The 71st Southeastern Regional Meeting of the American Chemical Society
October 20-23, 2019
Savannah, GA

Brent Feske, Program Chair

SUNDAY MORNING

Savannah Marriott Riverfront
Ballroom C

Chemistry Education in the Technical College System of Georgia

J. Kiser, Organizer, Presiding

8:00 Introductory Remarks.

8:05 1. Community outreach and its impact on science students. C. Letson

8:25 2. Employability skills through critical thinking. J. Kiser

8:45 3. Why is chemistry so hard (to teach)? Exploring strategies for the chemistry courses at Gwinnett Technical College. S. Johnson, K. Francois

9:05 4. Teaching STEM classes at the technical college level. A.A. Anderson

Savannah Marriott Riverfront
Chatham

Inorganic Chemistry

General
Financially supported by Division of Inorganic Chemistry
W. E. Lynch, Organizer
B. Wicker, Presiding

8:00 Introductory Remarks.

8:05 5. Shaken, not stirred: Exploration into the synthesis of group 2 amide compounds. I.R. Speight, T.P. Hanusa


8:45 7. Synthesis and reactivity of expanded-ring heterocyclic selones. K. Dowling, D. Rabinovich


10:05 Intermission.


11:40 15. New molecular and ionic actinide fluorides: Simple systems, complex chemistry. G. Gotthelf

Savannah Marriott Riverfront
Oglethorpe B
Organic Chemistry in Fluorescence Microscopy

L. Zhu, Organizer, Presiding

8:00 Introductory Remarks.

8:05 16. Click, fluoresce, and release: Tracking drug delivery through the concomitant generation of a fluorophore. B. Wang


8:59 18. Aurones as a scaffold for fluorescent probes and sensors. S.T. Handy

9:26 19. Metal ion-responsive ratiometric fluorescent probes for two-photon microscopy. C.J. Fahrni

9:53 Intermission.

10:08 20. Lessons from super-resolution microscopy: Choosing the right method and sample preparation considerations. J. Allen

10:35 21. Photoswitchable fluorophores for bioimaging applications. F.M. Raymo


11:29 23. Photo-click strategies for selective substrate labelling with 4D resolution. V. Popik

11:56 Concluding Remarks.

Savannah Marriott Riverfront
Franklin

Biobased & Bio Inspired Polymers & Composites

R. L. Quirino, Organizer, Presiding

8:10 Introductory Remarks.

8:35 25. Monomer from abietic acid and tung oil. K.A. Monroe, A. Hullete, R.L. Quirino


9:15 27. Non-isocianate polyurethanes (NIPUs) obtained from fatty acids. J.D. Rodrigues, F.H. Kobiraki, L.G. Paterno, M.A. Sales


9:55 Intermission.


10:35 30. Polymeric memory resistive devices from poly(N-alkyl methacrylate)s as an artificial synapse. B. Grant, S.H. Foulger, I. Bandera

10:55 31. Thermo-mechanical, rheological, physical and chemical characterization of poly(lactic acid)/poly(hydroxybutyrate)/lignin coated cellulose nanocrystals nanocomposites prepared by high torque melt mixing. A. Tucker, D. Jackson, E.A. Mintz


11:35 33. Phase transferable polymer encapsulated metallic nanoparticles. M.P. Confer, J.P. Harris, S. Street

Savannah Marriott Riverfront
Reynolds

Biochemistry

SAR, Drug Discovery, & Methods

T. Leeper, Organizer, Presiding

8:10 Introductory Remarks.

8:15 34. Hydrophobic ligands influence the structure, stability, and processing of the major cockroach allergen Bla G 1. A.C. Foo, P.M. Thompson, L. Perera, S. Arora, E.F. Derose, J.G. Williams, G. Mueller

8:35 35. Deciphering the biophysical effects of glycosylation on membrane proteins. G. Cook

9:15 37. VGSC blockers with cell invasion inhibitory activity in breast cancer cells. S.E. Velu


9:55 Intermission.

10:15 39. Uncovering the many roles of Stk1 in MRSA virulence and resistance gene regulation. M.S. Blackledge


10:55 41. Crystallographic and analytical characterization of an enzyme catalyzed transformation of a conjugated polymer. H. Spivey, T. Leeper

11:15 42. Micro-technique isolation of insect binding proteins as an antibody assay source. M. Lassiter, B. Welborn

11:35 43. Photodynamic inactivation of antibiotic-resistant bacterial strains using lignin-photosensitizer conjugates. P. Sadrpour, R.A. Ghiladi

Savannah Marriott Riverfront
Oglethorpe A

**f-Element Chemistry & Separations**

Financially supported by Division of Inorganic Chemistry and Auburn University - Department of Chemistry and Biochemistry
A. E. Gorden, E. J. Werner, *Organizers, Presiding*

8:10 Introductory Remarks.

8:15 44. Molecular tetravalent lanthanide complexes. H.S. La Pierre

8:35 45. Thermodynamics and stability studies of actinide-based metal-organic frameworks. O.A. Ejegbavwo, M.D. Smith, N.B. Shustova

9:15 47. Preparation of novel complex uranium oxides via exploratory crystal growth methods. K. Pace, H. Zur Loye


10:15 Intermission.

10:35 50. Tripodal CMPO ligands for selective f-element extraction. E.J. Werner, S.M. Biros, W.B. Larrinaga, A. Martinez, M. Glander

10:55 51. Incorporation of new secondary building units into uranium framework materials by flux crystal growth. C.A. Juillerat


11:35 53. Large area airborne contamination monitoring. T. Whiteside, K.M. Fenker, A. Judy, D.P. Diprete

11:55 Concluding Remarks.

Savannah Marriott Riverfront
Pulaski

Organic Chemistry

Drug Discovery

8:15 54. Complexation thermodynamics between cyclodextrins and fatty acids. X. Yao, M. Bonizzoni, L. Kong
8:35 55. Synthesis and antimicrobial activity of \(n,n'\)-bis-substituted triazolium salts with lipophilic substituents on 1,2,3- and 1,2,4-triazole rings. Z. Lin, J. Wilson, T. Ta, D. Fico, S.S. Johnson, J.D. Gorden, M. Frazier, L. King, K.S. Taylor

8:55 56. Identification and development of antifungal peptoids. K. Bicker


9:55 Intermission.


10:35 60. Uncouplers of oxidative phosphorylation as obesity therapeutics. J.A. Santiago-Rivera


Savannah Marriott Riverfront
Ballroom B

Synthesis & Application of Novel Nanocatalysts

J. Wu, Organizer, Presiding

8:10 Introductory Remarks.

8:15 64. pH responsive colloidal gold nanoparticle catalysts for recovery and reuse. C. Joshi, S. Chakraborty, C.L. Kitchens

8:35 65. Magnesium oxchloride formation kinetics and enhanced water stability for sustainable building materials applications. R.F. Gochez, C.L. Kitchens
8:55 66. Photoswitchable nanoparticle ligands to modulate and control catalytic reactivity. M.R. Knecht

9:15 67. Nickel nanoparticles supported on multi-walled carbon nanotubes as an effective catalyst in Suzuki cross coupling reactions. A. Siamaki

9:35 68. Molecular/heterogeneous catalyst for the selective hydrodeoxygenation of oxygenated aromatics related to lignin biomass. A.K. Vannucci

9:55 69. Continuous flow system for the heterogeneous catalytic production of advanced biofuels. N.E. Fraley, A. Lachgar, M. Wright

10:15 70. Plasmon drag effect pinning and molecule adsorption. M. Durach

Savannah Marriott Riverfront
Ballroom E

Undergraduate Research Experiences: The Power of Quality Mentorship & Programming

Financially supported by Sorbtech
K. S. Aiken, Organizer, Presiding

8:10 Introductory Remarks.

8:15 71. High-impact undergraduate research experiences through the eyes of the undergraduate scholar. S.T. Mensah

8:35 72. MAP (mentorship advancing to Ph.D.): Role mentorship played in a McNair program scholar's life. F. Minter

8:55 73. Mentors matter for all students from high school to graduate school and beyond. J.M. Iriarte-Gross

9:15 74. Mentoring high school students in nanoscience research at Hampton University. P.N. Njoki

9:35 75. SciWrite: Workshop development and mentorship in scientific writing for summer undergraduate researchers. R.R. Ramoutar

9:55 Intermission.

10:15 76. Integrating scientific research to create meaningful undergraduate experiences. K.S. Marriott

10:35 77. REU Site that recruits faculty-student teams. K.L. Buchmueller
10:55 78. Mentoring and support for the REU-INFEWS: Food, energy, water security program at Mississippi State University. D. Mlsna


11:35 80. Kennesaw State University chemistry and biochemistry summer undergraduate research experience. K.J. Linenberger Cortes

Savannah Marriott Riverfront
Academy

Analytical Chemistry

Materials & Nanomaterials

C. McKenas, Organizer, Presiding

8:15 Introductory Remarks.


8:40 82. Evaluation of metal-organic framework as sorbents for the BTEX family of compounds. J.E. Shankwitz, D. Speed, D. Sinanan, G. Szulczewski

9:00 83. Electrochemical monitoring of the thermal sintering behavior of electrode-attached 1.6 nm diameter gold nanospheres. B.P. Mainali, D.K. Pattadar, J.N. Sharma, F.P. Zamborini


9:40 85. Polyaniline modified biochar to remove nitrate from aqueous system. A. Herath, T.E. Mlsna, C. Reid

10:00 Intermission.

10:20 86. Tuning the surface plasmon resonance by patterning plasmonic nanoparticles using metal grid/stamp, glucose crystal deposition and mechanical deformation. M. Ranasinghe, F. Ameer, T. Estrada-Mendoza, L. Hu, A. Rao, G. Chumanov, J.N. Anker

11:00 88. Nitrogen-Doped Screen-Printed Carbon Electrodes (N-SPCEs) and Carbon Ultramicroelectrodes (N-CUME) as platforms for electrocatalysis and immobilization of metal nanoparticles. **G.W. Bishop**, C. Ogbu, E. Amoah, D. Mawuduku, E. Adeniji


11:40 90. High-temperature fast-flow reactor for the study of radical-radical reactions. **Y. Lee**

Savannah Marriott Riverfront
Ballroom D

**Project SEED**

Financially supported by Project SEED
A. Mallia, D. Masterson, *Organizers, Presiding*

8:20 Introductory Remarks.

8:25 91. Using the society for science & the public advocate grant to encourage Project SEED students to enter science competitions. **D.S. Masterson**

8:55 92. Growing a Project SEED site at Boise State University. **D.L. Warner**

9:25 93. ACS Project SEED at Clark Atlanta University. **I.M. Khan**

9:55 Intermission.

10:15 94. ACS Project SEED student participation in molecular materials research at UNC Charlotte. **M.G. Walter**


11:15 96. Project SEED program at Georgia Gwinnett College: Successfully organizing Project SEED at a primarily undergraduate institution. **A. Mallia**

11:45 Concluding Remarks.

Savannah Marriott Riverfront
Plaza

**Undergraduate Papers**

**General**
Financially supported by American Chemical Society and the Coastal Georgia Local Section of the ACS
M. Weiland, Organizer
N. Davis, Presiding

8:30 Introductory Remarks.

8:35 97. Janus micromotors improve the catalytic efficiency of immobilized enzymes. A. Pan

8:50 98. Development of a fluorescence sensor for tracking heme insertion into proteins. A. Whitten, L. Plate


9:20 100. Kinetic isotope effect in the Kemp elimination catalyzed by heme systems. B. Taormina, E.A. Smolenski, A. Callaway, M. Forconi


9:50 102. Vitamin K2 analogs as anti-epilepsy therapeutics. L. Prosser, E. Watt, R. Himes, C. Chou, S. Chan, C. Christie, T. Williamson

10:05 Intermission.

10:25 103. Study of 5-HT_{1D} and 5-HT_{1F} receptor interactions with mini G proteins via BRET analysis. A. Trang, N. Okashah, A.C. Spencer, N. Lambert

10:40 104. 2-ethynylpyridine polymerization using His-tagged T4L, a variant of bacteriophage T4 lysozyme. W. Turner, S. Thomas, T. Leeper


Savannah Marriott Riverfront
Mercer
Undergraduate Papers

General

Financially supported by American Chemical Society and the Coastal Georgia Local Section of the ACS
M. Weiland, Organizer
A. Saha, Presiding

8:40 Introductory Remarks.


9:00 110. Synthesis and structural characterization of a new coordination polymer with nine-coordinated La(III) ions. M. Raja, S. Dixon, K. Barnes, G. Raja, M.D. Smith


9:30 112. Lewis acid catalyzed formation of ligand-stabilized highly crystalline Cu$_2$O nanoparticles via a hot injection esterification method. N. Gibson, A.R. Combs Bredar, B.H. Farnum

9:45 113. $^1$H-NMR investigation of displacement of oleate at PbS quantum dot surfaces using carboxylic acids, thiols, amines, and halides. P. Wasdin, M.R. McPhail

10:00 Intermission.


10:35 115. X-ray study of the chemistry of haloaurates with heteroaromatic N-oxides. S. Lynch, C.W. Padgett, W.E. Lynch


11:05 117. Reductive removal of pertechnetate and chromium by zero valent iron under variable ionic strength conditions. A. Maria, Y. Katsenovich, J. Williams, H. Emerson, D. Boglaienko, T. Levitskaia

Savannah Marriott Riverfront
Atrium

Undergraduate Posters

Financially supported by American Chemical Society - Undergraduate Programs; Coastal Georgia Local Section of the American Chemical Society
M. Weiland, Organizer

9:30 - 11:00


120. Computational studies of bis-phosphinimine NCN-pincer nickel(II) complexes. M. Kauz, C. Mendez-Childers, G. Guillet, w. turner


123. HPLC for separation and detection of organic gunshot residues extracted from silicone personal passive sampling devices. S.O. Sweck, C.R. Dockery, G.E. Potts


125. Efforts towards the total synthesis of synoxazolidinone C. B. Stemen, J. Pierce


127. Conformational flexibility in linear amino alcohols investigated by high-resolution Fourier-transform microwave spectroscopy and ab initio calculations. S. Spann, R. Lavrich

128. Purification and characterization of wild-type and modified small laccase from Streptomyces coelicolor in preparation for attachment to a surface. M. Sullivan, B.W. Gregory, P.A. Baker, C.M. Johnson

129. Bioinspired polymers for sequestration of doxorubicin during chemotherapy treatment. W. Vaughn, M. Bardot, O. Wadsworth, M.D. Schulz
130. Quantifying the connection between polymer architecture and metal chelation. A. Fiorito, S. Winn, P. MacNicol, W.R. Archer, M.D. Schulz

131. Isolation of calcium oxalate from fresh spinach. J.T. Cooper, S. Falk

132. Chemoselective synthesis of $\alpha,\alpha'$-homodifunctional polymeric systems. R.A. Olson, C. Figg, J.S. Levi, B.S. Sumerlin

133. Calorimetric study of the adsorption of oxalate on hematite nanoparticle. N.C. Clarke, D.H. Bui, M. Oganga Cooper, E. Stroeva, H.A. Al-Abadleh, N. Kabengi

134. Antiproliferative structure-activity relationships of 5-substituted indoles and indole-based chalcones. F. Kidd, D.W. Crick


137. Sphingosine kinase inhibition using modified variants of a sphingosine kinase inhibitor. T.C. Grattan, K.J. Butler


140. Use of zinc-specific DNAzymes on nucleic acid functionalized nanocapsules for sensing applications. B. Tate, J.L. Rouge

141. Computational studies of the structures and electron-density topology of the group 14-substituted butatrienes $x=C=C=Ch_2$ ($x=Ch_2$, Cf$_2$, SiH$_2$, SiF$_2$, GeH$_2$, SnH$_2$, PbH$_2$). A. Gonzales, D.A. Clabo

142. Design and application of green, solid-supported palladium catalysts for synthesis of important chemical targets in water. J. Burrell, D. Paull

143. Investigation of the weathering of automotive clear-coat formulations using Fourier-transform infrared spectroscopy (FTIR) for forensic purposes. H. Elaskalani, N.T. Perera

144. Amino acids in soy sauces and alternatives: How do they affect the taste? X. Sillie, M. Fujita

Design and synthesis of solid-supported palladium catalysts using N-heterocyclic carbenes for greener coupling reactions. A.T. Cagle, D. Paull


Synthesis and characterization of l-asparaginase (l-asnase) encapsulated poly-l-lysine-graft-poly(ethylene) glycol (pll-g-peg) polymer nanoparticles for the efficient delivery of therapeutics. K. Goff, R.S. Hikkaduwa Koralege

Analysis of cannabinoid-infused consumer products. T. Griffin, L. Billotto, H.J. Murdock


Analysis of cannabidolic acid (CBDA) and cannabidiol (CBD) ratios in consumer products. K. Focke, S. Jones, V.R. Griffin, T. Griffin

Finding functionality of enzyme 3H04 through computational analysis. S.E. Jennings, A.A. Carter, P.A. Craig

Development and validation of a differential FTIR method for the analysis of model prebiotic peptides. K. Rezaeerod, J.G. Forsythe


Molybdenum-catalyzed cycloisomerization of alkynyl anilines to indoles. L. Broome, M.S. Hobbs, C. Mejia, T.L. Scott

GC-MS measurement of the intermediates of beta oxidation in the lipid bodies of Brassica napus. A. Davidson, G.A. Giles

Investigating the role of chirality in the formation and hydrolysis of model prebiotic peptides. M.B. McDonald, R. Peter, J.G. Forsythe

Microwave synthesis for materials chemistry labs. J. Sanchez, M. Foley

Enzymatic dynamic kinetic resolution for the stereoselective synthesis of α-hydroxy ketones. **K.G. Darrigrand**, P.W. Robbins, E. Reynolds

Design and synthesis of self-complexing multi-substituted boronic acid derivatives as potential selective glucose sensors. **A. Gordon**

Oxidative copper(II) catalyzed alcoholysis of 3-hydroxyflavone: Synthesis, characterization and structure of 3-hydroxy-2,3-dialkoxy-2-phenylchroman-4-ones and 3-dihydroxy-2-alkoxy-2-phenylchroman-4-ones. **E.M. Beasley, B.P. Quillian**


Preparation and preliminary catalysis of a viable ruthenium-based olefin hydroarylation catalysis supported by bis(pyrazolyl)acetate. **J.G. Bazemore**, W. Zhu, **T. Gunnoe**, B.P. Quillian

Synthesis of seedless latex emulsions for use in waterborne coatings. **E. Moscoso**

Savannah Marriott Riverfront
Ballroom C

**Advances in Polymer Science & Engineering**

P. Kalelkar, *Organizer, Presiding*


9:40 166. Fluorescent responsive behavior of a soluble adenine-functionalized polythiophene synthesized via direct arylation polymerization. **S. Sabury**, G.S. Collier, S. Kilbey

10:00 167. Exploring multi-tiered conjugated oligomers as models for conjugated materials. **A.E. Johns**, D.M. Collard

10:20 Intermission.


11:35 171. Mechanistic and kinetic studies of asustainable catalysis of a conjugated polymer by an enzyme. **T. Leeper**
Smart Polymer Materials & Coatings

W. Ming, Organizer, Presiding

10:00 Introductory Remarks.

10:05 172. Intimate and permanent ligating of photoresponsive and thermoresponsive polymers on plasmonic nanoparticles with switchable self-assemblies, optical properties, and catalytic activities. Z. Lin

10:35 173. RF plasma treatment of cellulose materials to fabricate paper-based analytical devices. D.W. Hess

11:05 174. Electrospun polyelectrolyte fibers as nanoreactors. L. Zhai

SUNDAY AFTERNOON

Savannah Marriott Riverfront
Chatham

Advances in Phosphorous-Based Ligands

Financially supported by Southeastern Louisiana University - College of Science & Technology and Department of Chemistry & Physics
G. G. Stanley, B. Wicker, Organizers

1:00 Introductory Remarks.

