations for deciphering interaction and aggregation mechanisms on surfaces and nanoparticles key to agrochemical systems. **A. Banerjee**

3:50 1329. Organic nanocarriers encapsulating streptomycin for managing citrus greening disease. **K. Ristroph**, L. Oliveira, K. Sanchez, H. Kohay, G. Lowry, R. Jones, P. Rolshausen, A. Schumann

4:20 Concluding Remarks.

Plasmonic Nanoparticles and Applications--Applications

Cypress A

S. Zou, *Organizer*

X. Huang, Y. Wang, *Presiding*

1:30 1330. Rapid, label-free detection and quantification of respiratory viruses using surface-enhanced Raman spectroscopy and machine learning. Y. Yang, J. Cui, A. Kumar, J. Murray, L. Jones, X. Chen, R. Tripp, **Y. Zhao**

1:55 1331. Plasmonic nanoparticles for cancer theranostics and environmental remediation. **N. Hooshmand**

2:20 1332. Single exosome profiling with gold nanoparticles for early breast cancer detection and stage differentiation. **X. Huang**

2:45 1333. Hybrid nanoplasmonic probes for ultrasensitive analysis of extracellular vesicles towards cancer diagnosis. **Y. Zeng**

3:10 coffee breaker.

3:30 1334. Sub-100 nm Au nanoshells for low-fluence deep-tissue photoacoustic imaging. **K.M. McPeak**

3:55 1335. Dual-function gold–zinc ferrite nanocomposite sensors for selective colorimetric detection of phosphates in environmental water. **A. Ibrahim**, G. Pathiraja, M. Wijesinghaa, A. Dellinger, Y. Mo, S. Obare

4:20 1336. Catalytic silver–platinum hollow nanoparticles for enhanced sensitivity in colorimetric lateral flow assays. **J. Zhou**, S. Shao, X. Xia

SERMACS/SWRM: Hosting, Planning, Best Practices and More

Cypress C

B. D. Feske, *Organizer, Presiding*

1:30 1337. Introduction to SERMACS, Inc. and its structure. **B.D. Feske**

1:50 1338. Introduction to the SWRM Steering Committee. **S.E. Hubbard**

2:05 1339. How to plan a successful regional meeting despite a global pandemic – SWRM 2021. **K.L. Hull**, D. Kneeland, M. Connor, A. Chen, K. Lewis, D. Harwell, B. Streusand, M. Prouty, M. Kopecki-Fjetland

2:30 1340. Tips and tricks learned by hosting SERMACS2018. **T. Whiteside**

2:55 1341. SWRM 2023, lessons learned and a few, hopefully useful tips. **F.D. Blum**, C.B. Frech, L.A. Bumm

3:20 1342. Tips and tricks for a program chair hosting a regional meeting. **B.D. Feske**

Ultrafast and Nonlinear Spectroscopy

Nautilus C

B. Kudisch, P. E. Ohno, S. T. Roberts, *Organizers, Presiding*

1:30 Opening Remarks.

1:35 1343. Ultrafast pathways to triplet states: A tale of two photophysical processes. **S. Rather**

1:55 1344. Solvated electrons in radical anion photocatalysis. **S. Das**, B. Kudisch

2:15 1345. Manipulating the ligand-field dynamics of Cr(III) *Tris*(1,10-phenanthroline) via ligand functionalization. **A. Barth**, I.Y. Dzaye, J.P. Wheeler, A.P. Faulkner, F.N. Castellano

2:35 1346. Photodynamic behavior of uracil modified by the ring substitution. **M. chudali**

2:55 1347. Time-resolved photoelectron study of gas phase 5-azacytosine: Effect of aza-substitution on excited state dynamics in cytosine. **B. Duwal**, S. Ullrich

3:15 Closing Remarks.

