

TECHNICAL PROGRAM

E. Mansfield and R. Richards, Program Chairs

WEDNESDAY EVENING

Westin Westminster
WB I/II
Wednesday Evening Keynote

C. Gabel, Presiding

7:00 1. A combinatorial and distributed search for semiconducting oxides that photoelectrolyze water. **B. A. Parkinson**

THURSDAY MORNING

Westin Westminster
WB IV
Energy

E. Mansfield, R. Richards, Organizers
P. Hsieh, R. Watt, Presiding

8:00 2. Experimental and kinetic analysis of 1-Butene pyrolysis: Molecular weight growth from olefin. **K. Wang, A. A. Shoaibi, S. M. Villano, A. M. Dean**

8:20 3. Reduced pressure advanced distillation curve analysis of marine diesel fuel. **P. Y. Hsieh, K. R. Abel, T. J. Bruno**

8:50 4. Viscosity of Alaska heavy oil saturated with methane. **A. Bazyleva, M. W. Liberatore**

9:10 5. Ignition Quality Tester (IQT): An alternative for characterizing combustion kinetics of low volatility fuels. **E. Osecky**, G. Bogin, M. A. Ratcliff, J. Luecke, J. Y. Chen, B. T. Zigler, A. M. Dean

9:30 6. Preparing samples for analysis by x-ray spectrometry. **J. V. Thomas**, C. R. Wilson

9:50 Intermission.

10:10 7. Coal gasification with a composite catalyst. **R. Monterroso**, M. Fan, T. Popa

10:30 8. Catalytic coal gasification using iron catalyst. **T. Popa**, M. Fan

10:50 9. Ferritin as a charge separation photocatalyst in an artificial photosynthesis system. **R. K. Watt**, R. J. Hilton, T. Smith

11:20 10. Recycling Artificial Light Energy with Photovoltaics. **A. E. Wang**, J. G. King, C. Stephen

11:40 11. Dye-sensitized solar cells with dyes from plants indigenous to Botswana. **M. Hopkins**, L. Nguyen, S. Sathiaraj

Westin Westminster

WB III

Fuels of the Future: Biomass

A. Dean, Organizer, Presiding

8:00 12. Identifying new routes to improve cellulase enzymes for biofuels production with computer simulation. **G. T. Beckham**

8:40 13. Isolation and characterization of lignin-degrading microorganisms from rainforest soil. **K. F. Reardon**, X. Huang, K. Dunn, N. Santhanam, S. R. Decker, D. K. Manter, J. M. Vivanco

9:20 14. Photons to fuels: Manipulating metabolic partitioning to improve bioenergy carrier yields in algae. **M. C. Posewitz**, R. E. Jinkerson, V. H. Work, S. D'Adamo

10:00 Intermission.

10:20 15. Mechanistic modeling of fast pyrolysis of cellulose to predict bio-oil composition. **L. J. Broadbelt**, V. Ravikrishnan, H. B. Mayes

11:00 16. Lignin model pyrolysis: A computational approach. **A. Beste**, A. C. Buchanan

**Westin Westminster
Cotton Creek II
Physical Chemistry**

**E. Mansfield, R. Richards, *Organizers*
D. Buckley, J. Knight, *Presiding***

8:00 17. FTIR study of ammonia nuclear spin conversion in solid parahydrogen. **M. Ruzi, D. T. Anderson**

8:20 18. Degenerate Femtosecond Pump Probe Studies of Lead Sulfide Nanocrystals at the Band Gap. **D. M. Buckley, A. P. Spencer, D. Baranov, T. L. Courtney, D. M. Jonas**

9:00 19. X-Ray study of compounds formed by Substituted pyridines and Pyperidone with Dicarboxylic Acids . **B. Sandhu, K. Sawyer, M. Fonari, T. Timofeeva**

9:20 20. Probing reaction mechanism of DNA hairpin folding/unfolding by rapid-mixing stopped-flow kinetics. **R. K. Nayak, O. B. Peersen, K. B. Hall, A. K. Van Orden**

9:40 Intermission.

9:55 21. Enhancing nitrosation efficiency and tunability in polymer systems. **J. Joslin, M. Reynolds**

10:15 22. Hydrophobic contributions to the membrane docking of the C2A domain of synaptotagmin 7: mechanistic contrast between isoforms 1 and 7. **D. S. Brandt, M. D. Coffman, J. J. Falke, J. Knight**

10:55 23. Adaptive-partitioning QM/MM simulations of proton hopping between hydronium ion and water molecules. **S. Pezeshki, H. Lin**

11:15 24. Cold chemistry in parahydrogen quantum solids: What Arrhenius didn't tell you. **M. Ruzi, D. T. Anderson**