1:05 175. Synthesis of phosphonium salts and their potential as cationic ligands. B. Wicker, B.A. Atwater, F.R. Fronczek

1:25 176. Chemistry of phosphaethynolato with early transition metals. D.J. Mindiola

1:50 177. Bond activation reactions by boryl pincer complexes. O. Ozerov, W. Shih, Y. Cao, N. Bhuvanesh

2:15 178. Benzoxaphospholes as ligands for transition metals. J.D. Protasiewicz

2:40 179. Lessons in phosphine ligand design: Best laid plans often go astray. G.G. Stanley
3:05 Intermission.


3:45 181. Suzuki-Miyaura and Buchwald-Hartwig reactions utilizing a set of complementary imidazopyridine phosphine ligands. L. Yet

4:10 182. Mechanistic studies and catalytic applications of conformationally flexible phosphine ligands. K.H. Shaughnessy

4:35 183. Phosphine center stage: Profile of a leading and supporting actor in organometallic catalysis. B.V. Popp

Savannah Marriott Riverfront
Academy

Analytical Chemistry

Bioanalytical

C. McKenas, Organizer, Presiding

1:00 Introductory Remarks.


2:05 187. Redox-based fingerprinting method to sense antioxidants. F. Lozada, M. Bonizzoni


2:45 189. Analysis of heavy metals and antioxidant capacity in Slippery Elm bark samples. J. Mierzwa

3:05 Intermission.


4:20 193. Sensing of penicillins and cephalosporins using a pamam-calcein complex in neutral buffered water. **Y. Xu**, M. Bonizzoni


Savannah Marriott Riverfront
Pulaski

**Organic Chemistry**

**Drug Discovery & Others**

X. Chen, *Organizer, Presiding*

1:00 Introductory Remarks.


1:25 196. Design of agonists of the GABAB receptor from ?-amino difluoromethyl ketones. **D.A. Colby**

1:45 197. Vial organic: Safer, cheaper pedagogy for organic chemistry labs. **T.J. Russo**

2:05 198. Spectroscopic analysis of medium-sized constrained rings for potential long-range hyperconjugation: Steric or donor-acceptor effects? **P. Wiget**


2:45 Intermission.


3:45 202. Theranostic nanoparticles for simultaneous detection and treatment of cancer cells. S. Dada, M. Hua


4:25 204. Catalysis of the aza-Diels-Alder reaction by hydrogen and halogen bonds. V. Nzuwah Nziko, S. Scheiner

Savannah Marriott Riverfront
Atrium

Project SEED

Cosponsored by SEED
Financially supported by Committee on Project SEED
A. Mallia, D. Masterson, Organizers

1:00 - 2:00


207. Synthesis and characterization of porphyrin entrapped silica sol-gels for heavy metal detection. A. Rose, C.H. Lisse

208. Utilizing sol-gel technology to create a portable detector of DNA. G. Allred, W. Medawala, C.H. Lisse


211. Release of liquid hydrogen using perhydro dibenzyltoluene. L. Zachary
212. Development and characterization of azaleu-enkephalin analogs. S. Cornish

213. Hard and soft particle detection using machine learning. T.N. Saleh


215. Design and synthesis of novel iridium N-heterocyclic carbene based complexes for application in magnetic resonance imaging. J. Flores

216. Investigating the carrier protein CRM197 to shuttle molecules across the blood-brain barrier. S. Kanduri, J. Travis, N.J. Wymer


218. Lowering poly(vinyl chloride)’s glass transition temperature with urea and its derivatives. J. White

219. Preparing for additive manufacturing using semi-conductive polymers. Q. Cornish

220. Comprehending the molecular chemistry and chemical processing of high performance fibers. D.A. Davis

221. Water quality chemical and microbial analysis of select water resources in Gwinnett County, GA. J. Sheikh, T. Gluick, R. Simmons

222. Synthesis and studies of N-(phenylalkyl)octadecanamides as low molecular mass gelators. J. Kim, A. Mallia

223. Preparation and characterization of deep eutectic solvents based on amino acids. J. Suazo, A. Mallia

224. Molecular docking of the interactions of fluorinated heterocyclic sulfonamides with human and plasmodium DHFR. M. Nguyen, N.Y. Forlemu


226. Preparation of biodiesel using a DES. I. Tirmizi, A. Mallia, D.P. Pursell

Savannah Marriott Riverfront
Forsyth

Smart Polymer Materials & Coatings

W. Ming, Organizer, Presiding

1:00 Introductory Remarks.

1:05 228. Preprogrammed dynamic microstructured polymers. S. Minko


2:05 230. Insights into intra-chain cross-linking. E.B. Berda

2:35 231. Development of smart polymer nanofiber mats for selective removal of PFAS from landfill leachate. M. Feng


3:05 Intermission.

3:20 233. Biobased polymer coating and antimicrobials. C. Tang


4:20 235. Reversible thermochromic alkali metal polydiacetylene microcrystals. J.B. Parker, T.W. Hanks


Savannah Marriott Riverfront
Ballroom C

Advances in Polymer Science & Engineering
P. Kalelkar, Organizer, Presiding

1:05 Introductory Remarks.

1:10 238. Increasing the functionality of electrospun polymer fibers through large particle inclusion. B. Brettmann


2:00 240. Polydiacetylene nanostructures as sensor platforms. T.W. Hanks

2:25 241. Crawford group: At the interface of sensors and soft materials. K. Crawford


3:15 Intermission.


4:00 244. Robust metallo-polyelectrolyte membranes towards energy storage applications. T. Zhu, C. Tang


4:40 246. Effects of hybrid additives on the thermomechanical properties of PMMA parts printed by fused filament fabrication. W. Ledford, D.P. Street, S. Sabury, M. Kilbey

Savannah Marriott Riverfront
Ballroom D

Catalysis in Aqueous & Alternative Media

H. J. Schanz, Organizer
K. H. Shaughnessy, Organizer, Presiding

1:10 Introductory Remarks.

1:35 248. Polyoxometalate oxidation catalysts in solar fuels and anticancer chemotherapy. C.L. Hill


2:35 251. Study of photo-induced electron transfer from CdTe quantum dots to nickel molecular complexes in water. N. Botcha, R. Gutha, S. Sadeghi, A. Mukherjee


3:15 Intermission.


4:15 255. Understanding cobalt oxide-promoted catalytic reduction of para-nitrophenol. L. Shultz, T. Jurca


Savannah Marriott Riverfront Reynolds

Recent Advances in Bioinorganic Chemistry

Financially supported by Rotunda Scientific Technologies
J. D. Caranto, Organizer
T. Stich, Presiding

1:10 Introductory Remarks.

1:15 257. Heme sensor and inter-domain control of o2-dependent globin coupled sensor signaling. E.E. Weinert
1:40 258. Modeling nitric oxide reductase utilizing Cu(II) centers and secondary sphere H-bonding functionalities: Intramolecular proton transfer facilitates N₂O(g) release. G.B. Wijeratne, M. Bhadra, M. Seigler, K.D. Karlin

2:05 259. HNO trapping mechanisms with ferric heme proteins. Y. Shi, Y. Zhang

2:30 260. Maturation and assembly of the key enzyme of methanogenesis. S.O. Mansoorabadi

2:55 Intermission.

3:15 261. Biological implications of amino acid coordination to Cu(II) and Fe(II). J.M. Murphy, J.L. Brumaghim

3:40 262. Non-native redox processes by synthetic cytochrome C oxidase mimics. S. Hematian

4:05 263. Substrate tuning traps intermediates in radical SAM enzyme reactions. T. Stich

4:30 264. Demystify the chemical logic of mononuclear iron enzyme catalyzed olefin and nitrile groups installation. W. Chang, Y. Guo, M. Davidson, Y. Tang, C. Yu, R. Fan

Savannah Marriott Riverfront
Mercer

Undergraduate Papers

Financially supported by American Chemical Society and the Coastal Georgia Local Section of the ACS
M. Weiland, Organizer
S. R. Carpenter, Presiding

1:10 Introductory Remarks.


1:30 266. Asymmetric synthesis of nitrogen heterocycles by electrophilic cyclization reactions. S.L. Boyd, G.J. Rustin, M.G. Donahue

1:45 267. Towards a greener multidentate NacNac ligand. P.M. Jimenez Antenucci, H. Marcello, B. Wicker


3:00 Intermission.


3:50 274. Investigation of acid catalyzed Pictet-Spengler cyclization with sulfonamides. K. Birkhoff, M.G. Donahue


4:35 277. Thermal shift assay development for finding novel antibiotics targeting a cystic fibrosis pathogen. K. Meyberg, T. Leeper

Savannah Marriott Riverfront
Ballroom E

Understanding Coastal Environments through Toxicological Applications & Tools

W. E. Gato, Organizer, Presiding

1:10 Introductory Remarks.


1:45 279. Controlled-PCO₂ aquaculture for long-term investigation of ocean acidification. C. Hintz, H. Schroeder
2:15 280. Experimental determination of flame retardant effects on aquatic communities of the Southeastern Coastal Plain. **R. Cohen**


3:15 Intermission.

3:30 282. Research framework for coupled hydrologic and biogeochemical systems in freshwater wetlands on Georgia coast barrier islands. **J.B. Deemy, K. Takagi**

4:00 283. Detection and risk analysis of UV filter and paraben micropollutants in the tidal freshwater Potomac River. **T. Haji, G.D. Foster, T.B. Huff**

4:30 284. Detoxification of waste water of Pb$^{2+}$ and Cd$^{2+}$ using agricultural waste of boiled groundnut (*Arachis hypogaea*) shells. **T.A. Abii**

Savannah Marriott Riverfront
Franklin

**Advances in Connecting Structure, Dynamics & Functions of Macromolecules using Computational Methods**

V. F. Waingeh, *Organizer*
N. Y. Forlemu, *Organizer, Presiding*

1:15 Introductory Remarks.

1:20 285. Molecular dynamics simulations of micelle formation by surfactants and peptides. **J. Kindt**

1:40 286. Electrostatic tuning maps and average protein configurations: Strategies to aid in studying flavoproteins. Y. Orozco-Gonzalez, M. Kabir, **S. Gozem**

2:00 287. Design of asymmetric catalysts through virtual screening. **S.E. Wheeler**

2:20 288. Computational studies of 3-hydroxy-3-methyl-glutaryl-CoA (HMG-CoA) reductase complexes with steroid-based statin analogs. **V.F. Waingeh, M. Hackbarth**


Savannah Marriott Riverfront
Oglethorpe A
X-Ray in the Southeast: Single Crystal

Financially supported by Division of Inorganic Chemistry and Rigaku Americas Corporation
W. E. Lynch, Organizer
R. A. Groom, Organizer, Presiding

1:15 Introductory Remarks.


1:40 291. Polymorphs, enantiomers, and intra/intermolecular interactions of D\(^8\) transition metal complexes. D.E. Janzen


3:00 Intermission.

3:20 295. Multinuclear Cu\(^1\) bis(amidinates) as highly luminescent molecular strings. M. Stollenz, J. Arras, A. Calderon, E.T. Miller, N. Bhuvanesh, C. McMillen

3:40 296. Structure and reactivity relationship of mononuclear Cu(II) complexes with peroxides. A. Mukherjee

4:00 297. Polydentate bis(amidines) as versatile ligand platforms for multinuclear coinage metal assemblies. J. Arras, M. Stollenz, O. Ugarte Trejo, C. O'Dea, N. Bhuvanesh, C. McMillen

4:20 298. Exploring the continuum of halogen bonding and higher polyhalide anions. C. McMillen, K. Kobra, B. Hicks, Y. Li, W.T. Pennington


Savannah Marriott Riverfront Plaza
Undergraduate Papers

General

Financially supported by American Chemical Society and the Coastal Georgia Local Section of the ACS
M. Weiland, Organizer
C. R. Dockery, Presiding

1:20 Introductory Remarks.

1:25 300. Broadening the understanding of selective microwave heating on the 1,2-meisenheimer rearrangement. A. Ziegelmeier, G.B. Dudley, M. Frasso

1:40 301. Analysis of organic gunshot residues on activated charcoal passive sampling devices. R. Cronin, C.R. Dockery

1:55 302. Water purification efficiency using low-temperature atmospheric plasma jet under varying conditions. M. Thompson, R. Gott, K. Xu

2:10 303. Inhibition of oxidation of cosmetic foundation. A. Hartman

2:25 304. Aggregation patterns of insulin and amyloid-beta peptides. S. Brown

2:40 305. HPLC analysis and evaluation of cephalixin for DPAL (Distributed Pharmaceutical Analysis Laboratory). C. Fegan, M. Davila-Banrey, M. Howard

2:55 Intermission.


3:30 307. Removal of organophosphorus compounds from water. J.T. Mathew

3:45 308. Systematic study of the effects of functionalization on the interaction between CO$_2$ and calixarenes. J. Hymel, J. Townsend, K.D. Vogiatzis

4:00 309. Photophysical characterization of novel rhodamine B dimers. N.J. Grinalds, K.H. Fogarty, P.M. Lundin


Savannah Marriott Riverfront
Oglethorpe B
Cope Scholar Symposium in honor of Seth Marder: Development of Organic Semiconductor Materials

Financially supported by Division of Organic Chemistry
S. M. Landge, Organizer, Presiding
M. A. Lnu, Presiding

1:30 Introductory Remarks.

1:35 311. Development of redox dopants for organic semiconductors and interface modification. S.R. Marder


2:55 Intermission.


3:45 314. Development of C-H functionalization reactions for the incorporation of electron deficient building blocks in organic semiconducting materials. S. Blakey


Savannah Marriott Riverfront Atrium

Biochemistry

T. Leeper, Organizer

2:15 - 3:45


317. Leveraging a FapR biosensor for malonyl-CoA and non-natural extender units. M.M. Mitchler, A.A. Malico, R.E. Kalkreuter, G.J. Williams

318. Impact of acid insertions on packaging and damage of reconstituted arginine peptide-condensed DNA. E. Oikeh, J.E. Derouche
319. Protein-RNA complex characterization using biolayer interferometry and isothermal titration calorimetry. **M. Seemann, F. Abaza, T. Leeper**

320. Elucidate possible reaction mechanism of cyclopropanation found in cycloclavine. **X. Li, W. Chang**

321. Elucidate the mechanism of key cyclization in the fumiquinazolines biosynthesis. **L. Cha, W. Chang**

322. Change in expression of host selenoproteins SePP1 and TR1 in cell lines due to Zika infection. **G. Dailey, E. Taylor, J. Ruzicka**

323. Using choline kinase as a drug target leads to inhibition of *Streptococcus pneumoniae* growth via dysregulation of lipoteichoic acid production. **T. Zimmerman, V. Chasten, J. Lacal, S.A. Ibrahim**

324. Identification of staphylococcal autoinducing peptides with ultrahigh performance liquid chromatography: High resolution mass spectrometry. **L. Mejia Cruz, D. Todd, N.B. Cech**

325. Characterization of early steps from the biosynthetic pathway of the exomethylene β-branch in the polyketide difficidin from Bacillus velezensis FZB42. **R. Tikkanen, J.J. Reddick**

326. Synthesis & mitochondrial analysis of sigma-1 selective ligands. **E.L. Martin, B. Byrne, M. Prasad, K.S. Marriott**


330. Analysis of mitochondrial protein regulatory function in presence of synthetic compounds. **J.W. Cox, K.S. Marriott, M. Prasad**


333. Assessing the ability to predict drug-induced mitochondrial toxicity in mammalians. N. Mitchell, M. Prasad

334. Effects of chaperones on protein-protein interactions. D. Tinsley, A. Chowdhury, M. Prasad


336. Biochemical characterization of phosphoethanolamine methyltransferase from Eimeria tenella. D. Etoroma, B. Cox, S. Lee


338. Detecting prostate cancer associated glycosylation patterns from human serum using a boronic acid functionalized synthetic lectin array. M.G. Hollenbeck


340. Isolation, whole-genome sequencing, and antimicrobial activity of the slow-growing aquatic Pseudomonas sp. RIT623. K. Steiner, A. Parthasarathy, N. Wong, N.T. Cavanaugh, A.O. Hudson


345. Structure-based design of INGAP peptide analogs to promote viability and function of pancreatic islet beta cells. J. Su, K. Gonzales, S. Mungre

346. Characterization of lipid binding by full-length NoxO1. R. Gallaher, N. Davis

Decoding the machinery behind the thermodynamically unstable disubstituted β-branch formed in difficidin. **B. Kiel, J.J. Reddick**

Design of mimic peptides for inhibition of methyl-binding proteins. **A. Vanotteren, A.L. Stewart**

Biological evaluation of botanical extracts against *Staphylococcus aureus* and methicillin resistant *Staphylococcus aureus*. **C. Pelzer, D. Jones Jr., N.B. Cech**

Peptides as model systems for sequence specific transcriptional regulation. **A. Vanotteren, A.L. Stewart**

Analysis of enzymes involved in polymyxin resistance in *Escherichia coli* using fluorescent bactoprenyl phosphate. **B. Scarbrough, C. Eade, A. Reid, J. Troutman**

Characterization of novel protein domains in the DNA polymerase gamma from the human pathogenic yeast *Cryptococcus neoformans*. **C.A. Baumgardner, S. Walter, I. Bose, J. Wallen**

Savannah Marriott Riverfront
Ballroom B

**Chemical Education**

**Teaching in the Laboratory**

S. R. Mooring, *Organizer, Presiding*

2:35 Introductory Remarks.

2:40 **354.** How sweet it is: Using table sugar to teach single crystal X-ray crystallography at all levels of the undergraduate laboratory curriculum. **A.M. Beauparlant, C.T. Eagle**

3:00 **355.** Cross curricular themes of water quality in introductory general biology and chemistry courses. **R. Mohseni**

3:20 **356.** 3D printed models of atomic, hybrid, and molecular orbitals. **K.H. Fogarty, R. De Cataldo, K. Griffith**

3:40 **357.** Teaching essential QA/QC in the undergraduate analytical laboratory through pharmaceutical analysis: Cephalexin (DPAL project). **M. Howard, C. Fegan, M. Davila-Banrey**

4:00 **358.** Evaluation of virtual reality resources for an Organic Chemistry laboratory. **M.T. Gallardo-Williams**

4:20 **359.** Making a case for hands on activities in spectroscopy. **L. Strange de Soria**
4:40 360. Determining the quantity of acetic acid in household vinegar: Undergraduate laboratory titration experiment using three independent monitoring techniques. R. Dabke, S. Melaku, Z. Gebeyehu, S. Harris, J. Gonzales

Savannah Marriott Riverfront
Franklin

Advancements in Fermentation Chemistry

Z. S. Davis, Organizer, Presiding

3:25 Introductory Remarks.

