

Section B

Marriott Downtown
Salon C

Green and Renewable Composite Materials

J. P. Hinestroza and A. N. Netravali, *Organizers*

- 8:25 Introductory Remarks.
- 8:30 231. Biological cellulose microcomposite materials. R. Ernest, J. J. Pawlak, A. Grunden, A. A. Devine
- 9:00 232. Polyhydroxyalkanoate granules for surface treatment of paper. R. Bourbonnais, R. H. Marchessault
- 9:30 233. Light-weight composites from hop vines and polypropylene web. Y. Zou, N. Reddy, Y. Yang
- 10:00 Intermission.
- 10:15 234. "Green" composites from a conjugated linseed oil-based resin and wheat straw. D. P. Pfister, R. C. Larock
- 10:45 235. Fabrication and characterization of cellulose film incorporated of Solidago canadensis L. Q. Shen, W-X. Zhang, Y. Ren, Y-A. Zhang
- 11:15 236. Chemical modification of wheat proteins-based renewable/biodegradable polymer materials and its effect on material biodegradation. X. Zhang

THURSDAY AFTERNOON

Section A

Marriott Downtown
Salon G

Water Soluble Polymers from Cellulose: Materials and Applications

S. Murphy and M. J. Radler, *Organizers*

- 12:55 Introductory Remarks.
- 1:00 237. Solubility of cellulose ethers vs. substituent distribution. T. Heinze
- 1:30 238. Water-soluble nanocapsules based on blockwise methylated cell-oligosaccharides. H. Kamitakahara, F. Nakatsubo
- 2:00 239. Toward high molecular weight 3-O-methylcellulose derivatives. A. K. Miller, J. B. Stanislaus, S. J. Rowan
- 2:30 240. The role of interchain entanglements in the thermal gelation of aqueous methyl cellulose. R. L. Sammler, O. D. Redwine, J. D. Moore, D. Poche, D. Meunier, J. Sherman, M. J. Rinken
- 3:00 Intermission.
- 3:15 241. Effects of hydrophobically modified hydroxy ethyl cellulose to the colloidal stability of silica. Y. Boluk, L. Zhao
- 3:45 242. Accelerating cellulosic ether development with high throughput approaches. C. E. Mohler, R. L. Sammler, T. Boomgaard, L. K. Stoneburner, S. Gaynor, C. J. Tucker
- 4:15 243. Advanced characterization of molecular weight, molecular weight distribution and persistence length of cationic hydroxyl ethyl cellulose by SEC-MALS. H. Shen, R. L. Sammler, D. Meunier, B. Deshmukh, S. Gaynor, E. P. Wasserman
- 4:45 Concluding Remarks.

Section B

Marriott Downtown
Salon C

Green and Renewable Composite Materials

J. P. Hinestroza and A. N. Netravali, *Organizers*

- 1:30 244. Polyphenol-nanocellulose composites that biomimic the plant cell wall. Z. Li, A. I. Athamneh, J. R. Barone
- 2:00 245. Green processing of polyester materials. A. O'Neill, R. Araujo, M. Casal, M. Zinn, Q. Ren, A. Cavaco-Paulo
- 2:30 246. High strength wood flour composites based on tung oil-polyurethanes. M. I. Aranguren, U. Casado, N. E. Marcovich, M. A. Mosiewicki

- 3:00 Intermission.
- 3:15 247. Polymer blends and composites derived from biopolymers. S. Sharma, J. Hodges, I. Luginov
- 3:45 248. A thermosensitive chitosan/poly(vinyl alcohol) hydrogel containing hydroxyapatite for protein delivery. Y. Du, Y. Tang, X. Wang, X. Hu

CHED

Division of Chemical Education

J. M. Smist, I. J. Levy, and
W. S. Harwood, *Program Chairs*

OTHER SYMPOSIA OF INTEREST:

Teaching Chemistry to a Diverse Student Body (see CMA, Sun)

ACS Award for Encouraging Women into Careers in the Chemical Sciences: Symposium in Honor of Mary F. Singleton (see WCC, Tue)

Overcoming Issues in Graduate School (see YCC, Mon)

Starting a Successful Research Program at a Predominantly Undergraduate Institution (see YCC, Tue)

Hazardous Waste at Academic Laboratories: Final Rule Panel Discussion (see CHAS, Tue)

SOCIAL EVENTS:
High School Dinner: Mon, Tue
Reception: Sun

SUNDAY MORNING

Section A

Marriott City Center
Capitol B

Plagiarism: What is it? What Can We Do About It? Cosponsored by CHAL, ETHC, and CINF

G. M. Bodner, *Organizer*

T. R. LeBon, *Organizer, Presiding*

- 8:30 Introductory Remarks.
- 8:35 1. Helping students learn what is (and what is not) plagiarism. G. M. Bodner, G. Comstock
- 8:55 2. When the plagiarism of instructors meets copyright law. T. Holme
- 9:15 3. Plagiarism and epistemology: The odd couple of ethics? G. Bhattacharyya, A. Verdán, J. T. Ingallina
- 9:35 Intermission.
- 9:45 4. Plagiarism in class or lab: A trip to the Dean's Office. J. R. Appling
- 10:05 5. Why not teach a science ethics course to undergraduates. C. E. MacGowan
- 10:25 6. Plagiarism: Is there a solution? T. R. LeBon
- 10:45 Intermission.
- 10:55 7. Better documentation and paraphrasing through peer group review. J. A. Nash
- 11:15 8. Do we really teach students what plagiarism is? N. E. Levinger, E. R. Fisher

Section B

Marriott City Center
Capitol A

Outstanding Outreach is Elemental: The Helen Free Award Symposium

P. Kerrigan, *Organizer*

C. B. Frech, *Organizer, Presiding*

- 8:30 Introductory Remarks.

- 8:35 9. Have you reviewed your obituary recently? C. M. Lang
- 8:55 10. Chemistry outreach: 2 to 102. A. Hazari
- 9:15 11. Chemical education research: A different kind of outreach. D. M. Bunce
- 9:35 Intermission.
- 9:45 12. Many paths travelled to bring science to the public. M. W. Moy
- 10:05 13. Reaching out through outreach. M. Sarquis
- 10:25 Panel Discussion.

Section C

Marriott City Center
Olympus A

Advances in Teaching Organic Chemistry

S. F. Hornbuckle, *Organizer, Presiding*

- 8:30 Introductory Remarks.
- 8:35 14. Using an online writing assignment to teach about resonance and acid strength. L. S. Starkey
- 8:55 15. Effectiveness of iPods in the organic chemistry teaching laboratory. G. L. Anderson, J. R. Yocom
- 9:15 16. Production of effective media for iPods in the organic chemistry teaching laboratory. J. R. Yocom, G. L. Anderson
- 9:35 Intermission.
- 9:45 17. Discussion based organic chemistry: Getting students to talk about organic chemistry. T. A. Mobley
- 10:05 18. Increasing student engagement in a large lecture hall. A. Straumanis, S. M. Ruder
- 10:25 19. Organic chemistry preconceptions: What they are and where they are coming from. J. T. Wasacz, K. A. O. Pacheco
- 10:45 Concluding Remarks.

Section D

Marriott City Center
Capitol C

Integrating Nanoscience into the College and High School Classroom

High School Classroom Cosponsored by NANO[†]

A. E. Greenberg, *Organizer, Presiding*

- 8:30 Introductory Remarks.
- 8:35 20. What's so big about being small? The interdisciplinary opportunity of nanoscience. M. Orgill, K. Crippen
- 8:55 21. Nanotechnology in society: Issues, challenges and recommendations for high school and undergraduate level science education. A. E. Sweeney
- 9:15 22. Wiggling into traditional high school curriculum. T. M. Stanford
- 9:35 Intermission.
- 9:45 23. Teachers' beliefs, intentions, and uses of models of nanoscale phenomena for NSEE. S. Daly, L. Bryan
- 10:05 24. Integrating nanoscale science and engineering content into middle- and high-school classrooms: Challenges and successes. K. M. Hutchinson, S. Daly, L. Bryan
- 10:25 25. Nano ideas to macro inclusion: High school teachers learn about nanoscience and articulate its integration. K. Crippen, M. Orgill
- 10:45 Intermission.
- 10:55 26. Bringing current nanoscience research into the classroom via virtual laboratory tours and video interviews. C. A. Nichol, J. S. Hutchinson
- 11:15 27. Teachers' development of nanoscience lesson plans. E. D. Wischow, L. Bryan, G. Bodner

Teaching Chemistry to a Diverse Student Body Sponsored by CMA, Cosponsored by CHED, WCC, and YCC

† Cooperative Cosponsorship

SUNDAY AFTERNOON

Section A

Marriott City Center
Capitol B

Computers in Chemical Education

C. Metz, *Organizer*

S. C. Sendlinger, *Organizer, Presiding*

- 1:30 Introductory Remarks.
- 1:35 28. An online computational chemistry resource for educators. S. C. Sendlinger, C. Metz
- 1:55 29. Using Avogadro (and other free software) in chemical education. J. H. Jensen
- 2:15 30. Exposing students to the successes and challenges of molecular modeling and simulation. T. D. Shepherd
- 2:35 Intermission.
- 2:45 31. Use of an interactive simulation in the presentation of gas properties: The effect on students' conceptual learning. J. Barbera, L. M. Kowalski-Carlson
- 3:05 32. Molecular animations vs. simulations: Their effects on students' mental models. S. Akaygun, L. L. Jones
- 3:25 33. Virtual learning environments as a teaching tool for undergraduate thermochemistry courses. J. E. Tirano, G. Camargo, H. R. Zea
- 3:45 Intermission.
- 3:55 34. Chemistry lab procedures in iTunes. N. J. Gardner, W. Gajewski
- 4:15 35. Computer animations for etextbooks in chemistry. F. M. Dunnivant, J. Ginsbach

Section B

Marriott City Center
Capitol A

Microwave-Assisted Chemical Synthesis and Transformations

R. S. Varma, *Organizer, Presiding*

- 1:30 Introductory Remarks.
- 1:50 36. Microwave assisted synthesis and the classroom: A perfect match. E. K. Barnhardt, C. B. McGowan, N. E. Leadbeater
- 2:10 37. Quick and easy methods for microwave-assisted peptide synthesis and proteomics. G. S. Vanier
- 2:30 38. Microwave-assisted bismuth nitrate-catalyzed novel synthesis of pyroles. S. Rivera, D. Bandyopadhyay, B. K. Banik
- 2:50 Intermission.
- 3:10 39. Microwave-assisted unprecedented stereocentrol of β -lactam formation derived from conjugated arylamine. R. Rodriguez, H. Aguilar, B. K. Banik
- 3:30 40. Microwave-assisted synthesis of organics and nanomaterials. R. S. Varma
- 3:50 41. Organo- and nano-catalyst in greener reaction medium: Microwave-assisted expedient synthesis of fine chemicals. V. Polshettiwar, R. S. Varma
- 4:10 Concluding Remarks.

Section C

Marriott City Center
Olympus A

Advances in Teaching Organic Chemistry

S. F. Hornbuckle, *Organizer, Presiding*

- 1:30 Introductory Remarks.
- 1:35 42. Strategies for promoting active learning in the introductory organic chemistry laboratory course. J. A. Cramer

Please refrain from using cellular telephones and cameras during technical sessions.

- 1:55 43. Withdrawn.
 2:15 44. Research-based experiments for undergraduate organic chemistry laboratory courses. **G. C. Weaver**, D. Wink, D. E. Bergstrom, A. Bear, C. Russell, V. A. Curtis-Palmer
 2:35 Intermission.
 2:45 45. NMR Cards: Inquiry-based approach to teaching NMR spectroscopy. **J. Bennett**, M. R. Miner, J. Urda
 3:05 46. Free-radical and ionic bromination reactions: One apparatus, two mechanisms. **K. Charles**, M. Bartels, J. Bennett
 3:25 47. A stepwise strategy for teaching electron movement and the use of curly arrows to sophomore organic chemistry students. **S. F. Hornbuckle**
 3:45 Concluding Remarks.

Section D

Marriott City Center
 Capitol C

Integrating Nanoscience into the College and High School Classroom

Cosponsored by NANO²

A. E. Greenberg, *Organizer, Presiding*

- 1:30 Introductory Remarks.
 1:35 48. Nanoleap into new science. **J. D. Ristvey Jr.**, **C. S. Morrow**
 1:55 49. Approaches for incorporating nanoscience for high school classrooms. **J. M. H. Tomasik**, J. W. Moore
 2:15 50. "Nano boot camp" for high school students. **S. Jin**, R. S. Selinsky, S. A. Morin, J. Rajkumar
 2:35 Intermission.
 2:45 51. Constructivist approach to materials science for high school students: The GE-Global workshop. **L. A. Avila D.**, L. Fine, A. Alizadeh, A. Ku, N. Bathe, D. Buckley
 3:05 52. Nanotechnology for arts and communications students. **K. Kosteka**
 3:25 53. Teaching a first-year undergraduate course in nanochemistry. **G. C. Lisensky**
 3:45 Intermission.
 3:55 54. 3-D printing in the classroom: A model for successful transfer of research into the classroom. **J. Muskin**
 4:15 55. Simple flame synthesis of carbon nanostructures for the high school or college laboratory. **T. M. Ticich**, M. T. Blanchard, L. N. Gernand, K. Chaudhuri

SUNDAY EVENING

Section A

Salt Palace Convention Center
 Hall 1

General Posters

M. Orgill, *Organizer*

7:30–9:30

56. First two hundred "Hal's Picks". **H. Harris**
 57. Novel innovative approach of implementing classroom performance systems into a chemistry lab course. **C. M. Turner**
 58. 21st BCCE: The CaNe Roundup. **G. R. Shelton**, D. Mason
 59. Assessing National Chemistry Week. **L. Hogue**, A. Twiss-Brooks
 60. Many faces of National Chemistry Week. **N. A. Khan**, R. M. Hyde
 61. Students' perceptions of comprehensive chemistry examination questions. **B. Williamson**, J. P. Suits

The official technical program for the 237th National Meeting is available online at oasys2.confex.com/acs/237nm/techprogram/.

62. Having a Ball with Chemistry: Highlights from National Chemistry Week 2008. **R. de Groot**, A. Ribes, A. Sowell, T. A. Halmi, A. K. Taylor
 63. National Chemistry Week 2008 Having a Ball with Chemistry. **C. V. Gauthier**, A. G. Wall
 64. 5th Year anniversary of Chemists Celebrate Earth Day. **A. G. Wall**, C. V. Gauthier
 65. Chemists Celebrate Earth Day 2009: Air – the sky's the limit. **G. Baysinger**, A. Jorgensen, F. Colon
 66. Chemistry night: Formula for a successful program of outreach and recruitment. **J. Mueller**, R. W. Kugel, B. Bodsgard, J. G. Vogel
 67. Designing outreach curricula to focus on mentoring high school students: The relationship between greenhouse gases and global warming. **D. A. Laviska**, K. Stephen, S. M. Sparks, E. M. Pelczar, R. Spink, A. S. Goldman
 68. Project CHEMPRO: Incorporating hands-on experiences and simulations in chemical processes to high schools students and science teachers. **V. Montalvo-Rivera**, A. M. Garcia-Adarme Ph D, **S. J. Cardona-Gonzalez**
 69. Project ChemBOND, the next generation: Activities for high school science classes developed through the NSF GK-12 program. **D. M. Chamely-Wiik**, D. W. Louda, J. E. Haky, N. Romance
 70. Summer enrichment programs to increase diversity in STEM fields. **J. Nappier**, S. Preston
 71. *California Teach* at UCLA: A campus response to the critical shortage of highly qualified science and math teachers in the state. **A. A. Russell**, M. Fox
 72. Research site for educators of chemistry. **D. P. Rillema**
 73. Chemistry education research doctoral fellows program. **S. L. Bretz**, M. Bindis, L. Jackson, J. Jensen, C. Luxford, A. Vasquez Murata, A. Warren
 74. Before and during: Effect of a chemical education PhD program on teaching practices. **J. MacArthur**
 75. Target inquiry: Can professional development change teachers' beliefs and instructional practices? **K. M. Luxford**, D. G. Herrington, E. J. Yeziarski
 76. Investigating children's ideas about chemicals. **M. O'Donnell**, S. L. Bretz
 77. General chemistry students' beliefs about chemistry and learning chemistry: An international comparison. **J. M. Duis**, C. Wieman, L. L. Schafer
 78. Instruments for assessing practical skill development in a first-year chemistry laboratory course. **J. M. Duis**, L. L. Schafer, S. Nussbaum, J. Stewart, M. Carlson
 79. Classroom learning vs. laboratory application: Is there a disconnect? **C. E. MacGowan**, L. Padgett
 80. Predicting (non)success in general chemistry for first-year students. **H. Harris**
 81. Introducing the topic of equilibrium in an undergraduate general chemistry class using both thermodynamics and kinetics as bridge topics. **P. M. Mayo**, M. R. Columbia
 82. Students' interpretations and use of an energy diagram showing electron transitions: Examining a common external representation. **M. Orgill**, K. Crippen
 83. Implementing tablet PCs into organic chemistry lecture: A blind integrated assessment plan of student use and learning. **A. N. French**, **K. D. Shanton**
 84. What's the problem? An investigation of organic chemistry classroom problems through the lens of several problem-solving typologies. **J. R. Raker**, M. Towns
 85. Gender differences in the use and effectiveness of personal response devices. **D. B. King**, S. Joshi
 86. Quimx: An instrument for assessing cognitive expectations for learning chemistry among Hispanic populations. **D. J. Sanabria-Rios**, S. L. Bretz
 87. Multisensory learning experiences for students who are blind or low vision in the chemistry and science laboratories. **C. A. Supalo**, T. E. Mallouk, D. L. A. Rankel, D. Wohlers
 88. A comparison of ACS certified degrees at predominantly undergraduate institutions. **M. B. More**, H. L. Berghout
 89. Meeting the new ACS accreditation guidelines at a predominantly undergraduate institution. **H. L. Berghout**, T. A. Herzog, B. A. Lloyd, M. B. More, E. B. Walker
 90. SLCC Science Resource Center grows. **P. J. Iles**, L. Giddings, N. Bastian, R. Valcarce, S. Seshadri, C. Christensen
 91. Chemistry of wine: A January travel course to Australia for nonscience majors. **A. D. H. Marchetti**, S. Schreiner
 92. Chemistry of global health issues: An introductory course for nonmajors. **C. D. Strong**
 93. Illuminating biology connections in the general chemistry classroom. **E. V. Taylor**, C. L. Drennan
 94. Chemistry of crime scene investigation: Laboratory exercises introducing fundamental principles and instrumentation. **R. M. Hyde**, P. D. Hooker
 95. Use of forensic science to promote chemistry learning. **D. LaVictoire**, R. A. Morgan Theall, J. W. McGill
 96. Why games should be integral to peer-led team learning. **C. Ramirez**, L. Ronquillo, L. L. Llanes, A. M. Amaya, N. Ulloa, J. E. Becvar
 97. Krispy Khem donut races: A chemistry learning strategy. **M. A. Campos**, J. E. Becvar
 98. Chemistry battleship: A peer-led team learning activity. **L. L. Llanes**, J. E. Becvar
 99. Body geometry: A peer-led team learning activity. **L. Ronquillo**, J. E. Becvar
 100. Cake or death: A peer-led team learning strategy. **A. M. Amaya**, J. E. Becvar
 101. Potential to impact the entire chemistry teaching and learning pipeline: The undergraduate Learning Assistant model. **L. S. Langdon**, T. C. Pentecost, R. Parson, S. Hendrickson
 102. TA training that integrates pedagogy and content. **T. C. Pentecost**, L. S. Langdon, M. R. Asirvatham, R. Parson
 103. About an undergraduate research collaborative for community college students. **M. R. Brothers**, T. B. Higgins, T. Dowd, G. M. Ferrence, R. Torralba, Y. Harris, R. House, W. Hunter
 104. Expanding access to research: The Merck/AAAS Undergraduate Science Program in Chemistry and Biology at Colorado State University, Pueblo. **S. Bonetti**, M. Druelinger, D. W. Lehmpuhl, D. L. Dillon, C. Kinney, D. R. Caprioglio, J. Smith, B. Vanden Heuvel
 105. Synthetic organic research with undergraduate students at Washington and Jefferson College. **M. S. Leonard**
 106. Tangible experience of chemical concepts using eukinetics. **B. Büdy**, J. Young
 107. Discovering the Hammett equation through classroom exercises. **J. G. Lindberg**
 108. Teach arrow pushing with minimal pain: An activity for the first week of organic chemistry. **H. M. Sklenicka**
 109. Deriving the Boltzmann distribution using simple combinatorics. **R. W. Kugel**
 110. Teaching quantum mechanics conceptually through situated writing. **S. Pazicni**, A. V. Vázquez
 111. Physical sense of periodic law (itchem.com). **Y. V. Gankin**, V. Gankin
 112. Physical sense of Lewis and resonance rules, itchem.com. **Y. V. Gankin**, V. Gankin, M. D. Segal
 113. Scanning probe microscopy in undergraduate chemistry courses at SIUE. **J. D. Thomas**, R. A. Harris, D. T. Rensing, L. C. O'Brien, S. D. Wiediger, E. J. Voss
 114. Making chemistry real with natural dyes. **C. A. Miderski**, B. E. Elder
 115. Unique method for general chemistry flame ionization tests: A spectroscopic model. **K. Bodiford**, J. L. Evans Jr.
 116. Green chemistry, a human issues project. **M. Mork**, J. G. Goll
 117. THERESA-THE REtroSynthetic Analyser in the undergraduate classroom. **F. Petronijević**, B. Quade, P. Wijpf
 118. Modifying general chemistry experiments to encourage student interaction and engagement: Small changes that can transform the laboratory experience. **J. J. Bodwin**

119. Purple haze, white rabbits and mother's little helper: Drug projects that instill knowledge while fostering interest in nonscience majors. **L. Isom**
 120. Linking equilibrium and kinetics in the general chemistry lab. **W. H. Steel**
 121. Improving the inquiry approach through computer-based technologies in the general chemistry laboratory. **L. M. Diaz-Vázquez**, **C. M. Torres-Diaz**, K. Griebenow, C. González-Robles, M. Morales, I. Echevarria, A. Cruz, G. Acosta, F. Colón, A. Vázquez, N. Ramirez
 122. Juicing the juice: A laboratory based case study for analytical and general chemistry courses. **M. Saint Phillips**, F. J. Dinan, P. M. Schaber, R. Larson
 123. Taking organic chemistry experiments one step further to make them more relevant to the students' everyday lives. **L. L. Garcia**
 124. Technique based projects in the first semester organic chemistry lab. **D. P. Predecki**, A. H. Predecki
 125. Preparation and infrared spectroelectrochemistry of iron dinitrosyl compounds: Toward an undergraduate research experience. **M. W. Jones**, G. B. Richter-Addo
 126. Synthesis of tricosan: A multistep organic chemistry laboratory. **M. B. McGinnis**, A. Talmadge
 127. Green, enzymatic syntheses of divanillin and diapocynin. **D. A. Vosburg**, R. T. Nishimura, C. H. Giannanco
 128. Performing hydrogenation reactions in the teaching laboratory without any risk. **I. Kovacs**, R. Jones, G. Dorman, F. Darvas, L. Urge
 129. Introducing advanced NMR methods in an advanced organic laboratory course. **L. J. Anna**
 130. Study of organometallic reaction mechanisms using parahydrogen induced polarization on an Anasazi 60 MHz NMR spectrometer. **A. A. Dubarry**, M. A. Hamada, D. J. Fox
 131. Melamine analysis in baby formula powder: An experiment for analytical chemistry classes. **P. D. Hooker**, **R. M. Hyde**
 132. Separation and identification of analgesics by reverse-phase HPLC. **K. Baker**, R. M. Hyslop
 133. Instrumental analysis, environmental research and course management software. **D. Carter**
 134. Measuring the compressibility of gases: An experiment for the physical chemistry laboratory. **T. D. Varberg**, K. T. Kuwata
 135. Research in the classroom: A physical chemistry experience. **A. Vivoni**, A. M. González
 136. Using NMR to determine the structure of a peptide: An inquiry approach for an upper level undergraduate laboratory. **K. J. Linenberger**, A-H. Emwas, I. Peat, G. A. Lorigan, S. L. Bretz
 137. Accurate manometric measurement of catalase-hydrogen peroxide enzyme kinetics. **W. T. Grubbs**
 138. A 21st century biochemistry laboratory integrating discovery, outreach and civic engagement. **K. Cornell**, K. Pease, D. Force
 139. Teaching analytical biochemistry with a lab/classroom integrated approach. **M. B. Cannon**, **D. N. Heaton**
 140. Treatment of coal with molten salts. **D. A. Habboush**

MONDAY MORNING

Section A

Marriott City Center
 Capitol B

Computers in Chemical Education

S. C. Sendlinger, *Organizer*

C. Metz, *Organizer, Presiding*

- 8:30 Introductory Remarks.
 8:35 141. Withdrawn.

- 8:55 **142.** Walking the walk: Best practices for implementing educational hypermedia. **E. M. Epp**, G. C. Weaver
- 9:15 **143.** Production of a virtual college memory repository in a peer-led team-learning environment. **J. C. Noveron**, **A. Guerrero**
- 9:35 Intermission.
- 9:45 **144.** GoogleDocs: A convenient way to organize collaborative data in teaching and research. **J. Bennett**
- 10:05 **145.** WebAssign-based online reports for general chemistry experiments. **M-H. Kim**
- 10:25 **146.** Online academic success course for at-risk chemistry students. **J. R. Appling**, S. M. Gresham, L. B. Igo
- 10:45 **147.** Using system dynamics software to model rate laws in chemical kinetics. **C. Metz**, S. C. Sendlinger

Section B

Marriott City Center
Capitol A

Outstanding Outreach is Elemental: The Helen Free Award Symposium

C. B. Frech, *Organizer*

P. Kerrigan, *Organizer, Presiding*

- 8:30 Introductory Remarks.
- 8:35 **148.** In the footsteps of Mr. Wizard. **L. Hogue**, R. J. Sunberg
- 8:55 **149.** How to build the elements of successful outreach on television. **T. Holme**
- 9:15 **150.** Chemistry on the Late Show with David Letterman and more. **L. R. Marek**
- 9:35 Intermission.
- 9:45 **151.** The Helen Free Award: Past, present, and future. **C. B. Frech**
- 10:05 **152.** Hands-on workshop on diabetes. **H. M. Free**
- 10:25 Panel Discussion.