General Topics in Organic Chemistry

Majestic Ballroom

C. D. Chouinard, *Organizer*

2:00 - 4:00

1348. Synthesis and characterization of GUMBOS and NanoGUMBOS for targeted applications. **m. uchenna**, S. Hamdan, I.M. Warner

1349. Biocatalytic Aza-Michael addition of aromatic amines to enone using α -amylase in water. **S. DUTT**

1350. Discovery and development of benzothiophene ketones as STING agonists. **T.J. Henderson**, J.P. Jewell, M.D. Altman, W. Chang, M.L. Childers, J. Cumming, A. Haidle, B. Lacey, C.A. Lesburg, R. Liang, J. Lim, M. Lu, G.K. Schroeder, B.W. Trotter, D.F. Wyss, D.J. Bennett

1351. Asymmetric synthesis with the use of a microwave reactor and chiral Bronsted acid. **J. Carsley**, K.S. Petersen

1352. Scalable methanolysis reactor design for chemical recycling of condensation polymer. **L. Ball**, **M.M. Bogan**

1353. Therapeutic modalities at Merck. **J.L. Hanisak**

1354. Bioassisted synthesis of Ag/AgCl nanoparticles using medicinal plant extracts and their antibacterial activity. **A. Gómez Rivera**, S. Santos Vázquez, C.O. Barredo Hernández, A. Gallegos Garcia, C. Lobato Garcia, P. Quintana Owen, J.L. Torres López, S. Gómez Cornelio

1355. Development of chemoselective reactions for amino acid sidechains for applications in protein sequencing. **C. Heyl**, J.A. Buonomo

1356. Design, synthesis, and structure-activity relationships of selective biphenyl antithrombotic tissue factor/factor VIIa inhibitors. **P. Wiget**, P.L. Kotian, Y. El-Kattan, S. Niwas, M. Wu, T. Lin, B. Bourdreaux, S. Saini, D. Kellogg-Yelder, C. Parker, R. Chambers-Wilson, S. Bantia, Z. Miao, J. Williams, R. Krishnan, P. Chand, Y. Babu

1357. Synthesis and evaluation of multi-substituted tetrahydroquinoline-based alphavirus inhibitors. **T. Hampton**, O.S. Adeyinka, D. Metibemu, O. Crown

1358. Exploring functional activity of novel hybrid delta opioid receptor ligands. **K. Diaz**, D. Rounds, N. Clanton, W. Clarke, K. Berg, S.F. McHardy

- 1359.** A modern approach to selenation of aliphatic C–H bonds. **K. Rohilla**, M. Ju
- 1360.** Cyclohexadiene as a potential bioorthogonal tag through Diels-Alder reactions. **M. Asadi**, M. Nuruzzaman, J. Ohata
- 1361.** Fischer esterification for chemoselective labeling of carboxylates in polypeptides. **K. Rose**, S. Ishizawa, J. Ohata
- 1362.** Cyclizing heptamethine cyanines: A new class of fluorogenic cyanines. **B. Kumarasiri**, S.M. Usama
- 1363.** Sequential heterocycle oxidations and nucleophilic additions. **L.A. Surrusco**, C.R. Shugrue
- 1364.** Microwave-assisted methanolysis for low-energy depolymerization of condensation polymers. L. Ball, **M.M. Bogan**, D. Gort, **C. Oxendine**, C. Tirla
- 1365.** Identification and characterization of FKBP52-specific inhibitors for the treatment of prostate cancer. **N. Sahragardan**, M. B. Cox, R. D. Koyani, Y. Li
- 1366.** Mechanochemical Birch reductions for peptides. **N.O. Ghader**, M. Nuruzzaman, C.P. Uzoewulu, J. Ohata
- 1367.** Terpene brew: Expression of *neo*-dolabellane encoding genes from *Erythropodium caribaeorum* in brewer's yeast. **E. Jakubec**, P. Scesa
- 1368.** Design and development of Sulfono- γ -AApeptide-modified OH-CM6 analogs to combat drug-resistant bacteria. **M. Mahmoud**
- 1369.** Nitroalkane synthesis: Combining classical and modern approaches. **K. Gonzalez Ramirez**, M. Ju
- 1370.** Terpenoid-mediated defense in Caribbean Gorgonian Corals: Insights into predator deterrence and metabolite diversity. **N. Kanya**, P. Scesa
- 1371.** Synthesis of prochiral substrates and biocatalytic oxidation to form α -acyloxy ketone scaffolds. **C. Martinez**, R. Carter, S. Simmons, S. Reyes, C. Ammermann, M.E. Hinze
- 1372.** Prebiotic reactivity of formaldehyde and cyclic dipeptide under mechanochemical conditions. **J. Thuan**, A. Koirala, J. Pierz, J. Ohata
- 1373.** Ag(I)/K₂S₂O₈-mediated selective oxidation of ynamide-Yne *via* structural reshuffling and consecutive *N*-desulfonylation. **M. Mutra**, C. T. L., T. Wang, J. Wang
- 1374.** Exploring photochemical properties of intramolecular B-O chelated Aza-BODIPY dyes. **N. To**, M. Henary