3:30 361. NGS profiling of a mother culture used in the production of sour beer. C. Cornelison, M. Griffin, H. Den Bakker

3:50 362. Bypassing the malting process with Koji. B.F. Taubman, T. Williams

4:10 363. Investigation of volatile and semi-volatile aroma compounds in beer originating from either sorghum or barley malt. D. Budner

4:30 364. Effect of yeast strain on distilled spirit aroma and flavor: Sensory perception. W.N. Lory, Z.S. Davis

Savannah Marriott Riverfront
Atrium

Undergraduate Posters

Financially supported by American Chemical Society and the Coastal Georgia Local Section of the ACS
M. Weiland, Organizer

4:00 - 5:30


366. Design and synthesis of new aminoflavonol benzyl quinolone carboxylic acid (BQCA) analogs as potential Alzheimer’s disease drugs. S. Jarrell, S. Zingales

Expression, purification, and characterization of the *Staphylococcus aureus* pasta kinase STK1. **M. Callender**, N. Labban, M.S. Blackledge, J.A. Pollock

Regulation of pyrimidine degradation in *Pseudomonas chlororaphis*. **A.E. Chew**, M.F. Santiago

Pro-ligands of estrogen receptor beta and implications in neurodegenerative diseases. **J.D. McEachon**, H. Park, J.A. Pollock


Synthesis of ⁷bpyPt(C₂Py)₂ and its interactions with Cu(I) and Pd(II) metals. **L.D. Jaques**, S.L. McDarmont, C. McMillen, S. Neglia, J.P. Lee, J.A. Pienkos


Competitive reduction of ferrihydrite and nontronite and implications for lacustrine sediments. **D.M. Davis**, J. Chidzugwe, D. Deocampo

Predicting reactivity of homologous sulfohydrolases via bioinformatics. **A.E. Reeves**, J.L. Fox, M. Forconi

Assessing the release and transformation of metal additives from consumer plastics. **M. Hughes**, J.G. Clar

383. Hydrothermal syntheses and crystal structures of molybdenum tellurites. D. Burgess, H. Zhang, J. Ling


386. Measuring heat related to the dissociation and reformation of ferritin using isothermal titration calorimetry. B.W. Ellison, A.T. Perez, F.W. Outten, N.E. Grossoehme


388. Thermostability characterization of tetrahedrite nanoparticles synthesized by a modified polyol process. C.D. Fasana, G.E. Garcia Ponte, M.E. Anderson


390. Investigating the mechanism of eukaryotic heme A synthase. M.L. Huebsch, N.G. Taylor, N.J. Harris, O. Khalimonchuk, J.L. Fox

391. Interactions between heme biosynthetic proteins in mitochondria. H.G. Addis, N.G. Taylor, N.J. Harris, O. Khalimonchuk, J.L. Fox


393. Quantum mechanics study of QSAR in synthetic cathinones. J. Airas

394. Introduction of fluoroaromatic probes into peptides and proteins via nucleophilic aromatic substitution. J. Linzel, J. Dunne, M.W. Giuliano, M. Forconi


396. Discovery and evaluation of small molecules that potentiate antibiotics in methicillin-resistant Staphylococcus aureus (MRSA). R. Berndsen, G. Norris, H.B. Miller, M.S. Blackledge

397. Syntheses and structures of manganese tellurite chloride. M.S. Davis, H. Zhang, J. Ling

398. Temperature dependent stabilities of various isomers of C_{32} and C_{36} endohedral metallofullerenes. S. Church, T.J. Fuhrer
399. Recipe for a great scientist: Geometry, music, and mechanical drawing. S. Powell, T.J. Fuhrer


401. Kinetic isotope effect on the Kemp elimination. E.A. Smolenski, B. Taormina, F.J. Heldrich, M. Forconi

402. Surface tension and critical micelle concentration measurements of seawater and estuarine water. A. Deegan, R. Bramblett, T. Burdette, A.A. Frossard

403. Employing a binol based ligand for the design of chiral metal-organic frameworks. I.A. Riha, G.J. McManus

404. Synthesis of metal-organic frameworks using four-connected imide containing linkers. J. Jeffries, G.J. McManus

405. Constructing metal-organic frameworks from unique tetracarboxylic acid ligands. K. Gusty, G.J. McManus


407. Development of an active learning, organic chemistry laboratory experiment on extraction and LCMS identification of fragrant esters from fruits for use as a recruiting tool during UNC Asheville’s NSF S-STEM “Chemistry First Day”. D.O. Jackson, A.L. Wolfe

408. Synthesis of polypeptides via emulsion polymerization of N-carboxyanhydrides. M.P. Hale, D.W. Holley


410. Acetate: Assisted C-H bond activation: Attempts to prepare and isolate a key Co(III)-cyclometallated intermediate. T. Paratore, J.P. Lee

411. Modification of head-groups on 10,12-pentacosadiynoic acid using click chemistry. C.T. Stueber, T.W. Hanks
SUNDAY EVENING

Savannah Marriott Riverfront
Atrium

Undergraduate Posters

Financially supported by American Chemical Society and the Coastal Georgia Local Section of the ACS
M. Weiland, Organizer

6:00 - 7:30

412. Preparation, thermal properties and gelation studies of 3β-cholesteryl N-(9-acridinyl) carbamate as low molecular mass gelator and aggregation studies with DNA. T. Sawyer, J. Lainez, N.Y. Forlemu, T. Gluick, A. Mallia

413. Preparation, self-assembly and gelation studies of N-(4-hydroxyphenyl)alkanamides as low molecular mass gelators. C. Landaverde, S. Farre, A. Mallia

414. Surface modified polydopamine-polypyrrole coatings. Z. Wang, T.W. Hanks


416. Synthetic progress towards asymmetrical pyridine-based CXCR4 modulators. C.N. Tran

417. Control of encapsulation and embed magnetic nanoparticles within the aqueous interior bilayer of liposomes prepared from 10,12-pentacosadiynoic acid. T.W. Hanks, M. Fuller

418. Siloxy functionalized nanoclays and nanosilica towards automotive crashworthiness applications. Z. Murphy, E. Koricho, S.M. Landge

419. Exposure of hepatocellular carcinoma cells (Hep-G2) to CDSTE quantum dots. A.L. Ponton, L. Alamo-Nole

420. Cytochrome P450 activity of Hep-G2 cells after the exposition of quantum dots. I.J. Ortiz, L. Alamo-Nole

421. Determination of fluorescence quenching constants. J. Ellenburg, J. Bachmann, E. Storck, P.B. Nolibos


424. Analysis of lanthipeptides produced by *Salinispora* and characterization of the cyclase. S. Shah, C.G. Kittrell, E. Limbrick


426. Expression of electron transport chain complexes following exposure to tumor-suppressant α-TOS. A. Palos-Jasso


428. Structure activity relationship (SAR) studies of neurotoxin quinoline-derivatives. D. Smeyne, V. Sittaramane, M.A. Lnu


430. Determination of trace amounts of pesticides in green tea. A.M. Le, J.M. Plummer


432. Bio-based materials to synthesize a novel surfactant used in the production of polyurethane foams. C. Crull

433. Purification and characterization of Notch TM by NMR. M. Zhuang, C. Wang, J. Zhao, Y. Xiao, J. Gibson


438. Synthesis and characterization of copper proazaphosphatrane complexes as potential pre-catalysts for cross-coupling reactions. J. Thomas, M. Johnson
439. Compositional analyses of potsherds from an ancient Jewish pottery industrial site by inductively coupled plasma optical emission spectrometry. J.M. Trail, A.C. Rodgers, J.R. Strange, B.W. Gregory


441. Investigating the oxidative mechanism leading to atherosclerotic lesions. J.P. Post, K.M. Matera


443. Theoretical study of variable gas adsorption by the robust metal-organic framework NKMOF-1-Ni'. G. Beemer, T. Pham


445. Using chalcones to re-sensitize methicillin-resistant *Staphylococcus aureus* (MRSA) to antibiotics. A. Le Beau, J. Brigati, N. Duncan

446. Photochemistry of silver cluster: DNA conjugates. S. Carnahan, J.T. Petty

447. Silver cluster conjugates with a DNA template. D. Lewis, J.T. Petty

448. Identification of toxic metabolites produced by *Batrachochytrium dendrobatidis* fungus. L.E. Moore

449. Cracking the theobromine dimer through co-crystal formation with salicylic acid derivatives. A.N. Kerr, G.J. McManus

450. Studies toward functionalization of tenulin and isotenulin via Diels-Alder reactions. J. Wilson, K.S. Knight


454. Exploration of unexpected Ph-dependent acidic aromatic hydrogen in 1,8-diamino-2,7-naphthyridine-4-carbonitriles. J. Ewald, M. Pfanner, T.T. Truong, W. Yang
455. Phosphonates as a precursor to phosphorylated biomolecules. S.A. Khweis, K. Slavicinska, M.A. Pasek, H.L. Abbott-Lyon

456. Developing small molecules selectively targeting the sequence-based secondary structure of SSDNA, CCG repeats. M. Pfanner, S. Erwin, M. Linkous, W. Yang


458. Modification of polysiloxane surface coatings with zwitterionic thiols using thiol-ene click. T.W. Hanks, J.M. Owen


460. 3D printed laboratory accessories as a vital component of the undergraduate research experience. E.S. Quinn, N.T. Green, R.M. Hughes

461. Screening and characterization of a commercially available lipase library for catalysis of a Morita-Baylis-Hillman reaction. K.D. Hernandez Gomora, R.M. Hughes

MONDAY MORNING

Savannah Marriott Riverfront
Ballroom C

Advancements in Biocatalysis

A. S. Bommarius, Organizer, Presiding

8:00 Introductory Remarks.


8:33 463. Exploring sequence-function space in the old yellow enzyme superfamily. S. Lutz
9:01 464. Understanding the limited stereo-complementary nature of old yellow enzymes 1 & 3: Loop movement dictated by a single amino acid. R.R. Watkins, S. Lenka, M. Buteler, J.D. Stewart

9:21 465. Bubble column enables higher reaction rate for deracemization of (R,S)-1-phenylethanol with coupled alcohol dehydrogenase/NADH oxidase system. B. Bommarius


10:17 Intermission.


11:00 468. Recent advances in commercial scale biocatalytic processing. M. Abrahamson


Savannah Marriott Riverfront
Forsyth

Applications of Mass Spectrometry for Drug Discovery & Precision Medicine

Financially supported by Division of Analytical Chemistry
J. D. Tipton, Organizer, Presiding

8:00 Introductory Remarks.

8:05 470. Quick discussion on multiomics with mass spectrometry and standardization in metabolomics. J.D. Tipton

8:30 471. Mass spec applications to natural products drug discovery. B. Baker

8:55 472. Mass spectrometry metabolomics in clinical research. T.J. Garrett, C. Chamberlain, V. Rubio


9:45 474. Pharmacoproteomics: Mass spectrometry-based approach to determine drug targets and their effects in an unbiased manner. L. Herring, J. Beri, A. Prevatte, T. Gilbert, L. Graves

10:10 Intermission.
10:30 475. PepSAVI-MS for the identification of novel bioactive cyclotides. **N.C. Parsley, L.M. Hicks**

10:55 476. High-throughput screening by adaptation of IR-MALDESI-MS. **D.C. Muddiman, M. Ekelof, J. Dodds, E.S. Baker, J. Williams, N. Elsen**


11:45 Concluding Remarks.

Savannah Marriott Riverfront
Chatham

**Chemistry Education from Research to Practice**

Financially supported by Wilson Dam Local Section of the American Chemical Society
M. Anzovino, S. L. Johnson, *Organizers, Presiding*

8:00 478. Assessment in postsecondary chemistry courses: Results from a national survey. **J.R. Raker, K.L. Murphy**

8:20 479. Longitudinal investigation of changes in teaching beliefs of chemistry faculty at research-intensive institutions. **M. Popova, J. Harshman, M.N. Stains**

8:40 480. Characterizing observation feedback provided to trainee graduate teaching assistants. **C.A. Randles, F.K. Lang, K.A. Jeffery**

9:00 481. Improving the training of teaching assistants at Purdue chemistry: Incorporating what they really need and want. **F.K. Lang, C.A. Randles, K.A. Jeffery**

9:20 Intermission.


9:50 483. Utilizing evidence-based pedagogies to make general chemistry more individualized and accessible to under-prepared students. **J.H. Broome**

10:10 484. What student know and say about acid-base equilibrium. **S. Mooring, N.A. Kilpatrick**

Savannah Marriott Riverfront
Reynolds
Diversity: Minority Serving Organizations

Financially supported by ACS Local Section Activities Committee, Coastal Georgia Local Section of the American Chemical Society, NOGLSTP.
R. A. Groom, B. P. Quillian, Organizers, Presiding

8:00 Introductory Remarks.

8:05 Panel Discussion.

8:45 485. Diversity and inclusion: Perspective from a quarter of a century in a minority serving institution. S.Y. Ablordepey

9:15 486. ACS PROF and NOGLSTP: Making history for LGBTQ+ chemical professionals. C.J. Bannochie

9:45 Intermission.

10:10 487. American Chemical Society Committee on Chemists with Disabilities: Empowering ability. R.I. San Miguel

10:40 488. SACNAS: Achieving true diversity in STEM. P. Silveyra

11:10 489. Faculty research mentoring strategy at a PWI versus an HBCU. P.I. Binda

11:40 Discussion.

Savannah Marriott Riverfront
Franklin

Advancements in Chemical Biology

Financially supported by Division of Analytical Chemistry; North Carolina State University and the University of Georgia
G. J. Williams, Organizer
Y. Zheng, Presiding

8:05 Introductory Remarks.

8:10 490. Synthetic glycomics: Chemo-enzymatic synthesis of oligosaccharides, polysaccharides, glycolipids, glycopeptides and glycoproteins. P.G. Wang, J. Song, J. Zhang

8:35 491. Molecular basis for the evolution of methylthioalkylmalate synthase and chain elongation of methionine-derived glucosinolates. S. Lee
9:00 492. Fragment-based drug discovery targeting *P. aeruginosa* inhibitor of vertebrate lysozyme: Approach to active site-directed irreversible inhibition. **A.B. Schultz, T. Leeper**


9:30 494. Human milk and the art of (microbial) war. **S.D. Townsend**

9:55 Intermission.


10:40 496. Expanded genetic code to study protein post-translational modifications. **T.A. Cropp**

11:05 497. Unravelling the druggability of E3 ubiquitin ligase Nedd4 as a target for the alleviation of α-synuclein toxicity in Parkinson’s disease. **A. Hatstat, D.G. McCafferty**


11:35 499. Tunable chemistry for global discovery of protein function and ligands. **K. Hsu**

Savannah Marriott Riverfront
Mercer

Polymers at Interfaces

B. Brettmann, *Organizer*
L. F. Leon Gibbons, *Organizer, Presiding*

8:10 Introductory Remarks.

8:15 500. Dynamic polymer biointerfaces. **S. Minko**


9:15 502. Polymer interpenetration and chain connectivity on the local glass transition and dynamical gradients near and across polymer interfaces. **C.B. Roth**

9:45 503. Study of kinetics and functionalization efficiency of sonochemical assisted nanoscale anion exchange resins for water purification. **A. Sahu**, R. Sheikh, J.C. Poler
10:00 Intermission.

10:25 504. Polymer coatings for aerospace applications. **D. Priftis**

10:55 505. Counterion condensation in polymer electrolytes and its role on ionic conductivity in electrochemical processes. **C.G. Arges**

11:25 506. Pattern-based metal cation sensing at trace levels in water using fluorescent polymeric receptors. **M. Ihde, J. Tropp, J.D. Azoulay, M. Bonizzoni**


Savannah Marriott Riverfront
Ballroom D

**Strategy & Methods for Complex Molecule Synthesis**

Financially supported by Division of Organic Chemistry
E. M. Ferreira, A. J. Grenning, *Organizers, Presiding*

8:10 Introductory Remarks.

8:15 508. Beyond CP*: Mechanism guided design of a new rhodium complex for enantioselective C-H functionalization. **S. Blakey**

8:45 509. Understanding catalyst substrate interactions and reaction selectivity. **S. Wiskur**


9:35 511. Pericyclic reactions in the total synthesis of natural products. **J. Leahy**

10:05 Intermission.


11:15 514. Benzimidazolyl-metal complexes as simple bifunctional templates in sustainable catalysis. **V. Lindsay**
Savannah Marriott Riverfront
Oglethorpe A

Structure-Based Drug Design

Financially supported by Cresset
R. J. Bienstock, Organizer, Presiding

8:10 Introductory Remarks.


8:40 516. Bacterial and fungal ribosome RNA targeted antimicrobials. D.P. Arya


9:30 518. Computer-aided design and synthesis of potential pharmacophores. S.S. Panda

9:55 Intermission.

10:15 519. Structure-based design of panthothenate kinase modulators for the treatment of COA deficiencies. R.E. Lee

10:40 520. Type IV inhibitors of B-Raf kinase that block dimerization and overcome paradoxical MEK/ERK activation. C. McInnes

11:05 521. Data-driven construction of innate immune checkpoint inhibitors with controlled polypharmacology. D. Kireev

Savannah Marriott Riverfront
Oglethorpe B

WCC: Modern Issues for Women in Chemistry

S. Zingales, Organizer
C. Knight, D. E. Williams, Presiding

8:10 Introductory Remarks.

8:15 522. Navigating teaching, research, service and motherhood at a primarily undergraduate institution. P. Riggs-Gelasco
8:30 523. Barriers in the laboratory and perceptions of femininity. C. Knight

8:45 524. Pregnancy and parenting in academia. M.S. Blackledge

9:00 525. Succeeding in academia: Keep calm and say "no". S.L. Johnson

9:15 Panel Discussion.

10:00 Intermission.

10:30 526. My experience as an inexperienced negotiator. D.E. Williams

10:45 527. Encouraging success and access to opportunities for women and people of color at a primarily white undergraduate institution. J.H. Ferguson, A. Maxwell, J.R. Ward

11:00 528. Finding your voice and taking up space. C. Theodore

11:15 529. Empowering undergraduate students through chemical biology research. J.A. Pollock

11:30 Panel Discussion.

Savannah Marriott Riverfront
Ballroom E

New Forms of Carbon: Fullerenes, Metallofullerenes, Nanotubes & Graphene

Financially supported by President-Elect of the American Chemical Society
H. C. Dorn, Organizer, Presiding

8:15 Introductory Remarks.

8:20 530. Recent crystallographic studies of fullerenes and endohedral fullerenes. A.L. Balch, M.M. Olmstead, M. Roy

8:50 531. Actinide endohedral metallofullerenes: From cage selection to actinide–actinide interactions. J.M. Poblet


10:10 Intermission.

10:30 533. Single-electron lanthanide-lanthanide bonds inside a carbon cage: Towards robust metallofullerene molecular magnets. A. Popov
10:50 534. Isolation of tubular carbon ("fullertubes"): Fullerenes, nanotubes, or neither? S. Stevenson


Savannah Marriott Riverfront
Ballroom B

Plastics & Microplastics in the Environment

J. A. Brandes, Organizer, Presiding

8:15 Introductory Remarks.

8:20 536. Availability of plastic-associated chemicals to northern fulmar seabirds. E. Crater, K. Huncik, J. Hoguet, J. Kucklick

8:45 537. Mapping microplastics in Georgia’s coastal waters: Engaging the citizen scientist. D. Sanders, J.A. Brandes

9:10 538. Patterns of microplastic abundances in Georgia estuarine waters. J.A. Brandes, D. Sanders

9:35 539. Photochemical degradation of microplastics under aquatic conditions. K. Ma, J.A. Brandes

Savannah Marriott Riverfront
Plaza

Recent Advances in Cellulose, Lignin or Hemicellulose Derived Materials & Chemicals

S. Chatterjee, Organizer, Presiding

8:15 Introductory Remarks.

8:20 540. Robust route to multi-functional cellulose-based polymeric bottle-brush cocoons. Z. Wang, Z. Lin

8:40 541. Low cost production of xylose from biomass hydrolyzates. J. Satyavolu

9:00 542. Interaction of lignin dimers and derivatives with β-cyclodextrin. X. Tong, M. Moradipour, B. Novak, B. Knutson, S. Rankin, B. Lynn, D. Moldovan

9:40 544. Cellulose and lignin based biocomposites for thermal energy management in buildings. Y. Kim, X. Zhang, G. Bahsi Kaya, B. Vega, B. Via

10:00 Intermission.


10:40 546. Cellulose-derived bottlebrush-like block copolymers enable the crafting of one-dimensional functional nanorods with unprecedented control over dimensions, compositions, architectures and surface chemistry. Z. Lin

11:00 547. Biohybrid aerogel from self-assembled nanocellulose and nanochitin as a high-efficiency absorbent for water purification. X. Zhang, I. Elsayed, C. Navarathna, G. Schueneman, E.M. Hassan


11:40 Concluding Remarks.