**Westin Westminster
Cotton Creek I
Nuclear Chemistry**

**E. Mansfield, R. Richards, *Organizers*
D. R. Porterfield, J. Braley, *Presiding***

8:20 25. Analysis of heat source plutonium using gamma spectrometry with FRAM spectral analysis software. **S. C. Myers, D. R. Porterfield, N. R. Carver, R. K. Jump, L. A. Foster**

8:40 26. Nuclear and Radiochemistry at the Colorado School of Mines. **J. C. Braley**

9:00 27. Evaluation of LANL TA-55 RLUOB natural radiation background using gamma spectrometry. C. M. Hejde, **D. R. Porterfield**

9:20 28. Establishment and operation of detection facilities for radioactivity in Japan. **J. S. Morton**

9:40 29. Development of a new method for determination of plutonium and americium-241 in process aqueous samples. J. D. Auxier II, **D. R. Porterfield**, J. A. Trujillo

Westin Westminster

WB II

Reactions in Lipid and Lipid-Like Environments and Applications of the Chemistry

D. Crans, *Organizer, Presiding*

8:30 30. Supramolecular chemistry at the interface: Nanoparticle-stabilized microcapsules. **V. M. Rotello**

9:15 31. Surfactant modified nanoparticles, generation of SERS substrate and selective analyte detection. **B. Baruah**

9:50 32. Hydrophobic placement of fluorescein in anionic microemulsions. **F. L. Fontes**, J. B. Saeger, C. D. Rithner, N. E. Levinger, D. C. Crans

10:10 Intermission.

10:20 33. Enhancing the competence of liposomes as carriers. **G. R. Negrete**, A. M. Mfuh

10:55 34. Correlating Proton Transfer Dynamics To Probe Location in Confined Environments. **M. Sedgwick**, R. L. Cole, C. D. Rithner, D. Crans, N. Levinger

11:15 35. Connecting the dots: The link between the anti-diabetic effects of vanadium dipicolinate complexes and their behavior in Langmuir phospholipid monolayers and AOT reverse micelles. **S. J. Bonetti**, A. G. Sostarecz, E. Gaidamauskas, S. Distin, N. E. Levinger, D. C. Crans

Westin Westminster

Ballroom Foyer

Biochemistry and Chemical Biology Posters

E. Mansfield, R. Richards, *Organizers*

9:00 - 11:00

36. Structure of a new Zincin protease, NleC, an enteropathogenic *Escherichia coli* Type III Secretion System effector responsible for cleaving NF κ B subunit RelA. **M. M. Turco**, M. C. Sousa

37. Identification of imidazole-modified RNA sequences that mediate the formation of nanoparticles from dihydroxybis(ammonium lactato) titanium(IV). **C. Florance**, D. Feldheim, B. Eaton

38. Resolution and physicochemical properties of enantiomers of antiepileptic drugs containing an α -substituted amide group. **S. Bentum**, J. A. Torres, A. V. Krivoshein

39. In-silico study of RNA aptamers: comparison with experiments. **J. Vacek Chocholousova**, J. Vacek, J. J. Widmann, I. Majerfeld, R. Knight

40. NMR structural study of a hyperactive insect antifreeze protein. **R. S. Farver**, M. Shabbir-Hussain, R. Balogh, C. R. Battisti, **K. Varga**

41. Reducing product inhibition in β -glucosidase enzymes. **D. Granum**, G. Patterson, C. M. Maupin

**Westin Westminster
Ballroom Foyer
Catalysis Posters**

E. Mansfield, R. Richards, *Organizers*

9:00 - 11:00

42. Aggregation of LiCB₁₁Me₁₂ in non-coordinating solvents. **M. Hurtgen**, J. Michl

43. Photocatalytic, structural, and optical properties of group IIIb alloyed CoII/CoIII_{2-x}M_xO₄:Fe (M = Al, Ga, In) combinatorial libraries. **P. Newhouse**, B. Parkinson

**Westin Westminster
Ballroom Foyer
Energy Posters**

E. Mansfield, R. Richards, *Organizers*

9:00 - 11:00

44. Biocompatibility of ionic liquids on phototrophic microorganisms and use in isoprenoid extractions. K. S. Lovejoy, L. E. Davis, L. M. McClellan, E. N. Schmidt, C. K. Sanders, A. J. Lou, R. E. Del Sesto, **D. T. Fox, A. T. Koppisch**

45. Ordered hybrid thin films from poly(3-hexylthiophene) block copolymers for photovoltaic applications. **M. Kern**, S. Boyes

**Westin Westminster
Ballroom Foyer
Forensic Chemistry Posters**

E. Mansfield, R. Richards, *Organizers*

9:00 - 11:00

46. Use of Multiple Labeled Drug Analogs in the Analysis of Methamphetamine by Time-of-Flight Mass Spectrometry. **H. A. Miller**, J. A. Levisky, C. Corley, S. Iacono, W. Jenkins