Section C

Marriott City Center
Olympus A

Process-Oriented Guided Inquiry Learning (POGIL) across the Curriculum

R. S. Moog, *Organizer*

F. J. Creegan, *Presiding*

- 8:30 Introductory Remarks.
- 8:35 **153.** An introduction to POGIL. **R. S. Moog**
- 8:55 **154.** POGIL biochemistry: It's different. **B. J. Heyen**
- 9:15 **155.** POGIL implementation and assessment of student learning in an upper level biochemistry course. **L. D. Frost**
- 9:35 Intermission.
- 9:45 **156.** Solution chemistry activities for the general chemistry POGIL classroom. **S. E. Shadle**
- 10:05 **157.** Learning physical chemistry using POGIL: Trials, tribulations, and triumphs. **L. R. Peebles**
- 10:25 **158.** Using POGIL to improve student success in upper-division chemistry courses. **J. E. Smith**, E. J. Werner, D. Nivens
- 10:45 Intermission.
- 10:55 **159.** Integrating the use of technology to enhance the implementation of POGIL. **T. D. Shepherd**
- 11:15 **160.** Saving time with POGIL grading. **J. R. Pribyl**, M. Hadley, P. L. Rambo, J. A. Kaliski
- 11:35 Panel Discussion.

‡ Cooperative Cosponsorship

Section D

Marriott City Center
Capitol C

Research in Chemical Education K12 Teaching and Teachers

G. Bhattacharyya and D. I. Del Carlo, *Organizers*

T. C. Pentecost, *Presiding*

- 8:30 Introductory Remarks.
- 8:35 **161.** Teaching chemistry to blind and low vision students in a mainstream classroom setting. **C. A. Supalo**, T. E. Malouk, D. Wohlers, D. L. A. Rankel, W. Carlsen
- 8:55 **162.** Study of common misconceptions in chemistry among middle school science teachers and chemistry professionals. **D. R. Kimbrough**, **A. C. Jensen**
- 9:15 **163.** Relationship between preservice elementary teachers' understandings of the basic chemistry concepts and their beliefs about the relevancy of these concepts to the "real world" and teaching. **G. T. Durland**, F. Karatas, G. Bodner
- 9:35 Intermission.
- 9:55 **164.** Bridging the gap between preservice elementary teachers and the chemistry lab. **N. M. Grove**, M. B. Nakhleh
- 10:15 **165.** Target inquiry: Using observational data to detect changes in teacher practice. **E. J. Yezierski**, D. G. Herrington

Section E

Marriott City Center
Olympus B

Online Resources for Chemical Education Web 2.0 and Digital Objects Cosponsored by CINF

R. E. Belford, *Organizer*

J. H. Penn, *Organizer, Presiding*

- 8:30 Introductory Remarks.
- 8:35 **166.** Getting the most out of Jmol Protein Explorer. **R. M. Hanson**
- 8:55 **167.** Open source cheminformatics for teaching and learning chemistry. **C. Steinbeck**
- 9:15 **168.** Activating computational chemistry via an online presence. **H. S. Rzepa**, M. J. Bearpark, A. Armstrong, P. Hunt
- 9:35 Intermission.
- 9:45 **169.** Learner-centered teaching using online resources and tools. **P. Prakasam**, **D-C. Nash**
- 10:05 **170.** Free simulations for the teaching and learning of chemistry: The PHET project. **J. Barbera**, W. Adams, K. Perkins, C. Wieman
- 10:25 **171.** ChemEd DL: A repository for online resources in chemical education. **J. L. Holmes**, J. W. Moore
- 10:45 Intermission.
- 10:55 Discussion.

MONDAY AFTERNOON

Section A

Marriott City Center
Capitol B

ACS Award for Achievement in Research for the Teaching and Learning of Chemistry: Symposium in Honor of Alexander Henry Johnstone

M. M. Cooper, *Presiding*

- 1:30 Introductory Remarks.
- 1:40 **172.** The "n" worlds of chemistry. **G. M. Bodner**
- 2:05 **173.** Analyzing exam items and student performance on ACS Exams in terms of complexity and working memory. **T. Holme**
- 2:30 **174.** Information processing model, Johnstone's domains, and representations in biochemistry. **M. Towns**
- 2:55 Intermission.

- 3:10 **175.** Johnstone's influence on general chemistry textbooks and how chemistry is taught. **T. J. Greenbowe**
- 3:35 **176.** Heuristics: Mental shortcuts used by chemistry students. **V. Talanquer**
- 4:00 **177.** Attitudes relating to chemistry (what does research reveal?). **N. Reid**
- 4:25 Intermission.
- 4:40 **178.** Award Address (ACS Award for Achievement in Research for the Teaching and Learning of Chemistry, sponsored by Pearson Education). You can't get there from here? **A. H. Johnstone**

Section B

Marriott City Center
Capitol A

NSF Catalyzed Innovations in the Undergraduate Curriculum

S. Hixson, *Organizer*

B. E. Holmes, *Presiding*

- 1:30 Introductory Remarks.
- 1:35 **179.** Division of Undergraduate Education: Supporting undergraduate education at NSF. **E-W. Chang**, B. E. Holmes, E. L. Lewis, S. Hixson
- 1:55 **180.** Research and science visions preparation program at Purchase College, SUNY: A model for two-year to four-year collaborations. **A. J. Skrivanek**
- 2:15 **181.** Animations for bio-organic chemistry: Bio-ORA. **S. A. Fleming**
- 2:35 Intermission.
- 2:45 **182.** Creating a portable biochemistry course with an active learning emphasis. **J. Loertscher**, V. Minderhout, J. E. Lewis, S. Villafane
- 3:05 **183.** New approach to analytical chemistry: The development of process-oriented guided inquiry learning materials. **J. M. Lantz**, **R. S. Cole**
- 3:25 **184.** Designing an interactive, student-centered, physical science curriculum for large enrollment, general education courses. **E. Price**
- 3:45 Intermission.
- 4:05 **185.** Building electronic delivery and criterion referencing for ACS Exams. **T. Holme**, D. Hart
- 4:25 **186.** Designing a cost-effective field trial for an intervention to improve high school science and math instruction in a messy system with multiple, interacting variables. **W. Sweeney**, P. Mills

Section C

Marriott City Center
Olympus A

The Journal of Chemical Education: Celebrating Classroom Activities

J. W. Moore, *Organizer*

E. K. Jacobsen, *Presiding*

- 1:30 Introductory Remarks.
- 1:35 **187.** JCE Classroom Activities: Celebrating service to high school teachers. **J. W. Moore**, E. A. Moore
- 1:55 **188.** Illustrating materials chemistry and nanoscience using JCE Classroom Activities. **G. C. Lisensky**
- 2:15 **189.** JCE Classroom Activities: The secret life of an organic chemist. **S. W. Wright**
- 2:35 Intermission.

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- 2:45 **190.** Disabilities are opportunities, not liabilities. **J. A. Bell**
- 3:05 **191.** Tips for converting laboratory experiments into JCE Classroom Activities. **M. J. Sanger**
- 3:25 Discussion.

Section D

Marriott City Center
Capitol C

Research in Chemical Education Concepts and Misconceptions

G. Bhattacharyya and D. I. Del Carlo, *Organizers*

R. A. Morgan Theall, *Presiding*

- 1:30 Introductory Remarks.
- 1:35 **192.** Analyzing the distribution of conceptual questions in chemistry textbooks. **M. J. Sanger**, G. Gillette
- 1:55 **193.** Changes in conceptual understanding during a first semester general chemistry course. **W. R. Robinson**
- 2:15 **194.** First semester general chemistry students' misconceptions about laboratory safety. **W. E. Schatzberg**, L. L. Jones, J. P. Suits, K. A. O. Pacheco
- 2:35 Intermission.
- 2:55 **195.** Chemistry facets: Diagnostic assessment of high school students' chemistry conceptions. **T. M. Stanford**, A. Heydel DeBarger, C. Ayala
- 3:15 **196.** Making sense of how students interpret atomic representations. **I. I. Salame**, R. Steinberg

Section E

Salt Palace Convention Center
Hall 5

Undergraduate Research Poster Session: Analytical Chemistry Cosponsored by ANYL and SOCED

N. Bakowski, *Organizer*

12:00-3:00

- 197.** Analysis of doxorubicin and its metabolites in rat myocardium: Mechanisms of reduced cardiotoxicity through exercise. **M. Bradshaw**, P. Kamilaw, R. Hayward, R. M. Hyslop
- 198.** Analysis of four polyaromatic hydrocarbons in cigarette smoke using solid phase extraction and gas chromatography-mass spectrometry. **N. Carcamo**, R. Robinson, T. Pagano
- 199.** Analysis of polyphenolic compounds in grape seed and pomegranate extracts using MALDI-TOF and HPLC-MS. **R. A. Williamson**, G. R. Dubay
- 200.** Analysis of soft drinks for caffeine and benzoate ion. **S. A. Fordham**, E. Knight
- 201.** Application of headspace SPME-GC/MS to noninvasively characterize the aging of rare books. **A. J. Clark**, J. L. Calvillo, J. A. Ganske, D. B. Green
- 202.** Calculation of quadrupole coupling constants for n-methylformamide. **S. Ferrey**, J. A. Goodnough
- 203.** Cell potential of Cu(II)/Cu(I) in a solution of EDTA. **C. D. Felts**, G. Seebach
- 204.** Characterization of hydrogel-entrapped antibodies. **L. Spivey**, G. T. MaGee
- 205.** Characterization of volatile compounds responsible for the flavors and fragrances of tropical fruits using SPME and GC/MS techniques. **J. Ramos Ortiz**, S. Rivera-González, E. Garcia, Y. Vignoni Arroyo
- 206.** Chelation of mercury (II) by peptide ligands containing cysteinyl and histidyl residues. **A. Radwan**, A. Hilliard, J. Merle, M. Ngu-Schwemlein
- 207.** Combining gravimetric and volumetric analysis in the analytical chemistry laboratory. **K. Harper**, C. H. Lisse
- 208.** Comparison of bulk and microvolume concentrations of Cu(II) in bacterial media utilizing atomic absorption (AA) and anodic stripping voltammetry (ASV) with an ultramicroelectrode (UME). **G. G. Globensky**, R. E. Hemingway

209. Comparison of conventional *Cimicifuga racemosa* Soxhlet extraction technique to a low temperature alternative method. **A. Minnick**, P. Biser
210. Comparison of pH values for four different buffer solutions of MOPSO at 25 and 37°C. K. Allen, I. Henson, M. S. Fuge, L. N. Roy, **R. N. Roy**
211. Comparison of polyphenol antioxidants in vitamin enhanced waters, raw fruits and their juices. **P. E. Donnelly**, T. M. Churilla, C. M. Russo, J. A. Vinson
212. Density fractionation of molluscan carbonates for radiocarbon dating. **C. M. Russo**, J. A. Tripp
213. Detection of honey adulteration with high fructose corn syrup via SNIF-NMR. **M. M. Lever**, A. D. H. Marchetti
214. Determination of benzene in carbonated beverages. **C. Bogar**, H. Altmiller
215. Determination of electrode kinetic parameters for phenol electrooxidation at the platinum electrode in 0.1 M H₂SO₄. **D. R. Baluha**, J. V. Arena
216. Determining ripeness in white sturgeon females: A nonlethal method to maximize yield and quality of caviar. **S. A. Servid**, A. G. Cavinato
217. Determining the efficacy of popular antioxidants through the fluorescence of diphenyl-1-pyrenylphosphine (DPPP): An analytical laboratory experience. **S. Poole**, D. J. Tshudy
218. Developing an LC-MS analysis protocol for ammonium and urea nitrate. **D. E. Riegner**, S. H. Kazmi, S. E. F. Kaplan, A. W. Fountain III
219. Developing analytical techniques to investigate dendrimer interactions with the blood brain barrier. **A. Haskamp**, C. Cason, K. L. Haik, H. A. Bullen
220. Development of a molecularly imprinted polymer for retention of 4,6-dimethylidibenzothioephene. **A. S. Brooker**, C. M. Hutchison, D. L. A. Tom
221. Development of a novel instrument for the simultaneous detection of crucial parameters for the study of dynamic oxygen quenching in fluorescence spectroscopy. **K. Edzenon**, G. Kennedy, J. E. Kenny, T. Pagano
222. Dissociation constant (pK₂) and pH values of the buffer MOPS from 5 to 55°C. **J. T. Wollen**, A. Bwashi, S. J. DeArmon, C. Mehroff, L. N. Roy, R. N. Roy
223. Effects of pressure and solvent composition on stationary phase structure in reversed-phase liquid chromatography studied by sum-frequency generation. **A. D. Quast**, L. R. Baker, A. D. Curtis, J. W. Workman, J. E. Patterson
224. Electrochemical investigation of novel metal-dithiocarbamate complexes. **J. P. Provenzano**, S. Dille, J. E. Coffield
225. Erythromycin thiocyanate, a pH dependent aquaculture antibiotic: A look at hydrophobicity, solubility and degradation. **D. M. Crossland**, J. L. Franz
226. Examination of components of Xiao Yao San, an herbal tincture. **K. M. Lincoln**, J. M. Davis, J. R. Garza II, J. Guevara, J. J. Stankus
227. Experiences with carotenoid isomer preparation, isolation, and characterization. **R. Murthy**, L. Kispert
228. Exploration of guanidinium-based ion-exchangers for use in polyanion-sensitive electrodes. **A. Yu**, J. M. Esson
229. Field portable sensor for direct detection of mercury in aqueous media and in crude oil. **M. Hecket**, D. D. Russell, R. M. Cox
230. Further studies of an analytical method for the determination of organoarsenic compounds in the workplace using GC/MS. **A. B. Diop**, B. M. Hopkins
231. How old is this scotch? **J. Pope**, H. Altmiller
232. Impact of cultivar selection on phenolic content and antioxidant properties of basil (*Ocimum basilicum* L.). **E. Kwee**, E. D. Niemeier
233. Influence of cosmetic treatments on the stability of dextromethorphan. **I. T. Lowery**, **M. W. Storms**
234. In situ synthesis of monolithic alumina columns for applications in microscale liquid chromatography. **Z. Zajickova**, E. Rubi, V. Narciso, F. Svec
235. Integration of automated solid-phase microextraction (SPME) with portable GC-TMS detection technology. **D. E. Riegner**, **M. D. Swayze**
236. Investigation into fluorine- and phosphorus-containing commercially available products by ¹⁹F and ³¹P NMR. **C. Lee**, S. A. Yakey, N. V. Duffy
237. Investigation of glycosaminoglycan-histamine interactions through capillary electrophoresis and circular dichroism. **S. M. Gutierrez**, A. M. Stalcup
238. Investigation of novel metal-dithiocarbamate complexes using coupled thermogravimetric analysis-Fourier transform infrared spectroscopy. **S. A. Yakey**, C. Lee, J. E. Coffield, N. V. Duffy, M. J. Baird
239. Investigation of the North American wild hop variety *Humulus lupulus* var. *pubescens* for utility in the brewing industry. **H. Grunkemeyer**, D. J. Krofcheck, G. W. Stull
240. Ion microprobe uranium analysis of mice liver, kidney, and lung. **A. VanAtta**, J. C. Ingram, M. M. Briehl
241. Ion-selective electrode for the voltametric determination of trace, aqueous uranium concentrations. **R. M. Cox**, D. D. Russell
242. Isolation of a biologically active compound from the leaf gel of *Aloe arborescens*. **A. Herrick**, M. R. Lee, R. L. Bretz
243. Method for determination of organic components of bottled water. **J. A. Taylor**, J. T. Long
244. Method will be developed for the determination of pharmaceuticals in water from treatment facilities. **A. R. Long**, R. E. Berg
245. Microfluidic immunoassay of estrogen metabolites using laser-induced fluorescence detection. O. Otubusin, **G. T. MaGee**
246. Modification of silica-based monoliths with nanolayer of fluorinated methacrylate via photografting for applications in microscale liquid chromatography. **J. C. Luna**, Z. Zajickova, F. Svec
247. Nanoimprinted organosilicates for detection of aromatic and nitroaromatic compounds. **K. D. Cole**, P. J. Cothron, C. L. Davis, T. A. Standley, A. C. Friedli
248. NMR investigation of the interactions between beta-blocker drugs and chiral polymers. **L. Potter**, R. Miller, K. F. Morris, S. A. Shamsi
249. Optimal extraction of nitrogen-containing disinfection by-products (N-DBPs) from drinking water using solid phase microextraction. **J. W. Quinn**, C. N. Dalton
250. Optimization of the analysis of a sulfur mustard metabolite using solid-phase microextraction and gas-chromatography mass-spectrometry from protein matrices. **M. R. Dobberpuhl**, A. S. Appel, B. A. Logue
251. Oxidation of the components in wine. **A. Davenport**, A. Rollins, G. Seebach
252. pH for the physiological buffer standard AMPSO from 5 to 55°C in an isotonic saline solution. **A. Bwashi**, J. T. Wollen, S. M. Hayden, S. Rocchio, Z. Downs, L. N. Roy, R. N. Roy
253. pH values of the zwitterionic buffer HEPPS from 5 to 55°C. **J. Stegner**, M. Harmon, S. J. DeArmon, L. N. Roy, R. N. Roy
254. Pitzer model for the calculation of the single ion activity coefficient, γ_{\pm} for standard buffer solutions such as TES, TRICINE, and MES at 25 and 37°C. **L. N. Roy**, R. N. Roy
255. Preparation of molecularly imprinted polymers for separation of ketoprofen enantiomers from similar compounds. **M. S. Campbell**, D. L. A. Tom
256. Probing UV signaling pathways in plants: Utilizing flavonoid standards and acid hydrolysis to identify flavonoids in Arabidopsis and cucumber plants. M. M. Bushey, J. R. Shinkle, **S. K. Sivam**, N. C. Michaeli, J. R. Furr
257. Q-NMR optimization of acquisition and processing parameters. **T. M. Figg**, O. Hicks, L. D. Schultz, P. T. Bell
258. Quantitative identification of α and β acids present in hops (*Humulus lupulus*) and the degradation of these components at different temperatures in an N₂ atmosphere vs. an air exposed atmosphere via HPLC. **E. N. Sellitto**, D. B. Burnham
259. Rapid and nonlethal analysis of bacterial kidney disease in Chinook salmon using near infrared spectroscopy. **E. A. Byrd**, S. A. Servid, M. Clark, T. Hoffnagle, A. G. Cavinato
260. Reducing ¹⁸O/¹⁶O back-exchange to improve labeling and quantification of RNA. **M. K. Lilleness**, C. M. Castleberry, P. A. Limbach
261. Removal of actinides from fuel samples using manual gas pressurized extraction chromatography with TRU resin column. **S. L. Gates**, M. Jimenez, J. Giglio
262. Separation of a mixture of benzodiazepines using reverse phase high performance liquid chromatography. **S. Morris**, R. M. Hyslop
263. SHArK (solar hydrogen activity research kit) project. **N. Norasetaphorn**, J. Thomas, A. Fillingner
264. SNIF-NMR identification of the ethanol origin in ethanol-blended fuel samples. **K. Newton**, A. D. H. Marchetti
265. Spectroscopic analysis of siderophore/metal oxide complexations: Implications in biofilm formation. **S. Wall**, H. A. Barton, H. A. Bullen
266. Study of HEPES buffer compound for pH measurements. **Z. Downs**, K. Allen, J. Stegner, M. Harmon, C. Mehroff, M. S. Fuge, L. N. Roy, R. N. Roy
267. Supercontinuum rapid excitation emission matrix detection. **C. M. Dettmar**, H. Handoko, T. C. Corcoran
268. Surface analysis of the role of pyoverdinin siderophores in *Pseudomonas aeruginosa* biofilm formation on metal oxides. **W. L. Schmidt**, H. Urcia, H. A. Barton, H. A. Bullen
269. Surface assisted laser desorption/ionization (SALDI) on ordered mesoporous titania film and its imaging applications. **J. F. Cahill**, Q. Liu, Y. Xiao, L. He
270. Synthesis and characterization of meso-substituted tetraabenzoporphyrin complexes with Pt(II) and Pd(II) for optical oxygen sensing. **A. S. DeToma**, S. M. Borisov, I. Klimant
271. Synthesis of a series of naphthoquinone sulfonic acid thiosemicarbazone and semicarbazone compounds and use in formation of a solid support system. **M. Monteen**, K. Monteen, E. C. Lisc
272. Testing and optimization of planar membraneless microchannel fuel cells. **C. A. Rodriguez**, N. DaMota, D. A. Finkelstein, H. D. Abruna
273. Understanding the chemistry of the reaction between nicotinamide and trichloroacetic acid. **N. E. Larm**, G. Geme
274. Use of fluorine-19 NMR to quantitate fluorinated fungicides. **D. Dietrich**, K. Moore, D. P. Predecki
275. Using NMR spectroscopy to study the motional dynamics of chiral molecules bound to a molecular micelle. **A. Stiglich**, K. F. Morris
276. Using perdeuterated surfactant micelles to resolve mixture components in diffusion ordered NMR spectroscopy. **M. E. Zielinski**, K. F. Morris
277. Utilizing thermal lens spectroscopy to study the thermal stability of ion binding in solution phase complexes. **D. Park**, L. Laughlin, D. Saiki
278. Validation of an NMR method for quantification of constituents of *Aloe vera* extract. G. L. Milligan, **S. R. Weaver**, P. Jiao, Q. Jia

Section F

Salt Palace Convention Center
Hall 5**Undergraduate Research Poster Session:**
Biochemistry Cosponsored by BIOL, BIOT,
and SOCEDN. Bakowski, *Organizer*

12:00-3:00

279. 5-Aminosalicylic acid as an antioxidant: Mechanism of reaction with chloramine. **T. K. Magsam**, Z. R. Winkler, J. C. DiCesare, G. H. Purser
280. 5-Aminosalicylic acid as an antioxidant: Mechanism of reaction with hypochlorous acid. **Z. R. Winkler**, T. K. Magsam, J. C. DiCesare, G. H. Purser
281. Acid-catalyzed chalcone preparations. **J. T. Nguyen**, D. M. Doctor, V. Marfetan, W. N. Tinnerman II, W. Crawford
282. Acrylamide production in french fries cooked in trans fat free oil or vegetable oil. **S. Guthrie**, J. Bird, N. E. Flynn

283. Adsorption of glycine conjugated bile acids to calcium phosphate: A theoretical study. **J. Rus**, L. Tribe
284. Allergic peanut protein digestion and adsorption onto activated charcoal. **T. Van**, R. A. Kopper
285. Analysis of cytotoxicity of hexagonal mesoporous silicates in IEC-18 and MDCK cells for their use as drug carriers. **J. Shick**, I. Lagadic, R. L. McCann
286. Analysis of metal content in multidrug resistant cancer cells by ICP-MS. **J. K. Monda**, W. T. Potter, M. D. Hall, K. R. Brimacombe, M. M. Gottesman
287. Analysis of tetrodotoxin production in *Notophthalmus viridescens* by ELISA. **J. Patterson**, J. Snyder, R. L. McCann
288. Analysis of the high density pool of OXPAT in C2C12 fibroblasts. **B. C. Patterson**, S. R. Bartholomew, W. E. Ackerman, J. T. Tansey
289. Analyzing the degradation of actin and myosin in rat muscle as a method of determining the postmortem interval. C. E. Stitts, **R. A. Newton**
290. Annotating domains of unknown function in *Plam* protein domain *DUF294*. **S. M. Beaudry**, I. Tasovski, N. Goonesekere
291. Anthraquinone in vivo incorporation into PS1 complexes of *Synechocystis* sp. PCC 6803 phyliquoines lacking mutants. **K. Smith**, T. W. Johnson
292. Assessment of ronozyme as a pretreatment option for the dry storage of ethanol feedstock. **J. F. Bruhn**, D. N. Thompson
293. Biochemical analysis of potential photodynamic therapy agents. **J. L. Connor**, C. M. Davis-McGibony, C. P. Tidwell
294. Biochemical characterization Entamoeba histolytica MTA nucleosidase: A potential target for antiparasitic therapies. **D. Quapp**, K. Cornell
295. Biological investigations of natural products from local marine sponges. **S. S. Lott**, C. M. Davis-McGibony
296. Brain-derived neurotrophic factor role in stress response. **M. A. Santoro**, R. C. Hughes, J. K. Jones, N. Porter, N. A. Jenkins, A. Harkness, W. T. Potter
297. Cell wall analysis of *Neurospora crassa* using atomic force microscopy. **S. P. Hartono**, L. A. Alex
298. Characterization of hydrogen/deuterium exchange in the amphipathic helices of piscidin 1 and 3. **A. S. Kozlova**, M. Cotten, R. Fu
299. Characterization of toxic metabolic state by sequencing and classification of differential proteins from digests using LC-ESI-MSn. **C. A. Serrano**, K. Schug
300. Characterization of polymer-membrane based electrodes for suramin. **M. R. Wagner**, J. M. Esson
301. Characterizing the degradation of methacholine using LCMS. **D. M. Furfaro**, G. R. Dubay
302. Characterizing the reaction of the arginine side-chain with hypochlorous acid. **G. R. Medders**, K. Brumback, J. C. DiCesare, G. H. Purser
303. Cloning and expression of a metacaspase gene from the mushroom-producing fungus *Schizophyllum commune*. **E. R. Schloss**, S. Baig, J. S. Horton, K. M. Fox
304. Cloning of a potential rubredoxin from anabaena 7120. **M. Naik**, M. A. Kopecki-Fjotland
305. Cloning the nitrobenzene dioxygenase genes from *Comamonas* sp. Strain JS765. **J. A. Minke**, M. B. Neiberger
306. Color polymorphism in *Plethodon cinereus*: Mutations in the melanocortin-1 receptor. **D. C. Kimble**, C. Hyatt, B. Pytel

The official technical program for the 237th National Meeting is available online at oasys2.confex.com/acs/237nm/techprogram/.