Savannah Marriott Riverfront
Pulaski

Polymeric Materials for the Next Generation Sensing, Diagnostics, & Therapy

Financially supported by Division of Polymer Chemistry
D. L. Watkins, Organizer
C. N. Scott, Organizer, Presiding

9:00 Introductory Remarks.

9:05 549. Facial amphiphilic antimicrobial polymers against gram-negative bacteria. C. Tang


10:05 Intermission.

10:20 551. Polymer-tetrodotoxin conjugates to induce prolonged duration local anesthesia with minimal toxicity. C. Zhao
10:35 552. Temperature-responsive polymersomes of poly(n-vinyl-2-methylcaprolactam)-block-poly(n-vinylpyrrolidone) to dampen drug-induced cardiotoxicity. V.A. Kozlovskaya, E.P. Kharlampieva


11:20 554. Fundamental studies and biomaterials application of peptoid polymers. D. Zhang

Savannah Marriott Riverfront Atrium

Undergraduate Posters

Financially supported by American Chemical Society and the Coastal Georgia Local Section of the ACS
M. Weiland, Organizer

9:30 - 11:00


556. Synthesis of indolenine and quinoline derived water-soluble squaraine dyes. B. Marx

557. A single-entity method to actively control the nucleation-crystal growth process (I) - basics in lysozyme crystallization. R. Lee, R. Yang, G. Wang

558. A quantum chemical study of enolate, enol, and alkene structures as predictive models for the site of alkylation. A. Kumar, J.P. Bowen

559. Biosynthesis of iron oxide nanoparticles by ammonia diffusion. S.O. Ekiyor Katimi


561. Towards the synthesis and complexation of a new Janus-type N-heterocyclic carbene. E. Swalles, J.M. Ralston, J. Scott, D. Tapu


563. In vivo UGT isoenzyme glucuronidation of daidzein. S.A. DeFiglia, J.W. Brock

565. Sulfidation of silver nanoparticles by zinc sulfide. B. Nguyen, H. Lieb, K.M. Mullaugh


568. Synthesis of amines by nucleophilic ring opening of aziridines. A.M. Bogatkevich, T.J. Barker

569. Affordable determination of the elemental composition of quantum dots with portable X-ray fluorescence spectroscopy. J. Land, A. Landin, J.D. Keene

570. Detecting endocrine disrupting compounds: Development of a differential sensing array for use in aqueous media. T.C. Meeks, M. Meadows

571. Optimization of reversible-deactivation radical polymerization procedure. S. Welch, N. Shank, K.J. Noonan

572. Computational study of FXBN spin trap derivatives with hydroxyl radicals. A.K. Harvey, S.J. Kirkby

573. Reaction of alkylboronic esters with epoxides. S.G. Gierszal, T.J. Barker


575. Photoacoustic thermometer: Shift in the photoacoustic signal frequency of ethene due to temperature variation. J. Taylor, H. Park

576. Reaction between benzylboronic esters and alkyl halides. R.W. Russell, T.J. Barker

577. Patterning conjugated polymer growth by microcontact printing. I. Postle, P.M. Lundin, B. Augustine

578. Mechanistic investigation of the platinum-catalyzed acylation of 2-phenoxy pyridines. J. Neu, S. Huo


580. Studies into the mutagenic potential of 8-oxo-2'-deoxyguanosine with human polymerase kappa. S. Zielinski, M. Hamm
581. Synthesis of a novel perfluoroalkyl(aryl) sulfonylimide (PFSI) monomer as a precursor for PEM fuel cells. S.E. Garland

582. Modular synthesis of fluorescent probes for metal ion detection. A.M. Hay, T. Dowell, P.H. Mueller, N. Deifel

583. Effects of replacing CP with indenyl on metal-to-metal charge-transfer in CP₂Ti(C₂FC)₂ complexes. K.T. Nguyen, E.E. Lane, J.A. Pienkos, P.S. Wagenknecht

584. Multi-step electrodeposition of p-type metal chalcogenides as components of water splitting tandems. B. McCloskey, C. Harris

585. Coordination chemistry, luminescence, and f-element extraction selectivity of a tripod carboxamidomethylphosphine oxide-based ligand. W.B. Larrinaga, A. Martinez, E.J. Werner

586. Incorporation of lignin-coated cellulose nanocrystals (L-CNCS) in poly(hydroxybutyrate) (phb)/poly(lactic acid) (PLA) blends and characterization by DSC and TGA. D. Jackson, A. Tucker, E.A. Mintz


589. Direct allylation of ketones with trimethylsilyl trifluoromethanesulfonate and triethylamine. I. Zhong, E. Heafner, A. Lin, C.W. Downey


593. Crossed Aldol reactions of aldehydes and subsequent styrene formation promoted by trimethylsilyl trifluoromethanesulfonate. G. Dixon, C.W. Downey


595. One-pot furan synthesis from ketones and propargyl acetates. D. Sklar, C.W. Downey


598. Identification of the function of protein 3L1W. A. Nelson, A.A. Carter, P.A. Craig

599. Synthesis of 5'-triphosphate-8-thio-2'-deoxyinosine, an analogue of 5'-triphosphate-8-oxo-2'-deoxyguanosine. G.A. Leconte, M. Hamm

600. Wound healing in space: Final frontier and the role of biomimetic polymers. A. Walker, S.K. Hamilton

601. Synthesis of colloidal gold aggregates for speckle patterning of mouse aorta. S. Alford, L. Du, S. Lessner

602. Crystal structure of phosphoethanolamine methyltransferase from *Eimeria tenella*. B. Cox, D. Etoroma, S. Lee

603. Synthesis of 1,2-diketones through platinum-catalyzed C-H functionalization. J. Neu, A. Hatch, S. Huo

604. Investigating the structures and properties of mixed silicon-copper, germanium-copper and germanium-gold clusters. N.S. McKenney, A. Quang, J. Kobe, J.T. Lyon

Savannah Marriott Riverfront
Chatham

**Chemistry Education: Active Learning Methods**

S. Verberne-Sutton, *Organizer. Presiding*


10:40 605. Gas chromatography relay: passing the baton from one laboratory student group to the next. S. Verberne-Sutton

11:00 606. Escaping from quant lab: Using competition and teamwork to build critical lab skills. L.A. Hiatt, H.B. Musgrove, W.M. Ward


11:40 608. POGIL in the physical chemistry lecture and lab. A.A. Carter
MONDAY AFTERNOON

Savannah Marriott Riverfront
Chatham

Computational Chemistry Applied to Interesting Problems

Financially supported by Division of Computers in Chemistry (COMP), Journal of Chemical Information and Modelling (JCIM) and Furman University
G. C. Shields, Organizer, Presiding

12:45 609. Computational chemistry applied to interesting problems. G.C. Shields, T. Ball, A. Gale, T.T. Odbadrakh

1:15 610. Molecular studies of halogen bonding, protein dynamics and combustion. C.A. Parish

1:45 611. Noncovalent interactions in solution and crystals. C.D. Sherrill

2:15 612. New insights into the mechanisms of ubiquitin conjugating and ubiquitin ligase enzymes. I. Sumner

2:45 613. Adventures in DFT designing of organic electronic materials. A.L. Tomlinson

3:15 Intermission.

3:30 614. Toward a comprehensive predictive model of stacking interactions. S.E. Wheeler

4:00 615. Applications of computational chemistry to engineering problems. A. Miraz, C.D. Wick, B. Ramachandran


4:40 617. Reproducible, rational, and rigorous QM-cluster enzyme models. N.J. Deyonker, Q. Cheng, T.J. Summers, M. Palma

Savannah Marriott Riverfront
Franklin

Advancements in Chemical Biology

Financially supported by Division of Analytical Chemistry; North Carolina State University and the University of Georgia
G. J. Williams, Organizer, Presiding
1:00 Introductory Remarks.

1:05 618. Biochemical mechanistic investigations to enable the synthetic biology of type I polyketide synthases. C.B. Bailey, E.E. Druva, E.G. Hix, M. Curry

1:30 619. Harnessing actinomycete biosynthetic pathways to expand diketopiperazine chemical diversity. A.L. Lane

1:55 620. Investigating the transcript dependence of improved recombinant protein expression in *E. coli* with dynamic metabolic control. J. Hennigan, M. Lynch


2:25 622. Dihydroxyacid dehydratases containing the [2Fe-2S] cluster are a promising antimicrobial target. Y. Ding

2:50 Intermission.

3:10 623. Engineered biosynthesis of non-natural polyketides and isoprenoids. G.J. Williams

3:35 624. Genetically encoded fluorescent sensors to illuminate cellular chloride signaling. S. Dodani

4:00 625. Small-molecule poly (ADP-ribose) polymerase (PARP) and PD-L1 inhibitor conjugates as dual-action anticancer agents. S. Ofori, S.G. Awuah

4:15 626. Pharmacologic modulation of ER protein folding to identify host/flavivirus interactions and inhibit viral propagation. K. Almasy, J. Davies, S. Lisy, R. Tirgar, S. Tran, L. Plate

4:30 627. Bioorthogonal probes of protein acetylation. Y. Zheng

Savannah Marriott Riverfront Plaza

**Advancements in Environmental Chemistry**

Financially supported by Division of Environmental Chemistry
V. Anagnostopoulos, Organizer, Presiding

1:00 Introductory Remarks.

1:05 628. Sequestration of gadolinium in sediments of a constructed wetland. M.J. Beazley, A. Altomare


2:05 631. Role of proton-coupled electron transfers in energy efficient environmental restoration of oxyanion-contaminated waters: Example of chromate reduction. **C.M. Stern**, D.W. Hayes, L.O. Kgoadi, **N. Elgrishi**

2:25 632. Manganese oxide geochemical controls over Tc-99 fate in the environment: TcO$_2$ oxidative dissolution. **J. Stanberry**, I. Szlamkowicz, A. Grabe, **V. Anagnostopoulos**


3:05 Intermission.

3:20 634. Mechanistic understanding of ozone-assisted oxidation reaction of trans-2-butene in a jet stirred reactor. **D.M. Popolan-Vaida**


4:00 636. Influence of aging on the iodine adsorption capacity of reduced silver adsorbents. **A. Wiechert**, A. Ladshaw, Y. Nan, S. Choi, L.L. Tavlarides, J. Moon, C. Tsouris, S. Yiacoumi


4:40 638. Peracetic acid fate and decomposition in poultry processing wastewater streams. **J. Chen**, **S.G. Pavlostathis**

Savannah Marriott Riverfront
Atrium

**Inorganic Chemistry**

Financially supported by Division of Inorganic Chemistry
W. E. Lynch, *Organizer*

1:00 - 2:30
A study on the effect of steric hindrance on the reactivity of phosphinimine NCN-pincer complexes of nickel(II) with dibromomethane. A. Eaton, S. Pitts, G. Guillet


Synthesis and utilization of polyoxometalate compounds as antimicrobial agents. C.P. Hodges

Mapping the electronic structure of an iron(II) polypyridine complex with ligand-centered frontier orbitals. H. Kwon, E. Jakubikova

Tailoring the electronic structure of corannulene-integrated crystalline materials. G. Leith, A.M. Rice, B. Yarbrough, N.B. Shustova

Versatility and structural functionality of heterometallic metal-organic frameworks (MOFs). O.A. Ejegbavwo, M.D. Smith, D.A. Chen, N.B. Shustova


Electrochemical crystal growth of POM-based complex oxides. S. Hwu, Q. Zhang, J. Ondus

Zirconium-based metal-organic frameworks as a platform for nuclear waste remediation. V.A. Galitskiy, A. Berseneva, N.B. Shustova

Photophysics and electronic properties of photoswitchable frameworks. C.R. Martin, N.B. Shustova

Comparative study of the ABTS redox indicator in various solvents. K.J. Doheny, S. Hematian


Porphyrin modified polyhedral oligomeric silsesquioxane molecules for the photodynamic therapy of cancer cells. A. Johnston, P. Loman-Cortes, P. Siano, J.L. Vivero-Escoto

Extending the $^3$MI Ct state of osmium(II) tris-(2,2'-bipyridine) through encapsulation within zinc(II) trimesic acid metal-organic frameworks. J.M. Mayers, R.W. Larsen

654. Guest to framework photoinduced electron transfer in a cobalt substituted Kullek type metal-organic framework. C. McKeithan, R.W. Larsen

655. Pore modulation of guest photophysics in metal-organic framework: Photophysical studies of meso-tetra (n-methyl-4-pyridyl) porphine encapsulated within MOM-11 and MOM-12. A. Alanzi, L. Wojtas, R.W. Larsen

656. Synthesizing and investigating the catalytic properties of (Cu(II))2Mn(II) complexes. C. Wolfe, N. Deifel

657. Computational study of iron(II)-polypyridines as chromophores for dye sensitized solar cells. G.M. Curtin, E. Jakubikova


661. Thermodynamic and structural characterization of Cd(II) and Ca(II) binding to EF-hand peptides by isothermal titration calorimetry and circular dichroism spectroscopy. C. Taylor, K. Byers, E. Karnik, A.M. Spuches

662. Linear Cu14 bis(amidinates) as flexible molecular strings. A. Calderon, N. Maya, C. O'Dea, N. Bhuvanesh, C. McMillen, M. Stollenz

663. New hexadentate bis(amidines) as flexible ligands for dichloro-dicopper(I) and -digold(I) complexes. C. O'Dea, O. Ugarte Trejo, J. Arras, N. Bhuvanesh, M. Stollenz

664. Determination of the binding affinity of Cd(II) to Ca(II) bound human cardiac troponin C using isothermal titration calorimetry: Competition study. A. Cunningham, C. Palmer, K. Vang, A.M. Spuches, R. Johnson


666. Redox inactive catalysts for aldehyde deformylation. A.C. Saunders, C. Burch, A. Scott, C.R. Goldsmith

667. Characterizing the binding of Pb(II), Ca(II), and Cd(II) to EF-hand peptides III and IV of human cardiac troponin C and EF-hand peptide V of calbindin D28k using circular dichroism spectroscopy. A. Wilson, C. Taylor, L. Bauza-Davila, K. Byers, A.M. Spuches
668. Study of electrocatalytic CO₂ reduction by nickel and copper complexes. S. Saha, A.
Stephens, C. Richburg, M.R. Mazumder, B.H. Farnum

669. Synthesis and characterization of tri-iron, tri-cobalt, and nickel di-lithio complexes with 2,6-
bis(trimethylsilylamino)pyridine. K.Y. Arpin, D.M. Elwell, G.L. Guillet

670. Hydrodeoxygenation of vanillyl alcohol by ruthenium pincer complexes. W. Yao, S. Das,
A.K. Vannucci, E.T. Papish

671. Isolation of two novel polynuclear Mn 3 and Mn 7 clusters incorporating the anion of 4,5-
bis(hydroxymethyl)-2-methylpyridin-3-ol. K. Moncur, A. Saha

672. Towards the synthesis of a metal sensor: Varying reaction conditions in the synthesis of
silver nanoparticles with 8-hydroxy-5-quinolinesulfonic acid hydrate. K.E. Ragland

673. Existence of pnictide analogs of small nitrogen and phosphorus compounds: Review. J.W.
Hall, T. Griffin, S. Hutchison

Savannah Marriott Riverfront
Ballroom E

New Forms of Carbon: Fullerenes, Metallofullerenes, Nanotubes & Graphene

Financially supported by President-Elect of the American Chemical Society
H. C. Dorn, Organizer, Presiding

1:00 Introductory Remarks.

1:05 674. New covalent reactions to tune the optical properties of single-wall carbon nanotubes.
R.B. Weisman

1:35 675. Many faces of carbon. P. Jena

2:05 676. Molecular self-assembly on 2D materials studied by STM. C. Tao

2:35 677. Scrolling behavior of nanosheet materials. T.T. Salguero

3:05 Intermission.

3:25 678. Integration of fullerenes as electron-acceptors in 3D graphene networks. M.R. Ceron,
C. Zhan, T.A. Pham, P.G. Campbell, L. Echegoyen, J. Biener, M.M. Biener


Savannah Marriott Riverfront
Atrium

**X-Ray in the Southeast**

Financially supported by Division of Inorganic Chemistry and Rigaku Americas Corporation
W. E. Lynch, Organizer

1:00 - 2:30

**681.** X-ray study of the chemistry of lanthanide complexes with heteroaromatic N-oxides. C. Miller, K. Sheriff, m. Raymundo, W.E. Lynch, **C.W. Padgett**

**682.** A single-entity method to actively control the nucleation-crystal growth process (II) – electrical and optical signatures during lysozyme crystallization. **R. Yang**, G. Wang

**683.** Halogen bonding (XB) consortium in several iodide vs. triiodide cocrystals. **K. Kobra**, C. McMillan, W.T. Pennington

**684.** Halogen bonding as a route to new cocrystals and potential green solvents. **W. Gardner**, K. Kobra, R. Sachdeva, C. McMillen, W.T. Pennington

Savannah Marriott Riverfront
Forsyth

**Ion Mobility-Mass Spectrometry: Adding a New Dimension to Omics Analysis**

Financially supported by Agilent
C. D. Chouinard, Organizer, Presiding
L. Fenn, Presiding

1:10 Introductory Remarks.

1:15 685. Advanced structural mass spectrometry strategies in systems, synthetic, and chemical biology. **J.A. McLean**

1:40 686. Mapping structural diversity with TIMS-MS: From small molecules to protein complexes. **F. Fernandez-Lima**
2:05 687. Simplified sampling and characterization of THC and CBD using differential mobility spectrometry-mass spectrometry (DMS-MS). I. Ayodeji, T.G. Nguyen, L. Song, K. Evans-Nguyen, B. Musselman

2:30 688. Understanding circadian dysfunction in Alzheimer’s disease: Cylindrins trigger peptide release in living suprachiasmatic nucleus brain slices. T. Do

2:55 Intermission.


3:40 690. Tandem-trapped ion mobility / mass spectrometry: Analysis of protein systems. C. Bleiholder

4:05 691. Mechanisms of sequential ion-molecule reactions in protonated methanol using mass spectrometry, ab initio methods, and statistical modeling. J. Melko

4:30 692. Exposomic applications of ion mobility-mass spectrometry: Development of analytical methods for emerging perfluoroalkyl substances (PFAS). J. Dodds, E.S. Baker

Savannah Marriott Riverfront
Mercer

Recent Advances in Green Metal Nanoparticle Synthesis & Applications

Financially supported by Division of Colloid and Surface Chemistry
B. B. Penland, Organizer, Presiding

1:10 Introductory Remarks.


1:35 694. DNA conjugates with molecular silver clusters. J.T. Petty, J. Bush, S. Carnahan, D. Kim, D. Lewis

1:55 695. Chalcogenide nanocrystals for energy applications. A. Gupta

2:15 696. Morphologically controlled SiO₂ overcoating of Au nanorods and functionalization with Fe₃O₄ nanoparticles. W. Wu, B.S. Chapman, L.R. Rowe, J.B. Tracy

2:55 Intermission.

3:15 698. Assembling nanoparticles with peptides: From static to dynamic nanoparticle superstructures. **N.L. Rosi, Y. Zhou**

3:35 699. Rationally-designed iron oxide nanoparticles for biomedical applications. **Y. Bao**


4:15 701. Sustainable fabrication of metal oxide nanomaterials for environmental remediation. **M.R. Knecht**

4:35 702. Nanotechnology enables hot gold nanorods to kill cancer cells and to stop alive sick cells from migrating to other places in the body. **M.A. El-Sayed**

Savannah Marriott Riverfront
Oglethorpe A

**Structure-Based Drug Design**

Financially supported by Cresset
R. J. Bienstock, *Organizer, Presiding*

1:15 Introductory Remarks.


1:45 704. Structural selection of immunomodulatory HLA binding small molecules. **D. Ostrov**


2:35 706. Identification of allosteric exosites on the cannabinoid CB1 receptor using grand canonical Monte Carlo simulated annealing and validation via mutation and SAR. **P. Reggio**

3:00 Intermission.