47. The analysis of bath salts using solid phase extraction and GC/MS. **K. Evans**

**Westin Westminster
Ballroom Foyer
Inorganic Chemistry Posters**

E. Mansfield, R. Richards, *Organizers*

9:00 - 11:00

48. Synthesis of a Novel Ligand to bind Alkylthiols. A. Hendrix, B. Neighbors, V. Grove, **R. Henry**

49. Solvent vapor bubbles inside dissolved molecular cages: Are they really there? **C. C. Givélet**, J. Wen, J. Michl

**Westin Westminster
Ballroom Foyer
Nano Science and Nano Technology Posters**

R. Richards, E. Mansfield, *Organizers*

9:00 - 11:00

- 50.** Carbon nanotube bottles for incorporation, release, and enhanced cytotoxic effect of cisplatin. **S. Yoong**, J. Li, S. Yap, T. R. Nayak, W. Ang, G. Pastorin
- 51.** Preparation and catalytic activity of phase pure bimetallic carbides of Mo and W. **Y. Regmi**, B. M. Leonard
- 52.** On the blinking behavior of nanocrystals: correlating closed-circuit current measurements with fluorescence intermittency. **D. P. Ryan**, K. Maturova, K. J. Whitcomb, M. P. Gelfand, J. van de Lagemaat, A. Van Orden
- 53.** Size and Morphology of the carbide nano-crystals modified by organic-inorganic hybrid nano-compositions method. **C. Wan**
- 54.** Towards ferroelectric materials using molecular rotors. **P. I. Dron**, L. Kobr, K. Zhao, C. T. Rogers, J. Michl
- 55.** Self-Assembly of Azahelicenes on Ag(1,1,1): STM and Computational Study. **J. Vacek**, J. Vacek Chocholousova, J. Misek, I. G. Stara, I. Stary, B. Such, T. Glatzel, S. Kawai, S. Koch, E. Mayer
- 56.** Fluorescence resonance energy transfer in porphyrin-Cadmium selenide quantum dots systems. **U. TOHGHA**, m. Balaz

**Westin Westminster
Ballroom Foyer
Organic Chemistry Posters**

E. Mansfield, R. Richards, *Organizers*

9:00 - 11:00

- 57.** Organic salts composed of 4-nitrophenol and pyridine derivatives for nonlinear optical applications. **S. I. Draguta**, M. S. Fonari, J. Zazueta, M. Y. Antipin, T. V. Timofeeva
- 58.** X-ray single crystal study of narciclasine. **E. Jucov**, A. Kornienko, M. Masi, M. Antipin, T. Timofeeva

59. Dibenz[c,h]acridines as potential telomerase antagonists. **R. Tennyson**, M. D. Mosher
60. One-pot synthesis of hetero-sequenced shape-persistent macrocycles and 3-D cages through orthogonal dynamic covalent chemistry. **K. D. Okochi**, Y. Jin
61. Bisvelcrands for self-assembly oligovelcralexes. **B. Andrade**, L. M. Gutierrez-Tunstad
62. Consequences of $n-\pi^*$ interaction in oxidation potentials of thioethers with neighboring amide groups. **T. Yamamoto**, M. Ammam, G. B. Hall, G. S. Wilson, R. S. Glass
63. Synthesis and characterization of diferrocenyl phenylthioethers as systems for the study of through-space, intramolecular electronic communication. **G. Meyer**, R. S. Glass
64. Progress on the design, synthesis, and evaluation of anti-tumor aminoacridines. **A. L. Carlson**, **A. B. Galetti**, M. D. Mosher
65. Uptake of perfluorinated alkyl substances in food crops via land applied biosolids. **A. Blaine**, C. Rich, L. Kudryk, L. Hundal, C. Lau, M. Mills, K. Harris, C. Higgins
66. Progress towards the synthesis of a second generation naphthopyran metal-binding photoswitch. **M. Ayala**, N. Rico, A. McCurdy
67. Synthesis and X-ray studies of triene chromophores containing the cyclohexene ring structure for nonlinear optical applications. **R. Ebule**, **C. R. Ordonez**, T. Timofeeva, R. Martinez
68. Structure-based design and synthesis of Mcl-1 inhibitors for the treatment of multiple myeloma. **L. D. Julian**, J. Moen, O. McNulty, C. Yan
69. Design and synthesis of potential inhibitors of tryptophan biosynthesis. **A. M. Jevons**, G. M. Gerardo, R. G. Molloy, M. J. Gage, C. C. Browder
70. Constructing a second-generation library of cystathionine- γ -synthase inhibitors using “click” chemistry. **M. J. Hirschman**, J. M. Ellsworth, M. A. Hipple, R. G. Molloy, M. J. Gage, C. C. Browder
71. Synthesis of Isotopically labeled pyrene. **G. A. Rael**, R. Martinez

Westin Westminster

WB I

Reaching New Heights in Natural Product Synthesis and Medicinal Applications

C. Gabel, Organizer, Presiding

9:00 72. Total synthesis and biological mode of action of macrocyclic histone deacetylase inhibitors. **R. M. Williams**

10:00 73. Enabling chemistry technology: an accelerator of the drug discovery process. **S. Djuric**

11:00 Intermission.