- 1375.** Structural optimization of thiophene reagents for tryptophan-selective polypeptide modification. **E.C. Joyner**
- 1376.** Synthesis of substrates and standards to investigate biocatalytic heteroatom oxidation. **A.M. Johnson**, M.E. Hinze
- 1377.** Synthesis of self-assembling oxazaborole macrocycles. **B. Mensah**, D.E. Gross
- 1378.** Synthesis and characterization of diazapentalene derivatives from pyrazole and acetone condensation products. **I. Hussein**, V. Badra, I. Chakraborty, A.M. Mebel, R.G. Raptis
- 1379.** Ligand development for effective metal-mediated carbonyl allylation. **B.N. Matthews**
- 1380.** Efforts toward an alternative synthesis of avibactam. **G.R. Campagnola**, A. Lee, J.W. Leahy
- 1381.** Optimizing hydrogenation reactions with gas chromatography: Unveiling the effects of temperature, pressure, and catalysts. **M. Rahim**, C.M. Garner
- 1382.** Exploring pathways for Fullerene formation. **L. Chuidian**, C.A. Parish
- 1383.** Harnessing the therapeutic potential of selenium. **D. Weaver**, J.C. Lukesh
- 1384.** Discovery of a novel compound with potential to overcome glioblastoma drug resistance. **H. Zhang**, Y. Li
- 1385.** Synthesis of a novel, in silico designed, inhibitor of ALAS for treatment of Porphyria. **C. Murray**, H. Gartrell, H. Reuther, J.W. Leahy
- 1386.** Preliminary phytochemical characterization and antimicrobial activity of organic extracts from *Cecropia obtusifolia* B. and *Cecropia peltata* L.. S. Bravata Silvan, **C. Lobato Garcia**, E. Medrano Sanchez, A. Gomez Rivera, R. Lopez Rodriguez, A. Gallegos Garcia, M. Gonzalez Cortazar, M. Perez Garcia, A. Zamilpa
- 1387.** Importance of Carbon-13 (^{13}C), Deuterium (^2H), Oxygen-18 (^{18}O) and Nitrogen-15 (^{15}N) isotopically labeled precursors of vitamin B₃ in NAD^+ (nicotinamide adenine dinucleotide) metabolism and catabolism. **F. Hayat**, M.E. Migaud
- 1388.** Photocatalyzed $\text{C}(\text{sp}^3)\text{--N}$ bond activation of isonitriles for Mizoroki-Heck cross-coupling with vinyl arenes. **A.B. Wood**, N. Mizuno, S. Jung, A. Schuppe
- 1389.** Design, synthesis, and evaluation of Spns2 inhibitors for the treatment of chronic kidney disease. **O. Coyle**
- 1390.** Exploring uncharted diterpenoids: Functionalization of the gersemiane scaffold for potential anticancer applications. **I.R. Carley**, P. Scesa

1391. PCET-mediated intermolecular hydroetherification of alkoxy radicals. **L. Delgutte**, Y. Hua, J. Lee, A. Lugo, A. Iyengar, D. Kim

1392. Platinum-catalyzed cyclopropanation of vinyl arenes employing diazirines as carbene precursors. B. Slinger, **M. Cohen Suarez**

1393. Fluorescence with a Focus- One Scaffold, Two Triggers: Tailored synthesis of Aza-BODIPYs for pH and Metal Responsiveness for NIR potential bioimaging applications. **O.A. Basant**

1394. Cold chemistry: Unearthing antibiotics from Antarctic benthic life. **A. Comly**

1395. A bioluminogenic probe for monitoring heparanase activity in vitro and in vivo. **J. Somers**, K.A. Schleyer, Z. Wang, L. Cui

1396. Improvements in design and synthesis of sensor Heterocyclophanes. **A. Link**, M. Pensenstadler, T. Dales, T. Janshon, A.B. Brown, M. Knehans, G.S. Blaustein

1397. Cobalt-Catalyzed Enantioconvergent Decarboxylative N-Alkylation. **R. Trevino, J. Sanchez**

1398. Progress towards the synthesis of unsymmetric pyridyl-1,2,4-triazine complexant scaffolds via tandem metal-catalyzed borylation/cross-coupling with application to minor actinide separation. **C. OPOKU ACHEAMPONG**