4:10 709. Effective way to apply AI to the design of new drug lead compounds. S. Keinan, W.J. Shipman, E. Addison

4:35 Concluding Remarks.

Savannah Marriott Riverfront
Oglethorpe B

WCC: Modern Issues for Women in Chemistry

S. Zingales, Organizer
D. W. Dixon, S. K. Hamilton, Presiding

1:15 710. Establishing a career mentoring network to support women in chemistry. M.C. Srougi

1:30 711. Influential and courageous mentorship in STEM. K.S. Aiken

1:45 712. Non-traditional careers and mentorship. A. Weisbruch

2:00 713. Mind the gap: Underrepresentation of women in chemistry and the impact of networking and mentorship in a woman’s career. S.K. Hamilton

2:15 Panel Discussion.

3:00 Intermission.

3:30 714. Supporting female graduate students in STEM: Role of doctoral career training programs. C.E. MacBeth

3:45 715. Strategies for dealing with gender bias in STEM fields. J.L. Brumaghim

4:00 716. Raising the profile of women in chemistry. D. Reeser, A.T. Yarnell


4:30 Panel Discussion.

5:15 Concluding Remarks.

Savannah Marriott Riverfront
Reynolds
Diversity: Opportunities, Scholarships, Fellowships, & Internships

Financially supported by ACS Local Section Activities Committee, Coastal Georgia Local Section of the American Chemical Society, NOGLSTP.  
R. A. Groom, B. P. Quillian, *Organizers, Presiding*

1:20 Introductory Remarks.

1:25 Panel Discussion.

2:00 718. National science foundation programs that support undergraduate chemistry education.  
J.E. Lewis

2:30 719. Opportunities as a Florida Georgia Louis Stokes Alliance for Minority Participation (FGLSAMP) fellow.  
G. Rocabado

3:00 Intermission.

C.J. Bannochie, R. Diamond, B. Belmont

3:55 721. Joining forces: McNair Scholars Program and National Science Foundation research experiences for undergraduates.  
I. Taylor

4:25 Discussion.

Savannah Marriott Riverfront  
Ballroom C

Frontiers in Nucleic Acid Chemistry

D. P. Arya, N. Shank, *Organizers*  
F. Leng, *Organizer, Presiding*

1:30 Introductory Remarks.

1:35 722. Peptide nucleic acids with backbone modifications to control binding and applications.  
D.H. Appella

2:05 723. Smart-responsive nucleic acid nanoparticles designed to modulate immune behavior.  
K. Afonin

2:35 724. Fluorescence imaging reagents based on RNA aptamers, synthetic polymers and fluorogenic cyanine dyes.  
B.A. Armitage
3:05 Intermission.

3:25 725. Investigating a disulfide linkage in the backbone of peptide nucleic acid. N. Shank

3:55 726. Enhanced nucleic acid recognition by small molecule-oligonucleotide conjugates. D.P. Arya

4:25 727. Examination of RNA-privileged small molecule chemical space and elucidation of important recognition properties. S. Wicks, B. Morgan, A.E. Hargrove

4:40 728. G-Quadruplexes in both subunits of the human ribosome. S. Mestre-fos, P. Penev, L.D. Williams

Savannah Marriott Riverfront
Pulaski

Polymeric Materials for the Next Generation Sensing, Diagnostics, & Therapy

Financially supported by Division of Polymer Chemistry
C. N. Scott, Organizer
D. L. Watkins, Organizer, Presiding

1:30 729. Theranostic microcapsules for imaging and ultrasound-triggered drug delivery. E.P. Kharlampieva

2:00 730. Polymer-functionalized optical nanosensors for diagnostics. J. Budhathoki-Uperty

2:15 731. Electrosynthesis and characterization of isoindigo based copolymers for use as NIR-II imaging agents. N. Sparks

2:30 732. Polymer modified magnetic colloids: Surface binding, colloidal stability, and added functionality. O.T. Mefford

3:00 Intermission.


3:45 735. Discrimination of seawater contaminants using conjugated polymers. J. Tropp, M. Ihde, M. Bonizzoni, J.D. Azoulay
4:00 Concluding Remarks.

Savannah Marriott Riverfront
Ballroom D

**Strategy & Methods for Complex Molecule Synthesis**

Financially supported by Division of Organic Chemistry
E. M. Ferreira, A. J. Grenning, *Organizers, Presiding*

1:40 736. New strategies for the C-H functionalization of amines. **D. Seidel**

2:10 737. Search for narrow-spectrum antibacterials & ways to access fluorinated molecules. **S. Roy**


3:00 Intermission.


4:10 741. Make allylation great again. **M. Chen**

4:40 742. Semisynthesis: Unexpected pathway to novel methodology development. **M.P. Croatt**

Savannah Marriott Riverfront
Ballroom B

**Analytical Chemistry**

**Mass Spectrometry**

C. McKenas, *Organizer, Presiding*

2:50 Introductory Remarks.


3:35 745. Glucuronidation of Bisphenol A by UGT2B15 and possible inhibition by over-the-counter drugs. **H. Middlesworth**, J.W. Brock

3:55 746. Enhanced protonation due to chromium(III) during liquid chromatography-electrospray ionization mass spectrometry. **M. Mireles**


4:35 748. Determination of pesticide residues in vegetable samples. **D. Cook**, C.H. Lisse

4:55 Concluding Remarks.

Savannah Marriott Riverfront Atrium

**Organic Chemistry**

X. Chen, *Organizer*

3:00 - 4:30


750. Utilizing α-aminocycloalkylcopper reagents to synthesize 1,2,3,4-tetrahydroquinoline alkaloids and derivatives. **Z. Bertoli**, A. Ahmed, C.W. Alexander

751. Enantioselective rhodium-catalyzed dearomative addition of boronic acids to aromatic nitrogen heterocycles. **D.J. Robinson**, R. Karimov


754. Exploration of silicon phthalocyanines as viable photocatalysts for organic transformations. S. Dickerson, S. Wiskur

755. Synthesis and conformational analysis of aza-peptide β-hairpin analogs. P. Gourville, E. Willis, M. McMechen, C. Proulx

756. Investigation of the reaction of monochloramine and 2,6-dichlorophenol as a model for the purification process of drinking water. N.M. Bauer, S. Smith, D. Zoetewey

757. Extensive alignments of atomic orbitals in the substrate-binding strands of HIV-1 protease mutant ASP25ASN. P. Little, J.N. Haseltine

758. Repurposing nTZDpa: Antimicrobial effective against growing and persistent Staphylococcus aureus. A. Steele, E.E. Csatory, M. Dekarske, W.M. Wuest

759. C-H functionalization of five-membered heteroarenes with aryl halides using carbazole as photocatalysts. T.D. Weinhold, A.R. Longstreet

760. Substituted [3]-radialene dianions as catholytes for energy storage. N.A. Turner, C. Bejger, M. Freeman

761. Synthesis and complexation of boronic acid derivatives with N-oxides. H. Kline, K.S. Thomas, W.R. Kwochka

762. Synthesis and characterization of new albuterol double salt ionic compounds. J. Thorn, O.A. Cojocaru


764. Increased organoid nutrition using TPG as a dynamic natural collagen analogue. M. Nayak


766. Adsorption of juglone free acid and its tetrabutylammonium derivative on hydrophilic mesoporous silica. R. Paris, T.W. Majors, O.A. Cojocaru


768. Dual red and near infrared emitting charge transfer probe for detection of serum albumin. R. Choudhury

770. Developing biocompatible thiol-ene coupling conditions. W.A. LeFever, A.J. Wommack

771. Oxidation reaction screening of tricyclic ketones towards the synthesis of furan-bridged medium-sized rings. E. Prester, N. Brandau, P. Wiget


774. Metal catalyzed coupling in the synthesis of bis-para-anisyl alkanes. A. Pampu

775. Mild & efficient solid phase synthesis using cesium carbonate. L. Kline


777. Synthesis and virtual screening of novel acridone derivatives as potential topoisomerase II α catalytic inhibitors. A.S. Oyedele, C.O. Okoro

778. Search for highly selective and potent CB1 and CB2 inhibitors: Synthesis and characterization of (s,e)-11-[2-(thionylmethylene)hydrazono]-pbd. K. Kankam, A.G. Shilabin


780. Synthesis of ionic liquids. B. Cork, J. Hamlin, M. Montilus, C. Tirla


786. Using enyne metathesis to rerminate ROMP. A. Irvin
Tetraarylphosphonium/tetrakis(pentafluorophenyl)borate (TAPR/TFAB) salts as non-aqueous electrolytes for organic redox flow batteries. J. Bibbs, G. Mandouma

Transmission µ-FTIR of unconventional source rocks using improved thin section preparation methods for monitoring changes in kerogen chemistry. J.L. Brothers, D. Jacobi, S. Althaus, S. Eichmann

Purifying complex reaction mixtures via high-performance flash chromatography. J.R. Bickler

Elucidation of greener chemistry methods on the synthesis of O-methyl resveratrol derivatives. W.K. Myers, D. Abramovitch

Design and synthesis of EF-24 analogs as anti-cancer agents. R. Smith

Modeling reactive intermediate analogues of gold(I)-catalyzed reactions by Lewis acid mediated gamma-ionization. N. Kim, R. Widenhoefer

Savannah Marriott Riverfront
Ballroom C

Plenary: John Laurence Busch

B. D. Feske, Organizer, Presiding

5:10 793. Corrosion Presentation: Building the First "Steamship" in History. J. Busch

TUESDAY MORNING

Savannah Marriott Riverfront
Oglethorpe B

Advancements in Mechanistic Enzymology

J. M. Miller, Organizer, Presiding

8:00 Introductory Remarks.

8:05 794. Temperature dependent kinetic isotope effects reveal the origins of lipoxygenase C-H activation efficiency. A.R. Offenbacher, J. Klinman, B.M. Hoffman
Combined solution and crystal methods reveal the electrostatic tethers that provide a flexible platform for replication activities in the bacteriophage T7 replisome. J. Wallen, B. Foster, D. Rosenberg, H. Salvo, K.L. Stephens, B.J. Bintz, M. Hammel, T. Ellenberger, M. Gainey

Conformational dynamics of G protein-coupled receptors: One receptor at a time. R. Lamichhane

Molecular mechanisms of enzyme catalyzed protein unfolding and translocation by class 1 AAA+ motors. A.L. Lucius

Temperature dependence of conformational heterogeneity of enzyme thermolysin. M. Dong, B.J. Bahnson

Hydrogen peroxide activated estrogen receptor beta ligands. J.A. Pollock

Intermission.

Insights to a structure-based catalytic mechanism from neutron and X-ray crystallographic structures of the Thermococcus thioreducens inorganic pyrophosphatase. J.D. Ng

Radicals, switches, and a protein-based cofactor: Expanding the catalytic abilities of an old active site. D.C. Goodwin

Oxidative stress promotes altered YME1L conformational dynamics. C. Brambley, J.M. Miller

AAA ATPase AFG1 helps maintain protein homeostasis in the mitochondrial matrix. J.L. Fox, E.M. Germany, N. Zahayko, M.L. Huebsch, V. Prahlad, O. Khalimonchuk

Sequestered imine intermediate and interplay of nucleophilic catalysis with proton transfer during reduction of nitrile to amine by the nitrile reductase QueF from Escherichia coli. J. Jung, B. Nidetzky

Biodegradable Polymers: Recent Innovations & Applications

Financially supported by Division of Polymer Chemistry and Malvern
P. I. Binda, H. Zhao, Organizers
P. Binda, Presiding

Introductory Remarks.
8:05 805. Synthesis of functionalized biodegradable poly(α-methylene-γ-butyrolactone). P.I. Binda

8:25 806. Bio-based composites with enhanced matrix-reinforcement interactions from the polymerization of α-eleostearic acid. A. Murawski, R.L. Quirino


9:10 808. Synergistic effects of potassium dimethyl 5-sulphonatoisophthalate (LAK-301) and lignin coated cellulose nanocrystals (L-CNCS) on the nucleation and crystallization of poly(lactic acid) (PLA). R. Ford, W. Simmons, R. Lumpkin, E.A. Mintz

9:30 809. Preparation and characterization of poly(lactic acid) (PLA) and poly-3-hydroxybutyrate (PHB) polymer matrix nanocomposites prepared with bio-based, biodegradable cellulose/lignin nanofillers. E.A. Mintz

9:55 Intermission.

10:10 810. Bio-based antimicrobial coating. W. Ming


11:40 814. Preparation and characterization of poly(lactic acid) nanocomposites incorporating lignin-cellulose nanocrystals (SL-CNCS) prepared by sulfuric acid hydrolysis. Z. Barnes, G. Schueneman, U. Agarwal, E.A. Mintz

Savannah Marriott Riverfront
Reynolds

Diversity: Experiences & Initiatives

Financially supported by ACS Local Section Activities Committee, Coastal Georgia Local Section of the American Chemical Society, NOGLSTP.
R. A. Groom, B. P. Quillian, Organizers, Presiding

8:00 Introductory Remarks.
8:05 Panel Discussion.

8:35 815. The ARC network: Driving change through an empowered virtual community. R.L. Williams

9:05 816. Starting a SACNAS chapter at the University of South Florida. G. Rocabado


10:05 Intermission.

10:30 818. Out of the closet and into the chemistry classroom: Importance of visibility. J.R. Raker

11:00 819. Increasing diversity in chemistry and physics graduate programs by focusing on best practices in inclusion and recruitment. S.E. York, E. Tanebaum, L. Ritzow

11:30 Concluding Remarks.

Savannah Marriott Riverfront Plaza

Incorporating Research into the Analytical Curriculum

Financially supported by Division of Analytical Chemistry
C. R. Dockery, G. E. Potts, Organizers, Presiding

8:00 Introductory Remarks.

8:05 820. Student projects in the quantitative analysis laboratory. L. De La Garza

8:25 821. Project-based integrated lecture and laboratory upper division analytical chemistry curriculum. D. Budner, B.K. Simpson

8:45 822. Bioanalytical chemistry: Classroom undergraduate research experience. J.G. Forsythe, M.W. Giuliano

9:05 823. Incorporating current events in the undergraduate analytical chemistry laboratory. C.R. Dockery

9:25 824. How clean is the water: Student designed analytical lab project. J.J. Weaver

9:45 825. Measuring mass percent calcium in *E. carinifera* and *E. modesta* gastropod shells: Pilot course-embedded undergraduate research experience for analytical chemistry laboratory. K.
Zimmermann, X. Li, W. Huang, R. Simmons, M. Kirberger, H. Guan, S. Mwongela, C. Brown, R. Fiorillo

10:05 826. Using nanoparticles in undergraduate research to teach analytical techniques. B.B. Penland

Savannah Marriott Riverfront
Mercer

Inorganic Chemistry

General

Financially supported by Division of Inorganic Chemistry
W. E. Lynch, Organizer
M. Lufaso, Presiding

8:00 Introductory Remarks.

8:05 827. Flux crystal growth and characterization of new oxides containing early transition metals. D. Carone, H. Zur Loye

8:25 828. CsFeGeO₄: Non-centrosymmetric ABW-zeotype iron germanate grown from molten alkali halide flux. M. Usman

8:45 829. Design and electronic exploration of crystalline corannulene-integrated materials. G. Leith, N.B. Shustova

9:05 830. Photophysics control by confinement environment: Cage, MOF, and COF. A. Berseneva, N.B. Shustova

9:25 831. Crystal growth, structures and properties of inorganic fluorides and oxyfluorides. G.B. Ayer


10:05 Intermission.

10:20 833. Chemical substitutions and structure-property relationships of bismuth mixed-metal oxides. M. Lufaso

10:40 834. Oxygen, carbon dioxide and carbon monoxide sensing properties of oxygen-deficient perovskites, aa’bb’₀₆₋₆ (a = Ca, Sr; b = Fe; b’ = Fe, Mn). S.B. Karki, F. Ramezanipour, R.K. Hona
11:00 835. Experimental and theoretical studies on lithium-ion conductivity of novel layered perovskites Li$_2$LaMTiO$_7$ (m = Ta and Nb). S.J. Fanah, F. Ramezanipour, M. Yu, A. Huq


Savannah Marriott Riverfront
Ballroom E

New Forms of Carbon: Fullerenes, Metallofullerenes, Nanotubes & Graphene

Financially supported by President-Elect of the American Chemical Society
H. C. Dorn, Organizer, Presiding

8:00 Introductory Remarks.

8:05 838. Nanoparticle fullerene is a stellar candidate for treatment of back pain. L. Jin

8:35 839. Functionalization and polymerization of fullerenes. H.W. Gibson, H. Wang, D. Schoonover

9:05 840. Fullerene-based nanomaterials for cancer diagnosis and therapy. Y. Peng, T. Cai

9:35 841. Regioselective multi-addition reactions for endohedral metallofullerenes. J. Zhang, Y. Li

10:05 Intermission.


11:20 844. Study of dual modality anti-oxidant and fluorescent properties for terbium endohedral metallofullerenes derivatives. R. Huang, L. Xiao, C. Li, L. Jin, X. Li, H.C. Dorn

11:50 845. Preparation of red emissive carbon dots for biomedical applications. K.J. Mintz, R.M. Leblanc

Savannah Marriott Riverfront
Academy
Physical Chemistry

Computational

C. W. Padgett, Organizer, Presiding

8:00 846. RPA renormalized perturbation theory applied to the asymmetric Hubbard dimer. J.E. Bates, J.A. Derteano

8:20 847. Classical-wave based simulation of chemical reaction dynamics: Avoiding the curse of multi-scale time problems in MD simulation. B.K. Dey

8:40 848. Thermodynamic and modeling study of cyclopropane adsorbed on graphite. C.A. Crain, J.Z. Larese

9:00 849. QM level investigation into binding of aromatic and non-aromatic ionic liquid cations to active site of cytochrome P450 employing DFT calculations. A. Banerjee, J. Shah


9:40 851. Molecular structures and energetics of small copper, silver, and gold nanoclusters. R. Persaud, Z. Fang, M. Chen, D.A. Dixon

10:00 Intermission.

10:20 852. Understanding the complex adsorption equilibria of small alkanols on SrTiO₃(001) using density functional theory. R.C. Chapleski, S. Roy, B. Doughty

10:40 853. Structures and properties of mixed metal / metalloid clusters. J.T. Lyon

11:00 854. ¹³C fractionation during aqueous alanine transamination. A.S. McNeill, B. Dallas, J. Eiler, D.A. Dixon


11:40 856. Heterogeneous oxidation of aqueous organic aerosols by OH radical. T.w. Masaya

Savannah Marriott Riverfront
Oglethorpe A

Spectroscopic Imaging: Bridging the Gap between Chemical & Spatial Heterogeneity
A. Ghosh, Organizer, Presiding

8:00 Introductory Remarks.

8:10 857. Nanoscale spectroscopy and chemical imaging with conventional and with nanophotonic AFM probes. A. Centrone

8:40 858. Monitoring charge transfer in thin films and single crystals with femtosecond stimulated raman microscopy. R.R. Frontiera

9:10 859. Near-field optical spectroscopy for the study of electronic properties in semiconducting nanostructures. J. Atkin

9:40 860. Applications of nanoscale functional imaging to reveal the role of heterogeneities in complex systems for sustainable energy applications. L. Tetard

10:10 Intermission.

10:30 861. Hyperbolicity and polaritonic strong coupling: Towards enhancing IR sensing and imaging platforms. J.D. Caldwell, T. Folland

11:00 862. Infrared spectroscopic imaging of microplastic contamination <20u. C.A. Marcott, J. Anderson, F. Weston, M. Kansiz, R.C. Hale

11:30 863. Investigating chemical heterogeneities in organohalide perovskites with multiscale infrared imaging. A. Ghosh

Savannah Marriott Riverfront
Pulaski

Advancing Infrared Spectroscopic Techniques & Vibrational Sensing

Infrared Polaritons

Financially supported by Piketec GMBH; Neaspec GMBH; MKS Spectra Physics
J. D. Caldwell, Organizer
L. E. Buchanan, Organizer, Presiding

8:10 Introductory Remarks.