11:10 74. Towards Myriaporone 3/4: Adventures in developing new synthetic methodologies. **C. C. Browder**

THURSDAY AFTERNOON

Westin Westminster
WB IV
Thursday Lunch Keynote

R. Richards, *Presiding*

12:00 75. Greener nanoscience: Advancing applications and reducing implications through material and process design. **J. E. Hutchison**

Westin Westminster
Cotton Creek I
Catalysis

E. Mansfield, R. Richards, *Organizers*
B. Dutcher, M. Mundschau, *Presiding*

1:30 76. Development of homogeneous catalysts for conversion of synthesis gas into fuel ethanol. **M. V. Mundschau**, G. Srinivas, E. W. Andersen, S. D. Dietz, B. J. Clapsaddle, S. C. Gebhard

2:10 77. Designed Material with Water Oxidation-Rate comparable to Photosystem II. B. Nepal, S. Das, **S. Das**

2:30 78. Imparting stability to nanostructured metal oxides for pyrolysis oil upgrading. **K. B. Finch**, D. S. Heroux, R. M. Richards

2:50 79. Intercalation of palladium nanoparticles in the framework of mesoporous silica: Synthesis, characterization and catalytic application. **X. Wang**, M. Shang, J. Li, M. Risky, R. M. Richards

3:10 Intermission.

3:25 80. Catalytic upgrading of biomass pyrolysis vapor over nanoscale MgO(111)-based catalysts. **Z. Zheng**, X. Zhang, C. Mukarakate, C. Cadigan, R. Richards, M. Nimlos

3:45 81. Investigation of catalytic and photocatalytic properties of flower-like ZnO with novel structure. **C. Cadigan**, F. Lin, L. Chen, C. Chou, N. Linck, R. Richards

4:05 82. Catalytic conversions of CO₂ and coal and biomass chars to CO and H₂. **B. Dutcher**, D. Herr, M. Fan

4:45 83. Effect of a nitrogen-doped PtRu/carbon anode catalyst on the durability of a direct methanol fuel cell. **A. R. Corpuz**, T. S. Olson, P. Joghee, S. Pylypenko, A. A. Dameron, H. N. Dinh, K. J. O'Neill, K. E. Hurst, G. Bender, T. Gennett, B. S. Pivovar, R. M. Richards, R. P. O'Hayre

**Westin Westminster
Longs Peak
Chemical Education Workshops**

C. Gabel, Organizer, Presiding

1:30 84. Animated sample problem solutions. **S. G. Wood**, E. Meeks, B. Tobler, G. Nay

**Westin Westminster
WB III**

Fuels of the Future: Biomass/Alternative Fuels

A. Dean, Organizer, Presiding

1:30 85. Catalytic pyrolysis of biomass for fuel production. **S. R. Czernik**

2:10 86. Synthesis and characterization of oxide materials for thermochemical CO₂ splitting using concentrated solar energy. **A. Ambrosini**, E. N. Coker, R. A. Mark, O. A. James, A. H. McDaniel, A. D. Mark, J. E. Miller

2:50 87. Soot oxidation kinetics: pressure and fuel comparisons. **J. S. Lighty**, J. Levinthal, I. C. Jaramillo

3:30 Intermission.

3:50 88. Catalytic and electrocatalytic performance of doped perovskites: Control of oxygen mobility. **U. S. Ozkan**

4:30 89. Ceramic devices for biofuels synthesis. **N. P. Sullivan**

**Westin Westminster
WB IV
Inorganic Chemistry**

**E. Mansfield, R. Richards, *Organizers*
A. Zakutayev, R. Houser, *Presiding***

1:30 90. Two-Coordinate and quasi-two-coordinate early transition metal complexes of chromium, vanadium, and titanium: Synthesis and magnetic studies. **J. N. Boynton**, P. P. Power

1:50 91. Redox chemistry of copper(II) and thioether sulfur-containing polydentate ligands: A model of the oxidation of methionine in the A β peptide. **R. P. Houser**, E. L. Klein, U. Pal Chaudhuri, D. R. Powell, B. M. Anderson, J. T. Michels, B. G. O'Malley

2:30 92. Synthesis and reactivity of (C₂F₅-PONOP)Ir(Cl). **T. G. Parson**, J. J. Adams, D. M. Roddick

2:50 93. Seeking the single molecule magnet: Investigating magnetic characteristics of low coordinate transition metal compounds. **A. M. Bryan**, P. P. Power

3:10 Intermission.