307. Comparative analysis of antioxidant extraction and reduction potential in nutritive foods and teas and their effects on *S. cerevisiae*. **L. M. Simons**, L. S. Strozler, R. Torralba, Y. Harris
308. Comparative study of olfactory communication in eulemurs. **C. R. Sacha**, G. R. Dubay, C. Drea
309. Comparison of fluorescence signal during bile salt aggregation to a head group labeled vs. tail labeled phosphatidyl-ethanolamine. **M. A. Pittman**, L. D. Frost
310. Comparison of the interfacial behavior of native cholesterol and two oxidized cholesterol derivatives. **G. M. Charles**, E. A. Mintzer
311. Conotoxins of the M-superfamily: A review. **M. Turner**, O. M. McDougal
312. CYP2E1 overexpression inhibits microsome Ca²⁺-ATPase activity in HepG2 cells. **K. L. Evans**, A. A. Caro
313. CYP2E1-dependent increase in mitochondrial DNA content in HepG2 cells. **E. N. Joseph**, A. A. Caro
314. Damage to mitochondrial DNA in CYP2E1-overexpressing liver cells. **J. Tackett**, A. A. Caro
315. Design and implementation of a method to clone and overexpress serine carboxypeptidase II at the undergraduate level. **M. Garcia**, M. A. Kopecki-Fjelland
316. Destabilization effects of sulfate on a polyaniline peptide. **K. K. Myer**, J. D. Madura, E. K. Asciutto
317. Determination of OXPAT function in c2c12 fibroblasts. **B. Colopy Jr.**, S. R. Bartholomew, W. E. Ackerman, J. T. Tansey
318. Determination of amino acid galactation sites in human albumin. **D. W. Clark**, M. A. Cohenford
319. Determination of the membrane-bound structure of the antimicrobial peptide piscidin: Molecular biology and biochemical approaches. **D. J. Hibbard**, M. Cotten, R. Fu
320. Determination of the molecular pathway leading to tight junction disassembly in diabetic retinopathy. **E. Thomas**, R. L. McCann
321. Determining the ability of resveratrol to inhibit human carbonyl reductase activity. **A. B. White**, C. K. Ewing, H. A. Charlier Jr.
322. Determining the postmortem interval through the analysis of decomposition gases in rats via gas chromatography. **C. E. Stitts**, **M. R. G. Wolbert**
323. Development of an enzymatic system to synthesize lyngbyatoxin and its analogs. **M. U. T. Huynh**, N. M. Hernandez, D. B. Ball, D. J. Edwards
324. Discovery of a novel eyespot-positioning mutant in *Chlamydomonas reinhardtii*. **M. M. Gray**, J. S. Boyd, C. L. Dieckmann
325. DNA damage mediated by a naphthalene diimide bis-intercalator. **D. J. De Luca**, B. L. Iverson, M. Zewail-Foote
326. Effect of different oxygen concentration on cell growth and proliferation. **S. M. Zohorsky**, I. Mitra, R. Munk, H. Takahashi, C. Morris, D. Longo, P. Ghosh
327. Effects of alcohol on mitochondrial DNA in CYP2E1-overexpressing liver cells and mice. **T. Lewis**, A. A. Caro
328. Effects of 6-OHDA, sulphide and SCH23390 on the dopaminergic system in *C. elegans*. **R. Gibson**, N. Ragsdale
329. Withdrawn.
330. Estimation of the effects of hormone treatments on the bioavailability of lutein. **A. R. Merkel**, R. Rigby
331. Effects of ascorbate on oxidative DNA-protein crosslinking. **N. R. Bruner**, B. Proctor, A. Madison, D. E. D. A. Stemp
332. Effects of buffer on human-gC-crystallin aggregation. **A. T. Trojanowski**, Y. Wang, J. King, S. A. Petty
333. Effects of ionization and reduction upon the folding transitions in bovine pancreatic ribonuclease. **K. M. Jetter**, D. J. McLoughlin
334. Effects of pH and cytosine basicity on oxidative DNA-protein crosslinking. **B. Proctor**, **A. Wayman**, A. Madison, E. D. Stemp
335. Effects of testosterone analogs on prostate cell proliferation and gene expression. **B. M. Anose**, **K. M. O'Brien**
336. Electron microscopy studies of desiccated halobacterium. **J. Kelkar**, K. Hammerlund, C. K. Robinson, J. DiRuggiero, K. P. Roberts
337. Enhancing an analytical biochemistry experiment with 2-D NMR. **A. L. Miller**, L. J. Anna
338. Enzymatic reactions producing glucose derivatives from wood products. **E. M. Counce**, J. C. Eason, K. E. Garrison, S. Marr, L. Hart
339. Enzymes within the amidohydrolase superfamily from *Mycobacterium tuberculosis*. **V. Y. De La Rosa**, T. Nguyen, F. M. Raushel
340. ErbB/HER receptor signaling in breast cancer cell membrane microdomains. **K. R. Allison**, K. J. Krager, J. G. Koland
341. Evidence for an allelochemical in the berries of European buckthorn. **M. Penn**, S. Chavda, N. Viradia, G. Mines, T. Trobec, C. Ward
342. Exploring the binding specificity of the ykkCD riboswitch aptamer domain using fluorescent spectroscopy. **S. Pekovic**, T. Gercezi
343. Expression and purification of an RNA silencing suppressor. **C. Fox**, J. M. Vargason
344. Expression and purification of scp1, a yeast metacaspase homolog, from *Schizosaccharomyces commune*. **M. J. Gabriella**, S. A. Hussnain, K. M. Fox
345. Expression of a proposed amphotericin B dehydratase. **R. Lausted**, N. Beyer
346. Expression of HtrA1 in ovarian cancer cells upon 4-hydroxyestradiol treatment. **A. M. Tittler**, M. A. Fisher
347. Expression of lipid droplet proteins in monocyte-derived macrophages. **M. L. Hobbs**, T. M. Ander, J. T. Tansey
348. Fluorescence microscopy studies of halobacterium salinarum. **J. N. Bearden**, C. K. Robinson, J. DiRuggiero, K. P. Roberts
349. Genetics of stress and cortisol response. **J. K. Jones**, A. Santoro, S. Palit, B. W. Quick
350. Hydrolysis of creatine ethyl ester. **N. S. Katsereis**, D. W. Reading, L. Shayya, J. DiCesare, G. H. Purser
351. Inhibition of tyrosine kinases: The influence of protein flexibility on ligand design. **A. Fields**, A. Clements, E. F. Healy
352. Identification and cloning of a second putative metacaspase gene in *Schizosaccharomyces commune*. **S. Baig**, J. S. Horton, K. M. Fox
353. Identification of stereospecific crotonases in the ethylmalonyl-CoA pathway of *Rhodobacter sphaeroides*. **M. M. Tigges**, T. J. Erb, G. Fuchs
354. Identification of the copper ligands of NosL from *Achromobacter cycloclastes*. **R. R. Manabat**, J. M. Chan
355. Identification of virulence genes in plant pathogen *Fusarium verticillioides*. **N. Pandey**, N. Goonesekere, J. Jurgenson, T. Bruns
356. Improving the design of a chimeric (β)₂ barrel. **W. Proffitt**, J. Meiler, B. Höcker
357. In vitro evolution of strictosidine synthase. **K. Loh**, P. Bernhardt, S. E. O'Connor
358. Inhibitor design by Trojan horse attack on the model cysteine protease papain. **M. Cabral**, E. J. Brush
359. Withdrawn.
360. Interaction between lanthanide chelates and quadruplex DNA: An NMR study. **D. Snyder**, S. Basu
361. Investigating biological role of chloro-p-benzoquinone in ribonuclease a modification. **A. Vaughn**, M. J. Kang, J. Kim
362. Investigating the role of carbonyl reductase in anthracycline drug resistance. **R. Morton**, C. K. Ewing, C. Jorczyk, H. A. Charlier Jr.
363. Investigation of the effect of gene II Shine-Dalgarno mutations on protein expression and the rate of propagation in M13 bacteriophage. **E. H. Tallmadge**, M. F. Hall
364. Investigation of the feasibility of using 295 nm to monitor RNA triple helix denaturation. **M. J. Rau**, D. J. Holland
365. Investigation of the flexible loop of metallo- β -lactamase CcrA from *Bacteroides fragilis*. **K. Bender**, M. W. Crowder
366. Investigation of the ligand-binding mechanism of methionine sulfoxide reductase A of *E. coli*. **N. R. Kesireddy**, V. F. Smith
367. Ion channel properties underlying voltage insensitivity in rod phototransduction. **J. L. Schwartz**, A. L. Zimmerman
368. Isolation and purification of human centrosomal protein. **A. Hernández**, D. Narváez, A. M. Gómez1, B. Pastrana-Ríos
369. Kinetics and mechanism of thioesters. **S. M. Haley**, B. P. Mahon, D. N. Reed, M. J. D'Souza, D. N. Kevill
370. Knockdown of retinoblastoma family proteins in differentiating 3T3-L1 pre-adipocytes. **S. J. Love**, S. Daly, R. Brown, T. E. Hayes
371. Measuring the reduction potential of superoxide dismutase. **R. Bustos**, K. Sea, M. G. Hill, H. B. Gray
372. Methyl p-benzoquinone induced ribonuclease modification. **S. W. Ledford**, C. B. Redman, J. Kim
373. Miami University: A thriving SAACS chapter. **C. Chan**, L. J. Spadafora, K. Bender, A. Herrick, S. Ivanov, J. Oh, J. Hasel, I. Budik, C. Turney, J. L. Sarquis
374. Modeled molecules bind best. **S. Eidemiller**, D. Quapp, L. Zemp, O. M. McDougal
375. Modified synthesis of orotidine 5'-monophosphate. **M. Wilkerson**, G. E. A. Rudd
376. Molecular modeling of taurine adsorption to calcium phosphate. **T. B. Garner**, L. Tribe
377. Molecular modeling study of flurbiprofen, naproxen, and piroxicam in the presence of 4 and 4' substituents of diphenylsulfone within the active site of cytochrome P450 2C9. **J. S. Aguilar**, E. Danhart, **M. Kopp**, J. Brown
378. Monitoring acid-induced conformational changes in horseradish peroxidase. **D. M. Vasquez**, M. Gupta, B. J. Schmersahl, S. M. Tremain
379. Monitoring glucosidase kinetics with a glucose meter. **V. Ting**, P. W. Baures
380. Muscle phosphatidylcholine lipid profile changes in response to exercise. **A. C. Miller**, D. R. Sims, B. Roberts, S. G. Wood, C. D. Thulin, M. R. Linford, A. Parcell
381. Nicotinamide cofactor affinities of human oxidative 3 α -hydroxysteroid dehydrogenase (RODH / 17 β HSD Type 6). **D. R. Meyer**, M. Papari-Zareei, D. Mizrahi, R. J. Auchus
382. Observing bacterial cell-membrane disruption through induced extracytoplasmic stress responses. **K. D. Checchi**, T. Domanski, S. Lin, D. D. Isaac
383. Olive oil produces less acrylamide in french fries compared to lard as analyzed by HPLC and SPE. **J. Bird**, S. Guthrie, N. E. Flynn
384. Parameterization of small molecules that interact with the dopamine active transporter. **J. D. Gibbons**, J. D. Madura
385. Pepsin digestion and adsorption of peanut proteins onto activated charcoal. **A. K. Ahn**, R. A. Kopper
386. Polar localization of a conserved ATPase required for mating of the conjugal element ICEBs1 of *Bacillus subtilis*. **M. A. Levicheva**, E. Cross, E.-K. Loveday, L. Atehortua, E. McDonald, M. A. Turano, A. D. Grossman, M. B. Berkmen
387. Potential role of *Escherichia coli* ribosomal proteins in Zn(II) storage and transfer. **L. J. Spadafora**, M. P. Hensley, T. J. Richards, M. W. Crowder
388. Preparation and evaluation of some synthetic auxins related to indole-3-acetic acid. **G. L. Milligan**, **D. E. Berry**, C. L. Billingsley
389. Preliminary development of quantitative immunoassays for mitochondrial proteins. **A. Hovey**, J. Katzenmeyer, E. Arriaga
390. Probing protein subunit-subunit surface interface requirements of the GrpE protein. **A. S. Wells**, A. F. Mehl
391. Probing the changes in properties of mutant Rieske proteins from *Thermus thermophilus*. **S. Muellner**, A. Schwander, M. Konkle, L. M. Hunsicker-Wang
392. Probing ligand-induced changes in the structural energetics of human serum albumin using differential scanning calorimetry. **J. M. Alvarez**, K. Cunvong, B. L. McClain
393. Probing the tRNA binding properties of lysyl tRNA synthetase anticodon binding domain. **J. O. Melby**, P. Tsang, S. Liu, M. Marei, C. Robinson, M. Howell
394. Production of bioplastics using various biofuel by-products. **R. D. Bruce**, N. Singh
395. Protein binding to activated charcoal under simulated gastrointestinal conditions. **C. J. Yue**, R. A. Kopper
396. Protein modification that may lead to new cancer therapy, specifically the p27 protein tumor suppressor. **A. R. Briggs**, R. Sheaff
397. Protein sufficiency in Phenylketonuria. **L. Wright**, G. Arnold
398. Purification and characterization of the putative copper chaperone TtScO, the Sco protein from *Thermus thermophilus*. **J. Robicheaux**, P. Shaw, L. M. Hunsicker-Wang
399. Purification of a prolyl endopeptidase from *Aspergillus oryzae* and evaluation of its ability to digest gluten. **H. M. Riggle**, M. A. Fisher
400. Purification of TtCuA and the in vivo investigation of the functional role of TtScO. **L. Handley**, L. M. Hunsicker-Wang
401. Reaction of hypochlorous acid with resveratrol. **J. M. Cantu**, K. J. Brumback, J. DiCesare, G. H. Purser
402. Redox regulation alters tertiary structure of the tumor suppressor p27. **L. C. Velasquez**, R. J. Sheaff
403. Redox regulation of the tumor suppressor protein p27kip1. **R. M. Bedford**, R. J. Sheaff
404. Reducing growth stunting in children in the hilltribe villages in northern Thailand with zinc sulfate coated rice seeds. **J. E. Hammons**, L. A. Swift, D. R. Benner
405. Reduction-oxidation of the tumor suppressor protein p21cip1. **E. R. Lewin**, R. J. Sheaff
406. Regulation of matrix metalloproteinases by sodium hydrogen exchanger isoform 1. **A. J. Haak**, J. Provost, G. Dorsam
407. Release of protein from peanut and binding to activated charcoal. **A. Kim**, R. A. Kopper
408. Roles of γ -glutamyl transpeptidase in the cellular response to reactive oxygen species. **M. E. Mason**, T. Friele
409. Seasonal variation of characteristic scent compounds in eulemurs using gc/ms analysis. **W. W. Kesler III**, C. R. Sacha, C. Drea, G. R. Dubay
410. Site-directed mutagenesis and iron binding in 1-DOPA 2,3-dioxygenase. **A. Markham**, K. Colabroy
411. Specificity of p19 protein for DNA. **F. Yong**, J. M. Vargason
412. Spectroscopic and metabolic characterization of deciduous leaf senescence. **S. M. Gregory**, V. F. Smith
413. Steric accessibility of the heme center in cytochrome c' and its effect on molecular recognition. **D. A. Pixton**, C. A. Davis, K. W. Elliot, E. M. Garton, J. L. Arnst, C. R. Andrew
414. Structure-function studies of the neuro-peptide processing enzyme EP24.15. **M. F. Toh**, L. E. Parmentier
415. Structure prediction of human histamine 4 receptor (hH4R). **C. Seto**, R. Abrol, W. A. Goddard III
416. Study of green fluorescence protein in ionic liquids. **C. L. DaBronzo**, L. M. Haverhals, J. Schlessman, H. C. De Long, P. C. Trulove
417. Sulfhemoglobin: Factors affecting its formation. **D. Marchany-Rivera**, R. M. Hernandez-Mercado, E. M. Roman-Morales, J. López-Garriga

‡ Cooperative Cosponsorship

Please refrain from using cellular telephones and cameras during technical sessions.

418. Susceptibility of guanine multiplies toward oxidative DNA-protein crosslinking. **Z. A. Perez**, A. Madison,
419. Synthesis and reaction of succinamic acid analogs with glycosylasparaginase. **A. M. Young**, J. Risley
420. Synthesis and characterization of fluorescently labeled ribonucleic acid ribozyme substrates. **T. L. Freeman**, C. E. Rohlman
421. Synthesis of 2-methylquinoxaline. **D. Stevens**, H. Bui, W. Crawford
422. Synthesis of 4,4'- and 3,3'-disubstituted chalcones and the effect of substituents on their proton NMR, IR, UV and mass spectra. **D. M. Doctor**, C. Vences, J. Zaiabq, W. N. Tinneman II, W. Crawford
423. Synthesis of fluorine labeled etheno adenosine analogs as tools for characterizing protein structure and folding. **M. T. Woon**, W. T. Brooks, D. J. McLoughlin
424. Synthesis of the P4 gene and insertion into the p21a vector. **K. M. Theisen**, D. Speckhard
425. Thermodynamic characterization of inosine-adenosine base pairs. **M. C. Burke**, **M. S. Alexander**, B. M. Znosko
426. Thermodynamic characterization of inosine-cytosine pairs located within Watson-Crick helices. **D. J. Wright**, C. R. Force, B. M. Znosko
427. Thermodynamic characterization of naturally occurring RNA hairpins of four nucleotides. **J. P. Sheehy**, B. M. Znosko
428. Trace metal characterization of soils by X-ray fluorescence. **T. P. Burton**, G. T. Cheek
429. Transition metal-mediated oxidative DNA damage by photoactivated daunomycin. **W. Johnson**, M. Zewail-Foote
430. Understanding genetic characteristics of the human stress response. **R. C. Hughes**, K. Jones, A. Santoro, A. Harkness, R. J. Sheaff, W. T. Potter
431. Uptake kinetics for the closed form of alpha-2-macroglobulin. **R. Estrada**, M. C. Linder
432. Use of a novel ELISA technique to characterize the zinc binding of phage-displayed peptides. **G. M. Ciovacco**, M. F. Hall
433. Use of surface plasmon resonance technique for screening novel compounds with application to Autism treatment. **H. S. Schwafel**, M. K. Schulte
434. Using a novel approach toward the determination of protein dynamics using pulse electron paramagnetic resonance. **C. Chan**, G. A. Lorigan
435. Using an improved method for the detection of estradiol in an ELISA. **A. E. Louiselle**, J. T. Ippoliti
436. Using photodynamic therapy to treat crown gall disease in kalanchoe plants. **H. M. Galonis**, C. J. Patton, C. E. Stills
437. Using RNase H to improve RNA secondary structure prediction. **R. J. Campagna**, C. B. Bartels, A. D. Kaufmann, J. L. Childs-Disney
438. Variations in I_{C50} values of mushroom tyrosinase may be related to purity of the enzyme. **E. Neeley**, W. H. Flurkey III
439. Visualization of montmorillonite-catalyzed RNA polymerization. **A. J. Rennie**, E. K. France, L. Tribe
- Section G
- Salt Palace Convention Center Hall 5
- Undergraduate Research Poster Session: Chemical Education** Cosponsored by SOCED
- N. Bakowski, *Organizer*
- 12:00–3:00
440. Adapting and perfecting a CASPIE module for Ball State University: Phytochemical antioxidants with potential health benefits in foods. **L. M. Eimore**, **R. A. Ford**, **S. P. Leary**, **L. C. Moores**, **J. M. Seyler**, P. R. Durham, J. W. Ribblett
441. Amending the GOB lab manual at Ball State University. **A. A. Everett**, **S. Idlewine**, **L. E. Janiga**, **K. L. Zimmerman**, J. W. Ribblett
442. Assessing substituents' electronic effects using NMR spectroscopy. **W. B. Keckler**, J. Schreck, D. Pringle
443. Beliefs vs. practice: Studying high school chemistry teachers in the classroom after an inquiry-based professional development experience. **B. Cardon**, B. Taylor, G. T. Rushton
444. BGB-20 ecoSoap: Utilizing biodiesel glycerin by-product in the large scale preparation of soap to illustrate the principles of green chemistry. **R. N. Cappa**, **G. M. Gioranino**, I. J. Levy, K. S. Quackenbush, L. C. Stevenson, **R. L. Walker**, T. D. Wright
445. Building a copper (I) oxide solar voltaic cell. **K. M. Adams**, H. Hershberger, J. W. Ribblett
446. Chemistry curriculum in nonmajor courses. **W. W. Laxson III**, **F. M. Dunnivant**
447. Can adoptively transferred adult CD8 T cell effectors protect susceptible tadpoles against the ranavirus FV3? **C. Noel**, H. Morales, J. Gantress, J. Robert
448. Chemical bingo. **S. Bremer**, N. Bastian, L. Giddings, **P. J. Iles**, S. Seshadri, R. Valcarce
449. Creation of learning goals and assessment tools for majors' and nonmajors' introductory chemistry laboratories. **M. C. Casey**, L. U. Gron
450. Collective virtual notebooks: A new approach to knowledge content integration in a peer-led team learning environment. **J. C. Noveron**, **V. E. Loya**
451. Comparison of upper-level chemistry majors' and chemistry experts' knowledge of physical change and environmental topics. **A. R. Brandriet**
452. Creating a biodiesel experiment for physical chemistry students. **K. D. Jackson**, C. Schnitzer, E. Dombrowski, H. Trieu
453. Determination of arsenic species in grape-based beverages. **L. M. Chirino**, T. Xu, K. O'Shea
454. Determination of multiple equilibrium constants by photometric titration in the physical chemistry laboratory. **J. D. Gilbert**, B. D. May
455. Developing bioanalytical laboratories: Real students testing published procedures for efficacy. **S. R. Laughlin**, A. Brown, L. D. Frost, C. M. Davis-McGibony
456. Development of an inquiry-based Diels-Alder experiment for the first year organic chemistry laboratory. **K. L. Pate**, **P. G. Bodager**
457. Development of an undergraduate laboratory: Identification of an unknown tripeptide. **D. S. Harrison**, S. J. Kohler, J. D. Kehlbeck
458. Development of hands-on science modules that connect science with everyday life. **J. Hein**, C. M. Ragain
459. Diels-Alder reactions in organic liquids: A guided-inquiry investigation for the first-year organic chemistry laboratory. **K. L. Pate**, **J. A. Jusek**
460. Distribution and stereochemistry of halide exchange of tetrahedral and octahedral complexes as observed by Al-27, Nb-93, and Sn-119 NMR spectrometry. **B. M. Dixon**, C. M. Davis
461. Efficient ways to teach "like dissolve like" using column chromatography. **A. Gonzalez**, C. Oliveros, M. Exposito
462. Embracing the liberal arts: Chemistry and art history make good lab partners. **V. Bolton**, J. A. Goodnough
463. From chemophobia to green chemistry: An analysis of marketing claims in *National Geographic Green Guide*. **J. A. Gephart**, M. O'Donnell, S. L. Bretz
464. General ELISA protocol for incorporation into undergraduate lactate dehydrogenase purification regimens. **T. J. Pegg**
465. Geocaching as a way of engaging students and the public in chemistry. **D. J. Swartling**, **J. Threet**
466. Going green in Idaho. **A. N. Johnston**, M. McCormick, D. L. Warner, K. Hammond, M. M. Swartz
467. Green chemistry alternatives for an introductory chemistry lab. **U. S. U. Chemistry and Biochemistry Club**, C. M. Hansen, R. Severinsen, S. A. Huefner, B. Marshall, R. McMahon
468. Greening the Wittig reaction for the undergraduate organic chemistry laboratory. **J. A. MacKay**, **N. R. Wetzel**
469. How guided inquiry classes affect student's learning chemistry. **B. P. Roggow**, J. R. Pribyl
470. Impact of curricular innovations on spatial ability of chemistry students. **H. D. Beers**, R. S. Cole
471. Implementation of a research component into the general chemistry lab curriculum. **R. M. Strong**, E. A. Baldauff
472. Implementation of 2-D electrophoresis and analysis in biochemistry laboratories for undergraduate education. **S. A.-E. Erwin**
473. Incorporating electrochemistry into undergraduate inorganic chemistry laboratories. **P. T. Czech**, **A. J. Massetti**
474. Integration of public outreach into a college biochemistry laboratory: Detection of West Nile Virus overwintering sites as a service learning project. **K. Pease**, K. McHail, R. Fox, M. Nadal, A. DePayne, K. Katula, A. Ormond, D. Force, K. Cornell
475. Investigating first year chemistry major students' ideas about chemicals. **L. R. Bullinger**, M. O'Donnell, S. L. Bretz
476. Laboratory ranking of household oxidizers using spectroscopy. **J. Rosenbaum**, R. C. Ullsh
477. Lighting up general chemistry with photosynthesis experiments. **S. J. Donnelly**, L. Rexius, **T. Whittier**
478. Lure of the kitchen: A food chemistry laboratory for liberal arts students. **P. A. Brietic**, L. K. Amos, K. Bangor, D. Clingerman, **M. Strayer**
479. Modification of the green chemistry laboratory manual for a homeschool environment. **S. A. Henrie**, **J. M. Guastadisegni**
480. Metabolism of simple and complex sugars in glycolytic and fermentative pathways in *Saccharomyces cerevisiae*: A laboratory approach. **W. A. Deutschman**, B. Gillespie
481. Modern sport and chemistry: What a golf fanatic should know. **S. McKay**, **T. J. Robbins**, R. Cole
482. Modification of the green chemistry laboratory manual for homeschool high school students. **S. A. Henrie**, **T. M. Parrish**
483. Making nanoparticle "stained glass" in the general chemistry laboratory. **A. S. Hyme**, C. M. Brown, A. Yu, T. Sams, D. H. Johnston
484. NMR experiments for freshmen. **C. Meason**, A. Kwate, D. Aviles, J. Doan, C. Vences, V. Phuoc, M. M. Nunes, A. Knutson, T. B. Malloy Jr.
485. Novel method for utilizing a falling-ball viscometer using digital videography. **S. M. Huff**, J. L. Evans Jr., B. Lackey
486. On implementing virtual office hours in a large class that uses the peer-led team-learning model. **J. C. Noveron**, **A. Miramontes**
487. Optimal procedure for the synthesis of biodiesel. **J. S. Scata**, E. A. Alkhatib
488. Organic reaction cycles for the undergraduate laboratory. **L. Rodrigues**, D. L. Dillon
489. Perchlorate uptake by garden vegetables. **S. Komansky**, N. Bastian, L. Giddings, **P. J. Iles**, S. Seshadri, R. Valcarce
490. Powering up the general chemistry curriculum with solar energy. **S. J. Donnelly**, **K. McClellan**, M. Edmonds
491. Production of biofuels: Methane generation from manure in a nonsterile anaerobic batch bioreactor. **H. Torres**, **M. Martinez**, A. Soto, Y. Cabrera, A. Medina, W. Molina, M. Montalvo, W. Velez, Z. Molina, B. Arroyo
492. Proposing an unknown mechanism via a question-driven laboratory exercise: Grignard formation and reaction in hydrocarbon media. **J. M. Teixeira**, R. W. Holman, K. W. Housley
493. Raman spectroscopy at a predominantly undergraduate institution. **M. J. Christiansen**, H. L. Berghout, M. B. More, J. E. Sohl
494. Selective oxidation of benzyl alcohol to benzaldehyde: A green chemistry laboratory experiment. **I. J. Levy**, **E. J. Thames**, **R. L. Walker**
495. Transforming outreach from entertainment into education. **R. W. Fureigh**, L. U. Gron
496. University-school partnership model to enhance teachers' science content knowledge and classroom practices through problem and inquiry based professional development programs. **K. Gil**, K. Edwards, L. Moore, K. Rodriguez, Y. Salinas, E. E. Gonzalez, A. R. Chaudhuri
497. Using eye gaze analysis to investigate problem-solving strategies of novices and experts. **M. Kreitzer**, W. S. Harwood
498. Using NMR spectroscopy to identify alcohols in esterification. **J. Lucero**, J. Schreck, D. Pringle
499. Use of automated hypertext markup to access the interactive periodic table of the Chemical Education Digital Library. **K. E. Yancey**, R. E. Belford
500. Westminster College chemistry placement exam assessment. **J. J. Riott**, M. R. Joseph
501. Women and minorities in forensic chemistry. **J. Arthur**, R. A. Morgan Theall, J. W. McGill
- Section H
- Salt Palace Convention Center Hall 5
- Undergraduate Research Poster Session: Environmental Chemistry** Cosponsored by ENVR and SOCED
- N. Bakowski, *Organizer*
- 12:00–3:00
502. 1,3-Butadiene and acetylene from experimental burns contained in canisters over time. **K. D. Gardner**
503. Alternative energy at home. **M. M. Swartz**, S. Eidemiller, O. M. McDougal
504. Ames assay of fluorinated fungicides as potential mutagens. **H. Hunt**, K. Clark, M. Baer-Lehman, D. P. Predecki
505. Anodic stripping voltammetry of arsenic. **T. Kosgei**, J. H. Brown
506. Attenuation of polybrominated diphenyl ethers (PBDEs) from abiotic processes characteristic to southeast Alaska environments. **S. Schreiber**, L. A. Hoferkamp
507. Batch experiments and ^1H NMR study of the effect of organic acids and mineral types on tetrahydroxybutate and methylate adsorption. **J. P. Lisher**, J. L. Morford
508. Biodegradation of steroidal pharmaceuticals by environmental bacterial isolates. **K. E. Shuman**, K. C. Biswas, M. J. D'Souza
509. Biocolorization of lead and cadmium in *Bouteloua curtipendula* and *Cynodon dactylon*. **A. M. Castillo**, T. M. Tercero, J. M. Davis
510. Bioluminescent bacteria as biosensors for polycyclic aromatic hydrocarbons. **V. Y. De La Rosa**, W.-Y. Lee
511. Calcite precipitation and water chemistry dynamics in a calcareous fen. **E. L. Kahley**, D. M. Reed, J. J. Piatt, E. M. Stamm
512. Characterization of fatty acids in fish from the upper Mississippi River using GC-MS. **T. W. Nalli**, **A. K. Abdalla**, M. Mulder, M. Alstad, L. A. Bartsch, M. R. Bartsch, W. B. Richardson
513. Comparison of silicone-coated paper samplers and polyethylene in Narragansett Bay. **V. R. Dekany**, R. Lohmann
514. Comparison of masking agents for anodic stripping voltammetry of arsenic. **C. McMullen**, R. L. Hull, J. H. Brown
515. Concentrations of past-use organochlorine pesticides in commercial potting soils. **M. F. McGuirk**, R. L. Falconer
516. Copper and iron encapsulated zeolites for cyclohexane oxidation. **N. E. Montgomery**, L. S. Davis