1399. Engineering cyclopropanol-derivatized sphingosines: Synthesis, metabolic incorporation and proteomic analysis. **A. Wijesooriya**, S. Hu, J. Myers, D. Yan, J. Jongkhumkrong, W. Cotham, M. Walla, Q. Wang

1400. Sustainable synthesis of furfural-based *N*-acyl hydrazones toward novel organocatalysts and antimicrobial agents. **K. Murphy**

1401. Ongoing development of novel reactivators of human acetylcholinesterase to treat nerve agent poisoning. E. Lucas, **T. Jones**, D. Zehnder, R. Hoffmaster, R. Moyer, T. Witkowski, T. Winters, P. Vignaux, S. Ekins

1402. Controlling alkoxy radical reactivity via an in-equilibrium back electron transfer. **Y. Hua**, L. Delgutte, J. Lee, A. Lugo, A. Iyengar, D. Kim

1403. A Biomimetic approach toward bioactive triterpenoid natural products. **K.J. Kellar**, S. Weierbach, K.M. Lambert

1404. Nitric acid- and transition metal-free synthesis of nitramines: Applications in novel natural product discovery and enzyme inhibition. **B. Rathman**, A. Casanova, G. Padilla, J.D. Caranto

1405. Design and synthesis of a conjugated cycloparaphenyleneacetylene-based Nanocavitand: Toward chiral guest encapsulation. **C. Lawrence**, H. Khosravi, R. Hernández Sánchez

1406. Under the surface: Exploring the bioactive depths of Ophiocordyceps. **P. Herrera Figueira**, E. Cruz-Rosa, B.J. Baker

1407. Syntheses of pentagonal and hexagonal cyclophanes: Applications in host–guest systems and selective molecular encapsulation. **J. Ou**, Y. Feng

1408. Investigation of thermal properties in liquid state compounds derived from Parkinson's Therapeutics and anti-inflammatory anions. P. Nortey, I. Henderson, **O.A. Cojocar**

1409. General strategy for polymethine substituted oxonol fluorophore and conversion to fluorogenic probe. **F. Biakengzaua**, S.M. Usama, M. Kodisana

1410. A cyanine dye functionalized with amino acids at the meso position for potential use as a pH-responsive imaging agent. **N. Azizi Khereshki**

1411. Synthesis of 1-allyl-3-methylimidazolium acetate for use in biopolymer dissolutions. **J. Guy**, L. Yoder, J.R. Alston

1412. Bronsted's acid-catalyzed transformation of rare nitrogen-containing heterocycles: Synthesis and computational studies. **C.U. Ibeji**, D.C. Whitehead

1413. Advances in near-infrared dyes for biomedical imaging: Applications in cartilage visualization. **M. Henary**, G.E. Ozmen, H. Kang, H.S. Choi

1414. C-H bond oxidation: A green approach to the oxidation of aminophenol derivatives: A conceptual framework. **N. Van Dyke**, **J. Franklin**, J. Anyim, D.T. Do

1415. *Syn*-selective Aldol Reactions of *N, N*-dimethylarylacetamides. **C. Bankston**, **P.B. Chanda**

1416. *Anti*-selective Aldol Reactions of *N, N*-diisopropylarylacetamides. **J. Morrison**, C. Bankston, **P.B. Chanda**

1417. Diisopinocampheylboron triflate (Ipc₂BOTf)-mediated enantioselective *Syn*-aldol reactions of *N, N*-dimethylarylacetamides. **J. Castaneda**, C. Bankston, **P.B. Chanda**

1418. Improved procedure for the oxidation of Borneol to Camphor. J. Cooper, **K. Jules**, J. Julius

1419. An Investigation into the Diels-Alder reactions of 9-Anthracene Methanol. J. Cooper, **J. Julius**

1420. Synthesis and binding evaluation of a 2-methoxy-4-nitrophenyl-based receptor for oxoanions. **J. Fickling**, C.R. Johnson

1421. Mild and modular synthesis of tertiary amines using iodonium salt-mediated functionalization. **J.E. Dannatt**

Structures and Properties of Photoactive Materials

Majestic Ballroom

T. Hopper, D. Zhang, S. Zou, *Organizers*

2:00 - 4:00

1422. Investigating the excited state dynamics of DIPP-PDI and methylene blue in thin films. **A. Smith**, J. Gaetgens, G.D. Scholes, T.J. Fuhrer