8:15 864. Nonlinear phonon polariton spectroscopy and microscopy. A. Paarmann

8:45 865. Doped semiconductors as components in infrared plasmonic systems. S. Law
9:15 866. Exploring and exploiting the properties of highly anisotropic media with infrared spectroscopy. **T.G. Folland**, J.D. Caldwell


Savannah Marriott Riverfront
Ballroom D

**Astrochemistry in the Southeast & Beyond**

**Laboratory/Theoretical Astrochemistry & Beyond**

R. C. Fortenberry, *Organizer, Presiding*

8:10 Introductory Remarks.

8:15 868. Far-infrared synchrotron spectroscopy of some important interstellar molecules. **P. Raston**

8:45 869. Tools to rapidly assign the rotational spectra of molecules in vibrationally excited states. **S.T. Shipman**


9:45 871. Interstellar inheritance of primitive bodies in the solar system. **S.N. Milam**

10:15 Intermission.

10:35 872. Infrared spectroscopy of hydrogen molecular ions and their clusters. **M.A. Duncan**

11:05 873. Challenges and opportunities in the investigation of astrochemical surface chemistry. **H.L. Abbott-Lyon**


Savannah Marriott Riverfront
Chatham

**Environmental Chemistry**

**General**
W. E. Lynch, Organizer
R. C. Wingfield, Presiding

8:10 Introductory Remarks.

8:15 875. Effects of nutrient overload and environmental conditions on algal bloom formation: Case study of private ponds in Madison County, Kentucky. L.N. Sutton, C.J. Tran


9:55 Intermission.

10:15 880. Preparing vulnerable populations for the impacts of climate change: Family/community emergency preparedness and resiliency. R.C. Wingfield, V. Watson


11:35 884. Liquid crystal electrode-assisted hybrid bio-electrochemical treatment technology: Sustainable approach towards biofilm enhancement and wastewater treatment. R. Srinivasan, I. Nambi, J. Senthilnathan

Savannah Marriott Riverfront
Ballroom C

Frontiers in Nucleic Acid Chemistry
D. P. Arya, F. Leng, Organizers
N. Shank, Organizer, Presiding


8:45 886. Targeting the mammalian high mobility group protein AT-hook 2 for drug discovery. F. Leng


10:15 Intermission.

10:35 889. Design and use of oligonucleotide substrates to probe the mechanism and inhibition of type IA topoisomerases. Y. Tse-Dinh

11:05 890. Targeting breast and prostate cancer cells with DNA-methylating molecules bearing nuclear receptor targeting ligands. S. Varadarajan


Savannah Marriott Riverfront
Ballroom B

Relating Research to Community

K. Marriott, Organizer, Presiding

8:15 Introductory Remarks.


8:40 893. Protein-protein networking: Discovering mitochondrial metabolic disease pathways. M. Prasad

9:00 894. Sigma-1 receptors in mitochondrial steroid synthesis: Potential new therapeutic target. V. Thapliyal
9:20 895. Chemistry research: Making bonds in your community. K.S. Marriott

9:40 896. Communicating chemistry through the local cuisine and beyond. K.M. Jackson

10:00 897. Challenges, methodologies, and benefits associated with community-based participatory research. B. Lian

Savannah Marriott Riverfront
Franklin

Heterocyclic Chemistry in the Southeast & Beyond

Financially supported by ViiV Healthcare
Q. Wang, Organizer
C. E. Stephens, Organizer, Presiding

8:20 Introductory Remarks.


9:05 Intermission.

9:15 900. Functionalized benzo-fused heteroaromatics via metal-catalyzed cascade benzannulations. S.A. France


9:55 Intermission.

10:15 902. Cabotegravir: Playing the long game to combat HIV. B.A. Johns, E. Velthuisen

10:35 903. Cycloadditions using photocatalysis based on earth-abundant metals with heterocyclic ligands. E.M. Ferreira

10:55 Intermission.

11:05 904. Photoassisted synthesis of structurally complex natural products. J. Frederich

11:25 905. Copper-catalyzed amino difunctionalization of alkenes using nitrogen-heteroatom bonds. Q. Wang
Savannah Marriott Riverfront
Atrium

Undergraduate Posters

Financially supported by American Chemical Society and the Coastal Georgia Local Section of the ACS
M. Weiland, Organizer

8:30 - 10:00

906. Functional dynamics of human cyclophilin. F. Ahmed

907. Synthesis of hydroxyl polyester for medical and pharmaceutical applications. S. Buteaux, P.I. Binda


909. Using M062X/aug-cc-pVTZ model chemistry to study the lowest energy isomers of sulfuric acid-water clusters. S. Smith

910. Synthesis of diphenyl oxalates used for testing the chemiluminescence characteristics of multiple fluorophore dyes. R. Aldaghir

911. Progress towards a micro-structured Stark quadrupole guide. J. Bracewell, L. Duffy


914. Molecular modeling of the opioid peptide DPDPE and a derivative of this peptide containing a unique sonogashira cyclization. J.C. Ouellette, A.L. Williams, T.L. McGomery, S. Majumdar, K.R. Wilson


917. Solubility of select azolium compounds. C.A. Rose, J.M. Meyers
918. Synthesis of transition metal-based catalyst using functionalized nanoclay for oxidation reactions. M. Kent, C. Freeman, S.M. Landge

919. Investigation of amine substituted 4-oxazolidinones and their biological activity. C. MacAllister, B. Frohock, K. Robinson, J.G. Pierce

920. Quantitative analysis of the components of gun shot residue (GSR) deposited at various distances using different caliber firearms. A. Wilcox, S.E. Hooper

921. Immobilized metal affinity chromatography polymeric high internal-phase emulsion foams for protein purification. S. McDonald, J. Pribyl, K.B. Wagener


924. Second-generation kappa opioid agonist as a peripherally-restricted analgesic in the ProNeura platform. E. Schneider, T. Beck, T. Dix

925. Microwave-assisted synthesis of zinc oxide nanoparticles using diethylene glycol as the surface capping ligand. L. LaPlant, C.R. De Silva

926. Microwave-assisted synthesis of europium-doped calcium fluoride nanoparticles for potential biomedical applications. W. Garabedian, C.R. De Silva

927. Synthesis and characterizatio of Si(bzimpy)$_2$ analogs for application within organic light emitting diodes. K.E. Norman, M. Kocherga, T.A. Schmedake

928. Toward the stereoselective synthesis of olefins. T. Ramsey, N.N. Shaw


931. Incorporation of hybrid gold nanoparticles to investigate differences in plasma protein biomarkers of chronic obstructive pulmonary disease (COPD) in a population of smokers. D.J. Swinton, T. McClary, B. Yarbrough, K. Tyree

933. Expedited microwave assisted synthesis of 1,2,3-triazoles for ion sensing. I. Graves, S.M. Landge, A. Ugboya, K.S. Aiken


935. Effect of dimerization and interaction with nanoparticles on the absorption and emission spectra of 2,7-dichlorofluorescein. T. McPherson, O. Mojek, U.P. Kalapathy

936. Monosaccharide lithium affinities and how they relate to water adduction to the lithium cationized molecule. C. Rumley, P. Soma, G.L. Glish


938. Multifunctional polyacrylates containing TEMPO, PEG and a hemoglobin binding group. K. Thomas, A.K. McMahan, H.J. Schanz


940. Mitotropic liposome for targeted delivery of antifibrotics in IPF. C. Nigg, S. Bui


943. Photophysics of two-dimensional organic inorganic perovskites. W.R. Ware, B.R. Gautam

944. Investigation of aroma and flavor compounds generated by various yeast strains. W.N. Lory, Z.S. Davis


946. Impact of solvent and fluorination on aggregation of conjugated polymers. T. Wright, M.C. Rose, B.R. Gautam


950. Access to borylated trifluoromethylalkenes via a Boryl-Wittig process. **T. Jones**, C. Kelly

951. Role of solvent when forming palladium nanoparticles on gold nanorods for plasmonic catalysis. **M. Sumner, B.B. Penland**


954. Synthesis, characterization and gelation studies of N-(acridin-9-yl)alkanamides based low molecular mass gelators. **S. Ndiaye**, A. Mallia


Savannah Marriott Riverfront
Atrium

**Undergraduate Posters**

Financially supported by American Chemical Society and Coastal Georgia Local Section of the American Chemical Society
M. Weiland, *Organizer*

10:15 - 11:45

956. Substituted pyrazolines as microtubulin inhibitors under hypoxic conditions. **C. Anderson**, J.H. Ferguson, H. Holt


958. Synthesis, thermal properties and gelation studies of anthraquinonylalkanamides as low molecular mass gelators. **E. Lee**, T. Dairo, A. Mallia


962. Progression in the development of an alternative energy synthetic pathway to nylon 6,6 through the use of solar irradiation as the sole heat source. C.B. Hammond, B. Agee

963. Quantification of Rosmarinic acid in dried rosemary. C. Mathis, H.V. Clontz

964. Investigation and analytical characterization of Lavandula angustifolia essential oils. J. Viera, B. Quarles, N. Hollabaugh

965. Progress toward the synthesis of paramagnetic luminophores: Mn(II) dipyrrinato complexes. M. Gunter, S.M. Thodupunoori, A.B. Scharf

966. Facile fabrication of pristine nickel hexaminobenezne (Ni₃(HIB)₂) metal-organic framework supercapacitor electrodes via electrophoretic deposition. S. Wechsler, F. Amir

967. Removing copper from aqueous solutions utilizing cotton plant waste. A. Rizzuti, R. Winston

968. Extraction and analysis of the essential oils of fruit rinds and other materials using liquid carbon dioxide. J.A. Estevez Nolasco, E. Call, B. Tutkowski

969. RTILS as a greener extraction solvent for carbamazepine. A.L. Coker, T.R. Hayden

970. What is the chemistry behind medicinal plants? S.E. Taylor, J. Haldeman, T.R. Hayden

971. Comparison of the stereochemical effects on the cyclization of sorbitol and allitol sugars and non-sugar model 1,4-pentanediol using B(C₆F₅)₃ and allylsilane CO-catalysis. E.B. Armstrong


974. Formation constants for Cr(III)-DNA binary adducts. C.S. Thomas, S. Brown, J.B. Vincent

975. Redox mediator synthesis for dye sensitized solar cells. C. Dale, C.M. Boudreaux, J.H. Delcamp, E.T. Papish

976. Development of a rapid presumptive test that differentiates between hemp and marijuana. C.E. Lapointe, J.O. Boles
977. Targeted antibacterial therapeutics for multi drug resistant *Pseudomonas aeruginosa*. T. Massengill


980. Development of Pd nanoparticle catalysts supported on carbonaceous ZrO$_2$ for Suzuki cross coupling reactions. D. McTaggart, J. Bobb, M.S. El-Shall

981. Measurement of chlorophyll in green vegetables by fluorescence. E. Call, C.E. Dahm

982. Comparison of the rates of decay from glow in the dark paints. E.D. Fluman, C.E. Dahm

983. Changes in enamel surface roughness and *S. mutans* growth after vital bleaching. S. Carreno

984. Computational investigation of the importance of tryptophan to the Myo19 ATPase cycle. J. Airas, E. Modeste, Y. Ali, C.A. Parish, O. Quintero

985. Investigating the *in silico* binding energetics of novel aromatic-substituted POSs and “POCs” HIV-1 protease inhibitors. E.K. Acosta, J. Airas, C.A. Parish


987. Investigating aged and irradiated meclizine tablets for NASA space mission planning. N. Cahill, E.L. Lawson, F. Najjar, V. James, W. Cory

988. DFT study of the Bergman cyclization of several enediynes. C. Ancajas, C.A. Parish

989. Total phosphorus monitoring in Georgia’s Lake Lanier watershed. M. Dennis, L.J. Wilson

990. Spin-flip characterization of the Bergman cyclization of the HEPTA-1, 6-diyne system. S.G. Wairegi, A. Luxon, C.A. Parish

991. Analyzing conformational changes of steroid response activator RNA (SRA-RNA) bound to sharp suppressor protein using circular dichroism. B.O. Okosun

993. NacNac: New synthetic routes to a well-known ligand. P.M. Jimenez Antenucci, H. Marcello, B.F. Wicker

994. Synthesis and analysis of biologically compatible drug-infused polymers. K.N. Weeks

995. Analysis of adonitol as a resource for future sustainable consumer products. P. Vanna, J.A. Dabrowski

996. Catalytic cyclization of 1-amino-1-deoxy-d-galactitol towards a renewable alternative to petroleum-based medicines. E. Scimone, J.A. Dabrowski

997. Comparing the efficacy of commercial water filters with homemade water filters using atomic emission spectroscopy. V.A. Mativo, E. Browne, A. Green


1000. Anomalous redox behavior of bis(serinato)copper(II) complex and comparison to closely related bis(homoserinato)copper(II) complex: Update. Q. Nguyen, T.L. Venable


1002. Stabilization of αβ oligomers using serotonin, indole, and catechol and their effects on DNA. E.A. Chapman, K.M. Matera

1003. Quantitative and colorimetric evaluation of hemoglobin in bloodstains over various time intervals using UV/VIS spectroscopy and chemical enhancements. S. Knox, S.E. Hooper

1004. Accessing novel metal organic frameworks using reticular chemistry. E.D. Shrewsbury, L.Z. Miller

Savannah Marriott Riverfront
Pulaski

Advancing Infrared Spectroscopic Techniques & Vibrational Sensing

Novel Infrared Techniques & Materials

Financially supported by Piketec GMBH; Neaspec GMBH; MKS Spectra Physics
J. D. Caldwell, Organizer
L. E. Buchanan, Organizer, Presiding


11:35 1007. Time resolved infrared spectroscopy studies of proton coupled electron transfer. **R.B. Dyer**

Savannah Marriott Riverfront Plaza

**Incorporating Primary Literature into the Curriculum**

Financially supported by Division of Analytical Chemistry
L. Strausberg, *Organizer, Presiding*


10:50 1008. Incorporating primary literature and writing instruction in an upper-level capstone chemistry laboratory course. **J.D. Keene**, A.M. Kiefer, C.S. Seney

11:10 1009. Addressing scientific literacy through scaffolded literature review in inorganic chemistry. **M.R. McPhail**

11:30 1010. Guiding students to recognize chemical concepts in primary literature. **L. Strausberg**

**TUESDAY AFTERNOON**

Savannah Marriott Riverfront
Ballroom B

**Diversity Luncheon: Connecting Diversity to Humanity**

Financially supported by ACS Local Section Activities Committee, Coastal Georgia Local Section of the American Chemical Society, NOGLSTP.
B. P. Quillian, *Organizer*
R. A. Groom, *Organizer, Presiding*

12:00 1011. Connecting diversity to humanity. **R.L. Williams**
Savannah Marriott Riverfront
Atrium

Materials Chemistry

W. E. Lynch, Organizer

1:00 - 2:30


1013. Solar-blind ultraviolet-C persistent luminescence phosphors for self-sustained tagging in all lighting conditions. X. Wang


1016. In situ formation of calcium copper tetrasilicate in Egyptian faience. E. Abdelrahman, T. Salguero

1017. Properties and nanostructuring of Cr(II) and Cr(II)/Fe(II) containing tetrasilicates. H. Rathnaweera, T. Salguero


1019. Exfoliation of metal hexaborides via metal ion incorporation techniques. M. Milkovska, R. Ramachandran, T. Salguero


1021. Sulfur host based on cobalt phosphides-graphitic nanocages for advanced lithium-sulfur batteries. A.A. Abdelkader, A. Alzharani, H.M. Elkaderi

1022. Initial studies of biolubricants obtained from the epoxidation of macaúba (Acrocomia aculeata (jacq.) Lood. Ex mart) kernel oil. R.A. Breves, T.A. Serafim, R.V. Lopes, M.A. Sales


1024. TiO$_2$ nanotubes electrode decorated with NiS nanoparticles applied as a photoanode for photoelectrocatalytic degradation of penicillin G. F. Sayao, M. Boldrin Zanoni


1027. Hexacoordinate silicon complexes for OPV and OLED applications. **M. Kocherga**, M.G. Walter, T.A. Schmedake

Savannah Marriott Riverfront
Atrium

**Organic Chemistry**

X. Chen, *Organizer*

1:00 - 2:30

1028. Synthesis and biological investigation of aeruginoic acid and derivatives. **A. Kaplan**

1029. One-pot allylsilane synthesis from enolizable aryl ketones. **M.L. Kwan**, P. Challen, Y. Zhou, Q. Tran


1033. Effects of enzymatic treatment on sucrose content and sensory quality of peanuts. **N. Idris**, B. Holmes, J. Yu

1034. Biologically active tri-substituted pyridazine compounds as anti-cancer agents. **C. Wallace**, A. Williams, J. Wilson, L. Demby, V. Sittaramane, S.M. Landge

1035. 3-step synthesis of fluoroflavones as potential neuroprotective agents. **M. Alshammari**, N.M. Ashpole, D.A. Colby

1036. Oxidation kinetic studies on porphyrin-manganese(IV)-oxo intermediates via chemical and photochemical generation. **S. Klaine**, W. Ning, R. Zhang
1037. Quinidine and quininine based double salt ionic liquids for liver injury prevention. T.D. Robertson, O.A. Cojocaru

1038. Synthetic and catalytic studies of metalloporphyrin complexes for biomimetic oxidations. F. Bratcher, C. Alcantar, R. Zhang

1039. Characterization of unmodified and bleached peanut hulls for use as an inexpensive biosorbent for waste water treatment. M.J. Sands, C.L. Huffman

1040. Activity of resveratrol analogues against triple-negative breast cancer (TNBC) cells and LCMS monitoring of molecular isomerization. H.S. Benmerabet, D. Paull

1041. Synthetic simplification enables the discovery of a unique biofilm target in *Streptococcus mutans*. A. Scharnow, A.E. Solinski, W. Wuest


1044. Two-step synthesis of flavonol-derived ligands for metal-flavonol complexes and CO release. R. Dean, S. Zingales

1045. Development of a 1,2,3-triazole chemosensor for the detection of organophosphate nerve agents. O. Akinsoji


1050. Swellable organically modified silica facilitated synthesis of biodiesel fuel: Complete story. A. Lowry, N.N. Shaw

Polymer Chemistry

W. E. Lynch, Organizer

1:00 - 2:30


1053. Charge effects and their role on particle transport in polyampholyte gels. K. Nuti


1055. Surface modification of titanium surfaces for improved tendon adhesion. H. Feinberg, T.W. Hanks

1056. Cationic tricyclic natural product-derived polymers as antimicrobial agents. L. Kurnaz, M. Lamm, C. Tang

1057. Modification of polymeric carbon nitride films for increased photoelectric density. A. Turturici

1058. Preparation of metallopolymers hydrogels. J. Hwang, T. Zhu, Y. Cha, C. Tang

1059. Controlling topologies of biobased copolymers from renewable rosin and soybean oil. Y. Ma, Y. Sha, T. Zhu, M. Rahman, C. Tang

1060. Optical and electronic properties of benzodithiophene-based conjugated polymers with nucleobase side chain functionality. T.J. Adams, S. Sabury, M. Kocherga, M.G. Walter, M. Kilbey

1061. Polymer from pine rosin and tung oil. A. Hulette

Savannah Marriott Riverfront
Mercer

The Past, Present, & Future of the Periodic Table

Financially supported by Division of the History of Chemistry
D. Rabinovich, R. H. Wallace, Organizer
C. W. Padgett, Organizer, Presiding
1:00 Introductory Remarks.

1:05 1062. Elements of alchemy. C.W. Padgett

1:30 1063. Elemental name game. C.E. MacGowan

1:55 1064. Law & order: Periodic table. D. Rabinovich

2:20 1065. Musical tables: Two early periodic arrangements of the elements. C.J. Giunta

2:45 1066. South Carolina: Wonderful iodine state. W.T. Pennington

3:10 Intermission.