The official technical program for the 237th National Meeting is available online at oasys2.confex.com/acs/237nm/techprogram/.

517. Copper encapsulated zeolite catalyzed cyclohexane oxidations. **C. R. Riley**, L. S. Davis
518. Detection of pharmaceuticals and personal care products in treated wastewater from a waste treatment plant. **A.-M. Joseph**, R. McNeil, S. Sims, K. LaiHing
519. Determination of phosphorus concentration in pinelands clay. **L. Sturner**, G. P. Foy, D. Gray
520. Determining the concentration of lead in the soil of a nearby playground. **L. K. Simione**, M. D. Hoops
521. Determining the efficacy of washing techniques for removing polybrominated diphenyl ethers and organochlorine pesticides from children's stuffed toys. **S. N. McMullen**
522. Development of a chemical tracer in urine to assess exposure to wood smoke in humans. **A. R. Evanowski**, T. Ward, B. Megan
523. Development of an improved activity assay for the rapid assessment of conditions sought to enhance catalytic activity in the production of biofuels from cellululosic feedstocks. **J. Pinto**, J. O. Boles
524. Effect of sample processing and earthworms on soil chemistry. **T. M. Mancarella**, S. C. Laustsen, L. Bryne, S. K. O'Shea
525. Effects of atrazine on embryonic development and hatching of Japanese medaka (*Oryzias latipes*). **J. Theriot**, T. John, M. A. Tarr, B. B. Rees
526. Electrode, electrolyte, and proton effects on the electrochemical synthesis of ammonia. **L. M. Thoma**, C. R. Dukart, T. M. Pappenfus
527. Exploratory studies on the use of B-vitamins as alternative post-column reagents for haloacetic acids. **S.-W. Yu**, P. S. Simone
528. GC-ECD quantitative analysis of endosulfan soil leachates. **J. Gonzalez**, H. Holness, K. E. O'Shea
529. Influence of mixture composition on the solubilization of nitroaromatic compounds in micellar solutions of Brij-58. **J. L. Sims**, A. N. Waddle, D. J. Luning Prak
530. Interactions among land cover management, earthworms, and soil biogeochemistry. **S. C. Laustsen**, T. M. Mancarella, L. Bryne, S. K. O'Shea
531. Ion chromatography as part of a data cohort for assessment of water quality on lakes. **R. S. Wible**, M. C. Casey, L. U. Gron
532. Kinetics and energetics of 3,3,3-(trifluoropropyl)dimethylchlorosilane condensation with silica gel. **C. Richards**, K. T. Mueller, N. M. Washton, K. V. Potts
533. Levels, fate, and toxicity of environmental contaminants in cigarette wastes. **E. Gijka**, M. Vittorioso, L. A. Benedict
534. Ligand-dependent moderation of cadmium toxicity in zebrafish, *Danio rerio*. **A. K. Malone Oliver**, K. S. Warren, S. K. O'Shea
535. Measurement of metal ions to assess water quality and potential shale oil drilling impact on Brewer Lake. **M. C. Drilling**, M. C. Casey, L. U. Gron
536. Metal accumulation in *Nasturtium officinale* in aquatic lotic systems from the central part of Puerto Rico. **S. J. Cardona-Gonzalez**, M. Diaz-Rivera, V. Aicea-Vázquez, A. I. Calderón-Pagán, M. Ramos-Fontán, J. Arbelo
537. Withdrawn.
538. Monoterpene emissions of *Pinus strobus* in response to changes in soil pH and nitrogen content. K. L. Hervert, H. Grunkemeyer, L. J. Anderson, **D. J. Krofcheck**
539. Multicomponent solubilization of nitroaromatic compounds in ionic surfactant solutions. **A. N. Waddle**, J. L. Sims, D. J. Luning Prak
540. Natural organic matter fraction predicts the labile desorption rate of chlorinated organic pollutants found in sediment suspensions. **J. Ginsbach**, F. M. Dunnivant
541. Occurrence and transport of pharmaceuticals in private onsite waste treatment systems. **E. M. Patterson**, J. J. Piatt
542. Optimization of a titania capped packed-bed photocatalyst. **P. R. Burkholder**, J. DiCesare
543. Purifying biodiesel using a bubble column. **E. K. Dombrowski**, C. Schritzer, K. D. Jackson, H. Trieu
544. Qualitative and quantitative heavy metal analysis of Lehigh River water samples using an ICP-AES. **M. Connelly**, S. Geronimo, B. Slaybaugh, F. C. Mayville Jr.
545. Quantitative characterization of particulate matter in Claremont, CA by particle-into-liquid sampler with ion chromatography. **A. L. Liberman-Martin**, N. Yonis, K. L. Purvis-Roberts
546. Speciation of microorganisms found in bovine fecal biomass grown under anaerobic condition. **W. C. Molina-Pagan**, H. Torres, N. M. Vega-Cotto, H. Roman
547. Study of effect of solvent polarity on kinetics of hydrolysis of micromolar ferric iron. **A. R. Sims**, H. Zhang
548. Thermodynamic analysis of inorganic aerosol and gas phase particles in ambient air in Selinsgrove, Pennsylvania. **A. R. Evanowski**, D. Straub
549. Use of coal slurry to produce methane and fossil fuels. **N. Holmes**, W. Castellon, A. Cook
550. Using glycerin from biodiesel production as a co-fuel in a heating furnace: Emissions and efficiency. **C. J. Patterson**, I. Setiawan, C. H. Schilling, D. S. Karpovich
551. Using HYSPLIT trajectory calculations to determine the source of increased ozone concentrations in Grand Canyon National Park. **D. P. Kleinsmith**, M. S. Robinson
552. Water analysis of northern New Mexican ponds for future boreal toad reintroduction. **J. M. Joslin**, A. Ponce, R. P. Beeton

Section I

Salt Palace Convention Center
Hall 5Undergraduate Research Poster Session:
Inorganic Chemistry Cosponsored by
SOCEDN. Bakowski, *Organizer*

12:00-3:00

553. A-type Keggin polyoxometalate sandwich anions as nanoscale building blocks. **J. Gilbertson**, W. A. Neiwert
554. Alcohol oxidation by metallic benzoquinone complexes. **J. Easterling**, R. Johnston
555. Analysis of CuGaSe₂ films for photoelectrochemical water splitting. **K. A. See**, T. G. Deutsch, J. Kaneshiro, J. A. Turner, S. W. Cowley
556. Arene-limiting perfluoroalkylation with iron carbonyl compounds. **R. L. McMahon**, D. Julien, J. D. Lawrence
557. Bis-amido-acid ligands and their copper(II) complexes: Adding peripheral functionality to copper(II)-based oxidation catalysts. **B. C. Haight**, J. J. Bodwin
558. C-H activation of cyclic ethers with (PNP)Ir fragment. **S. D. Timpa**, Y. Zhu, C.-H. Chen, B. M. Foxman, O. V. Ozerov
559. Calcium complexes for stereoregular ring-opening polymerization of lactide. **S. Wilson**, O. Karroonnirun, D. J. Darensbourg
560. Chemical and lubricating properties of a series of solutions for use as "ionic lubricants". **L. Troupe**, J. Perkins
561. Withdrawn.
562. Computational study of the reactivity of novel N-heterocyclic carbene complexes. **M. D. Bray**, H. Palencia, J. S. Poole
563. Computer modeling and fluorescence detection of metal DNA binding. **C. L. Bartoszek**, A. C. Young, M. S. Ward
564. Continued development of CPL into a biomolecular structural probe. **K. T. Hua**, S. D. Bonsall, G. Muller
565. Coordination chemistry of Group 6 tetra-carbonyl compounds with *P,P'*-1,4-diphosphacyclohexane: A rigid bidentate molecule. **G. M. Carroll**, M. L. Helm
566. Copper(II) complexes of pyridine-bisamide ligands: Exploring copper(II)-based oxidation catalysts. **K. P. Schultze**, J. J. Bodwin

567. Design and synthesis of new chiral β -diketimine complexes for asymmetric catalysis. **D. F. Abbott**, C. F. Dignam
568. Direct NMR evidence for bromide ion coordination to transition metal substituted polyoxometalates in nonpolar solvents. **M. Kozik**, **M. Makar**, K. Malstrom, S. H. Szczepankiewicz
569. Direct synthetic routes to unencumbered single-scorpionate nickel complexes. **A. Corken**, B. M. Besel, R. Tarkka, P. J. Desrochers
570. Direct use of molybdenum clusters as precursors in the development of molybdenum blue ceramic glazes. **M. Fiedler**, S. C. Haefner
571. Effect of surface modifications on electron transfer in cytochrome c. **S. G. Tucker**, K. R. Hoke
572. Electrochemical synthesis of an oxotron(IV) complex in buffered water-acetonitrile (1:2) solution: Spectral evidence of a new intermediate. **M. Zhang**, M. J. Collins
573. Electronic coupling in metalloporphyrin dimers. **G. E. Rayermann**, A. Hickman, J. A. Kouzelos, R. S. Gabor, H. Ahmad, V. Gunderson, A. C. Jacobs, R. J. Cave, H. Van Ryswyk
574. Exploring nature of the linking group in copper(II) complexes of bis-amido-acid ligands. **N. Manohar**, J. J. Bodwin
575. Formation of a phosphinomethylamine platinum(II) complex. **S. A. Heston**, M. L. Helm
576. Investigation of intermolecular interactions by NMR and CPL spectroscopy. **N. M. Nguyen**, F. K. Vo, G. Muller
577. Investigation of low power optical upconversion in the undergraduate research lab. **B. D. Smith**, **A. T. Lattanzi Jr.**, T. Dermota
578. Investigation of selected rare earth (RE) containing high-temperature superconductors. **L. S. McCage**, B. A. Hornbeck, B. D. Palmer
579. Investigation of the chemical components of selected sage species. **S. O. Adu**
580. IR and NMR characterization of some ruthenium hydride complexes. **N. Arulsamy**, D. Roddick, H. A. Ackerman, A. B. Crooks, B. A. Dutcher, K. B. Hansen, K. J. Koch, J.-P. G. Kollmar, K. M. Lore, L. L. McDonald, C. M. Markum, F. A. Massingill, A. M. Milmont, M. J. Pearson, L. M. Snyder, N. Yanagisawa
581. Ligand properties of an imidazolium-based self-ionic liquid. **A. Ng**, **B. Anacleto**, **D. R. A. Kipp**
582. Mechanistic studies of carbonyl insertion at a κ^3 -[N(C)]PtMe complex. **E. H. Smith**, B. S. Williams
583. Mechanistic study of iron (III) porphyrin nitrite oxidation and their iron (II) nitrosyl redox reactions. **C. B. Meloney**, S. K. O'Shea
584. Microwave assisted synthesis of ruthenium-dmsio complexes. **A. Harvey**, S. Chui, R. Snell, M. Draganjac, E. Benjamin
585. Mixed ligand diimine-thiosemicarbazone complexes of ruthenium(II): Synthesis, biophysical reactivity and cytotoxicity. **F. A. Beckford**, **M. Shalowski Jr.**, G. Leblanc, J. Thessing, N. P. Seeram, L. Li
586. New bidentate sulfur ligand for biomimetic molybdenum and tungsten complexes. **N. M. Schmidt**, J. S. Cole III, E. P. Bergh, R. R. Conry
587. Ni(II) enolate and carboxylate complexes of tridentate nitrogen donor ligands. **R. Severinsen**, E. Pound, A. M. Arif, L. M. Berreau
588. Nickel (II) complexes as functional urease mimics. **M. A. Hafeez**, A. B. Bethune
589. Nickel(II) complexes as functional urease mimics. **E. V. Mittelstaedt**, A. B. Bethune
590. NKU fullerene research: Synthesis and spectroscopic studies of fullerene-bipyridine and corannulene-bipyridine organometallic supramolecular systems. **E. A. Walsh**, C. D. Girten, J. R. Deye, K. A. Walters
591. NKU Tungsten isocyanide research 1: Synthesis of a new ligand to maximize excited-state stability. **S. A. Kramer**, R. A. Seger, K. A. Walters
592. NKU Tungsten isocyanide research 2: Synthesis of isocyanide ligand and tungsten isocyanide complex. **D. Mazor**, S. Karasiova, K. A. Walters
593. NKU Tungsten isocyanide research 3: Photophysical studies of tungsten(0) isocyanides. **S. Karasiova**, S. A. Kramer, D. Mazor, K. A. Walters
594. Organometallic platinum complexes for use as electronic materials. **S. S. Sullivan**, K. R. Mann, **D. E. Janzen**
595. Oxidation of veratryl alcohol with copper(II)-salen derivatives: Precursors to catalytically active metal-organic frameworks. **D. L. Pestka**, J. J. Bodwin
596. Oxygen-activating nickel(II) complexes with bulky oximate ligands. **A. L. Young**, C. M. Davis
597. Patterns of activity in cation exchanged Y and USY zeolites characterized by ²⁴¹Am NMR spectroscopy. **A. F. Tierno**, D. J. Aurentz, K. J. Sutovich
598. Photophysics of platinum(II) diimine complexes. **N. A. Larew**, A. Shivelev, W. B. Connick
599. Preparation of group 13 ketiminate and β -diketiminate complexes possessing adamantyl groups. **B. Weber**, J. K. Vohs
600. Preparation of group 13 Schiff base complexes. **J. King**, J. K. Vohs
601. Pseudo-A-type Keggin polyoxometalate sandwich anions as nanoscale building blocks. **T. Rauschke**, W. A. Neiwert
602. Quaternary transition metal chalcogenides MPb₃Sb₂O₁₀ (M = Mn, Fe; Q = S, Se): Synthesis, crystal structure and magnetism. **P. F. Poudeu**, **J. Eastwood**, A. Rivera, C. Obiako
603. Reaction of potassium with selenium in *N,N*-dimethylformamide. **C. E. Terrel**, L. D. Schultz
604. Reaction of sodium cyanoborohydride and semicarbazide hydrochloride in ionic liquids II. **A. L. Gorackowski**, G. M. Edvenson
605. Role of the bidentate ligands in asymmetric bimetallic ruthenium (II) complexes and their interactions with DNA. **T. Yi**, **R. Berns**, M. T. Mongelli
606. Ru(II) thioether complexes in self-assembled molecular squares. **M. Bajic**, G. J. Grant
607. Self-assembled molecular squares and cubes using group 9 metal ions. **H. V. Vashi**, G. J. Grant
608. Sensitizing and protecting lanthanide ion emission using optically active nanocrystals. **P. Rastogi**, J. Vela, J. A. Hollingsworth
609. Solar cell capabilities of a porphyrin coupled with fluorescein. **D. Cason**, J. E. Bradshaw
610. Solid-state emission of square-planar platinum(II) 2-phenylpyridine complexes. **K. M. Skodje**, K. R. Mann, **D. E. Janzen**
611. Solvent-free synthesis of porphyrins. **A. Orvieto**, T. D. Hamilton
612. Spectroscopic studies of mixed-valent complexes based on *trans-trans*-[ClRu(py)₂(L)Ru(py)₂Cl]²⁺. **B. N. DiMarco**, C. J. Timpon
613. Substituent effects on copper phenanthroline reaction kinetics. **M. Coppola**, S. P. Watton
614. Substituent effects on electron exchange in phenoxide-bridged dimanganese complexes. **S. E. Kelley**, M. Soler, L. Cargill, D. Guo, J. K. McCusker, V. P. McCaffrey
615. Substitution and isomerism in polyamine tungsten carbonyl nitrosyl complexes. **J. M. Keane**, **S. A. Burgess**, **S. E. Kalman**, **J. L. DiMeglio**