3:25 94. QR-SCMEH-MO Calculations on the [Pt(SnCl₃)₅]³⁻ Complex. **E. A. Boudreaux**

3:45 95. Inverse Design of Missing materials: theoretical prediction of stable V-IX-IV materials and experimental synthesis of TaCoSn. **A. Zakutayev**, X. Zhang, A. Nagaraja, L. Yu, S. Lany, T. O. Mason, D. S. Ginley, A. Zunger

4:25 96. Combinatorial investigation of copper nitride thin films. **C. Caskey**, A. Zakutayev, M. Yang, X. Zhang, J. Vidal, S. Lany, J. Perkins, R. Richards, F. DiSalvo, D. Ginley

4:45 97. Metal Organic Frameworks as Nitric Oxide Biocatalysts. **J. L. Harding**, M. M. Reynolds

**Westin Westminster
Cotton Creek II
Organic Chemistry**

R. Richards, E. Mansfield, *Organizers*
B. Rodgers, K. Djernes, *Presiding*

1:30 98. High Performance, Bio-derived Polyimides from 4-Aminocinnamic Acid. **A. Kumar,** S. Tateyama, N. Takaya, T. Kaneko

1:50 99. Environmentally-degradable, Bioderived Polyamides Converted from Itaconic Acid Salts with Diamines. **M. Ali,** S. Tateyama, M. Okajima, T. Kaneko

2:10 100. Synthesis and characterization of new fluorescent cytidine analogs. **B. J. Rodgers,** N. Vashisht, M. Mulvahill, B. W. Purse

2:40 Intermission.

2:55 101. Purification of kinetically trapped hydrogen-bonded pyrogallolarene assemblies and their application to chemical compartmentalization. **J. C. Chapin,** M. Kvasnica, B. W. Purse

3:15 102. Synthesis and characterization of *S*-nitrosated chitosan derivatives. **A. C. Lutzke,** V. B. Damodaran, M. M. Reynolds

3:35 103. Aryl azides in the traceless Staudinger ligation: Applications to prodrug synthesis. **T. Kirby,** T. H. Koch

Westin Westminster

WB I

Reaching New Heights in Natural Product Synthesis and Medicinal Applications

C. Gabel, *Organizer, Presiding*

1:30 104. Nucleophilic reactions of alkyl azides: From chemistry to biological discovery. **J. Aube**

2:30 105. New Strategies in Organocatalysis. S. Zhang, X. Song, H. Xie, H. Li, **W. Wang**

3:30 106. Natural killer T cell adjuvants for oligosaccharide vaccines. **P. B. Savage,** S. Deng, L. Kain, M. Cornellas-Aragonés, L. Teyton, M. Finn

4:30 107. Catalytic reactions based on the insertion of transition metals adjacent to carbonyls. **C. J. Douglas**

Westin Westminster

WB II

Reactions in Lipid and Lipid-Like Environments and Applications of the Chemistry

D. Crans, Organizer, Presiding

1:30 108. Water droplet chemistry. **M. D. Johnson**, D. C. Crans

2:05 109. Utilizing Langmuir monolayers and liposomes to investigate molecular interactions in cellular membranes in relation to disease progression. **A. G. Sostarecz**

2:40 110. Selective Electron Transport Inhibitors for MDR *Mycobacterium tuberculosis* Infections. **M. Kurosu**

3:15 Intermission.

3:25 111. Effect of cholesterol on the transfer of protons in CTAB reverse micelles by ^1H NMR spectroscopy. **A. M. Trujillo**, B. Baruah, D. C. Crans

3:45 112. Decavanadate Initiates Degranulation of RBL-2H3 Cells by Altering Membrane Fluidity. **D. A. Roess**, A. Al-Qatati, D. C. Crans, G. Barisas

4:20 113. Thermal conversion of algal biomass to soluble sugars and extractable lipids. **L. M. Laurens**, N. Nagle, P. T. Pienkos

4:55 114. A new approach to Biofuels: Cost effective pre-treatment. **M. S. Chorghade**

**Westin Westminster
Ballroom Foyer
Analytical Chemistry Posters**

E. Mansfield, R. Richards, Organizers

2:00 - 4:00

115. Individual effects of headspace oxygen, carbon dioxide, and nitrogen on the oxidative browning mechanism of sweetened fruit sauce packaged in barrier and non-barrier semi-rigid containers. **J. A. Torres**, J. Mulligan, J. Kutner, J. King