1423. Design of crosslinkers compatible with metal-free ring-opening metathesis polymerization (MF-ROMP). **R. Raftari**, B.S. Jones, T.J. Forsberg, Y. Yuan, S.M. Kuebler

1424. Photo and electrochemical properties of N-arylated dipyrindyl thiazolo[5,4-d]thiazoles. **J. Anderson**, T.J. Adams, M.G. Walter

1425. Probing mechanisms of the CISS effect with chiral peptide-porphyrin systems. **V. Cinnater**

1426. Synthesis and characterization of thiophene extended viologens for photochromic applications. **T.J. Adams**

1427. Synthesis of isoquinolinyl derivatives of planar Blatter radicals through photocyclization. D.J. Sanabria, R.N. Helms, O. Hietsoi, **A.C. Friedli**

1428. Investigation of the role of the photo-Smiles rearrangement in formation of 9-substituted planar Blatter radicals. E. Westerman, O. Hietsoi, P. Kaszynski, **A.C. Friedli**

1429. Co-facial Blatter radicals: Properties of rotational isomers. **A.C. Friedli**, P. Bartos, D. Pomilka, K. Sorenson, O. Hietsoi, P. Kaszynski

1430. Reversible proton control in basic solution conditions using a novel benzimidazole-type metastable-state photoacid. **M.A. Laud**, P. Liyanage, Y. Liao

1431. Highly effective method for stabilization and functional enhancement of merocyanine photoacids via a biomimetic approach. **P. Liyanage**, Y. Liao

WEDNESDAY MORNING

Chemistry Education Research General Program

Magnolia B

C. Randles, *Organizer*

T. Legron-Rodriguez, *Organizer, Presiding*

8:00 Session 2 Introduction.

8:05 1432. Exploratory analysis of student motivation and anxiety in chemistry courses. **E. Negron**, C. Randles

8:25 1433. Developing a stimulus tool to examine links between test anxiety, working memory, and test performance. **M. Roshandel**, A. Evans, C. Randles

8:45 1434. “I can see where you’re coming from”: The role of previous experience on ULAs’ instructional decision-making. **E.R. Richards**, E. Dolcine, E. Saitta

9:05 1435. Identifying barriers and self-perceptions of blind and visually impaired (BVI) chemists on their ability to perform chemistry. **J.T. Nelson**, E. Saitta

9:25 1436. Adopting the PISQ-5d survey for use in STEM: A mixed-methods evaluation of the practices factor. **C. Bechard**, J. Ellis, T. Legron-Rodriguez

9:45 Closing Remarks Session 2.

9:50 Break.

10:05 Session 3 Introduction.

10:10 1437. Investigating chemistry students use of heuristics across nucleophilic and electrophilic reaction and intermolecular force contexts. **C.K. Robinson**, S.E. Lewis

10:30 1438. Enhancing intermolecular force understanding in general chemistry II through electrostatic potential map assignments. **S. Krzypkowski**, S.E. Lewis

10:50 1439. Broadening UV–Vis spectroscopy education: A comprehensive framework beyond the Beer–Lambert law. **P. Wathudura**, H. Pham, K. Siriwardana, S. Athukorale, U. Jayasundara, S. Gunatilake, Z. Cao, W. Collier, A. Moon, D. Zhang

11:10 1440. Students’ sensemaking of electrostatic potential maps within substitution and elimination reactions. **I. Nelsen**, M. Weinrich, S.E. Lewis

11:30 Closing Remarks Session 3.

11:35 Break.

Revolutionizing Science Communication: Innovations, Insights, and Impact

Magnolia C

R. E. Hunter, G. Wiedman, *Organizers*
H. Cheng, *Organizer, Presiding*

8:00 1441. New developments in science communication: An overview. **H. Cheng**, R.E. Hunter, G. Wiedman

8:10 1442. Role identity in the training and practice of science communication in chemistry. **S. Sandi-Urena**, G. Brenner

8:40 1443. Click, share, discover: Harnessing social media to bridge science and society. **A. Cooper-Morgan**

9:10 1444. Chemistry in verse: Poetry as a tool for the communication of chemical ideas. **N.V. Tsarevsky**

9:40 Intermission.