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‡ Cooperative Cosponsorship

616. Superstructured metallotetraazaporphyrins as O₂ activation catalysts. **A. J. Wright**, J. P. Fitzgerald
617. Suspension of zeolite particles within an aerogel matrix. **B. W. Davis**, E. A. Baldauf
618. Synthesis and ¹H NMR structural characterization of a series hexanedione bis-thiosemicarbazone ligands and their Pd(II) complexes. **H. Z. Taylor**, K. Steelman, E. C. Liscic
619. Synthesis and characterization of a new series of palladium compounds with water-soluble 5-formyl-2-furan thiosemicarbazone ligands. **E. P. Hoy**, E. C. Liscic
620. Synthesis and characterization of high aspect-ratio gold nanoparticles. **M. E. Weiss**, S. H. Brewer
621. Synthesis and characterization of metal complexes of theobromine. **J. A. Walmley**, **E. T. Pohl**
622. Synthesis and characterization of metal complexes supported by three-coordinate ligands. **P. S. May**, M. B. Jones, C. E. MacBeth
623. Synthesis and characterization of new 2-carboxyquinoline thiosemicarbazones and their Pd(II) complexes. **R. Wilson**, E. Stoner, E. C. Liscic
624. Synthesis and X-ray absorption spectroscopy of metallothiosalen complexes. **C. T. Lyons**, E. C. Wasinger
625. Synthesis of a lanthanide double-decker metallacrown single-molecule magnet. **K. E. Moore**, C. M. Zaleski
626. Synthesis of amphiphilic polyoxometalates based on P₂W₁₇O₆₁¹⁰⁻. **J. White**, R. C. Chambers
627. Synthesis of bulky monodentate phosphine ligands and some of their group 10 metal complexes. **L. Dodd**, I. Schranz
628. Synthesis of fluorescein-appended perfluoroalkyl iron compounds for use as potential biofunctional imaging agents. **D. J. Crouthers**, **A. E. Rawson**, J. D. Lawrence
629. Synthesis of Group 8 metals with a tridentate phosphine ligand. **P. R. Vorce**, M. L. Heim
630. Synthesis of novel single-molecule magnets. **B. M. Emerich**, C. M. Zaleski
631. Synthesis of single-molecule magnets using S-phenylalaninehexadecamic acid, 4,7-dimethanoic-1,10-phenanthroline, lanthanide metal ions, and transition metal ions. **P. D. Pickett**, C. M. Zaleski, D. P. Predecki
632. Synthesis of the p-type semiconducting ternary oxide CuAlO₂ using a low-temperature Pechini method. **R. H. Jarman**, J. Bafia, T. Gebreslase, B. J. Ingram, J. D. Carter
633. Synthesis, characterization and cytotoxicity of copper and ruthenium complexes of a series of thiosemicarbazones derived from piperonal. **F. A. Beckford**, **J. Thessing**, M. Shalowski Jr., C. Robertson, N. P. Seeram, L. Li
634. Synthesis, characterization and magnetic properties of transition metal complexes of 2,6-pyridinedicarboxylic acid. **J. R. Jettler**, **A. DeSimone**
635. Synthesis, characterization and optical limiting properties of thallium and lead tetraazaporphyrins. **I. A. Brenner**, J. P. Fitzgerald
636. Synthesis, characterization and studies of ferrocene derivatives. **M. Rivera-Claudio**, I. Martinez, M. Acevedo, B. Acosta, J. Castillo-Ramirez
637. Toward the synthesis and characterization of copper(I)-arene compounds using phenyl- and naphthyl-appended NS₂ macrocyclic ligands. **R. R. Conry**, **T. R. Maltais**, C. P. Owens, M. S. Kim, P. J. Lee
638. Trace element and mineral analysis of Native American pottery from the upper Susquehanna River valley. **M. J. Lahr**, S. M. Young, J. B. Dudek, D. E. L. Johnson
639. Tridentate terminal ligand effect on binding of asymmetric bimetallic ruthenium (II) complexes to DNA. **R. Vachhani**, M. T. Mongelli
640. Turning over oxoiron(IV): Using electrolysis to convert oxoferryl from stoichiometric reagent to "catalyst". **A. A. Hebdia**, M. J. Collins
641. Utilization of adamantyl substituted N-heterocyclic carbene ligands in Group 13 organometallic complexes. **J. Rigo**, J. K. Vohs
642. Water system of a fossil/hydro power plant and the work behind it. **D. E. Williams**, E. E. Carpenter
- Section J
- Salt Palace Convention Center Hall 5
- Undergraduate Research Poster Session: Medicinal Chemistry** Cosponsored by MEDI and SOCED
- N. Bakowski, *Organizer*
- 12:00-3:00
643. Analysis of volatile chemical constituents in *Cacalia descomposita* (Matiarique), *Geranium robertianum* (Hierba San Roberto), and *Tecoma stans* (Tronadora) used in Mexican folk medicine for the treatment of type II diabetes. **C. Vasquez**, A. Arambula, Y. Chu, P. P. Gonzalez, A. R. Chaudhuri, E. E. Gonzalez
644. Analysis of volatile chemical constituents in *Cnidioscolus chayamansa* (Chaya), *Cecropia obtusifolia* (Chancarro), and *Dichondra argentea* (Oreja de Raton) used in Mexican folk medicine for the treatment of type II diabetes. **Y.-Y. Chu**, C. Vasquez, A. R. Chaudhuri, E. E. Gonzalez
645. Analysis of volatile chemical constituents in *Lupinus albus* L. (Altramuz), *Rhus packyrrachis* (Lantrisco), and *Chlorophora tinctoria* (Palo Amarillo) used in Mexican folk medicine for the treatment of type II diabetes. **D. Carrillo**, A. Garcia-Dena, A. R. Chaudhuri, E. E. Gonzalez
646. Analysis of volatile chemical constituents in *Vaccinium myrtillus* (Arrandano), *Nasturium officinale* (Berro), and *Taraxacum officinale* Weber (Diente de Leon) used in Mexican folk medicine for the treatment of type II diabetes. **A. Garcia-Dena**, W. Flores, J. Bkakta, P. P. Gonzalez, A. R. Chaudhuri, E. E. Gonzalez
647. Bioassay guided fractionation of anthelmintic compounds from *Paulownia tomentosa*. **J. D. Kehlbeck**, **Z. C. Smith**, F. L. Spector, M. Wu, K. LoGiudice
648. Cell growth inhibition studies of potential tyrosine kinase tumor growth inhibitors. **C. L. Klein Stevens**, **I. Aiao**, R. Graham, S. Haron, T. Wiese
649. Chemistry research for biology majors: Assessment of plant antibacterial activity at the Green Field Station in southeastern Wisconsin. **W. J. Baehr III**, K. McMahon
650. Computational docking studies of nitroanisoles and nitrophenols with CYP2E1. **D. Demaree**, M. D. Perry Jr., G. P. Miller
651. D-Aspartate has been found in the frog nervous system and activates excitatory amino acid receptors. **N. Gonzalez**, G. Fisher, A. Holohean, J. Hackman
652. Design of simpler analogs of a novel antimalarial agent to assist in pharmacophore identification. **C. E. Gutteridge**, **M. C. Baxter**, B. W. Sadowski, M. T. O'Neil, W. F. McCalmont, L. Gerena
653. Development and validation of a dried blood spot assay for chitotriosidase, an important biomarker for Gaucher Disease. **M. Merzel**, M. Grace, M. Balwani
654. Development of quantitative structure-activity relationships for sulfonamide inhibitors of the Hsp90 chaperone protein. **B. Hill**, J. A. Morrill
655. Dietary linoleic acid and butyrate suppress apoptosis by enhancing Bcl-2 expression. **C. Cozby**, Y.-Y. Fan, L. A. Davidson, R. S. Chapkin
656. Different drying methods have an effect on the release of naproxen from microcrystalline cellulose beads. **S. Hartman**, E. Remaly, F. C. Mayville
657. Effects of antioxidants from pomegranate juice on DNA-protein crosslinking via guanine oxidation. **K. E. Rodgers**, L. Marzanyan, D. E. Stemp
658. Evaluating the utility of the Keivill-D'Souza aromatic ring parameter (I) to correct for dispersions in LFER's. **A. M. Darrington**, M. J. D'Souza, D. N. Kevill
659. Genetic studies of adenosine deaminase in the rodent malaria parasites *Plasmodium yoelii* and *Plasmodium berghei*. **B. M. Herzberg**, L.-M. Ting, A. Mwakingwe, M. M. Croken, D. Madrid, S. Hochman, K. Kim
660. How atrasentan effects docetaxel protein binding. **R. R. Stewart**, T. J. McManus, W. P. Petros
661. Hydrogen bonding acidities of monohydroxyflavones determined by NMR. **L. B. Rogers**, E. Okoso-amaa, **W. L. Whaley**
662. Identification and development of a novel series of antimalarial agents. **C. E. Gutteridge**, **B. W. Sadowski**, M. C. Baxter, M. T. O'Neil, W. F. McCalmont, L. Gerena, G. Montip
663. Identification of phenolic acids in medicinal herbs from Puerto Rico using HPLC technique. **C. Mercado**, E. Perez, J. Garcia, S. Rivera
664. Imidazole-4,5-dicarboxylic acid libraries: Alkanamines and alcohol substituents. **E. Chuck**, R. Johnston, J. C. DiCesare, P. W. Baures
665. Investigating the molecular dynamics of oxidative metabolism of 4-nitroanisole with CYP2E1. **M. A. Brumley**, M. D. Perry Jr., G. P. Miller
666. Molecular dynamics studies of substrate interaction with the iron(V)=oxo species of CYP2E1. **M. Clarkson**, M. D. Perry Jr., G. P. Miller
667. New benzophenone glucoside from *Hypericum ellipticum*. **E. M. Petrunak**, A. C. Kester, G. E. Henry
668. Pharmacophore elucidation of a triple reuptake inhibitor. **H. C. Collier**, M. Gourley
669. Prevention of oxidative damage through the usage of resveratrol. **B. Wilson**, **Z. Valdez**, **J. Franks**
670. Promethazine stability in normal saline. **S. Mullins**, N. Bastian, **P. J. Iles**, L. Giddings, S. Seshadri, R. Valcarce
671. Rational design and study of carbonyl-drug mimetics. **C. M. Madigan**, K. T. Welch
672. Sequence modifications of peptidyl allyl sulfones as inhibitors for clan CA cysteine proteases. **K. K. Chung**, M. G. Götz
673. Small molecule inhibition of *Pseudomonas aeruginosa* secretion of exoenzyme S. **S. A. Shola**, M. A. Fisher
674. Stereochemical analysis of peptidyl allyl sulfones as clan CA protease inhibitors. **H. L. Main**, M. G. Götz
675. Structure/function relationships responsible for the inhibition of human type 1 3β-hydroxysteroid dehydrogenase (3β-HSD1). **K. L. M. McQueen**, J. L. Thomas, K. M. Bucholtz
676. Studies investigating the nucleophilic activation of aziridinomitosenes for the formation of DNA adducts. **K. M. McHail**, S. M. Rink, D. L. Wamer
677. Studying the inhibition properties of brown algae *Padina gymnospora*. **E. Rodriguez Gomez**, G. Peña, M. Buttler
678. Surface complexes of histidine on montmorillonite: A theoretical study. **A. K. Slutter**, **L. Tribe**
679. Synthesis and bioactivities of novel analogs of 2,5-di-tert-butylhydroquinone (BHQ) as inhibitors of the sarco/endoplasmic reticulum calcium ATPase. **R. Ratliff**, J. Purnell, J. Abell, B. Rutledge, C. Elam, J. Deye, M. Lape, K. Evans, R. Kempton, S. Paula
680. Synthesis and evaluation of novel indane derivatives of 3-iodothyronamine as regulators of TAAR activity. **K. A. Maupin**, K. Krummrey, **M. E. Hart**
681. Synthesis of an isothiazole antimicrobial. **J. J. Stokman**, J. T. Ippoliti
682. Synthesis of prodrug esters for folic acid polyglutamate synthetase inhibition. **P. C. Bandaranayake**, J. R. Nortman, A. R. Mastay, D. M. Bartley
683. Synthesis of spermidine and spermine derivatives as potential inhibitors of *Trypanosoma cruzi* trypanothione reductase. **T. Edd**, **M. Saric**, M. St. Phillips, N. Karney, M. O'Sullivan
684. Taxanes: Not just from yew tree bark or needles. **A. Samuels**, A. Hoffman
685. Vitamin E in health and wellness. **R. Maul**, N. Bujouves, P. Di Raddo
- Section K
- Salt Palace Convention Center Hall 5
- Undergraduate Research Poster Session: Nanotechnology** Cosponsored by SOCED and NANO
- N. Bakowski, *Organizer*
- 12:00-3:00
686. Ab initio study of carboranethiols and supporting monolayer patterning studies. **J. N. Hohman**, P. P. Zhang, **E. I. Morin**, V. Balema, P. S. Weiss
687. Al-Zn layered double hydroxide (LDH): A surface treatment for TiO₂ pigment particles using *Daphnia magna*. **T. Gonzalez**, O. A. Banks, T. B. Higgins
688. Biocatalysts in hollow microstructures. **B. D. Blakeley**, M. Duff, C. V. Kumar
689. Carbon nanofiber growth via dehalogenation of tetrachloroethylene. **A. C. Morgan**, B. D. Fahlman, D. K. Mohanty
690. Coupling of gold nanoparticles using click chemistry. **A. H. Tran**, S. Kim, N. T. Flynn
691. Coupling quantum dots with water-soluble porphyrins. **K. Singleton**, J. E. Bradshaw
692. Crystal face dependence of p-Cu₂O reactivity. **K. Sowers**, I. Weiss, C. Engel, A. Fillingier
693. Detection of biotoxin targets with quantum-dot aptamer sensors. **A. Sandoval**, H. Chambers, C. Allen, S. T. Oszwaldowski, L. A. Bumm, K. P. Roberts
694. Dye-sensitized zinc oxide fibers from electrospinning and photovoltaic cells. **R. L. Figueroa-Diaz**, J. J. Santiago-Aviles
695. Examination of novel nanomaterials using Langmuir-Blodgett techniques. **C. Cason**, A. Haskamp, K. L. Haik, K. A. Walters, H. A. Bullen
696. Fluorescent ZnS nanoparticles doped with Cu²⁺. **F. A. Oba**, C. Corrado, A. Wolcott, J. Z. Zhang
697. Formation of single wall nanotube dispersions using β-sheet peptides. **A. Sreelatha**, W. J. Goux
698. Gold and copper water-soluble metallic nanoclusters. **D. M. Glunt**, J. C. Kuruc
699. Investigations of oxidation species in nano-C₆₀ colloidal suspensions. **A. Harvey**, J. Dammron, M. Hilburn, B. Muriadanti, R. Maples, T. Hasley, S. Kuriyavar, K. Ausman
700. Kinetic study of multiwalled carbon nanotube surface functionalization via Fischer esterification. **R. Sosa Jr.**, J. R. Dorgan
701. Nanoparticle synthesis for separation optimization with capillary electrophoresis. **R. A. Keeney**, M. R. Ivanov, A. J. Haes
702. Novel method to functionalized carbon nanotubes. **A. L. Shipman**, J. DiCesare
703. Novel titanosilicate nanoporous materials: Selective CO₂ sorbents. **M. Michelman**, M. Rivera, A. J. Hernandez-Maldonado
704. Organic dye-sensitized solar cells. **E. M. Berget**, **Z. A. Morseth**, **K. K. Price**, P. A. B. Marasinghe
705. Platinum nanoparticles on SWNT nanopaper support: Synthesis, characterization and application in electrocatalysis. **M. R. Bromberg**, A. Patolla, Q. Wang, R. Segal, W.-Q. Han, I. Feldman, F. R. Zypman, Z. Iqbal, A. I. Frenkel
706. Porous silicon-based remote chemical sensors on an airborne platform. **M. L. Snedaker**, M. E. Dudley, A. Garcia Segal, T. J. Wong, M. J. Sailor
707. Preparation and characterization of gold, platinum, silver and iron thiol derivatized nanoparticles. **V. Poole**, J. Anthony, D. Nelson, K. Lai-Hing

The official technical program for the 237th National Meeting is available online at oasys2.confex.com/acs/237nm/techprogram/.

709. Sensor development of silica encapsulated quantum dot nanoparticles. **K. Swenson**, L. Grigsby, S. Oszwaldowski, K. P. Roberts
710. Synthesis of carbon nanostructures in a simple ethanol burner. **M. T. Blanchard**, L. N. Gernand, K. Chaudhuri, T. M. Tichich
711. Synthesis of gold core/quantum dot shell nanoparticles. **S. L. Capehart**, L. Yang, B. M. Reinhard
712. Synthesis of pH responsive metal-oxide microspheres. **L. M. Guiney**, N. T. Flynn
713. Toward metal ion mediated layer-by-layer assembly. **C. Min**, N. T. Flynn
714. Using patterned arrays of silver nanoparticles to probe plasmon enhanced luminescence of CdSe quantum dots on GaAs. **S. L. Skiles**, Y.-H. Chan, S. E. Wark, D. H. Son, J. D. Bateas
715. ZnO/ZnS fibers synthesized through a novel, low temperature, solution method. **J. Gomez**, L. C. Fernández-Torres
- Section L
Salt Palace Convention Center
Hall 5
- Undergraduate Research Poster Session: Organic Chemistry** Cosponsored by SOCED
- N. Bakowski, *Organizer*
- 12:00-3:00
716. ω -Azidoalkyl-, ω -alkynyl- and ω -phthalimido-alkyl substituents at the methylene bridge position of calix[4]arenes. J. L. Fantini, **M. J. Hardman**
717. 1-Alkyl-2,3-dihydro-4(1*H*)-quinolones by a tandem Michael-SNAr annulation reaction. **T. Nago**, R. A. Bunce
718. 3-(Hydroxymethyl)hexahydro-1*H*-pyrrolizine-1,2,6,7-tetraol synthesis from D-glucose. **N. Dogal**, L. J. Liotta
719. Acid promoted *tert*-butylation of thiols under pressure. **K. B. Seward**, A. C. J. Coffey, M. A. Clinebinst, M. E. Cox, R. W. Fitch
720. Additional Knoevenagel coupling reactions of aldehydes and ketones. **C. J. McCormick**, D. J. Swartling
721. Analysis of pyrrolizidine alkaloids in *Onosmodium helleri*. **N. Root**, W. R. Parker, B. I. Turner, J. A. Cox, C. M. Flesher, R. K. Kyniston, R. B. Kelley
722. Analysis of pyrrolizidine alkaloids in *Rainiera stricta*. **A. A. Julian**, J. D. Brown, D. S. Kelley, R. B. Kelley
723. Analysis of the long-range coupling in the ^{19}F NMR spectra of some fluoroalkyl triflates. **M. M. Nunes**, T. B. Malloy Jr.
724. Analysis of $[\text{Fe}^{II}(\text{2,2'-bipyridine})_2]$ derivatives as dye sensitizers on nanocrystalline TiO_2 solar cells. **M. D. Graaf**, J. E. Elbert
725. Approaches to anthracene-substituted cyclopropenium ions. **T. J. Sisto**, D. M. Thamattoor
726. Approaches to the preparation of 2-substituted bis-indenylidene dications with phenyl spacers. **T. Dailey**, F. Lubrin, B. Shackleton, N. S. Mills
727. Asymmetric conjugate addition: Synthesis of (+)-kalkitoxin. **E. W. Merling**, N. R. Collins, R. J. Mullins
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730. Attempted determination of pK_a values for substituted acetic acids using carbon-13 chemical shifts. **S. Hoyhtya**, R. Kuchta, R. Eliason
731. Attempted synthesis of polyphosphonium salts. T. W. Nalli, D. Bates, C. Skar, **S. Mahabamunige**
732. Bridged analogs of two-twist [10]annulene. **P. T. Nguyen**, C. Castro, W. L. Karney
733. Chemical reactivity of 6-oxoverdazyl free radicals. **D. J. R. Brook**, T.-N. T. Le
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736. Chiral ionic liquids as resolving agents in chromatography. J. Calixto, W. Eichert, W. Scherzinger, **D. E. Vitale**
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741. Comparing the alkenyl group with the presence of a bulky group on the α -carbon of chloroformate esters. **S. E. Carter**, M. J. D'Souza, D. N. Kevill
742. Comparison of intramolecular-intermolecular hydrogen bonding competition in alcohols and diols. **L. Gonzalez**, A. Pavia, A. Riojas, J. D. Lewis
743. Concise, biomimetic synthesis of (+)-davanone. **J. P. Litz**, K. C. Brown, K. P. Scherpelz, P. D. Dossa, D. A. Vosburg
744. Convergent approach to the preparation of 1,2-dihydroquinolines via a tandem Michael-aldol reaction. **A. Wagner**
745. Conversion of dihydroacetalene to [14]annulene. **T. Okoronkwo**, C. Castro, W. L. Karney
746. Correlation of the rates of solvolysis of isopropyl chloroformate. **B. P. Mahon**, D. N. Reed, M. J. D'Souza, D. N. Kevill
747. Cyclization of vinyllogous acylcarbenes to furans. **J. B. Goods**, D. M. Thamattoor
748. Cyclopropane fragmentation approaches to the synthesis of piperidines and azepines. **B. Vara**, M. Troum, K. P. C. Minbiole
749. Dehydrogenation of indoline and some derivatives with potassium permanganate supported on montmorillonite K-10 as oxidizing material. **L. N. Ruiz**, I. Troche, R. S. Vieta
750. Design and synthesis of structural analogs of the natural product angelmarin to target pancreatic cancer. **C. B. Reddy**, **A. Badea**, D. Carrico-Moniz
751. Development of a catalytic reaction for the phosphorylation of alcohols. **O. S. Fenton**, E. M. Morris, B. R. Sculimbrenne
752. Development of Raman spectroscopy as a tool for monitoring organic reactions. **K. Frazier**, J. R. Schmink, N. E. Leadbeater
753. Distribution of *para*-nitrophenol in a model biphasic system by single pulse slice-selective spatially resolved excitation (SPS³RE) NMR spectroscopy. **B. Martin**, O. M. McDougal, M. W. Hill
754. Dramatic heavy atom effect in the quenching of chloro-substituted lucigenin. **A. M. Jones**, C. A. Ragland, E. F. Healy, J. S. T. Gorman
755. Efficient synthesis and characterization of biodiesel for small scale production. S. E. Smith, J. Gesford, G. P. Foy, K. M. Halligan, **G. Sigel**
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757. Formation of peptide isosteres via olefin cross metathesis. **J. A. Beaudoin**, B. R. Sculimbrenne
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759. Efforts toward the synthesis of iridium pincer complexes of saturated NHC ligands. P. L. Osburn, **A. J. Schmidt**
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761. Employing azaferrrocene catalysts in the ketene-Claisen condensation of β -ketoesters. **A. E. Osborn**, M. R. N. Garrett
762. Encapsulation of an aryl azide in a hemiacetand. **G. A. Berkeliyeva**, S. S. Poole
763. Evaluation of the chiral relay concept using pyrazolidinone ring systems. **K. M. Morrison**, C. P. Jasperse
764. Examination of regioselectivity and stereoselectivity of intramolecular silyl nitronate cycloaddition of an alkenyne nitroether. **K. Hassebroek**, S.-K. Li
765. Expanding the scope of polyhydroxylated pyrrolizidine synthesis by starting with D-galactose. **N. J. Pace**, L. J. Liotta
766. Extraction and isolation of capsaicin from various peppers. **C. Busch**, N. Chubaty, F. C. Mayville
767. Fluorescence assay for molecular recognition of peptides by cucurbit[8]uril. **D. Stuck**, N. D. Bouley, A. R. Urbach
768. Formation of proximal β -amino silyl enol ethers from 2-acylaziridines using silyl-lithium reagents. **L. A. Augustine**, A. M. Hartel
769. Free energy relationships in nucleophilic aromatic substitution reactions of substituted pyridines in an ionic liquid. **S. A. Brown**, M. W. Thomsen
770. Free radical iodination of alkanes. **C. Hall**, M. W. Mosher
771. Green aldol reactions using *trans*-cinnamaldehyde as a starting material for the undergraduate organic laboratory. **L. K. ter Meer Guardia**, C. H. Jaworek-Lopes
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773. Green microscale organic chemistry: Solventless synthesis of sulfa drug derivatives. **R. Callahan**, B. Burkert, L. Desrochers, D. Fuller, S. Gibbons, D. Turner, Y. Wanchia, C. A. Washington, T. E. Goodwin
774. Grignard based epoxide coupling methodology: Application to propyloxylation synthesis. **K. Rosa-Pérez**, E. M. Valentin-Nevárez, J. A. Prieto
775. Highly conjugated arenediynes: Synthesis, structure and reactivity of 1,2-bis(2-(anthracen-10-yl)ethynyl)benzene. **J. R. Renner**, J. D. Spence
776. Hydrogen-bonding in *ortho*-substituted benzoates I. **J. D. Kim**, C. M. Baldwin
777. Initial investigations into the synthesis and electrochemical polymerization of thiophene-based molecular imprinted polymers for use as benzene sensor electrodes. **L. J. Young**, **M. K. Haga**, D. L. Warner
778. Investigation of temperature and solvent effects of 4-methyl-1,2,4-triazoline-3,5-dione (MTAD) reacted with Z,Z'-1,4-dicyclopropyl-1,3-butadiene. L. L. Young, **C. Gomez**, K. O'Shea
779. Investigation of the C10 electrophilic site in DNA interstrand cross-linking by synthetic azidinomitosenes. **E. L. McInturff**, K. M. McHail, D. L. Warner
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782. Investigations of stereoselectivity in the formation of peptidyl vinyl and allyl sulfones. **A. B. Arend**, M. G. Götz
783. Ionic liquid diesters and diols. **K. M. Ausburn**, **A. T. Smith**, M. J. Campbell
784. Improving the yield of polyhydroxylated pyrrolizidines. **A. E. Lajoie**, L. Liotta
785. Iron-catalyzed Oppenauer-type oxidation of alcohols. **A. N. Brown**, H. Guan, M. G. Coleman
786. Isolation and characterization of organic compounds from *Momordica charantia* "Cundearmor" infusion used for type II diabetes in Puerto Rico. **J. Torres Kolbus**, E. D. Reyes
787. Isolation and extraction of metabolites from *Maquira calophylla*. **H. J. Bodle**, K. M. Halligan
788. Isolation of limonene in citrus and its quantification using gas chromatography. **L. Revoredo**, J. Murillo, J. Torres, D. Ruizcalderon, M. Exposito
789. Isolation of pyrrolizidine alkaloids from *Buglossoides anvense*. **D. S. Kelley**, S. Arleth, R. B. Kelley
790. Mechanistic comparison of organocatalytic ring-opening polymerizations of L-lactide. **A. Hollenbeck**, H. W. Horn, J. E. Fice, W. C. Swope, J. L. Hedrick
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792. Metal triflate catalyzed Friedel-Crafts reactions in room temperature ionic liquids. **K. M. Traister**, M. W. Thomsen
793. Method development for synthesis of 1,4-benzodioxanes. **E. C. Bowman**, J. Zhang
794. Methylation of a doubly-linked cyclopentadiene ligand. **J. Criswell**, R. M. Chin
795. Michael addition of nitromethane to Knoevenagel adducts of Meldrum's acid. **D. J. Roubik**, D. J. Swartling
796. Microwave allylic bromination reactions. **L. Ladino**, L. Farber
797. Microwave-assisted Clauson-Kaas synthesis: A green approach to substituted pyrroles. **K. C. Miles**, D. M. Ketcha
798. Mild method for the rapid reduction of alkenes and alkynes using acetic acid, sodium borohydride and palladium. **S. Whitney**, E. Friz, A. Tran, V. Hunyh, D. B. Cordes
799. Modification of methylene-bridge substituted *p-tert*-butylcalix[4]arenes. J. L. Fantini, **A. M. Thomas**
800. Modular synthesis of mono(THF) acetogenins. **B. L. Mackinson**, K. J. Quinn
801. *N*-Acyl nitrones en route to isoxanzidines. **C. C. Williams**, **H. C. Neubauer**, S. R. Sieck
802. New routes to aniline oligomers. **W. Joseph**, T. E. Nicolas, P. Spellane
803. Nickel oxide hydroxide: A potential oxidizing agent. **S. De la Torre**, I. Montes
804. Novel additivity scheme for predicting and interpreting alkane stability. **A. Beaven**, E. D. Glendening
805. Novel biocompatible phosphorylcholine polymers from norbornene derivatives. **N. A. Lesmeister**, J. T. Ippoliti
806. Novel cyclopentadienone dimer. **C. D. Huelsman**, W. A. Feld
807. Novel method for determining biodiesel gel point. **B. Krupp**, J. Howard, R. Hartmann
808. Novel method for studying transesterification employing capacitance measurement. **J. Howard**, B. Krupp, R. Hartmann
809. Novel resin bound iron catalyst for the synthesis of biodiesel. **V. A. Assimon**, R. Hartmann
810. Novel synthesis of a multidimensional isoflavone. Genistein. **J. S. Gordon**, J. D. St. Denis, R. Priefer
811. Novel synthesis of isoflavone library. **K. F. Biegasiewicz**, J. D. St. Denis, R. Priefer
812. Optimization of the synthetic methodology toward the formation of a novel anti-biotic. **A. L. Patraw**, J. T. Ippoliti
813. Organic reactions at polymer-coating interfaces. **D. Jenkins**, H. N. Gray
814. Oxaziridine-mediated intramolecular amination of sp^3 -hybridized C-H bonds. T. P. Yoon, C. P. Allen, **A. Turek**
815. Oxidation of asymmetric oligothiophenes and comparisons of physical and theoretical properties to the parent oligomer. **V. N. Melnichuk**, L. M. Hunker, A. M. Tucker, A. J. Turgeon, T. M. Pappenfus
816. Oxygen-18 labeling studies of beta-acetoxy carbene. **J. C. Guerrette**, D. M. Thamattoor