116. Use of Intrinsic Data for Certification and Renewal of Holmium Oxide Solution Wavelength Measurement Standards. **A. Dickson**, S. Guthrie, J. Messman

117. Certification Model for Absorbance Microplate Reference Material Standards. **S. Guthrie**, A. Dickson, J. Messman

118. Comparative Separation and Characterization of Dextran and Dextran Derivatives using GPC-RI and LC-ESI-MS. **A. R. Simone**, M. M. Mensack, M. M. Reynolds

119. Utilizing LC/MS to identify degradation products from modified poly (lactic-co-glycolic acid) polymers. **K. M. Altmiller**, M. Mensack, M. M. Reynolds

Westin Westminster
Ballroom Foyer
Chemical Education Posters

E. Mansfield, R. Richards, *Organizers*

2:00 - 4:00

120. Model Catecholate Siderophore synthesis and characterization for a Bioinorganic Chemistry Laboratory. **R. Henry**, M. D. Cullen, D. Shuster, S. Moslet

121. Development of a Chemistry Teaching Assistant Boot Camp at the University of Colorado Denver. **P. Burrow Crocker**, M. Maron, V. Fishback

122. Modern Insights in Drugs Discovery and Harmonic Theory: The Role of Organic Chemistry in Medical Sciences. **A. K. Khanamiryan**

123. Two alternative forms of the reduced van der Waals equation of state. **J. Eberhart**

124. Using PhET simulations to facilitate student inquiry in large lecture settings. **E. B. Moore**, J. M. Chamberlain, R. P. Parson, P. Loblein, K. K. Perkins

Westin Westminster
Ballroom Foyer
Physical Chemistry Posters

E. Mansfield, R. Richards, *Organizers*

2:00 - 4:00

125. Effect of inter-domain linker length on lateral diffusion of synaptotagmin C2AB domains. **K. Chantranuvatana**, J. D. Knight

126. Investigation of Na⁺ Binding to Various Anions in Aqueous Solution by ²³Na NMR Relaxation Measurements. **J. A. DiVerdi, Z. Wang**

127. Electron Spin Relaxation Times for a pH-sensitive triaryl methyl radical. Hanan Elajaili¹, Joshua R. Biller¹, Ilirian Dhimitruka², Valery V. Khramtsov², Sandra S. Eaton¹, and Gareth R. Eaton¹ ¹Department of Chemistry and Biochemistry, University of Denver, Denver, CO 80210 ²Department of Internal Medicine, Pulmonary Division, The Ohio State University, 201 Davis Heart & Lung Research Institute, 473 West 12th Avenue, Columbus, OH 43210. **H. B. Elajaili**

Westin Westminster
Ballroom Foyer
Undergraduate Posters: Chemical Education

E. Mansfield, R. Richards, *Organizers*

2:00 - 4:00

128. Less Cookbook and More Research: The Total Syntheses of JBIR-94 and JBIR-125, Student-Designed Research Projects Conducted in a Sophomore Organic Chemistry Lab. **C. Crawford, M. A. Christiansen**

129. Preparation of enantiomerically pure alcohols and esters using hydrolysis with lipase. S. M. Schelble, **L. Antonik, A. Drotar**

130. Molecules of the Mind that Matter: Development of a New Interdisciplinary Course in Chemistry. **R. Gregory, A. Davey, K. Knaus**

131. Introducing Visual Logic Maps into a Chemistry for Engineers Course. **M. Safi, R. Borman, Y. Zhao, X. Yujie, M. Tang, K. Knaus**

132. Evaluation of the Effectiveness of a New Educational Intervention: Visual Logic Maps for Undergraduate College Chemistry. **M. Tomlinson, R. Borman, M. Tang, K. Knaus**

133. Development of eLms (Efficient Learning Maps) a New Concept Mapping Software Application Based on the Visual Logic Map Teaching and Learning Method. **Y. Xu, Y. Zhao, K. Knaus, M. Tang**

Westin Westminster
Ballroom Foyer
Undergraduate Posters: Energy

E. Mansfield, R. Richards, *Organizers*

2:00 - 4:00

- 134.** Thermodynamics of cellulose solvation in novel solvent mixtures. **R. Das**, J. Chu
- 135.** Sweet sorghum for biofuel production. **K. J. Adams**, P. Mokgethi, E. Peloewetse
- 136.** Metropolitan State University of Denver Biofuels Research Project: A Study on the Feasability of Biodiesel Production. **K. Hensley**, L. Foley, **A. Williams**
- 137.** Analysis of hydrotreated renewable jet fuel mixtures with the composition-explicit distillation curve method. **K. R. Abel**

Westin Westminster
Ballroom Foyer
Undergraduate Posters: Forensics

E. Mansfield, R. Richards, *Organizers*

2:00 - 4:00

- 138.** Effects of wearing lotion on the collection and analysis of gunshot residue (GSR). **J. P. Beach**, D. W. Lehmpuhl

Westin Westminster
Ballroom Foyer
Undergraduate Posters: Physical

E. Mansfield, R. Richards, *Organizers*

2:00 - 4:00

- 139.** Interactions between Chloride Ion and Amino Acids. **J. Church**, S. Pezeshki, H. Lin

FRIDAY MORNING

Westin Westminster
Meadowbrook I
Women in Chemistry

H. Gerhard, *Organizer, Presiding*

- 7:30 140.** History of LaTonya Mitchell career. **L. Mitchell**

8:30 Intermission.