9:55 1445. Inclusive teaching strategies to improve STEM communication: Half-life your message, student-designed newsletter, and Universal Design for learning. **C.M. Babyak**, J. Perry Cecile, C. Cartaya-Marin, A.D. Schwab

10:25 1446. Revolutionizing science communications to empower and advocate for young girls and boys into careers in the chemical sciences. **T.K. Akinleye**, **S. Perna**, **J. Thammathong**, **J.M. Iriarte-Gross**

10:55 1447. Twenty five years of integrating science communication into summer undergraduate research experiences at James Madison University. K.L. Caran, J. Harsh, C.A. Hughey, G. Macdonald, I. Sumner, N.T. Wright, **L.M. Watkins**

AI Education and AI in Education

Magnolia A

C. Randles, *Organizer*

J. H. Broome, *Organizer, Presiding*

8:30 Introduction.

8:35 1448. Co-created AI tools for personalized STEM learning: A cross-institutional approach to scaffolded problem-solving. **T. Ritchie**

8:55 1449. Using a 4-step prompt creation framework to generate isomorphic problems in the sciences using generative AI platforms. **C. Randles**, S. Loza, J. Ibrahim, S. Fardeen

9:15 1450. Exam question creation through AI prompt-to-prompt chaining: Isomorphic problem banks in Chemistry. **J. Ibrahim**, C. Randles, S. Fardeen, S. Loza

9:35 1451. Empowering chemistry education with AI: Lessons from the Valencia College/UCF ESTELA faculty workshop. **A. Norbutus**, V. Sharma, C. Randles, J. Donnelly

9:55 Break.

10:10 1452. Identifying generative artificial intelligence chatbot use and the impact of question design on multiple-choice, general chemistry exams. G.M. McLeod, B. Hanks, H. Ashby, J. Nolder, B. Sorenson, **K. Hanson**

10:30 1453. Current hype of AI: Transforming organic chemistry teaching and learning at the undergraduate curriculum. **A. Rahman**

10:50 1454. Developing machine learning models for evaluating organic chemistry learners' explanations of electrophiles and nucleophiles. **C.J. Crowder**, J.R. Raker

11:10 1455. Utilizing game-based learning and artificial intelligence in the curriculum. **K.T. Schroeder**

Emerging Trends in Bio-based Polymers: A Pioneering Perspective and Advancements

Cypress A

C. Bodhak, M. Chaudhary, R. K. Gupta, *Organizers, Presiding*

8:30 Introductory Remarks.

8:35 1456. Bio-based boronic ester vitrimers: a prodigious journey towards sustainable covalent adaptable networks (CANs) with robust properties. **C. BODHAK**, R.K. Gupta

8:55 1457. Circularity in plastic packaging: Coextruded multilayer films with excellent barrier and biodegradable properties. **P. Sahu**

9:15 1458. Bio-based Pu and NIPU adhesives: Impact of crosslinkers on strength and sustainability. **M. Chaudhary**

9:35 1459. Advanced functionalization of bio-based coatings: Enhancing anti-smudge, mechanical strength, hydrophobicity, and thermal stability. **R. Patel**

9:55 1460. Non-isocyanate polyurethane coatings with silicon-based compound: A green approach for high-performance coatings. **A. Kumar**

10:15 Closing Remarks.

Innovations in Inclusive Introductory Teaching: Pedagogical Strategies to Improve Introductory STEM Courses

Cypress B

B. M. Mosby, K. Riley, *Organizers, Presiding*

8:30 Opening Remarks.

8:35 1461. Implementation of concurrent chemistry of art courses for both science and non-science majors. **S.K. Goforth**, C. Morefield

8:55 1462. Repetition with purpose: Revisiting a familiar scenario to strengthen conceptual connectivity in general chemistry sequence. **B. Sigdel Regmi**, P.B. Nolibos, A. Thomas

9:15 1463. Bridging the gap: How a first-year seminar with multimodal high-impact practices and multi-layered mentoring supports psychosocial success in freshmen STEM majors. **S. Silva, Z.S. Wilson-Kennedy**

9:35 1464. Reducing anxiety towards assessment in introductory STEM courses. **V. Sublett Breeden**

9:55 Break.

10:10 1465. The Periodic Puzzle Project: Development of a variant sudoku puzzle book full of chemistry history and trivia. **W.A. Alexander**

10:30 1466. From passive viewing to active learning: Enhancing general chemistry education through student-led demonstrations. **P.M. Todebush**

10:50 1467. Impact of team formation on student outcomes in a general chemistry II team-based learning and flipped classroom. **M.E. McGreal**

11:10 Closing Remarks.