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817. Ozonolysis of cyclopentene investigated by infrared spectroscopy at cryogenic temperatures. **K. N. Gillett**
818. Pathways to lyngbyatoxin: Development of a synthetic sequence to an asymmetric quaternary carbon center. **D. B. Ball, K. Voigtritter**
819. Pentacyclo[4.3.0.0^{2,4}.0^{3,8}.0^{5,7}]non-4-ene: Alternate synthetic approaches. **M. A. Forman, S. Deasey, D. Ruht, L. Linsinbigler**
820. Phenol-amine hydrogen bond as a director of molecular structure. **J. L. Doyle, B. N. Forcione, T. A. Knoerzer, B. L. Miller**
821. Phosphorus containing proline derivatives for asymmetric organocatalysis. **A. R. Mastay, D. M. Bartley**
822. Photochemistry of 4-azidoquinoline 1-oxide. **A. R. Campbell, J. S. Poole**
823. Photoinduced DNA cleavage by radicals from aryl sulfoxides. **A. L. Crowder, J. N. Richardson, A. H. Predecki**
824. Photoreduction-dimerization of imines to make vic-diamines. **C. Heuberger, J. Bennett**
825. Polymerization of ethynylpyridines with electrophilic carbohydrate reagents. **H. B. Kells, D. Sandman, A. Blumstein**
826. Preparation of aryl and alkyl proximal β -hydroxy silyl enol ethers from α,β -epoxyketones using silyllithium reagents. **H. K. Baker, A. M. Hartel**
827. Preparation of asymmetric allyl alcohols. **R. Johnston, M. J. Campbell**
828. Preparation of C₂ symmetric transition metal complexes as potential chiral catalysts. **L. M. Castellano, J. M. Tanski, L. A. Tyler, J. G. Reid**
829. Preparation of Mannich bases from 2-acylaziridines using silyllithium reagents. **A. L. Davis, A. M. Hartel**
830. Preparation of pseudotripeptides from amino acid (ester-protected) thiophosphorates. **J. Cook, S. M. Schelble, J. King IV, J. Lathrop, W. Vizcaino**
831. Probing the electronic influence of bystander substituents on the 1,2-H shift in carbenes (carbenoids). **T. Mahlokozera, D. M. Thamattoo**
832. Production of biogas on a small scale. **T. Feagin, S. Bremer, N. Bastian, P. J. Iles, L. Giddings, S. Seshadri, R. Valcarce**
833. Progress in greener synthesis of aziridines. **B. Walker, J. Bennett**
834. Progress to the racemic synthesis of gallicynoic acids. **D. B. Ball, C. McCulley**
835. Progress toward the development of a Wittig olefination catalytic in triphenylarsine. **A. L. Linde, N. A. Yakelis**
836. Progress toward a total synthesis of the endiandric acids. **R. T. Nishimura, A. H. Chung, K. Loh, D. A. Vosburg**
837. Progress toward the synthesis and chemistry of novel 1-aryl-1H-diazirino[1,2-b]phtthalazine-3,8-diones. **S. M. Bonser, L. A. Ruiz**
838. Progress toward the synthesis and chemistry of some 1,2-diacyl diaziridines. **S. M. Bonser, R. T. Dao**
839. Progress toward the synthesis and chemistry of some novel diaziridines. **S. M. Bonser, H. T. VanOrmer**
840. Progress toward the synthesis of 1,2-dibenzene sulfonyl diaziridines. **S. M. Bonser, B. C. Lor**
841. Progress toward the synthesis of a novel series of hepatitis C NS3/4A protease inhibitors. **N. A. Lodhia, D. Carrico-Moriz**
842. Progress toward the total synthesis of (+) angelmarin and structural analogs as potential anticancer agents. **K. Y. Ngai, C. Woo, D. Carrico-Moriz**
843. Quantitative evaluation of resonance forms using quantum mechanics. **F. A. Oba, C. R. Kemnitz**
844. Radical desulfonation reactions in aqueous medium using tris(trimethylsilyl)sulfane and thiols. **J. Zayas, P. R. Sacasa, S. F. Wnuk**
845. Radical intermediates in and additions to ruthenium polyene complexes. **J. J. Keenan, J. H. Byers**
846. Re-investigation of a geminal bis(nitroxide) diradical. **D. J. R. Brook, N. I. Omer, L. Lam, B. Patel**
847. Reaction of chlorosulfonyl isocyanate with fluorosubstituted alkenes. **K. J. Davenport, D. Shellhamer**
848. Reactions of acylhydrazides and sulfonohydrazides. **T. Wheeler, D. L. Dillon**
849. Reduction of 1, 4-diacetylbenzene using potatoes. **E. A. Clark, B. W. Baldwin**
850. Reductive alkylations of malononitrile and further manipulation to efficiently prepare substituted cyanoacetates. **C. Keyes, R. E. Sarmelson**
851. Rethinking anion exchange with quaternary ammonium compounds. **R. J. Fick, J. D. Erickson, D. G. W. Earl, D. D. E. Weisshaar**
852. Scent properties of *trans*-cinnamaldehyde. **E. Cshui, M. M. O'Conner, S. J. Blevins, C. M. McCoy**
853. Soluble-polymer supported synthesis of triazole libraries under thermomorphic conditions. **P. L. Osburn, D. Bertschman**
854. Steric and electronic effects of substituents on the rate of allene cyclopropanation. **M. K. Farrugia, J. R. Frost, T. M. Gregg**
855. Structure activity relationship of a novel non-nucleoside epigenetic anticancer agent. **R. A. Hickerson, C. Mwakwari, A. K. Oyelere**
856. Structure-activity studies in a well-defined oligovalent system. **M. V. Hager, A. R. Urbach**
857. Structure-defining interactions involving the nitro group in crystalline "bridge-flipped" isomeric phenylhydrazones. **J. D. Leavell, W. H. Ojala**
858. Studies in the preparation of Grignard reagents from *ortho*, *meta*, and *para* substituted secondary benzylic chlorides and bromides. **P. E. Williams, D. A. Counce, R. A. Kjonas**
859. Studies on sulfur-mediated oxidation of alcohols with chiral sulfides. **M. A. Clinedinst, A. C. J. Coffey, R. W. Fitch**
860. Studies toward the synthesis of lunamarine. **L. K. Amos, M. S. Leonard**
861. Withdrawn.
862. Study of linked ferrocene compounds in cyclic voltammetry and host-guest chemistry. **D. L. Sellers, G. Brueggem, B. W. Baldwin**
863. Syntheses and reactivity of (naphthalen-2-yl)ethynyl and (phenanthren-9-yl)ethynyl arenyldynes. **M. L. Chang, J. D. Spence**
864. Synthesis and antibiofilm activity of a diverse library of oroidin analogs employing an efficient reductive acylation reaction. **A. Aquino, T. E. Ballard, J. Richards, C. S. Reed, C. Melander**
865. Synthesis and biochemical analysis of 1-(1,2,3-triazolyl)-D-glucopyranose. **P. Norris, N. D. Mensah, C. H. Lottie, S. Knapp**
866. Synthesis and characterization of deoxyglucose derived low molecular weight organogelators. **S. Coleman, S. Cheuk, G. Wang**
867. Synthesis and characterization of fluorescent conjugated polymers with pendant cyclodextrin receptors for the detection of EDCs. **J. M. Fuller, C. B. Murphy**
868. Synthesis and characterization of new acetylpyrazine thiosemicarbazones. **M. Beck, K. Steelman, E. C. Lisc**
869. Synthesis and characterization of new chromone semicarbazone and thiosemicarbazone compounds. **E. Stoner, E. C. Lisc**
870. Synthesis and characterization of nona-thiophene oligomers and the effects of oxidation patterns. **Z. M. Boser, T. M. Pappenfus, L. M. Hinkle, K. A. McGee, K. R. Mann**
871. Synthesis and cyclization of bis-(2-trimethylsilyl)ethynyl)sulfide. **N. Conneely, D. Thomson**
872. Synthesis and evaluation of a seleno-derived hypervalent iodine reagent. **W. D. Andert, M. M. Logan, R. Stowe, L. M. Kirk, A. N. French**
873. Synthesis and PET reactions of multi-functionalized O-alkyl oximes. **M. M. Logan, H. J. P. De Lijser**
874. Synthesis and photophysical characterization of 2-hydroxynaphthalene-1-yl methylene hydrazine carboxamide as anion sensor. **O. A. Oladeinde**
875. Synthesis and reduction of alpha-halo ketones. **R. Erfani, R. E. Rosenberg**
876. Synthesis and self-assembly of a guanine derivative in aqueous media. **A. L. Collazo-Ramos, M. Garcia-Arriaga, J. M. Rivera**
877. Synthesis and studies of 5-azido-2-methoxy-1,3-xylyl-18-crown-5. **C. T. Dishinger, J. R. Povlatis, B. N. Storhoff**
878. Synthesis and thermal study of cyclopropyl-substituted bicyclic vinylcyclobutane derivatives. **A. J. Nocket, P. A. Leber**
879. Synthesis of β -fluoroamides and amines. **K. McLallen, M. Druelinger**
880. Synthesis of 1-N-substituted cyclised pyrazoline analogs of thiosemicarbazones as potential antiamebic drug. **K. B. Austin, M. Phay, D. A. Espinosa, D. D. Von Fliessen**
881. Synthesis of ¹³C-labeled chrysenes for soil sorption studies. **J. Nogueira, L. Phun, P. Wang, C. H. Jaworek-Lopes**
882. Synthesis of a 1,3,5-trisubstituted benzene ring in the development of site-switchable DNA-binding miniproteins. **L. Atwater, M. Hutchinson, L. Zullo, V. Bianco, T. A. Knoerzer, J. L. Mascareñas**
883. Synthesis of a biphenyl-based phosphoric acid for chiral Brønsted acid catalysis. **E. G. Gutierrez, L. K. Ackerman**
884. Synthesis of a carbohydrate-modified analog of KRN7000. **K. Camara, M. Khalili, A. R. Howell**
885. Synthesis of a new class of possible antitumor drugs: 9-Hydroxyaminoacridines. **N. S. Duncan, J. Taylor, M. W. Mosher**
886. Synthesis of a new humic acid model and its reactions with monochloramine. **K. E. Mitrovich**
887. Synthesis of a novel cubane-based chiral ligand and its application in asymmetric reactions. **M. L. Ingalsbe, R. Priefer**
888. Synthesis of a novel oxazolindione antimicrobial. **L. Nguyen, J. T. Ippoliti**
889. Synthesis of a peptidomimetic tertiary amide in the development of site-switchable DNA-binding miniproteins. **B. Hauck, N. Hopkins, V. Dodero, T. A. Knoerzer, J. L. Mascareñas**
890. Synthesis of an unexpected major product from the reaction of 2,2,4,4,6-pentachloro-5-cyclohexen-1,3-dione with ammonia. **L. A. Tatum**
891. Synthesis of beta-ketoesters via reactions catalyzed by quinine derivatives. **C. E. Miccoli, M. R. N. Garrett**
892. Synthesis of chiral crown ethers and their use as phase transfer catalysts. **J. R. Blanton, R. Clark**
893. Synthesis of copper (I) sensitive fluorescent compounds for use in imaging in living cellular systems. **A. Callaghan, M. Druelinger**
894. Synthesis of derivatives of 3-aminoquinazolinone and 2'-deoxyguanosine as potential protein tyrosine kinase inhibitors. **K. D. Wyatt, F. N. Ngassa, L. A. Witucki**
895. Synthesis of dihydropyranones by tandem metathesis. **K. P. McGrath, K. J. Quinn**
896. Synthesis of dihydroxyurea derivatives using dimethylthiocarbonate. **M. R. Uehling, N. A. Yakelis**
897. Synthesis of electron-rich dehydrobenzannulenes for incorporation into multicomponent sensors. **C. P. Miller, J. Beck, D. Johnson, K. Russell**
898. Synthesis of enamines, a precursor to neolignans. **N. Crouse, J. Zhang**
899. Synthesis of functionalized isoluminol derivatives. **A. R. Knoff, J. T. Ippoliti**
900. Synthesis of heterocyclic salts as muscarinic agents for Alzheimer's disease application. **C. Marrero, J. Boulos**
901. Synthesis of high molecular weight primary alcohols. **N. Hasling, E. Naughton, R. E. Milofsky, B. Stevens**
902. Synthesis of medium-sized bicyclic fused ring systems via fragmentation of cycloadducts derived from tandem cyclization-cycloaddition reactions. **S. A. Lee, X. Wei, M. J. Furtess**
903. Synthesis of methane and propane gas hydrates with organic additives. **J. C. Kuruc, S. Gravelle**
904. Synthesis of mono- and disubstituted malononitrile derivatives: Carbon alkylation selectivity. **B. Ricketts, R. L. Miller, R. E. Sarmelson**
905. Synthesis of soluble, photoluminescent bisoxadiazoles: Potential OLED materials. **M. L. Rodriguez, C. R. Kemnitz**
906. Synthesis of thiols with multiple amide groups for evaluation of phase separation in gold:thiol self-assembled monolayers. **K. Hoffmann, R. C. Chambers**
907. Synthesis of trihydroxylated pyrrolidines as glycosidases inhibitors. **S. Roderiques, L. J. Liotta**
908. Synthesis of [Ru^{II}(bpy)₂(NCS)₂] derivatives and their use as dye-sensitizers in nanocrystalline solar cells. **J. T. Kirner, J. E. Elbert**
909. Synthesis, purification, and characterization of a new selenocysteine derivative. **A. L. Schroll, P. R. Jarvis**
910. Synthesizing and reacting bromoalkenes to produce aziridine and heterocycles. **E. A. Driscoll, M. Lindsay, C. J. Jasperse**
911. Synthetic glycolipids as mimic cell surface receptors for shiga toxins 1 and 2. **T. L. Batts, S. S. Iyer, A. A. Kulkarni**
912. Synthetic strategies toward tetrahydrofurans involving double diastereoselective nucleophile-promoted aldo-lactonizations and subsequent applications to bioactive natural product synthesis. **K. M. Arendt, K. A. Morris, D. Romo**
913. Synthetic work toward ferrocene containing porphyrin-like macrocycles. **R. M. Obrien, A. Gebauer**
914. Template directed polymerization. **K. A. Schuett, M. Maddox**
915. Toward isostructural isomeric benzylideneanilines: A severely nonplanar conformation forced by 2,6-disubstitution. **A. L. Gerten, W. H. Ojala**
916. Toward polyhydroxy substituted verdazyl free radicals. **D. J. R. Brook, X. Mai**
917. Toward the development of (CUG)_n repeat RNA binding peptides targeting myotonic dystrophy type 1. **D. P. Curran III, B. L. Miller**
918. Tracking the photophysical properties of perylene oligomers as a function of geometry. **S. Westcott, A. Clark**
919. Understanding antiaromaticity through heterocyclic dianions. **M. H. Black, N. Mills**
920. Unexpected reactivity of simple alkyl derivatives of 1,10-phenanthroline. **I. M. Klein, S. J. Kraft, K. L. H. Cunningham**
921. Use of a bicyclo-[3.3.0]-octane system as a precursor for cyclopentane rings containing three contiguous stereocenters. **A. N. Brenner, D. K. Dillner**
922. Use of chemostat selection for isolation of microbes for biocatalysis of crude glycerol to value-added products. **A. T. Hynes, D. R. Caprioglio, D. L. Dillon**
923. Use of sulfone-substituted ketenes in synthesis of beta-lactams and cyclobutanones. **L. Myers, J. Schesser, T. Locascio, K. Stituka, A. T. Beard**
924. Using high speed ball milling to study the stereochemistry of the Wittig reaction. **J. Mack, R. A. Schmitz, W. Shearouse**
925. Using microwave heating to promote the Heck reaction. **G. A. Buckholtz, E. M. Landis, P. M. Smith**
926. Using recyclable nitration catalysts as an environmental and economical alternative to nitration of activated aromatic rings. **T. J. Whitcomb, D. J. Oostendorp**
927. Virtual screening of carbohydrate processing enzymes against polyhydroxylated pyrrolidines, pyrrolizidines, and indolizidines I: α -galactosidase, β -galactosidase, α -glucosidase, and α -mannosidase. **K. R. Overly, M. M. Barden, R. C. Kurker**

The official technical program for the 237th National Meeting is available online at oasys2.confex.com/acs/237nm/techprogram/.

Section M

Salt Palace Convention Center
Hall 5

**Undergraduate Research Poster Session:
Physical Chemistry** Cosponsored by PHYS
and SOCED

N. Bakowski, *Organizer*

12:00–3:00

- 928.** Acid-base reactions in 2-D: A scanning tunneling microscopy investigation of an acid terminated self-assembled monolayer. **R. E. Matsuda**, K. E. Johnson
- 929.** Analyzing the binding of nevirapine and rilpivirine to HIV-1 reverse transcriptase through computationally derived charge optimization. **M. Minkara**, M. Radhakrishnan
- 930.** Bioelectrochemistry of Venus flytrap. **H. Carrell**, A. G. Volkov
- 931.** β -Amino acid conformational energies and solvent effect. **A. Vida**, F. Ngassa, J. Song
- 932.** Bulk chirality: The influence of molecular asymmetry on the phase behaviors of the mesomorphic 2,7-diacyl fluorenes. **A. A. Pribram-Jones**, G. R. Van Hecke
- 933.** Cellular electron transport in the mitochondrial inner membrane: Pathways of initial electron transfer. **C. P. HO**, M. Hoang, X. Zheng
- 934.** Changing the electric field to increase the efficiency of ion mobility spectrometers. **L. Viehland**, **J. L. Regan**
- 935.** Characterization of solvent effects in Triton X-100 molecules. **R. H. Lo**, D. J. Aschaffenburg
- 936.** Comparison of rules of additivity and DFT in predicting ^{13}C NMR shifts of anisole derivatives. **E. C. Despeaux**, A. J. Stambaugh, J. B. Foresman, K. M. Halligan
- 937.** Computational investigation of the leucine transport mechanism in LeuT_{AA}. **B. A. Merchant**, T. J. Dick, J. D. Madura
- 938.** Computational modeling of nonlinear optical absorption in metallophthalocyanines. **P. A. Cox**, K. E. Johnson
- 939.** Computational study of TiH_5^+ and CH_5^+ . **M. A. E. Joyce**, J. M. Brom
- 940.** Contact electrification of liquid electrets. **G. A. Bernard**, G. K. Kaufman
- 941.** Creatine and beta-alanine stability and kinetics analyzed using NMR and HPLC. **K. Edwards**, T. Wallner
- 942.** Determining the binary phase diagram of n-dodecyl-(beta)-D-glucopyranoside in water. **C. H. Giammanco**, K. K. Karukstis
- 943.** Developing carbons for electrochemical double layer capacitors. **R. Mansfield**, C. R. Swartz
- 944.** DFT study of hydration in the neutral and zwitterionic fluoroquinolone antibiotic flumequine. **C. A. Casillas**, R. C. Binning, D. Baceilo
- 945.** DFT study of the ferrocene redox potential. **M. G. Guthrie**, L. E. Roy, E. R. Batista
- 946.** Dicyanamide: Its role in energetic ionic liquids. **C. M. Carlin**, M. S. Gordon
- 947.** Direct imaging of the photodissociation of OBrO . **D. C. Manion-Fischer**, K. S. Dooley, W. Harshbarger, S. W. North
- 948.** Econometric differential scanning calorimeter. **C. M. Hill**, J. Gryko
- 949.** Effects of ion and water channels blockers and uncouplers on the *Dionaea muscipula* Ellis trap closure. **K. J. Coopwood**, A. G. Volkov
- 950.** Electrochemical, spectroscopic, and theoretical studies of commonly used pyridine-based ligands. **E. Stennett**, A. Klostermann

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- 951.** Enthalpy change for the chemiluminescent oxidation of luminol. **J. Beri**, C. Salter
- 952.** Excess thermodynamic functions of n-hexan-1-ol or cyclohexan-1-ol + n-alkane mixtures using viscometry, dilatometry, refractometry, and laser light scattering. **M. P. Cyffka**, M. Jang, C. L. Kalcic, G. R. Van Hecke
- 953.** Excited state coupling of adjacent thymine nucleobases. **C. Kozak**, S. Matsika
- 954.** Factors that control the surface orientation of polymers. **S. B. Moxley**, A. D. Curtis, B. J. Nielson, J. E. Patterson
- 955.** Finding an equation for Λ^* to describe hydrochloric acid solutions to 579 K and 100 MPa. **D. Mayorov**, G. H. Zimmerman
- 956.** Fluorescence of ozone-sulfur dioxide van der Waals complexes. **J. A. Thomas**, D. Albrecht, M. S. Elioff
- 957.** Ground and excited state conformational analysis of methyl salicylate and other substituted phenols. **A. Gilmore**, N. Richards, J. W. Ribblett
- 958.** Formation and metastable fragmentation of hydrogen sulfide cluster ions. **H. A. Hargrove**, W. J. Porter, D. A. Hales
- 959.** Photofragmentation of hydrogen sulfide cluster ions. **W. J. Porter**, H. A. Hargrove, D. A. Hales
- 960.** Ground and low-lying excited states of C_2O_4 . **A. Findlater**, J. Song
- 961.** Ground state and low-lying excited states of NiC_2 . **T. Affandi**, A. Findlater, J. Song
- 962.** High resolution spectra of the $\text{AuF } D^1\Sigma^+ - X^1\Sigma^+$ and $C^1\Pi - X^1\Sigma^+$ transitions. **B. J. Knurr**, E. K. Butler, T. D. Varberg
- 963.** High resolution spectroscopy of the $E-X$ system of TaO . **T. K. Mahle**, Z. W. Morrow, B. J. Knurr, T. D. Varberg
- 964.** High-resolution IR spectroscopy of nitromethane: An explosive study. **J. M. Stephany**, M. D. Schuder
- 965.** High-resolution single-crystal X-ray structure and electron density determination of 6-aza-uracil. **G. Fontenot**, E. D. Stevens
- 966.** Hydrolysis of parathion in a liquid-liquid biphasic system. **B. A. Parker**, J. M. Coppola, H. A. Charlier Jr., M. W. Hill
- 967.** Identification of enantiomeric interactions in zeolites by solid state NMR. **T. Duong**, J. Ruiz Carreon, E. Martinez, J. Rios, C. Son, D. Cizmeciyan
- 968.** Immobilization of polyoxometalates on functionalized silica. **A. Tremaine**, M. A. Everest
- 969.** In search of X: EXAFS characterization and computational structural models of RNR intermediate X. **D. N. Ashong**, E. M. Sproviero, V. S. Batista
- 970.** Innovative method for measuring particle motion in a spouted fluidized bed. **E. E. Patterson**, J. Halow
- 971.** Investigating para-hydrogen induced polarization (PHIP) in hydrogenation reactions. **D. C. Bailey**, S. J. Kohler
- 972.** Investigating the network structure of type I collagen as a function of temperature and concentration via confocal microscopy. **L. M. Leone**, Y. Yang, L. J. Kaufman
- 973.** Investigation of liquid crystal binary phase diagrams exhibiting reentrance calculated by the equal Gibbs energy method. **T. A. McQueen**, G. R. Van Hecke
- 974.** Kinetic study of self-assembled monolayer deposition via Sonogashira coupling reactions under microwave heating conditions. **C. B. Hall**, C. B. Murphy
- 975.** Mechanism of the metabolism of flavonoids with cytochrome p450: Applications of computational chemistry. **D. R. Branson**, E. Dahlke
- 976.** Methane-to-methanol conversion on first-row transition metal oxide cations. **C. Hauger**, J. Brown, W. J. Jackson, E. D. Glendening, T. M. Fromm
- 977.** Modification of diblock copolymer thin-film morphologies by the addition of a fullerene derivative. **E. Nasca**, H-W. Lu, S. M. Baker
- 978.** Molecular dynamics simulations of methane motion in clathrate hydrate cages. **L. L. Pollum**, J. Goldsmith, L. B. Lewis, C. R. Bieler, C. C. Martens
- 979.** Molecular electronics: Tunneling devices with semiconducting leads. **A. J. LeVee**, E. V. Prodan
- 980.** Monitoring the effects of irradiation of ethylenediaminetetraacetic acid over titanium dioxide thin films using attenuated total reflectance infrared spectroscopy. **J. M. Shafer**, C. B. Vidican, E. D. Rames, A. M. Conflitti, P. M. Walworth, K. C. Lanigan
- 981.** Networks of correlated amino acids with a role in the mechanical response of fibrinogen to tension. **K. E. Haines**, R. I. Dima
- 982.** Nighttime measurements of NO_3 and N_2O_5 in equilibrium with NO_x and O_3 . **A. Molina**, S. W. North, K. Perkins, J. N. Geidosch
- 983.** NMR and molecular modeling studies of 2,3-diaminophenazine. **E. J. Malow**, J. Locker
- 984.** Nonideality in the binary phase diagrams of homologous 4'-n-alkyl-4-cyanobiphenyls. **J. M. Cobb**, G. R. Van Hecke
- 985.** Photodegradation of chlorophenol with dye-sensitized titania. **J. C. Kuruć**, **M. C. Sherman**, S. Gravelle
- 986.** Pseudo rate law determination of FD&C Green No. 3. **S. G. Rohrbacher**, M. R. Joseph
- 987.** Quantitative analysis of flavonoid content in teas and evaluation of antioxidant activities. **B. M. Kurt**, E. Dahlke
- 988.** Quantum dynamics simulations in MAD-NESS. **T. A. Barnes**, R. J. Harrison
- 989.** Sequence-dependent changes in PNA-DNA duplex conformations. **J.-L. Demers**, T. D. Shepherd
- 990.** $[\text{Ru}(\text{bpy})(\text{dmbpy})(\text{phen})]^{2+}$ as a luminescence probe for phase transitions in glycerol-water mixtures. **T. N. Van**, V. A. Schram, B. H. Milosavljevic
- 991.** Sequence-dependent structural differences in RNA-DNA hybrids. **D. Floisand**, T. D. Shepherd
- 992.** SERS measurements with a miniature Raman spectrometer. **M. Sullivan**, L. Zhang, W. A. Burns, S. W. Reeve
- 993.** Size controlled growth of sexithiophene islands on silicon oxide: Toward spatially resolved interfacial charge transfer studies in organic solar cells. **L. L. Kelly**, O. L. A. Monti
- 994.** Spectroscopic characterization of prodan encapsulated within the nanocavities of cyclodextrins. **A. R. Lee**, K. K. Karukstis
- 995.** Spontaneous 2-D nanostructures formed from mixtures of diblocks and triblocks. **T. Neiman**, S. M. Baker
- 996.** Stopped-flow enzyme-kinetics of the oxidation of o-phenylenediamine by hydrogen peroxide. **K. Birscsak**, J. Locker
- 997.** Structural characterization of ligand-bound glucose/galactose binding protein. **J. L. Garza**, T. C. Messina
- 998.** Study of bioelectrochemical effects of thermal shock in higher plants using high speed data acquisition. **R. D. Lang**, A. G. Volkov
- 999.** Surface adsorption effect on alcohol denaturation of cytochrome c. **R. A. Davidson**, M-C. Su
- 1000.** Surface-enhanced Raman scattering of 4-mercaptobenzoic acid-functionalized silver-gold sol-gels. **K. E. Sours**, B. Gilbert
- 1001.** Surface-enhanced Raman scattering of p-(dimethylamino)cinnamaldehyde: Theory and experiment. **D. Morgan**, B. D. Gilbert
- 1002.** Surface-enhanced Raman scattering of p-aminothiophenol on $\text{Ag}_{100-x}\text{Au}_x$ alloy nanoparticles. **V. A. Treadaway**, B. D. Gilbert
- 1003.** Withdrawn.
- 1004.** Surface-enhanced Raman scattering of polyphenyloxidase and inhibitor/substrate complexes. **T. L. Beaver**, B. Gilbert
- 1005.** Theoretical studies of peptide nucleic acid (PNA) monomers. **H. Cho**, T. Affandi, R. R. Pandey, J. Song
- 1006.** Theoretical study of the vibrational and electronic structure of magnesium and calcium silicate clusters. **P. Blachly**, H-S. Heriberto
- 1007.** Using coumarin 337 as an infrared probe. **D. J. Aschaffenburg**, R. S. Moog

- 1008.** Vacuum level shifts caused by the adsorption of MALDI matrices on metallic surfaces: An ab initio study. **A. S. Venable**, F. Mansilla, O. M. Ramirez, K. A. Beran

Section N

Salt Palace Convention Center
Hall 5

**Undergraduate Research Poster Session:
Polymer Chemistry** Cosponsored by PMSE,
POLY, and SOCED

N. Bakowski, *Organizer*

12:00–3:00

- 1009.** Anionic synthesis of multiblock copolymer compatibilizers. **K. C. Fairley**, D. A. Waldow
- 1010.** Atomic force microscopy of low molecular weight polystyrene/polybutadiene thin film polymer blends with added copolymers. **L. N. Latimer**, D. A. Waldow
- 1011.** Cloud point analysis of critical compositions and temperatures for a polystyrene/polybutadiene blend with added diblock copolymers of varying composition. **M. V. Barich**, D. A. Waldow
- 1012.** Dye-encapsulation and characterization of well-ordered poly(methyl methacrylate) photonic crystals formed on high density organic liquid substrates. **J. S. Wignall**, C. J. Campo
- 1013.** Development of quantitative structure-activity relationships for predictive modeling of dental biomaterials. **J. Biggs**, J. A. Morrill, C. N. Bowman, J. W. Stansbury
- 1014.** Environmentally friendly replacements for phenol-formaldehyde in phenolic urethane foundry binders. **M. A. Patterson**, S. R. Coon, G. Thiel
- 1015.** Integration of polymers and organometallic compounds for use as sensor materials. **S. Peterson**, M. L. Nagel
- 1016.** Ion concentrations at the surfaces of poly(ethylene oxide) films related to the casting substrate's surface free energy. **D. Kordonowy**, C. Smith, D. Teeters
- 1017.** Kinetic study of the radical copolymerization of acrylamide with 1-hexene in the presence of a Lewis acid. **N. Thom**, M. L. Nagel
- 1018.** Lowering cost and increasing the efficiency of ethanol production: Polymer-supported aquaporin Z water-selective membranes. **N. A. Earnshaw**, J. P. Irish, W. Yungans, C. J. Campo
- 1019.** Microwave-assisted suspension polymerization of polystyrene beads. **A. M. Applegate**, J. A. Tripp
- 1020.** New bis-urea building blocks for the preparation of supramolecular polymers. **K. C. Doty**, B. Andrioletti, M. Roman
- 1021.** Observation of block copolymer self-assembly in solution by NMR relaxation. **G. M. Wilmes**, **V. R. Porter**
- 1022.** Relating reaction conditions to regio-regularity in the polymerization of carbodiimides. **V. R. Porter**, J. G. Kennemur, B. M. Novak
- 1023.** Quasi-living synthesis of semiconducting polymers. **N. M. Lewis**, C. K. Luscombe
- 1024.** Structure and morphology of virus-composite fibers fabricated via electrospinning method. **V. G. Braxton**, Q. Wang, Z. Niu
- 1025.** Synthesis of phenol based polymers. **D. M. Raymond**, V. M. Carroll, R. Priefer
- 1026.** Synthesis of heterotelechelic macroinitiators. **T. Tomlin**, H. N. Gray
- 1027.** Synthesis of poly (ary) ethers using a difluoromethyl activated monomer. **S. J. Klein**, R. W. Koptizke
- 1028.** Utilizing polymer coatings for armor protection. **A. J. Knudson**, M. J. Schroeder

‡ Cooperative Cosponsorship

MONDAY EVENING

Section A

Marriott City Center
Olympus B

High School Program

T. Richmond, *Organizer*

L. Kesner, *Organizer, Presiding*

4:00 Introductory Remarks.