3:50 1068. History Pu-238 production at the Savannah River Site. E.B. Fox

4:15 1069. Future of new superheavy element discoveries. C.M. Folden

4:40 Concluding Remarks.

Savannah Marriott Riverfront
Ballroom E

Coordination Chemistry: Synthesis, Characterization & Application

Financially supported by Division of Inorganic Chemistry
A. Saha, Organizer, Presiding

1:10 Introductory Remarks.

1:15 1070. Dinitrogen coordination and activation by weak-field ligated multimetallic complexes. L.J. Murray


2:05 1072. Sustainable synthesis of organometallics through mechanochemistry. T. Jurca

2:30 1073. Metal-organic frameworks: Perspectives and applications. N.B. Shustova


3:20 Intermission.
3:35 1075. Investigating bonding and catalytic activity of TpCu(Co) complexes. A. Ison, E.A. Ison


4:35 1078. Flux crystal growth and magnetic properties of new f-element chalcogenides. V. Klepov, H. Zur Loye


Savannah Marriott Riverfront Plaza

Cure Chemistry Research in Lab

A. Sikora, Organizer, Presiding

1:10 Introductory Remarks.

1:15 1080. Bio-molecule course-based research experience for sophomores. N.L. Powell, B. Harmon, D. Das

1:35 1081. Cures beyond the classroom: Student’s perspective. M. Khoja, A. Sikora

1:55 1082. Using spectroscopy to identify a forgery: Inquiry-based, hands-on experience for non-majors. C. Theodore

2:15 1083. Incorporating an unexpected procedural flaw in a traditional undergraduate organic laboratory into a discovery-based laboratory experience. S. Bridges, A.M. Kiefer

2:35 1084. Assessing meaningful learning through thematic analysis of creative exercises in inorganic chemistry. J. Shaw

2:55 Intermission.

3:15 1085. Teaching proteomics without instrumentation: Novel undergraduate curriculum. S. Robertson

3:35 1086. TIME 4 Real Science: Unique high school CURE. J.S. Williams
3:55 1087. Crossing floors: Developing an interdisciplinary cure between an environmental toxicology and analytical chemistry course. K.R. Roth, J. Lau

4:15 1088. Undergraduate research at scale: What if the treatment is a cure? E.L. Dolan

4:35 1089. How do middle grade students interpret particulate level animations? T. Kinner, K. Linenberger-Cortes

4:55 Concluding Remarks.

Savannah Marriott Riverfront
Ballroom C

Frontiers in Nucleic Acid Chemistry

F. Leng, N. Shank, Organizers
D. P. Arya, Organizer, Presiding

1:10 1090. Transcription through roadblocks. L. Finzi


2:10 1092. Structural micro-heterogeneity of DNA and DNA bound peptide and protein complexes. F. Fernandez-Lima

2:40 1093. DNA in tight spaces: Linking structure, stability and protection in sperm chromatin. J.E. Derouchey

3:10 Intermission.


3:55 1095. Transcription factor discovery in the extreme thermophile Thermus thermophilus HB8. M. Van Dyke

4:25 1096. Elucidation of the dynamics of transcription-coupled DNA repair initiation by RNA polymerase II and CSB using kinetic network models. C. Yan, T. Dodd, D. Wang, I.N. Ivanov

4:40 1097. Evaluation of the binding contribution and cooperativity of TIAR/TIA-1 RRM modules for RNA. J.L. Siemer, T. Le, J. Zhang, M.A. Brinton, M.W. Germann
4:55 Concluding Remarks.

Savannah Marriott Riverfront
Chatham

Teaching, Creating & Sustaining a Safety Culture

M. B. Koza, Organizer, Presiding

1:10 Introductory Remarks.

1:20 1098. Nurturing a safety culture through student engagement. R. House, O. Williams, A.J. Miller, D.S. Lawrence, J.S. Johnson

1:45 1099. Supporting a culture of safety with teachable moments. M.C. Box, M.T. Gallardo-Williams

2:10 1100. Successful execution of top-down safety culture at UNC-Chapel Hill. J. Potts

2:35 1101. Collaborative safety training and integrative program development. M. Lassiter

3:00 Intermission.

3:20 1102. Cultivating a culture of safety in undergraduate chemistry labs at UNC Chapel Hill. K. Nevins

3:45 1103. From rules to ramp: Embracing safety culture’s expanding frontier as a recent graduate. R. Bocwinski

4:10 1104. SOPs, SOCs, and docs: Developing peer-to-peer safety to fight complacency in synthetic inorganic chemistry. Q.J. Bruch, A.J. Miller

4:35 1105. Laboratory safety culture at UNC-CH. M.B. Koza

Savannah Marriott Riverfront
Pulaski

Advancing Infrared Spectroscopic Techniques & Vibrational Sensing

Ultrafast & Raman Characterization

Financially supported by Piketec GMBH; Neaspec GMBH; MKS Spectra Physics
L. E. Buchanan, Organizer
J. D. Caldwell, Organizer, Presiding
1:15 Introductory Remarks.


1:50 1107. Probing plasmon-mediated processes with ultrafast surface-enhanced Raman spectroscopy. R.R. Frontiera

2:20 1108. Raman spectroscopy for in vivo and in vitro neurochemical sensing. B. Sharma


Savannah Marriott Riverfront
Reynolds

Aquatic Biogeochemistry

S. E. Gray, Organizer
C. E. MacGowan, D. Mullenax, Presiding

1:15 Introductory Remarks.


1:40 1111. Is dissolved organic carbon the key to understanding the fate of Arctic permafrost soil carbon? L. Ziolkowski

2:00 1112. In a sea of microbes and organic matter: Identifying the organisms and metabolisms that power the ocean’s carbon cycle through genomics and transcriptomics. S. Gifford

2:20 1113. What controls dissolved organic matter composition in marsh-dominated estuaries? P.M. Medeiros

2:40 1114. Elucidating tidally-driven factors influencing dissolved inorganic carbon export to the coastal ocean. C. Hintz

3:00 1115. Cation exchange reactions between silver nanoparticles and metal sulfides. K.M. Mullough, H. Lieb, B. Nguyen, E.R. Ramsayer

3:20 Concluding Remarks.
Savannah Marriott Riverfront
Forsyth

Frontier Research in Polymer Science

E. B. Berda, Organizer, Presiding

1:20 Introductory Remarks.

1:25 1116. Multi-mechanophore stress-relieving polymers synthesized via raft polymerization. B. Bowser, S. Craig

1:45 1117. Antifogging/frost-resisting polymer coating. W. Ming

2:05 1118. Precision synthesis of degradable acrylate and acrylamide copolymers with thionolactones. W.R. Gutekunst

2:25 1119. Rethinking single-chain nanoparticles. E.B. Berda

2:45 Intermission.


4:05 1123. Non-conjugated polymers as memristors in neuromorphic applications. S.H. Foulger

Savannah Marriott Riverfront
Oglethorpe B

Frontiers in Mechanistic Enzymology

M. K. Thompson, Organizer, Presiding

1:20 Introductory Remarks.
1:25 1124. New insights into the chemical reactivity of dehaloperoxidase: Multifunctional catalytic hemoglobin. **R.A. Ghiladi**

1:55 1125. Neurodegenerative diseases and the mitochondrial unfolded protein response. **R. Silvers**


2:55 Intermission.

3:15 1127. Redox-modulator or metal buffer? Exploring the role of glutathione in cellular copper homeostasis. **C.J. Fahrni**

3:45 1128. Exploring the heterogeneity of insect arylalkylamine N-acyltransferase. **B. O'Flynn**, D.J. Merkler

4:15 1129. On the mechanism of ANGPTL3 and ANGPTL4 inhibition of LPL. **S. Neher**

4:45 Concluding Remarks.

Savannah Marriott Riverfront
Franklin

**Heterocyclic Chemistry in the Southeast & Beyond**

Financially supported by ViiV Healthcare
C. E. Stephens, **Organizer**
Q. Wang, **Organizer, Presiding**

1:20 Introductory Remarks.

1:25 1130. Strategies and tactics inspired by biologically active alkaloids. **J.M. Smith**

1:45 1131. Marine natural products synthesis: Platform for chemical and biological discovery. **J.G. Pierce**

2:05 Intermission.

2:15 1132. Umpolung approaches to the synthesis and application of heterocycles enabled by hypervalent iodine reagents. **S. Wengrynïuk**

2:55 1134. Synthesis and characterization of high-performing explosive and propellant heterocyclic materials. J.J. Sabatini, E. Johnson, E. Bukowski

3:15 Intermission.


3:55 1136. Synthesis of azepinoidoles via ring expansion of 1-methyl-tetrahydro-β-carbolines. S. Ding, M. Ghavami, P.R. Carlier


4:35 Concluding Remarks.

Savannah Marriott Riverfront
Ballroom D

Astrochemistry in the Southeast & Beyond

Solar System Astrochemistry & Beyond

R. C. Fortenberry, Organizer, Presiding

1:30 Introductory Remarks.


2:05 1139. Fragment species in the comae of comets: Observations and challenges. D. Pierce

2:35 1140. Molecular water ice formation and processing in solar systems. T.M. Orlando, B.M. Jones, A. Alexandrov, K. Fiege

3:05 Intermission.

3:25 1141. Laboratory studies of thermally processed ice mixtures relevant to outer-planetary surfaces. D. White


4:55 Concluding Remarks.

Savannah Marriott Riverfront
Oglethorpe A

**Spectroscopic Imaging: Bridging the Gap between Chemical & Spatial Heterogeneity**

A. Ghosh, *Organizer, Presiding*

1:30 Introductory Remarks.

1:35 1144. Discovering complex microscopic interactions with broadband coherent Raman microscopy. **M.T. Cicerone**


2:35 1146. High-resolution label-free biochemical imaging of histology tissue sections can improve cancer detection and staging. **F.E. Robles**

3:05 Intermission.

3:25 1147. Imaging mass spectrometry of lipid isomers using gas phase ion/ion reactions. **B.M. Prentice**

3:55 1148. Metabolomics approaches to decipher response of pathogens in disease. **N. Garg**


Savannah Marriott Riverfront
Atrium

**Biochemistry**

T. Leeper, *Organizer*

3:00 - 4:30

1151. Allergenicity of different fractions of protein extract from enzymatically hydrolyzed peanut flour. N. Mikiashvili, J. Yu


1153. Predicted functions of FtrA and FtrB protein from the four-component uptake system, FtrABCD, in Brucella spp. M.N. Chanakira, S. Banerjee, R. Roop, D. Martin


1155. Characterization of a pH-responsive nanocage based on the ferritin iron storage protein. S. Singh, N.E. Grossoehme, F. Outten

1156. Bactericidal activity of copper-ascorbic acid mixture against Staphylococcus aureus spp.. T. Zimmerman, R. Gyawali, S. Aljaloud, S.A. Ibrahim

1157. QM/MM simulations of flavin electronic spectra in different electrostatic environments. M. Kabir, Y. Orozco-Gonzalez, S. Gozem


1159. Hemagglutinin mediated membrane fusion: Dynamics of fusion peptide insertion and interaction with transmembrane domain. A. Prokopik, R.B. Dyer

1160. Characterization of CdSe based nanoparticles for integration into photocatalytic systems. S. Narehood, M. Sanchez, R.B. Dyer

1161. Bioinformatic and in vitro characterization of primase-polymerase enzymes from viruses that infect Actinobacterial hosts. N.B. Folse, S.R. Watson, J. Wallen

1162. Altering zinc oxide metal-based nanoparticles and the potential changes in the antimicrobial properties. K. Brasecker

1163. Interaction of Grx4 with the SUF machinery for iron-sulfur cluster biogenesis in E. coli. E. Sanchez, F. Outten

Savannah Marriott Riverfront
Ballroom B

Environmental Chemistry
3:00 Introductory Remarks.

3:05 1164. Heterogeneous oxidation of phenolic aldehydes. M. Rana, M.I. Guzman


4:45 1169. Polymer fiber-based visible colorimetric sensor for selective and sensitive on-site determination of polycyclic aromatics hydrocarbons in aquatic ecosystems. J. Horne, D. Sanchez, J. Perch, C. Cook, Y. Lu, M. Elliott, E.K. Wujcik

Savannah Marriott Riverfront
Atrium

Physical Chemistry

C. W. Padgett, Organizer

3:00 - 4:30

1170. Molecular dynamics simulations of the interactions between triose phosphate isomerase and sulfonamides. N.Y. Forlemu, J. Sloop

1171. Nanoscale infrared spectroscopy of beta amyloid fibrils and prefibrillar aggregates. L. Zhang, A. Phadkule, A. Ghosh

1172. Decomposition of organophosphorus compounds on zirconium-based metal organic frameworks at the gas-MOF interface. H. Siegal, N.S. Sapienza, J.R. Morris

1173. Inverse temperature dependent conductivity of heme bacterial nanowires. X. Ru, P. Zhang, D.N. Beratan

1175. Exploring the evaporative properties of acoustically levitated solvent droplets. **H. McCardle**, E.R. Duranty


1177. Preparation, characterization, conformational stability and theoretical calculations of 4-methyl-1,1-dichloro-1-silacyclohexane. G.A. Guirgis, **B. Shumberger**, R. Sonstrom, B.H. Pate

1178. Computational study of the spin trapping behavior of melatonin and selected derivatives. **O.S. Oladiran**, S.J. Kirkby


1180. Elucidation of prominent features in the spectra of N₄H⁺ and N₄D⁺ clusters: Driven molecular dynamics study. D. Boutwell, **M. Kaledin**

1181. Preparation and activity of palladium catalyst on fumed silica support. **D. Fertal**, M. Billor, A.C. Banerjee

1182. Molecular dynamics of O(¹D) + CCl₄ → ClO + CCl₃ probed by cavity enhanced sub-THz spectroscopy. **R. O'Neal**, L. Duffy

1183. Formation mechanisms of interstellar C₃H₂O isomers from quantum mechanical calculations. **R. Johnson**, S. Gozem


1185. Endocannabinoid entry into TRPV1, the ionotropic cannabinoid receptor. **C. Muller**, D. Lynch, D. Hurst, P. Reggio

1186. Laboratory submillimeter spectroscopic detection of desorbed CO ices. **K.M. Yocum**, E. Todd, S.N. Milam, P.A. Gerakines, S.L. Widicus Weaver

1187. Spectral analysis of the reaction between O(¹D) and methylamine. **H.A. Bunn**, C. Schultz, J.A. Kroll, S.L. Widicus Weaver

1188. Effective determination of the theoretical infrared spectra of formic acid dimer (HCOOH)₂. **D.R. Boutwell**, M. Kaledin
1189. Solid phase extraction of heavy metal ions from aqueous solutions using amorphous melamine zirconium phosphate. A.M. Bakry, S. El- Shall


1191. Excited state dynamics of photo-ODIBO using transient absorption and stimulated Raman spectroscopies. W. Thompson

1192. Examining biomarker survivability in Enceladus plume capture conditions using laser-induced projectile impact testing. K.M. Seaton, B.L. Henderson, I. Kanik, T.M. Orlando, A.M. Stockton

1193. Treatment of the free electron wave function in photoelectron spectroscopy: Systematic benchmark study. M. Mahbub, S. Gozem

1194. Investigation of the low-energy isomers of SO$_4^{2-}$(H$_2$O)$_n$ (n=1-5) clusters. K. Pokorny


1196. Recent investigations of pure and Cu decorated ZNo nanoparticles. L.J. Langston, J.Z. Larese

Savannah Marriott Riverfront
Pulaski

Advancing Infrared Spectroscopic Techniques & Vibrational Sensing

Financially supported by Piketec GMBH; Neaspec GMBH; MKS Spectra Physics
L. E. Buchanan, Organizer
J. D. Caldwell, Organizer, Presiding

3:40 Introductory Remarks.

3:45 1197. Investigating the effects of nα-acetylation on amphiphilic peptide self-assembly with 2DIR spectroscopy. W.B. Weeks, M. Pan, L. Buchanan


4:25 1199. Enhancing chemical sensing through SEIRA and silicon carbide gratings. A.R. Bruncz, T.G. Folland, J.D. Caldwell
4:45 1200. Mapping polarity and hydrogen-bonding environments in live cells by hyperspectral stimulated Raman scattering microscopy. **X. Lang, K. Welsher**

Savannah Marriott Riverfront
Reynolds

**Geochemistry**

C. E. MacGowan, D. Mullenax, *Organizers, Presiding*


3:50 1201. Investigation into the effect of aging and aluminum-substitution in ferrihydrite under aerobic conditions using flow microcalorimetry, XRD, and XAS. **S. Zigah, B. Martín, C.I. Pearce, K. Rosso, N. Kabengi**


4:40 1203. Developing a hybrid surface complexation model for aluminum-substituted ferrihydrite. **F. Adams, M.L. Machesky, J.D. Kubicki, N. Kabengi**

Savannah Marriott Riverfront
Mercer

**History of Chemistry**

**Past, Present & Future of the Periodic Table**

Financially supported by Division of the History of Chemistry
R. H. Wallace, *Organizer, Presiding*


5:10 1205. Look back at two important chemurgy projects. **R.H. Wallace**
TUESDAY EVENING

Savannah Marriott Riverfront
Atrium

Frontiers in Nucleic Acid Chemistry

D. P. Arya, F. Leng, N. Shank, Organizers

5:00 - 6:00


1207. New fluorescence-based method to identify DNA topoisomerase inhibitors. Z. Deng, F. Leng

1208. Electrostatics dominate the interactions between the tethered intrinsically disordered regions and the DNA-binding domain of PU.1, a model eukaryotic transcription factor. S. Xhani, S. Esaki, M. Khanezarrin, M.W. Germann, G. Poon

1209. Long-lived intermediates in oxidation of guanine by one-electron oxidants: Kinetics of formation and lifetime under biologically relevant conditions. E. Campbell, Y. Razskazovskiy, M. Roginskaya

1210. Recognition of single ribonucleotides in duplex DNA by RNase HII. S.T. Brenden, S.V. Nguyen, M.W. Germann

1211. Identification and characterization of preferred DNA-binding sites for the Thermus thermophilus HB8 transcriptional regulator TTHB099. K. Moncja, M. Van Dyke

1212. Oxidative damage to guanine bases in DNA: Reaction pathways leading to the formation of 2,5-diaminoimidazolone lesion and their relative contribution. C.S. Thomas, Y. Razskazovskiy, M. Roginskaya


1215. Exploring stability and steric effects of disulfide bonds incorporated into the backbone of peptide nucleic acid (PNA). T.C. Hood, N. Shank
1216. Role of flanking amino acids in DNA binding by AT-Hook peptides. S. Wright, K.L. Buchmueller

1217. Dynamic RNA and DNA nanoassemblies with controlled immunological properties. W. Ke

1218. Design and synthesis of cyano-nilutamide conjugated DNA bis-methylating molecules that can target androgen receptor positive cancer cells. C.H. Murphy, J. King, C. McNeely, C. Cribb, A. Frampton, S. Varadarajan


1220. Potent inhibition of the mammalian high mobility group protein AT-Hook 2 binding to DNA by natural polyphenols. L. Su, J.W. Chambers, F. Leng

1221. Role of hydration in DNA recognition by structurally homologous transcription factors. A.V. Albrecht, K. Huang, G. Poon

1222. Suboptimal binding drives DNA site recognition in the transcription factor ETS-1. K. Huang, S. Xhani, A.V. Albrecht, G. Poon

1223. Identification of a DNA-binding consensus sequence for TTHA1359, a Thermus thermophilus HB8 transcriptional regulator. J. Teague, M. Van Dyke

WEDNESDAY MORNING

Savannah Marriott Riverfront Academy

Physical Chemistry

Experimental

C. W. Padgett, Organizer
T. Whiteside, Presiding

8:00 Introductory Remarks.