8:45 141. U.S. women in the chemical enterprise – Trends, issues, and interventions. **N. B. Jackson**

9:30 142. How did I get here? The winding path of an academic chemist. **K. M. Elkins**

9:55 143. Opportunities in Quality. **P. Schumann**

10:20 Intermission.

10:45 144. How to define a successful academic career: one woman's journey. **N. E. Levinger**

11:10 145. Not the career I imagined! **K. M. Schulz**

11:35 146. How to use the book African American Women Chemists to teach chemistry and history. **J. E. Brown**

**Westin Westminster
Cotton Creek II
Analytical Chemistry**

**E. Mansfield, R. Richards, *Organizers*
R. Synovec, T. Bruno, *Presiding***

8:00 147. Comparing headspace sampling vs. toluene-trapping for zinc phosphide analysis of prepared baits. **B. G. Abbo, S. F. Volker**

8:20 148. Fast, High Peak Capacity Separations with GC – TOFMS and GC x GC – TOFMS for Metabolomics and VOC Analyses. **R. E. Synovec**

8:40 149. Pyrolysis PLOT Cryoadsorption, or, Headspace Sampling on Steroids. **T. J. Bruno**

9:05 150. Concatenated gas saturation: A reliable method for the determination of low vapor pressures. **J. A. Widegren, T. Bruno**

9:25 151. Transition Metal Cation Separations with a Resorcinarene-based Amino Acid Stationary Phase. **N. LI, R. G. Harrison, J. D. Lamb**

9:45 Intermission.

10:05 152. Distributable chemical sampling and sensing system. **W. G. Kuhr, C. Rhodine**

10:25 153. Field deployable NMR: a new frontier?. **J. A. Frost**, M. Cassidy, J. Donohoue, J. Oviedo, C. Turcios

10:45 154. Porphyrin-DNA conjugates as highly sensitive and selective fluorescence sensors of mercury(II) in water. J. Choi, G. Sargsyan, A. M. Olive, **M. Balaz**

11:05 155. Room temperature solid-matrix luminescence of polycyclic aromatic hydrocarbons from optically clear sugar glasses. **M. Marlow**, C. Lovec, Z. Shovar, J. Robinson

11:25 156. Voltammetric Measurement of Phenols in Plant Materials. **W. G. Kuhr**, C. Hoffman, M. de la Rosa, M. Anderson

Westin Westminster
WB II
Chemical Education

J. Barbera, Organizer, Presiding

8:00 Introductory Remarks.

8:05 157. Reorganized class handouts and in-class activities facilitates retention of factual material and deeper understanding of concepts in Introductory & General Chemistry. **R. D. Walker**

8:25 158. Characteristic learning styles of college students in introductory general chemistry. **S. A. Beckley**, J. P. Suits

8:45 159. Analysis of math skills of general chemistry students in a supplemental instruction program. **C. Gabel**, R. Laremont

9:05 160. PhET Simulations in a large lecture setting: Student use and perceptions. **E. B. Moore**, T. A. Herzog, K. K. Perkins

9:25 161. Effects of general chemistry laboratory curriculum have on student learning outcomes. **L. Burk**, C. Miller

9:45 Intermission.

10:05 162. Visual Logic Maps for General Chemistry: Empirical Study and Preliminary Evaluation. **K. Knaus**, **M. Tang**, R. Borman, M. Tomlinson, Y. Zhao, X. Yujie

10:25 163. Introducing Visual Logic Maps for Undergraduate STEM: Design and Theory. **K. Knaus**, Y. Xu, Y. Zhao, R. Borman, M. Tang

10:45 164. Using an ACS organic practice exam to learn about misconceptions. **S. M. Schelble**

11:05 165. Retention and transfer of prior knowledge from general chemistry to first-semester organic chemistry. C. Gabel, **R. Fitt**

11:25 166. How students' working knowledge of general chemistry concepts map onto their success in organic chemistry. **V. Kiryak**, J. Barbera

Westin Westminster

Flatirons

Biochemistry and Chemical Biology

E. Mansfield, R. Richards, *Organizers*

L. Berliner, *Presiding*

8:00 213. Structure-switching DNA biosensors for protein detection in complex fluids. **A. J. Bonham**