4:15 1029. Award Address (James Bryant Conant Award in High School Chemistry Teaching, sponsored by Thermo Fisher Scientific, Inc). Teaching chemistry through food science. **S. B. Mitchell**

5:00 1030. Another look at the fizz keeper: A case study laboratory exercise for high school students. **C. R. Meikelburg**, M. Hellerer, S. H. Szczepankiewicz

5:25 Dinner.

6:25 1031. An innovative high school – university partnership in chemistry.

G. S. Owens

6:50 1032. Hands-on, minds-on POGIL in high school chemistry. **B. Howson**, **D. Krone**

7:15 1033. Visualizing and teaching quantum concepts in chemistry at the high school level. **A. D. Crosby**, D. Dill, P. Garik, A. Golger, M. Z. Hoffman

7:40 1034. Benefit risk analysis with Showing Evidence online interactive. **V. B. Costa**

Section B

Salt Palace Convention Center
Hall 5

Successful Student Affiliates Chapters

N. Bakowski, *Organizer*

8:00–10:00

Activities of the chemistry society of Brigham Young University-Idaho. **G. D. Starks**, D. Collins

Activities of the Texarkana College chemistry club. **B. Jackson**, C. Parsons, P. Harmon

Activities of the University of Northern Colorado ACS Student Affiliates chapter during the 2007-2008 school year.

T. Takeshita

American Chemical Society University of Puerto Rico Mayaguez, RUM. **J. E. Diaz-Arana**, S. Delgado

Barry University chem club/SAACS: "Having a ball with chemistry". **R. Nita**, A. Orvieto, N. Gonzalez, C. Akel, R. Zambrano, G. Fisher

Battle of the chemistry clubs: A great way to meet other Student Affiliates. **L. R. Cullen**, A. M. Hamlin, A. J. I. Perkowski, B. L. Yonke, M. J. Mio, J. L. Tischer

Beyond the SAACS-UPRR-RP: A K-20 domino effect. **I. E. Perez**, I. Montes, E. Robles, S. Román, A. M. Alicea, S. B. De La Torre, A. David, V. Montes, O. Delannoy, J. F. Rodriguez, M. Rivera, Y. B. Chandler, Z. Pérez, S. Vázquez, A. Báez, A. Ortiz, K. Hernández

Biodiesel, demos, explosions... oh my! **B. Medrano**, M. Macomber, C. M. Teague

Broadening horizons with chemistry.

K. J. Brown, V. L. Carpenter, K. M. Duncan, J. M. Brown, K. L. Evans

Cardinal chemistry: American Chemical Society Student Affiliates bond together.

N. L. Mikita, M. R. Wagner, B. Colopy Jr., J. M. Esson, J. T. Tansey, D. H. Johnston

Carroll University goes green.

K. L. Kaney, S. L. Gates, K. Gutschmidt, R. Rawski, E. Thomzik, M. D. Schuder

Catawba College SAACS demonstrates "better living through chemistry". **M. H. Black**, S. Ciborowski, J. W. Honeycutt, N. Griffin, M. S. Sabo, C. A. Miderski, J. Beard

Central Michigan University Student Affiliates 2007-present. **H. A. Miller**, J. D. Mann, S. Majorski

Chemical interactions: Student Affiliates chapter. **H. Magno**, J. Duenas, D. Sandoval, V. Barragan, S. Monroe

Chemistry and community outreach:

Exploring the sciences. **S. Sarti**, A. Lippincott, J. Morales, A. Stengel

Chemistry Club aka POBC at East Los Angeles College. **N. Jimenez**, M. Monrroy, A. Nanez, V. Jaramillo, A. Rivera-Figueroa

Chemistry club interactions at Wilkes University. **N. Harvey**, A. Karaffa, R. Curtis, E. Horvath, D. E. Mencer

Chemistry club members x [kids] = moles of fun at SVSU. **C. M. Alvey**, M. M. London, A. H. Pretzer, A. J. Lucio, C. J. Patterson, D. S. Karpovich

Chemistry of cooperation. **C. M. Anderson**, E. F. Poindexter, C. M. Dodds, L. B. Rogers

ChEmory: Emory University's successful chemistry outreach program. **L. MacKinnon**, D. Mulford, T. Morkin, A. Oddo, P. S. May, A. Lee, P. Zhao, A. Rudd, J. Gissy

Exploring chemistry through the chromatography of colors. **D. Clark**, E. Pospiech, B. Santos, A. Vetter, M. Zawadowicz, X. Zhu, E. W. Fischer

Coloring with carbon chemistry. **W. R. Hess**, J. Hess, D. Grigg, E. Vitaku, P. Whitham, A. Wilkinson, S. Woodbury

Match that element. **M. H. Black**, S. Ciborowski, J. W. Honeycutt, M. S. Sabo, N. Griffin, T. Jandes

Our friend the atom. **C. Paradise**, M. Hampton, B. Wormsbacher, J. Llano, S. Ackerman, C. Pellizeri, B. Rodriguez, K. Ferstadt

Let's get fired up: The chemistry of fireworks! **G. Breugen**, A. Cook, A. Comfort, B. Coyle, S. Hasbrouk, M. Gilbertson, R. Hoffmeyer, C. Howder, S. Lane, E. Piper, D. Sellers, J. Smith, R. Voss, E. Wittenberg, T. Kuntzman, B. W. Baldwin

Clemson University SAACS: Becoming a green chapter. **A. M. Parker**, M. A. Ouimet, J. T. Stritzinger, S. K. Comer, K. M. Stavros

CMSV's new interdisciplinary science club. **A. C. Uruena**, P. Kerrigan, T. J. Pufahl, C. M. Lavelle

Creating chemical connections in our community. **B. Farmer**, M. D. Perry Jr.

Contagious colligative condition of chemistry. **K. Majumder**, Z. Webb, C. Rytbos, A. Baker, M. Warhol, S. A. Petrich

Demos in the dark: Fifteen years of a continuously successful NCW event. **A. A. Lawson**, S. R. Woodruff, D. G. Watson

Dunking chemistry: Understanding basketball through chemistry. **R. L. Figueroa-Diaz**, F. P. Rodriguez-Rivera, E. Reyes

Eastern Oregon University SAACS: A year long commitment to public science education. **K. W. Elliott**, W. R. Parker, C. Davis, D. A. Pixton, A. G. Cavinato

Faces behind the obelisk: The Pacific Lutheran University chemistry club. **E. D. Gordon**, **D. J. Hibbard**, **M. R. Uehling**, N. A. Yakelis

Facilitating active participation in the Xavier University of Louisiana SAACS chapter. **T. Walford**, S. Johnson, O. Otubusin, L. Ausama, A. Hunt, J. McKnight, M. Gray, A. Mahone, M. R. Adams, A. Privett

Excellence in action: Our best recruiting tool. **A. L. Vega**, D. Faría, Y. Astacio, Y. Morales, L. Garcia, L. Martinez, E. Torres, S. Montalvo, N. Caraballo, A. Vélez, M. Rodríguez, A. M. González

Elements that matter the most. **M. E. Gianino**, R. Ayala, G. Castillo, A-P. Lopez, D. R. Brown

Florida International University students bringing chemistry to the community. **F. Hulett**, M. A. Perez, N. Membreno, D. Pinaha, R. Joseph, J. Garcia, A. Tarifa, J. Gonzalez, D. Chau

Florida Southern College: Community outreach and activities. **A. R. Huebner**, M. Politis, L. Wolfe, A. Turnasi, C. V. Gauthier

Future professionals in action! **S. J. Cardona-Gonzalez**, E. Rodriguez Gomez, M. Vazquez-Delgado, W. Molina, N. Rodriguez-Lacomba, S-L. Melechich-Sepúlveda, V. Montalvo-Rivera, M. Ramos-Fontán

GCSU's chemistry club: Outstanding Student Affiliates. **E. White**, D. Wilson, K. Harper, J. N. Cross, E. Williams, C. Neldon, C. H. Lisse

Getting chemically dependent on NKU SAACS. **C. P. Miller**, W. L. Schmidt, S. Karasiova, E-L. Byrd, D. Cunningham, C. D. Girten, K. A. Walters, H. A. Bullen

Going green in the Concho Valley: Green chemistry activities at Angelo State University. **K. N. Pruser**, C. A. Cozby, K. Boudreaux

Green sheet: Second year of spreading the word on environmental issues. **Z. A. Radwan**, S. R. Woodruff, D. G. Watson

Guide to running an active ACS chapter. **T. T. Norgyal**, C. Duncan, J. Resnick, N. Khan, J. Roestenburg, M. Marchio, R. M. Hyde, P. D. Hooker

Having a ball with chemistry. **J. M. Wheatley**, M. J. D'Souza

Having a ball with chemistry at the University of Puerto Rico at Humacao. **N. Torres**, W. de la Cruz, A. V. López, C. Benitez, J. Suárez

Increased communication and revising chapter events leads to increased membership and participation. **L. R. Giacotto**, J. M. Boriatynski

Journey of ACS-SAC-UPRR-Aguadilla's to preserve our tropical island environment. **D. Ruiz-Cortes**, J. A. Mercado-Muniz, B. J. Ramos-Santana, S. Rivera-Gonzalez

Juniata College SAACS: Expecting uncommon reactions. **Z. A. Page**, A. F. Oliveri, J. E. Beaver, A. N. Bloom, N. K. Machamer, J. V. Maxon, T. L. Fisher

Logical presentation of the mechanism of the Briggs-Rauscher oscillating reaction. **K. M. Fecteau**, S. Burrell, J. Ford, H. J. Tracy

Millersville University ACS Student Affiliates. **H. T. VanOrmer**, R. T. Dao, M. Novak, M. J. Tomlinson IV, J. V. Nguyen

The MSUM chem club: A commitment to our campus and community. **S. Toward**

National chemistry week: FIU chapter activities. **Y. Rodriguez**, M. A. Perez, N. Membreno, C. Meneses, D. Pinaha, R. Joseph, J. Garcia, J. Gonzalez, D. Chau, A. Tarifa

NCW 2008: Kickin' it with chemistry. **E. White**, K. Harper, C. Neldon, C. H. Lisse

New goals for the SAACS chapter at Centenary College of Louisiana. **C. E. Miccoli**, L. C. Monds, S. D. Timpa, D. J. Crouthers, M. M. Eskander

Newberry College Student Affiliates chapter of the American Chemical Society: Chemistry for everyone! **A. Amick**, B. Stanley, J. Lee, C. Jenkins, A. Man, C. McCartha

North Georgia's SAACS: Society of chemistry students. **W. Holcombe**, N. Conneely, M. B. McGinnis, C. E. Brown

Northwestern State rocks from the bayou, again. **T. DeVane**, C. Martel, R. Sullivan, M. McLellan, M. Wilkerson, P. Adams, M. Kilgore, A. N. French, G. E. A. Rudd

NTCC SAACS steps into action: Molding kids and educators. **C. Ramirez**, M. T. Chavez

Outreach activities of the Waynesburg University chapter. **J. D. Paiani**, B. W. Davis, R. M. Strong, E. A. Baldauff, R. B. LaCount

Park University C.H.E.M. club: Going green. **I. Pearce**, J. Geoo, D. K. Howell

Passing on the torch of knowledge. **C. Jeannot**, J. Murillo, A. Gonzalez, L. Valentines, L. Revoredo, A. Castillo, K. Sebekos, J. Lanzas, J. Garcia, G. Santisteban, M. Exposito, E. Cruz

Phoenix rising: The revival of an SAC at an undergraduate institution. **J. E. Meany**, J. L. Davis, M. L. Croteau, S. W. Ayers, J. Symmonds, C. D. Abernethy

Professional development, outreach activities and a recycling campaign by the Western Kentucky University Student Affiliates chapter. **C. J. Pruitt**, J. A. Vervynck, R. Zhang, L. L. Pesterfield

Progress of the ACS Student Affiliates at the University of Utah. **R. Pierce**, K. A. Olson, G. Russell, M. Tofaneli, J. Brewer

Quantum mechanics at work: MTSU SAACS chapter activities in 2008. **T. A. Barnes**, S. N. Eason, T. A. Standley, M. J. Swanson, W. C. Simpson, A. Gilani, E. D. Harris, G. D. White, A. C. Friedli

Rebuilding a Student Affiliates chapter: Community service, research conferences, guest speakers, and fund raising. **J. Pope**, A. M. Jones, C. Bogar, J. S. T. Gorman, D. L. Wharry Jr., J. D. Lewis

Recent outreach and recruiting activities of the Lock Haven University SAACS. **K. Range**, A. T. Lattanzi Jr., B. D. Smith, T. Padavano, A. M. Gerardi, J. D. Gilbert, B. D. May

Revitalization of the Student Affiliates chapter at Stonehill College. **S. Rodriques**, N. Dogal, C. Schnitzer, M. F. Hall

Roger Williams University goes biodiesel green. **V. Ortiz**, S. K. O'Shea

Running a successful SAACS chapter on a commuter campus. **J. King IV**, S. M. Schelbie, E. Koehler, J. Cook

SAACS at Georgia Southern University: Greener and better than ever. **A. R. Trzecielski**, G. B. Dazey, C. R. Riley, M. A. Pittman, J. L. Connor, S. S. Lott, C. M. Davis-McGibony

Safety video: Student-organized production to make chemical safety fun. **S. R. Woodruff**, C. Phun, D. G. Watson

Saint Louis University Student Affiliates Chapter. **M. C. Burke**, A. Young, L. Pelster, G. Lehn, B. M. Znosko

San José State University SAACS Chapter. **E. A. Sarina**, A. E. Knight, H. Simon, J. Hughes

SDSM&T Student Affiliates of the American Chemical Society. **J. Meyer**, B. Baker, B. Campbell, C. Thompson, K. Wold

Seattle Pacific University Student Affiliates Chapter: Engaging the community through chemistry. **S. H. Lowman**, M. Gonzalez, O. Lenz, R. Martinez, S. Schale, G. D. Phelan

Sharing chemistry with middle school and high school students through interactive and stimulating educational methods. **K. E. Mitrovich**, M. R. Kempton, J. M. Thomsen, J. J. Thorpe, R. J. Schneider, L. A. Tatum, G. L. N. Smith, S. Y. Choung

SIUE Chemistry Club on campus and in the community. **S. Jewell**, D. Downs, M. T. Sydow, L. Kyrouac, J. Kramer, M. Muehlenfeld, N. Mott

Sparking interest in SAACS activities around campus and beyond. **R. Gibson**, A. B. Moore

Student Affiliates activities at Angelo State University. **C. Cozby**, K. Pruser, K. Boudreaux

Student Affiliates activities at Tennessee Tech University. **D. Ghattas**, D. J. Swartling, D. J. Roubik, A. B. Guerrero, A. Ngy, C. Corbitt, E. Stoner

Student Affiliates at Ball State University. **G. A. Berkeliyeva**, S. Pekovic, R. Short, C. Keyes, R. Detweiler, L. E. Janiga, R. C. Lowe, N. Evans, J. W. Ribblett

Student Affiliates at St. John's successfully network. **M-T. H. Kyaw**, J. Khondoker, R. Younis, M. Zeeman, T. Folks, C. Ng, J. Petrofsky, K. Obiesoba, N. Jaspersen

Student Affiliates Chapter at the University of Texas at Tyler: Transformation from a good to a great chapter. **H. McBride**, T. Tomlin, J. Hein, A. Roth

Student Affiliates of the American Chemical Society at the University of St. Thomas, Houston, TX. **V. Phuoc**, D. Schwartzberg, D. Dolino, M. M. Nunes, E. Calasanz, J. Jabbour, T. B. Malloy Jr.

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The official technical program for the 237th National Meeting is available online at oasys2.confex.com/acs/237nm/techprogram/.

1121. Student Affiliates of the American Chemical Society of Cal Poly Pomona: Successful recruitment of students to promote chemistry. **P. D. Antunez**, K. M. Spaulding
1122. Student involvement at The College of New Jersey: Chemistry matters. **C. G. Collins**, K. R. Davis, E. Tabakin, J. Marrero, S. Wisniewski, R. Pavlick, A. Prybella, M. Nardone, D. Panaccione, A. Fuchs, B. C. Chan, D. A. Hunt
1123. Successful activities presented by the Student Affiliates chapter at South Texas College. **J. A. Gonzalez**, M. Salinas
1124. Successful certification of Boy Scouts over three weekends. **T. H. Zauche**, M. Dallman, J. VanPelt, D. Drochner, E. Rogina
1125. Successful SAACS activities at the University of Central Oklahoma. **H. Tournear**, D. G. New, J. M. Ferguson, A. Tretiak, A. Imel, A. Trifonov, M. E. Roberts
1126. Successful SHU activities. **J. Brickett**, N. Gelinis, J. Ricardo, A. Amin, T. Newell, K. Considine, J. Scata, M. Damianou, L. Ladino, A. Joseph, L. Farber
1127. Successfully hosting the undergraduate programming at a regional meeting. **C. M. Nichols**, J. D. Lingo, M. Block, C. Stogsdill, D. Fields, A. Osinawo, K. L. Stelman, K. W. Felling
1128. Suffolk University: Activities of a successful chapter 2007-2008. **U. Poreci**, A. Ng, M. Fall, M. Hamada, A. Dubary
1129. Supporting chemistry outreach: Fund-raising activities at North Dakota State University. **K. J. Sylie**, D. Pinnick
1130. Teaching through action: Chemistry outreach at North Dakota State University. **D. Pinnick**, K. J. Sylie
1131. University of Toledo SAACS summer camp experiences: What works. **E. P. Kippenhan**, A. Jablonski, M. Matzke, M. Pocio, K. Royer
1132. UT-Martin SAACS bowl for high school science. **C. R. Lowe**, K. Poindexter, R. H. Mitchell, S. K. Airee
1133. USM chemistry club bridges the gap between high school and college chemistry. **E. Gjika**, R. Griffin, E. Lopes, K. M. Fecteau, L. A. Benedict, J. Ford, D. Crockett
1134. UTD: A model for success. **K. Vu**, J. W. Sibert
1135. Withdrawn.
1136. University of Arizona SAACS: Stronger, better, faster, greener. **T. W. Jones**, J. R. Pollard
1137. University of Arkansas at Little Rock American Chemical Society Student Affiliates. **K. E. Gray**, J. S. Gaffney, J. A. Darsey
1138. University of Kentucky Student Affiliates of the American Chemical Society. **S. M. Testa**, O. Ringo, S. Murphey, J. Meyer
1139. UIW chemistry club: In our element. **S. B. Kong**, J. D. Caraway, K. Gil, R. A. Adrian, A. R. Chaudhuri, J. M. Davis, E. E. Gonzalez, B. G. McBurnett
1140. University of Colorado at Denver chemistry club SAACS chapter. **N. Sharma**, V. G. Guirguis
1141. University of Michigan-Flint: Chemistry for all ages. **D. Borgerding**, A. Baxter, A. Sheehy, R. Kelly, M. Wilhelm, J. L. Testler
1142. W&J SAACS: Encouraging chemistry throughout the community. **G. A. Ratti**, L. M. Leone, J. V. Czekaj, D. N. Miller, N. Matsuno
1143. We come from a small place, but we are all big winners. **L. Valentis**, C. Jeannot, J. Murillo, L. Revoredo, A. Juman, K. Sebekos, A. Castillo, K. Prieto, M. Amicarelli, D. Macadar, A. Gonzalez, M. Delgado, M. Exposito
1144. Wonderful life of Student Affiliates at Virginia Commonwealth University. **R. J. Mullenberg IV**, K. Gajjar, D. E. Williams

‡ Cooperative Cosponsorship

Section C

Salt Palace Convention Center
Hall 5

Sci-Mix

J. M. Smist, *Organizer*

8:00-10:00

14-16, 33-34, 45-46, 61, 70, 80, 91, 95, 100-101, 110, 114, 116, 118, 123-124, 139, 144, 160, 169, 182, 193. See previous listings.

1160, 1162, 1198, 1216, 1220, 1226, 1234, 1264, 1279-1280, 1287, 1305. See subsequent listings.

Utilizing the X Factor: Empowering the Next Generation of Women Chemists

Sponsored by WCC, Cosponsored by PROF and CHED

TUESDAY MORNING

Section A

Marriott City Center
Capitol B

Public Outreach: Better Living through Chemistry

Cosponsored by CINF

S. Gupta, *Organizer, Presiding*

8:00 Introductory Remarks.

8:05 1145. Connecting kids, chemistry, and the community: An innovative outreach collaboration with college mentors with kids. **L. A. Porter Jr.**

8:25 1146. Non-chemistry majors' chemistry course: An excellent tool for public outreach. **T. E. Hagan Jr.**

8:45 1147. Public access television: Your chemistry students can be stars! **D. I. Lewis**

9:05 Intermission.

9:15 1148. Working with Navajo communities to determine environmental uranium exposure. **J. C. Ingram**

9:35 1149. Toys, polymers, magic, and food: 30+ Years of public outreach. **D. A. Katz**

9:55 Concluding Remarks.

Section B

Marriott City Center
Capitol A

Naturally Nano

Cosponsored by PRES[‡], NANO, BIOT[‡], I&EC, and INOR[‡]

N. Baig, E. Fallows, K. E. Knope, J. D. Herdman, B. Shyam, and N. Deifel, *Organizers*

8:30 Introductory Remarks.

8:40 1150. P-Ink and Elast-Ink lab to market. **G. A. Ozin**

9:25 1151. Influence of surface chemistry on the behavior of engineered nanomaterials in the environment. **H. Fairbrother**, B. Smith, K. A. Wepasnick, H-H. Cho, W. P. Ball

9:55 Intermission.

10:25 1152. Anticipatory governance of emerging nanotechnologies. **D. H. Guston**

10:55 1153. Biogenic and synthetic polymer-reinforced single crystals: Formation and properties. **L. A. Estroff**, H. Li, M. Kunitake, H. L. Xin, A. Vodnick, S. P. Baker, D. A. Muller

11:25 1154. Toward sustainable nanotechnology: Low infrastructure manufacturing for nanomaterials. **V. Colvin**

Section C

Marriott City Center
Olympus A

Process-Oriented Guided Inquiry Learning (POGIL)

The POGIL Project: Activities and Assessment

R. S. Moog, *Organizer*

J. R. Pribyl, *Presiding*

8:30 Introductory Remarks.

8:35 1155. The POGIL Project: What it is

and how to get involved. **R. S. Moog**

8:55 1156. ANA-POGIL: Process oriented guided inquiry learning in analytical chemistry. **C. N. Dalton**, J. M. Lantz, R. S. Cole

9:15 1157. POGIL in inorganic chemistry courses. **D. C. Finster**, D. H. Johnston, S. C. Jackels, K. J. Donaghy,

K. A. Wozniak

9:35 Intermission.

9:45 1158. Reliability and validity of POGIL assessment rubric using controlled modification of a classroom activity. **C. F. Bauer**,

R. Cole, K. Anderson

10:05 1159. Improving retention in general chemistry: POGIL recitations for weaker math students. **S. L. Bretz**, M. O'Donnell

10:25 1160. Preliminary results of an investigation of the effect of teaching POGIL on student achievement and process skills. **D. M. Bunce**, J. R. VandenPlas, K. Neiles,

E. Flens

10:45 Intermission.

10:55 1161. POGIL and clickers: Dovetailing a paper ChemActivity with a multimedia presentation. **A. Straumanis**, S. M. Ruder

11:15 1162. POGIL-IC: An ideal context for developing problem solving skills. **J. A. Goodwin**, D. L. Slusher,

T. R. Gilbert, D. Hanson

11:35 Panel Discussion.