8:05 1224. Magnetic characterization of chromium intermediates in the reduction of chromium(VI) by glutathione in acidic solutions. R.A. Marin, R. Bose, B. Dabrowski, S. Kolesnik
8:25 1225. Infrared spectroscopic studies of the CO oxidation reaction mechanism on Cu/TiO$_2$ and the role of strong metal-support interactions. A. Maynes, J.R. Morris, D.M. Driscoll

8:45 1226. Hydrogen atom abstractions from carboxylic acids: Experimental mechanistic interpretation. M. Paradzinsky, J. Tanko

9:05 1227. Transient absorption microscopy in the total internal reflection geometry. B. Colon


9:45 1229. Laser spectroscopy of OCS dimers in helium nanodroplets. I. Miller, T. Faulkner, J. Saunier, P. Raston

10:05 Intermission.

10:20 1230. Particle-by-particle in situ characterization of the protein corona via real-time 3D single particle tracking microscopy. X. Tan, K. Welsher


11:00 1232. Thermodynamic, modeling, and neutron scattering investigation of acetylene adsorption of graphite. A. Pedersen, J.Z. Larese


11:40 1234. Speeding up 3D fluorescent laser scanning microscopy for live cell imaging. C. Johnson, K. Welsher

12:00 1235. Analysis of the Calcination of Plutonium(IV) Oxalate to Plutonium(III) Oxalate. C. South, L. Roy

Savannah Marriott Riverfront
Oglethorpe B

Biochemistry

Bioinorganic

T. Leeper, *Organizer*
G. Meloni, *Presiding*
8:10 Introductory Remarks.


8:35 1237. Investigation into the catalytic cycle of cytochrome P-450 involving imidazolium-based ionic liquid cations as substrate in a QM-based framework. A. Banerjee, J. Shah

8:55 1238. Enzymatic degradation of 4-cyanophenol pesticides with the multifunctional hemoglobin dehaloperoxidase. P. Staton, T. Malewschik, A. McGuire, R.A. Ghiladi

9:15 1239. Antimicrobial properties of cotton treated with altered zinc-metal based nanoparticles. K. Brasecker


9:55 Intermission.


11:35 1245. Observations, hypothesis, and consequence in the role of selenium and selenocysteine into HIV Nef protein expression and Zika viral RNA interactions with host cell mRNA and protein expression. G. Dailey, J. Ruzicka, E. Taylor

Savannah Marriott Riverfront
Ballroom D

Chemical Education

S. R. Mooring, Organizer, Presiding

8:10 Introductory Remarks.
8:15 1246. General chemistry lab practical exams at Augusta University. A.C. Spencer, S.A. Myers, C. Eidell

8:35 1247. Teaching organic chemistry concepts to non-science majors. J.E. Barker Paredes, J. Sloop


9:35 1250. Redesign of general chemistry with digital and adaptive learning courseware/technology supported high-touch student services. E.A. Mintz, C.W. Ingram, D. Teodorescu

9:55 Intermission.


10:35 1252. Development of an instrument to comprehensively assess core concepts in general chemistry. D. Inman, M. Balabanoff, A.C. Moon


11:35 1255. Only time will tell: Imagining the future of the scientific poster. R. Bocwinski


Savannah Marriott Riverfront
Chatham

Inorganic Chemistry

General

Financially supported by Division of Inorganic Chemistry
W. E. Lynch, Organizer
M. Johnson, Presiding
8:10 Introductory Remarks.

8:15 1257. Novel coordination and catalytic properties of Pd(II)-compounds of di-2-pyridyl ketone hydrazonic compounds. **M.A. Bakir**

8:35 1258. Synthesis, characterization, and reactivity of bis(phosphino) pyrrole ligands and their complexes. **H. Fokwa, M. Johnson**


9:15 1260. Understanding the photophysics of Ln(III) doped nanoparticles. **R.E. Ortega, G.F. Strouse**


10:15 Intermission.

10:30 1263. Nickel catalysts supported by redox active ligand scaffold for aziridination. **D. Liu, J. Bacsa, C.E. MacBeth**

10:50 1264. Development of modular bis(phosphino) pyrrole ligands for late metal-catalyzed cross-coupling. **M. Johnson**

11:10 1265. Thermodynamic characterization of Ca(II) and Cd(II) binding to wild type and mutant C35A, C84A, and C35A/C84A HcTnC using isothermal titration calorimetry and inductively coupled plasma optical emission spectroscopy. **C. Palmer, A. Cunningham, A.M. Spuches**


11:50 1267. Selective imine and amine synthesis catalyzed by a well-defined cobalt complex and a base. **K. Paudel**


Savannah Marriott Riverfront Reynolds
Materials Chemistry

W. E. Lynch, Organizer
G. Morrison, Presiding

8:10 Introductory Remarks.

8:15 1269. Tuning the frequency of localized surface plasmon resonances. C.R. Conti, G.F. Strouse


8:55 1271. Exceptionally high C$_2$H$_2$ adsorption affinity in robust ultramicroporous metal-organic frameworks. T. Pham, K. Forrest, Y. Peng, Z. Zhang, B. Space

9:15 1272. Physical and electrochemical properties of copper deficient CuCrO$_2$ for application in Li-ion batteries. A. Chown, B.H. Farnum


10:15 Intermission.

10:35 1275. Design strategies to enhance amidoxime chelators for uranium recovery. B. Aguila, S. Ma

10:55 1276. Monodisperse perovskite oxide nanocrystals with tunable size and composition for enhanced oxygen reduction reaction. Y. Harn, Z. Lin


Well-Defined Supramolecular Materials

Financially supported by Division of Inorganic Chemistry
N. B. Shustova, Organizer, Presiding

8:10 Introductory Remarks.

8:15 1280. Designing MOFs for trace CO$_2$ capture. C.R. Wade, C. Bien, Z. Cai, Q. Liu


9:00 1282. Gas-phase synthesis of hierarchically structured and responsive metal-organic frameworks. T. Kempa


9:45 1284. Modulating guest based photophysics in metal organic frameworks. R.W. Larsen

10:00 Intermission.

10:15 1285. Self-assembled reversed bilayer vesicles through pnictogen bonding: Step one in the design of a truly artificial cell. S. Moaven, A.F. Cozzolino

10:45 1286. Electronic properties and photophysics of photochromic frameworks. C.R. Martin, N.B. Shustova

11:00 1287. Syntheses of copper tetrachalcogenide metallate (Mo/W) nanoparticles and their applications towards energy storage. M.M. Li, S. Ivanov


11:45 1289. Redox reactivity of soft and porous materials. C.K. Brozek

Savannah Marriott Riverfront
Mercer

Forensic DNA Analysis & Beyond: Enabled by Biological Chemistry
O. Venderpuye, *Organizer, Presiding*

**8:15** Introductory Remarks.

**8:20 1290.** History and introduction to forensic DNA testing. **O. Venderpuye**

**9:00 1291.** The comparison of MtDNA control region haplotypes between individuals of known maternal lineage and ancient skeletal remains from the flevaeis plot archaeological Site in rhodes. **P. Marshall, M. Lohr**

**9:40 1292.** Case study analysis of DNA evidence: An examination of criminal defense and prosecution systems in south georgia. **M. Gilbert**

**10:20** Intermission.

**10:40 1293.** Development of cannabis sativa autosomal and organelle genotyping methods for forensic and intelligence purposes. **R. Houston, D. Gangitano, M. Roman**

**11:20 1294.** Forensic epigenetics, a powerful technique to determine body fluids and phenotype. **B. Mccord**

Savannah Marriott Riverfront
Pulaski

**Advancement in Microwave Chemistry**

Financially supported by CEM
S. M. Landge, *Organizer, Presiding*

**8:30 1295.** Interactive experience with microwave technology in teaching and research labs. **S. Ly, L. Robinson**

**9:10 1296.** Selective microwave heating of organic reaction mixtures. **G.B. Dudley**

**9:30 1297.** Microwave initiated nanomanufacturing towards energy applications. **X. Zhang, S. Sarwar**

**9:50** Intermission.

**10:05 1298.** One-pot microwave assisted Suzuki coupling synthesis of substituted isoxazoles: Efforts to minimize self-coupling byproducts. **N.L. Powell, B. Harmon**

**10:25 1299.** Green synthesis of five and six membered nitrogen containing heterocycles. **S.M. Landge**
10:45 1300. Microwave induced solution-combustion synthesis of complex metal oxides. A.L. Washington, C. Dandeneau

11:05 CEM Workshop Demonstration.

Savannah Marriott Riverfront
Atrium

Chemical Education

S. R. Mooring, Organizer

8:30 - 9:45

1301. What I did for summer vacation: Experiences of a high school student in a college research lab. G.K. Coleman, B. Wicker

1302. How yogurt can be used to teach biochemistry. T. Zimmerman, S.A. Ibrahim

1303. Investigating the effects of laboratory learning environment on students' learning outcomes in a general chemistry course. D.M. Samarasekara, D. Mlsna


1305. NSF Noyce program: REMAST (recruit and engage math and science teachers) at Newberry College, phase I (2009-2015) and phase II (2015-2020) through year 5. C.P. McCartha, C. Horn, R. Stubbs, S. Peters, N. Simmons, C. Aulbach, K. Simmons, G. Rushton

1306. Food chemistry applications through baking and sensory analysis in a summer research apprentice program. H. Colleran, R.C. Silva, S. Ibrahim

1307. Pt(0) nano-dispersed in a range of organically modified silicates as catalysts for the hydrosilylation of imines and oximes. S. Giglio IV, M. Agbo, B. Bernard, J. Fotie


1310. Preliminary assessment of food safety knowledge and practices at a university food service establishment in Bulgaria. H. Fidan, S.A. Ibrahim

1312. Green oxidations using oxoammonium salt for the undergraduate laboratory and student research. A.L. Bartelson

1313. Get involved with the ACS division of chemical education. S.L. Johnson

1314. Wheetrometer project: Low cost, lab built instruments for UV / VIS / near-IR spectrophotometry. J.S. Summers

1315. Determination of the density of eggs as they age to improve a general chemistry laboratory experiment. S. Hutchison, K.R. Wilson

1316. Teaching GOB organic chemistry as a general science core class for non-science majors. D.R. Zuidema, J. Jian

1317. Tandem reduction and cyclization of 2-nitrophenylacetylenes as a preparation of indoles. C. Ballard, L. Repke

Savannah Marriott Riverfront
Franklin

Entrepreneurs Tool Kit

J. E. Sabol, Organizer
J. Skinner, Presiding

8:30 1318. Small business development center assistance for existing and prospective small business owners. B. Brownlee

9:00 1319. Intellectual property and contract considerations for start-ups. M.D. DeMott

9:30 1320. Managing your online presence. C. Cowart

10:00 Intermission.

10:30 1321. Sales as a career alternative in the chemical industry. J.P. Stoner

11:00 1322. Board of directors and scientific advisory board: Know the needs for your start-up company. J. Skinner

11:30 Panel Discussion.
Savannah Marriott Riverfront
Atrium

Environmental Chemistry

W. E. Lynch, Organizer

8:30 - 9:45

1323. Functionalized shell-shell-core (SSC) nanopesticide for mosquito control. A. White, L.R. Pokhrel

1324. Analysis of factors affecting the removal of polyacrylamide from water by UV persulfate method. J. Huang, D. Yang, W. Pang

1325. Electrospinning of nanofiber polystyrene and silica layered mats for the visible colorimetric detection of polycyclic aromatic hydrocarbons in water. J. Horne, D. Sanchez, C. Cook, J. Perch, Y. Lu, M. Elliott, E.K. Wujcik

1326. Hygroscopic properties of marine aerosol particles and their role in cloud droplet formation. R. Bramblett, A.A. Frossard

1327. Seasonal measurements of atmospheric PAHs in the Atlanta metropolitan region via passive air sampling. K. Del Risco, D. Patel, K. Zimmermann

1328. Encapsulated oxygen releasing compounds in biodegradable micromaterials for environmental remediation. K.R. McCormac, M.J. Beazley

1329. Investigation of hygroscopic properties of giant cloud-condensation nuclei with an aerosol optical trap and humidified tandem differential mobility analyzer. B.E. Swanson, R. Bramblett, A.A. Frossard

1330. Impacts of the mountain valley pipeline: Longitudinal changes in the baseline assessment of Mill Creek, Bent Mt., Virginia. M. Bennington, K. Bishop, K.R. Roth

1331. Heavy metal pollution and loss of metal metabolism in eastern oysters (Crassotrea virginica) from the Elizabeth River, Virginia. B.F. Lasseter, R.P. Burke, B.W. Auchmoody, A. Russotti

1332. Change in wax profiles for CCD colonies. B.F. Lasseter, D.V. Liskin, R. Schopp, C. Reed

Biosorption of copper(II) to ground peanut hulls: pH dependence and regeneration capacity. **S. Adom**, C.L. Huffman

Assessment of environmental adversity of chemicals in traditional laboratory experiments: Best practices and benefits. **K. Banerjee**

Chemostratigraphy of the Big Harris River system using trace metal and particle size analyses. **S.N. Sullivan, G. Carney**, C.L. Huffman, J.R. Miller

Hydrogen molybdenum tungstate bronze films for reduction of carbon dioxide to formate. **D.W. Scott, M. Basjunaid**

Preparation and characterization study of modified multi-walled carbon nanotubes using iron oxide. **T. Tran, D. Deocampo, N. Kabangi**

Sonochemical degradation of metribuzin in aqueous solutions. **N. Mayon, D. Wayment**

Synthesis, isolation, and evaluation of oxidative behavior of aqueous fullerene oxide (c_{60}O) suspensions. **J. Ingham, R.S. Hikkaduwa Koralege**


Sink or swim: Biotic influences on carbon cycling in a vegetated barrier island ecosystem. **E. Long, S.L. McCallister, J.C. Zinnert**

Geochemical fingerprinting reveals effects of urbanization and geology on natural water across Middle Tennessee. **B. Davis, A.F. Callender**

Concentrations and sources of trace metals in water and sediments of the South Fork New River, Ashe County, North Carolina, and their potential effects on aquatic biota. **X. Watkins**

Savannah Marriott Riverfront
Johnson

**K-12 Teachers**

L. W. Padgett, *Organizer, Presiding*

8:30 Introductory Remarks.

8:35 **1345.** Chemical ecology made easy: Teaching students about the link between toxin chemistry and HABs. **M.C. Curran**, A. Robertson, M. Richlen
9:35 1346. Leveraging engineering for student success in chemistry. T. Kinner

10:35 1347. Classroom demonstration on ocean acidification. C. Hintz

11:35 1348. Implementing culturally responsive curriculum in the chemistry classroom. S. Oxley

Savannah Marriott Riverfront
Oglethorpe A

Organic Chemistry

Method Development

X. Chen, Organizer
W. Lei, Presiding

8:30 Introductory Remarks.

8:35 1349. One spot synthesis of highly regioselective 2,3-dihydrobenzofurans acetate through palladium catalyzed annulation of acrylic ester as synthons. M. Khan, A. Nath

8:55 1350. Brønsted base mediated trans hydroboration of alkynamides. R. Fritzemeier, R.J. Grams, W.L. Santos


9:35 1352. Novel chromium(III) photocatalysts for radical cation cycloadditions. B.K. Gall, E.M. Ferreira

9:55 1353. Transition metal catalyzed asymmetric dearomatization of heteroarenes. R. Karimov

10:15 Intermission.

10:35 1354. Stereoselective synthesis of olefins using swellable organically modified silica nano-reactors. A. Azieva, N.N. Shaw

10:55 1355. One-pot enol silane formation-Mukaiyama aldol reactions promoted by trimethylsilyl trifluoromethanesulfonate. C.W. Downey

11:15 1356. Swellable organically modified silica facilitated organic synthesis. N.N. Shaw

11:35 1357. Selected synthetic transformations of a polycyclic diene toward novel oxa-bowls. M. Etzkorn, M.J. Faussett
Organic Chemistry

Method Development: Functionalization

X. Chen, Organizer
G. Gumina, Presiding

8:30 Introductory Remarks.

8:35 1358. Palladium-catalyzed synthesis of α-trifluoromethyl benzylic amines via fluoroarylation of gem-difluoro-2-azadienes enabled by phosphine-catalyzed formation of an azaallyl-silver intermediate. C.I. Onyeagusi

8:55 1359. Synthesis, isolation, and characterization of alpha-oxo gold carbenoids. C.P. Stow, R. Widenhoefer


9:55 1362. Deoxyhalogenation of alcohols to alkyl halides using a silatrane moeity and acetyl chloride. S.E. Varjosaari

10:15 Intermission (C-H functionalization).

10:35 1363. Intermolecular allylic C-H etherification of internal olefins. T. Farmer Nelson, S. Blakey

10:55 1364. C-H functionalization of aromatic alcohols utilizing readily attachable and cleavable molecular scaffolds. S.L. Jackson, B.J. Knight, J. Rothbaum, Q. Li, E.M. Ferreira


11:35 1366. Convergent synthesis to access an enantiopure indenyl ligand scaffold. C. Poff, S. Blakey

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Forsyth
Patent Law for Chemists: What You Need to Know

A. Weisbruch, Organizer, Presiding

8:30 Introductory Remarks.


9:35 Intermission.


10:45 Intermission.

10:55 Panel Discussion.

11:25 Concluding Remarks.

Savannah Marriott Riverfront Atrium

Analytical Chemistry

C. McKenas, Organizer

10:00 - 11:30


1372. Bacterial exometabolomics by high-resolution mass spectrometry. C.A. Chamberlain, M. Hatch, T.J. Garrett


1374. Feasibility study of using ion mobility-mass spectrometry to detect RNA modifications. H. Wang, J. Simpson, D. Todd, N. Chiu


1380. Quantifying the atrazine degradation ability of mycelium utilizing high performance liquid chromatography (HPLC) and quadrupole time of flight mass spectrometry (QTOF-MS). **R. Pandya**, L. Olson, S. Gowen, S. Wheeler, J.F. Wheeler

1381. Development of an analytical method to detect commonly used herbicides, glyphosate and AMPA. **A.C. Staiano**, E.N. Graves, T. Griffin, S. West


1385. Investigation of toxic heavy metals in coffee samples by graphite furnace atomic absorption spectroscopy. **J. Lyons**, S.M. Abegaz

1386. Valorization of lignin through a mild organosolv treatment of biomass. **M. Dorrani**, B. Lynn

1387. Is goldenseal stable under different storage conditions? Targeted and untargeted approaches to study the effects of storage conditions on stability of *Hydrastis canadensis* (Goldenseal). **M. Khin**


1390. Surface-enhanced resonance Raman scattering of rhodamine B in thin films of multilayer Ti$_3$C$_2$Tx MXene nanosheets. K. Allen-Perry, R. Lascola, D.E. Autrey

1391. Size-dependent electrochemical deposition of Au on Au nanoparticles. H. Nambiathan Nambiar, F.P. Zamborini

1392. Combination of a Prussian blue modified electrode with a glucose oxidase encapsulated xerogel for the detection of glucose. O. Butbul, D. Budner

1393. Glucose oxidase and Prussian blue nanoparticles encapsulated within a xerogel for the detection of glucose. D. Baker, D. Budner


1395. Initial investigation of Prussian blue electrode applications with cholesterol and galactose. E. Zhang, D. Budner

1396. Statistical modeling for identifying dyes on fibers found at crime scenes. D. Rich, A. Abraham, N. Ratnasena, K. Livingston, S.L. Morgan

1397. Use of DRIFTS in the identification of accelerants in fire debris. R. Kerr, J. McCutcheon

1398. Comparative study between feed forward neural networks and least absolute shrinkage and selection operator for the degradation detection of polyester-urethane audio magnetic tapes. N. Ratnasena, A. Abraham, D. Rich, L. Cunha, S.L. Morgan

1399. N-donor heterocycles for trivalent actinide and lanthanide separations. B. Kilgore, J.D. Carrick, C.A. Hawkins