Section D

Marriott City Center
Capitol C

Research in Chemical Education Organic and Biochemistry

G. Bhattacharyya and D. I. Del Carlo, *Organizers*

D. P. Cartrette, *Presiding*

8:30 Introductory Remarks.

8:35 1163. How do organic chemistry students develop representational competence? **G. Bhattacharyya**, A. Kraft

8:55 1164. Synthesis research ab initio: Understanding the problem-solving experiences of three early career organic synthesis graduate students. **J. R. Raker**, M. Towns

9:15 1165. Analysis of competency quiz data for allied health general chemistry. **T. L. Brown**, **H. M. Sklenicka**

9:35 Intermission.

9:55 1166. Measuring knowledge transfer on three scales: Near, intermediate, and high-resolution, in the undergraduate pre-allied health biochemistry classroom. **J. L. Hilsenbeck-Fajardo**, R. M. Hyslop,

J. P. Suits

10:15 1167. Impediments to visualization among organic chemistry students. **G. M. Bodner**, R. Ferguson,

G. Bhattacharyya

10:35 1168. Visual literacy in biochemistry. **M. Towns**

Section E

Marriott City Center
Olympus B

Online Resources for Chemical Education Green and Organic Chemistry Applications

Cosponsored by CINF

R. E. Belford and J. H. Penn, *Organizers*

R. M. Hanson, *Presiding*

8:30 Introductory Remarks.

8:35 1169. Online tutorials for the organic chemistry laboratory. **L. S. Starkey**

8:55 1170. Using short video tutorials for teaching organic spectroscopy. **A. Kraft**, C. Cruickshank

9:15 1171. Does practice really make perfect? **J. H. Penn**, A. Al-Shammari

9:35 Intermission.

9:45 1172. Synthesis Explorer: Organic chemistry tutorial system for multistep synthesis and mechanism problems with personalized assessment and adaptive problem generation. **J. H. Chen**, P. Baldi

10:05 1173. Online tools for teaching green chemistry: Green Chemistry Resource Exchange and NEMI. **J. L. Young**,

R. Peoples III

10:25 1174. New features of the Greener

Education Materials database. **J. A. Haack**

10:45 Intermission.

10:55 Discussion.

Undergraduate Research at the Frontiers of Inorganic Chemistry

Bioinorganic and Biomimetic Chemistry

Sponsored by INOR, Cosponsored by CHED

TUESDAY AFTERNOON

Section A

Marriott City Center
Capitol B

George C. Pimentel Award in Chemical Education: Symposium in Honor of Henry W. Heikkinen

R. Milne, *Organizer*

D. M. Bunce, *Organizer, Presiding*

1:30 Introductory Remarks.

1:35 1175. There are no heroes? **S. A. Ware**

1:50 1176. *ChemCom*: The early years. **I. D. Eubanks**

2:05 1177. *ChemCom* today and forever. **A. R. Powers**

2:20 1178. ChemCom and Chemistry in Context: Their mutual genesis and philosophy. **C. L. Stanitski**

2:35 Intermission.

2:45 1179. ChemSource: A groundbreaking concept in the career of Henry Heikkinen. **M. V. Orna**, P. J. Smith, J. Schreck

3:00 1180. Unfolding our understanding of visualization in chemistry. **L. L. Jones**

3:15 1181. Impact of a doctoral program in chemical education on a high school chemistry teacher. **R. Milne**

3:30 1182. National science education standards and the paradoxes of leadership. **R. W. Bybee**

3:45 1183. *Award Address* (George C. Pimentel Award in Chemical Education, sponsored by Cengage Publishing and the ACS Division of Chemical Education). To form a favorable idea of chemistry. **H. W. Heikkinen**

Section B

Marriott City Center
Capitol A

Naturally Nano

Cosponsored by PRES[‡], NANO, BIOT[‡], I&EC, and INOR[‡]

N. Baig, E. Fallows, K. E. Knope, J. D. Herdman, B. Shyam, and N. Deifel, *Organizers*

1:30 Panel Discussion: George Washington University Graduate Student Symposium Planning Committee.

2:30 1184. Energy, environment and efficiency: Addressing the engineering trinity by capturing life in materials. **C. D. Montemagno**

3:00 1185. Stimuli responsive coatings: From mechanomutable nanotubes to functionalized living cells. **M. Rubner**

3:30 Intermission.

4:00 1186. Quantum dot nanosensor for use in medical diagnostics and therapeutics. **J. T-H. Wang**

4:30 1187. Nanopreparations for delivery of undeliverable drugs. **V. P. Torchilin**

5:00 1188. Using the fabrication technologies from the microelectronics industry to address the unmet needs in drug delivery. **J. M. DeSimone**

Photographing or recording meeting sessions and/or activities other than your own are prohibited at all official ACS events without written consent from ACS.

5:30 Concluding Remarks:
Thomas H. Lane, ACS President.

Section C

Marriott City Center
Olympus A

The Journal of Chemical Education: Celebrating Classroom Activities

J. W. Moore, *Organizer, Presiding*

- 1:30 Introductory Remarks.
1:35 1189. JCE Classroom Activities: The outreach option. **L. N. Fanis**
1:55 1190. Food color plus chemistry equals fun. **S. S. Hershberger**, A. M. Sarquis
2:15 1191. JCE Classroom Activities: Inspiring enthusiasm for chemistry beyond the classroom. **T. M. Taylor**
2:35 Intermission.
2:45 1192. Building a professional development program featuring JCE Classroom Activities. **D. Wink**, L. R. Marek
3:05 1193. Perfect fit: Molding JCE Classroom Activities to fit your situation. **L. E. Slocum**
3:25 1194. JCE classroom activities: From the inside out. **E. K. Jacobsen**
3:45 Discussion.
3:55 Concluding Remarks.

Section D

Marriott City Center
Capitol C

Sustaining Research at a Predominately Undergraduate Institution: Faculty Departmental, and Institutional Strategies for Success

T. Wenzel, *Organizer, Presiding*

- 1:30 Introductory Remarks.
1:35 1195. Finding the time to be productive in undergraduate-mentored research experiences. **L. N. Gentile**
1:55 1196. Multidimensional separation science research at Spelman College: Opportunities and challenges. **J.-M. D. Dimandja**
2:15 1197. Adapting research to meet regional needs. **A. G. Cavinato**
2:35 Intermission.
2:45 1198. Building a successful research program at Alcorn State University. **S. L. Barnes**
3:05 1199. How to keep undergraduate students interested in their research projects. **A. Holmes**
3:25 1200. Model research environment for students at an undergraduate and masters granting institution. **F. A. Gomez**
3:45 1201. Two strategies for long-term research-program sustainability at principally undergraduate institutions. **M. T. Berry**
4:05 Panel Discussion.

Undergraduate Research at the Frontiers of Inorganic Chemistry Inorganic Materials

Sponsored by INOR,
Cosponsored by CHED

TUESDAY EVENING

Section A

Marriott City Center
Olympus B

High School Program

L. Kesner, *Organizer*

T. Richmond, *Organizer, Presiding*

- 4:00 Introductory Remarks.

**The official technical program
for the 237th National Meeting
is available online at
[oasys2.confex.com/acs/237nm/
techprogram/](http://oasys2.confex.com/acs/237nm/techprogram/).**

- 4:15 1202. Virtual ChemLab. **B. Woodfield**
5:00 1203. Teaching tools: Celebrating 100 JCE classroom activities. **E. K. Jacobsen**, J. W. Moore, L. E. Slocum, L. N. Fanis
5:45 Dinner.
6:45 1204. The chemistry of rockets. **M. A. Kriech**
7:05 1205. Local and national chemical science career opportunities with the US government: Vital national needs of today resolved by chemists of tomorrow. **B. Bennett**
7:25 1206. Building a bridge between high school education and CENTC research: An interactive program for integrated outreach, mentoring, and education on greenhouse gases and global warming. **D. A. Laviska**, K. Stephen, S. M. Sparks, E. M. Pelczar, R. Spink, A. S. Goldman
7:45 1207. Quick and insightful demonstrations for the high school classroom. **J. Vanderhoof**, J. Statler

WEDNESDAY MORNING

Section A

Marriott City Center
Capitol B

High School Chemistry Teacher Professional Development: What Works and How We Know

D. G. Herrington, *Organizer*

E. J. Yeziarski, *Organizer, Presiding*

- 8:30 Introductory Remarks.
8:35 1208. *Connections to chemistry*: A local section professional development activity for high school teachers. S. Lantos, R. Tanner, **M. Z. Hoffman**
8:55 1209. Beyond giving teachers a free lunch: Lessons learned from the 2008 MIST summer teacher workshop at the University of Illinois. **G. M. Adams**, **H. A. Downs**, **J. R. McNeilly**, **T. Hickox**
9:15 1210. High school chemistry laboratory: A contextual- and inquiry-based teaching approach. **S. Basu-Dutt**, G. Marshall, D. Wink
9:35 Intermission.
9:45 1211. RAISE-ing the bar: Effects of research centered professional development for all stakeholders. **D. I. Del Carlo**, J. Ophus, A. J. Van Waardhuizen, M. Busch
10:05 1212. No quick fixes: The long road to inquiry based instruction. **D. G. Herrington**, E. J. Yeziarski
10:25 1213. Learning communities as means of professional development of teachers. **P. M. Nentwig**, M. Lindner
10:45 Intermission.
10:55 1214. Adapting the *Chemistry in the Community* professional development program for the Chicago high school transformation project. **D. Wink**, A. R. Powers, L. Tilton, P. L. Daubenmire, J. Kane, G. Watkins
11:15 1215. Professional development through multilevel coaching with the Chicago public schools' high school transformation project in 10th grade chemistry. **J. Kane**, P. L. Daubenmire, G. Watkins, D. Wink

Section B

Marriott City Center
Capitol A

Green and Sustainable Chemistry Education: Preparing Students for Challenging and Emerging Careers

E. J. Brush and C. Schnitzer, *Organizers*

L. A. Benedict and K. E. Peterman,
Presiding

- 8:30 Introductory Remarks.
8:35 1216. Costa Rica: An ideal natural laboratory for investigating climate change and sustainability issues. **K. E. Peterman**
8:55 1217. Field trips open the eyes of non-science majors to the benefits of understanding science: A student perspective. **B. M. Heyler**, K. E. Peterman

- 9:15 1218. Once upon a curriculum: Greening of general chemistry at Arizona Western College. **S. J. Donnelly**
9:35 Intermission.
9:45 1219. Greening up analytical chemistry: Preparing students for a greener graduate school or industrial career. **L. A. Benedict**
10:05 1220. Green chemistry and the Human Issues Studies Program at Edgewood College. **J. G. Goll**, J. Haebig, J. Dokey, T. Duellman, D. Oryall, M. Mork
10:25 1221. Integrating green and sustainable chemistry at Bridgewater State College: New challenges in preparing students for emerging career opportunities. **E. J. Brush**
10:45 Intermission.
10:55 1222. An undergraduate's perspective on biodiesel research. **E. K. Dombrowski**, C. Schnitzer, K. Jackson, H. Trieu
11:15 1223. Developing research skills and work ethic toward our future aspirations through undergraduate research on biodiesel. **A. Bragan**, **J. Martell**, E. J. Brush
11:35 1224. How do we weave sustainability and green technologies as a prominent theme into chemistry education and into the spring 2010 ACS national meeting? **M. C. Cann**
11:55 Discussion.

Section C

Marriott City Center
Olympus A

Process-Oriented Guided Inquiry Learning (POGIL) More POGIL across the Curriculum

R. S. Moog, *Organizer*

D. C. Finster, *Presiding*

- 8:30 Introductory Remarks.
8:35 1225. In depth look at the concepts of nomenclature and chemical bonding in a POGIL classroom vs. a traditional lecture classroom. **M. Hadley**, J. R. Pribyl, P. L. Rambo, J. A. Kaliski
8:55 1226. Facilitation strategies of POGIL-based implementation in high school general chemistry classrooms. **J. L. Hilsenbeck-Fajardo**, B. Williamson, C. Brown, J. P. Suits
9:15 1227. Reflections on the first year of implementing POGIL in nursing majors course. **A. N. French**
9:35 Intermission.
9:45 1228. POGIL implementation and activities for liberal arts chemistry. **J. A. Overly**
10:05 1229. POGIL in the general education chemistry classroom. **C. J. Nichols**
10:25 1230. Development and implementation of POGIL activities supporting an introduction to research course. **D. R. Quirk Dorr**
10:45 Intermission.
10:55 1231. Accenting POGIL with interactive data. **D. Krone**, E. M. Howson
11:15 1232. POGIL-PD: A powerful professional development tool. **T. R. Gilbert**
11:35 Panel Discussion.

Section D

Marriott City Center
Capitol C

Research in Chemical Education Visualization

D. I. Del Carlo, *Organizer*

G. Bhattacharyya, *Organizer, Presiding*

- 8:30 Introductory Remarks.
8:35 1233. Examining chemistry instructors' and general chemistry students' drawn depictions of precipitation reactions to develop a scaffold for visualization design. **R. M. Kelly**
8:55 1234. Changes in students' spatial ability, content knowledge, and attitudes through the use of storyboards and student-constructed animation in college general chemistry. **J. T. Watkins**, V. M. Williamson

- 9:15 1235. How students navigate hypermedia, and how they say they do. **E. M. Epp**, G. C. Weaver
9:35 Intermission.
9:55 1236. Student success with integration and correlation of variables in complex data. **S. D. Wiediger**, S. Jesse
10:15 1237. An investigation of the effective aspects of multiple external representations for students learning chemistry. **B. Postek**, M. B. Nakhleh
10:35 1238. Assessing visual-perceptual skills. **M. T. Oliver-Hoyo**, C. Christian
10:55 1239. Blind students' use of text, and figures to visualize abstract chemical concepts. **P. M. Mayo**, G. Bodner

Section E

Marriott City Center
Olympus B

Online Resources for Chemical Education General Chemistry Applications

Cosponsored by CINF

R. E. Belford, *Organizer*

J. H. Penn, *Organizer, Presiding*

- 8:30 Introductory Remarks.
1240. Withdrawn.
8:35 1241. First-year chemistry course text designed for the 'net generation. **S. G. Wood**
8:55 1242. Meeting student needs: An inexpensive internet-based chemistry textbook. **M. A. Bishop**
9:15 1243. Quantitative analysis of video based instruction to enhance understanding in general chemistry. **T. J. Kaiser**, M. Franciszkowicz, D. E. Flegner
9:35 Intermission.
9:45 1244. OWLBook, an integrated, assignable electronic text. **W. J. Vining**, S. M. Young, R. O. Day, B. Botch
10:05 1245. Cross-disciplinary molecular science education in introductory science courses. **D. J. Yaron**, D. R. Sadoway, L. M. Bartolo, G. Leinhardt, C. Ashe, J. J. Portman, W. C. Carter, M. Karabinos, J. Davenport
10:25 Intermission.
10:35 Discussion.

Undergraduate Research at the Frontiers of Inorganic Chemistry Organometallic Chemistry

Sponsored by INOR,
Cosponsored by CHED

WEDNESDAY AFTERNOON

Section A

Marriott City Center
Capitol B

Novel Applications for Classroom Response Systems: Thinking Outside the Clicker Manual

R. W. Morrison, *Organizer, Presiding*

- 1:30 Introductory Remarks.
1:35 1246. Clickerquestions.com: A repository for classroom response system (CRS) questions. **L. S. Starkey**
1:55 1247. Open-ended assessment of curved arrow notation using clickers. **A. Straumanis**, S. M. Ruder
2:15 1248. Applications of series response questions for general chemistry topics using personal response systems in large classrooms. **C. G. Shepler**, C. T. Cox Jr.
2:35 Intermission.
2:45 1249. Using student response systems as a learning tool to promote guided-inquiry instruction in the large lecture. **J. A. Caughran**, R. W. Morrison
3:05 1250. Guided inquiry-based organic chemistry questions for classroom response systems. **R. W. Morrison**
3:25 Discussion.

Section B

Marriott City Center
Capitol A

Green Chemistry Education: Is it an Advantage in Industry?

R. E. Engler, *Organizer*

B. W. Cue Jr., *Organizer, Presiding*

- 1:30 Introductory Remarks.
1:35 **1251.** Green chemistry education: A necessity in industry. A. S. Cannon, J. E. Pyers IV
2:05 **1252.** Elements of sustainability. A. Wallin
2:35 Intermission.
2:45 **1253.** Why GSK needs people trained in green chemistry. D. Constable, C. Jimenez-Gonzalez, R. K. Henderson
3:15 **1254.** Impact of the green chemistry summer school on industrial career paths. J. L. Young, R. Peoples III
3:45 Intermission.
3:55 **1255.** Incorporating green chemistry concepts into the chemical engineering curriculum. C. L. Kitchens
4:25 **1256.** Green chemistry education: An essential component of MBA training and business innovation. A. Larson

Section C

Marriott City Center
Olympus A

Advances in Teaching Inorganic Chemistry Cosponsored by INOR[†]

K. A. Walters, *Organizer, Presiding*

- 1:30 Introductory Remarks.
1:40 **1257.** VIPER: A resource and community for teaching inorganic chemistry. L. A. Watson, H. J. Eppley, M. J. Geselbracht, A. R. Johnson, B. A. Reisner, J. L. Stewart, B. S. Williams, E. Benatan, E. R. Jamieson
2:00 **1258.** How closer online ties to colleagues can change an inorganic chemistry course: The long spiky tail of VIPER. B. S. Williams
2:20 **1259.** The Chemmies: A multimedia inorganic chemistry project in a general chemistry course for majors. N. A. Yakelis
2:40 Intermission.
2:50 **1260.** Using online homework in an advanced inorganic chemistry course: A good idea? J. S. Overby
3:10 **1261.** Just what do you put in a one-semester inorganic class anyway? K. A. Walters
3:30 Panel Discussion.

Section D

Marriott City Center
Capitol C

Research in Chemical Education Active Learning

G. Bhattacharyya and D. I. Del Carlo, *Organizers*

L. S. Langdon, *Presiding*

- 1:30 Introductory Remarks.
1:35 **1262.** Which students do clickers help the most? J. MacArthur, L. L. Jones, M. R. Asirvatham
1:55 **1263.** A comparison of a traditional lecture demonstration method and a participatory science lecture demonstration method on students' content mastery in a large enrollment chemistry course for nonmajors. D. M. Majerich, J. S. Schmuckler
2:15 **1264.** Impact of an educational strategy based on multiple intelligences theory (MIT) on satisfaction, attitude toward science, and academic achievement of undergraduate chemistry students. S. Rivera-González
2:35 **1265.** Using an eBook, group-learning, and reporting to promote concept-construction in a general chemistry program. S. H. Szczepankiewicz, P. Sheridan, R. M. S. Gregorius

- 2:55 Intermission.
3:15 **1266.** Correlation between student success factors and rate of self selection into PLTL workgroups. B. B. Ratcliff, J. S. Carver
3:35 **1267.** Taking the lecture out of lecture hall: Teaching with learning assistants in an introductory chemistry course. R. A. Krystyniak, M. Buerkley, M. A. Dvorak
3:55 **1268.** Metacognition development in the cooperative problem based laboratory: Perspectives of first year teaching assistants. S. Sandi-Urena, M. M. Cooper, T. A. Gatlin, R. Stevens

WEDNESDAY EVENING

Undergraduate Research at the Frontiers of Inorganic Chemistry Sponsored by INOR, Cosponsored by CHED

THURSDAY MORNING

Section A

Marriott City Center
Capitol B

General Papers Strengthening Programs

D. S. Domin, *Organizer*

R. C. Bauer, *Presiding*

- 8:00 Introductory Remarks.
8:05 **1269.** Learning communities and core science education. M. C. Gelabert, W. deProphetis Driscoll, N. P. Richardson
8:25 **1270.** Cooperative efforts for sustainable development in the general chemistry program. E. E. Simanek
8:45 **1271.** The effects of collaborating learning techniques in organic chemistry. A. Azadnia
9:05 Intermission.
9:15 **1272.** Developing a new chemistry curriculum in the Netherlands. J. H. Apotheker
9:35 **1273.** New role of a chemistry TAP Team at a Bal/HCG university. B. B. Ratcliff, M. Richards-Babb
9:55 **1274.** Correlating teaching methodology and learning style quantitatively using student scores and qualitatively using student surveys in general chemistry. J. Lauer
10:15 **1275.** Chemistry-specific writing: Using move structures to help students follow conventional organizational patterns in journal-quality papers. M. S. Robinson, F. L. Stoller
10:35 Concluding Remarks.

Section B

Marriott City Center
Capitol A

General Papers Science Majors

D. S. Domin, *Organizer*

R. C. Bauer, *Presiding*

- 8:00 Introductory Remarks.
8:05 **1276.** Teaching environmental chemistry in a liberal arts setting. J. Beard
8:25 **1277.** Criminalistics II: A course in forensic DNA biology. K. M. Elkins, C. G. Tindall
8:45 **1278.** Chemistry and biology of brewing. An interdisciplinary course. P. D. Hooker
9:05 Intermission.
9:15 **1279.** Project-based learning in a chemistry majors instrumental chemical analysis laboratory. D. E. Mencer
9:35 **1280.** Low-cost electronic kits as instructional aids for introducing electro-analytical methods into the analytical and instrumental analysis courses. D. G. Sykes, R. Kreuter

† Cooperative Cosponsorship

- 9:55 **1281.** Silver nanoparticle synthesis in a robust one-pot room temperature reaction. A. Orbaek, M. N. Phillips, C. A. Nichol, M. E. R. McHale, A. R. Barron
10:15 **1282.** Musical chemistry: First music of the universe. M. M. Kumber
10:35 Concluding Remarks.

Section C

Marriott City Center
Olympus A

Process-Oriented Guided Inquiry Learning (POGIL) Laboratory and the Science Writing Heuristic

R. S. Moog, *Organizer*

F. J. Creegan, *Presiding*

- 8:00 Introductory Remarks.
8:05 **1283.** Putting POGIL into the laboratory. F. J. Creegan
8:25 **1284.** NMR, electronegativity, and periodic trends: A POGIL laboratory. M. A. Everest, J. M. Vargason
8:45 **1285.** Providing resources for instructors to teach using guided-inquiry in the laboratory. T. J. Greenbowe
9:05 Intermission.
9:15 **1286.** Impact of the science writing heuristic on student research. J. C. Kuruc
9:35 **1287.** Normal laboratory vs. the science writing heuristic. W. A. Wallace
9:55 **1288.** Students' ability to visualize chemical reactions in a POGIL-SWH laboratory course. R. A. Morgan Theall
10:15 Panel Discussion.

Section D

Marriott City Center
Capitol C

Research in Chemical Education Professional Development

G. Bhattacharyya, *Organizer*

D. I. Del Carlo, *Organizer, Presiding*

- 8:00 Introductory Remarks.
8:05 **1289.** Women graduate students' career choices in chemistry. M. L. Grunert, G. M. Bodner
8:25 **1290.** Professional identity in chemistry: Development and assessment. T. Fetters, B. Walls, G. Bhattacharyya
8:45 Intermission.
9:05 **1291.** "Maybe I choose to learn more." Findings from a research based laboratory case study. K. F. Green, L. J. Nikstad, G. Szeinberg, G. C. Weaver
9:25 **1292.** Ethics: Are my students prepared to make the right decision? P. M. Mayo
9:45 Discussion.

THURSDAY AFTERNOON

Section A

Marriott City Center
Capitol B

General Papers Analysis and Synthesis

D. S. Domin, *Organizer*

C. E. Ballard, *Presiding*

- 1:00 Introductory Remarks.
1:05 **1293.** Study of aza nucleophiles as catalysts of the Morita-Baylis-Hillman reaction. C. E. Ballard

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- 1:25 **1294.** Combustion analysis of solid-state glucose based rocket fuel. S. Holland, K. E. Garrison, J. C. Easdon
1:45 **1295.** Toward affordable computational kinetics for combustion processes. F. Louis, S. Canneau, J.-F. Pauwels
2:05 Intermission.
2:15 **1296.** Withdrawn.
2:35 **1297.** Factors affecting stereoselectivity of fluorinated beta-lactam formation. L. T. Mathews, K. E. Garrison, J. C. Easdon
2:55 **1298.** Synthesis of 8-(ethyl, 3-propenoate)-9-bromo-2-fluoro-6,7-dihydro-5H-benzocycloheptene. M. H. Silveira
3:15 Intermission.
3:35 **1299.** Synthetic and thermodynamic study of the propellant fuel, 3,6-bis(1H-1,2,3,4-tetrazol-5-ylamino)-1,2,4,5-tetrazine (BTATz). D. D. Swanson
3:55 **1300.** Study of the formation processes of collagen nanofibers via electrospinning. C. S. Flor
4:15 Concluding Remarks.

Section B

Marriott City Center
Capitol A

General Papers High School and Non-Science Majors

D. S. Domin, *Organizer*

E. A. Gardner, *Presiding*

- 1:00 Introductory Remarks.
1:05 **1301.** Project SEED: Strategies and successes. K. M. Elkins, E. S. Ball, R. J. Price II, D. L. Dillon, A. Noble, A. Hanson, S. M. Schelle
1:25 **1302.** Current state of safety in high school chemistry classrooms. M. Richards-Babb, J. Robertson-Honecker, J. Bishoff, K. D. Fisher
1:45 **1303.** Illustrating organic chemistry principles with drug and food additive molecules in a general/organic/biological chemistry course for health major students. R. Swisher
2:05 Intermission.
2:15 **1304.** Identification of thermodynamic systems: A laboratory practice that serves as a conceptual tool for nonchemists or chemical engineers. G. Camargo Vargas, A. Altamar, J. E. Tirano
2:35 **1305.** Teaching forensic chemistry to non-science majors. E. A. Gardner
2:55 **1306.** Color science laboratory exercises in art and theatre. M. C. Gelabert
3:15 Concluding Remarks.

CHAS

Division of Chemical Health & Safety

D. M. Decker, *Program Chair*

OTHER SYMPOSIA OF INTEREST:

Green and Sustainable Chemistry Education: Preparing Students for Challenging and Emerging Careers (see CHED, Wed)

Integrating Nanoscience into the College and High School Classroom (see CHED, Sun)

Naturally Nano (see CHED, Tue)

Green Chemistry (see YCC, Mon)

Small Chemical Businesses and Nanoscience (see SCHB, Tue)

SOCIAL EVENT:
Executive Committee Luncheon: Sun