8:20 214. Extending chemical accessibility to SUMOylated proteins. **C. E. Weller**, W. Huang, C. Chatterjee

8:40 215. Petrobactin and commodity chemical biosynthesis through the common intermediate, (-)-3-dehydroshikimate. **D. T. Fox, A. T. Koppisch**, J. D. Welsh, E. N. Schmidt, T. L. Kern, I. Bruzas, K. Hotta

9:00 216. Secret of Monosaccharides. **Z. L. Toth**

9:20 217. Calorimetric and spectrophotometric study of yeast hexokinase II. G. Kresheck, M. Bennes, M. Malihi, J. Lata, **S. Braun-Sand**

9:40 Intermission.

9:55 218. Rigid applications to spin labeling (RASL): Applications to therapeutic molten globule proteins. **L. Berliner**

10:20 219. Evaluating microwave assisted acid hydrolysis in the determination of collagen content using hydroxyproline quantification. **R. S. Stahl**, C. Furcolow, K. C. Hanson-Dorr, B. S. Dorr

10:40 220. Sodium ion translocation through the Gramicidin A channel by QM/MM simulations. **S. Pezeshki**, H. Lin

11:00 221. Computational structure elucidation of benzylsuccinate synthase: A bridge to understanding free radical chemistry in the anaerobic biodegradation of hydrocarbons. **V. S. Bharadwaj**,

Westin Westminster
WB III
Fuels for the Future: Engine/Fuels

A. Dean, *Organizer*
A. M. Herring, *Presiding*

8:00 167. Role of the Ignition Quality Tester as a validation tool for ignition kinetics of low volatility fuels. **G. Bogin**

8:40 168. Understanding the Performance of Advanced Engines Through CFD Simulations With Detailed Reaction Mechanisms. **C. V. Naik**

9:20 169. Biodiesel, cold weather, and polymorphic phase transformation. **R. L. McCormick, G. M. Chupka**

10:00 Intermission.

10:20 170. Coal Refining to Produce a Premium Fuel. **E. G. Meyer**

10:40 171. Assessment of the Composition and Volatility of Liquid Fuels with the Advanced Distillation Curve Method. **T. M. Lovestead, T. J. Bruno**

11:00 172. Aromatic and Nitro Aromatic Content in Exhaust Particles Collected from Industrial Equipment Utilizing Diesel and Biodiesel Blends. **K. R. Jensen, R. L. McCormick, N. Traviss, M. A. Ratcliff, K. J. Voorhees**

11:20 173. Lubricity Evaluation of Volatile and Non-Volatile Components of Ultra-Low Sulfur Diesel and ASTM Reference Fluid A. **R. A. Rorrer, A. J. Hagen, A. J. Slifka**

Westin Westminster
WB IV
Heterocyclics and Bioorganic Synthesis

N. Natale, *Organizer, Presiding*

8:55 Introductory Remarks.

9:00 174. Synthetic routes to 2-isoxazolines. **M. D. Mosher**

9:40 175. 1,3-Dipolar cycloadditions in the preparation of inhibitors of amino acid biosynthesis.
C. C. Browder

10:20 Intermission.

10:35 176. Heteroaryl-dihydropyridines inhibit the multidrug resistance transporter. **N. R. Natale**, H. D. Beall, V. Hulubei, A. K. Kearns, S. B. Mekrantz, D. A. Quincy, S. Steiger

11:15 177. Using Heterocycle Chemistry to Produce Pro-Drugs, Isosteres and Spacer Analogs of Glutamate. K. A. Syed, Y. Belabassi, S. A. Patel, R. J. Bridges, **C. M. Thompson**

Westin Westminster

Cotton Creek I

Contaminants in Aquatic and Terrestrial Environments: Fate, Behavior, and Risks

E. Mansfield, R. Richards, *Organizers*

C. Kinney, *Presiding*

9:00 178. Harnessing the Contaminant Paradigm to Tackle the Problem of Antibiotic Resistance.
A. Pruden

10:00 179. Contaminants of emerging concern in source and treated drinking waters from 25 drinking water treatment plants: pharmaceuticals and waste indicators. **E. T. Furlong**, M. C. Noriega, S. T. Glassmeyer, D. W. Kolpin

10:40 180. Accumulation pharmaceuticals and personal care products in cabbage (*Brassica campestris*) grown in biosolids-amended soils. **C. A. Kinney**, C. S. Holling, J. Bailey, B. Vanden Heuvel

Westin Westminster

Ballroom Foyer

Undergraduate Posters: Biochemistry and Chemical Biology

E. Mansfield, R. Richards, *Organizers*

9:00 - 11:00

181. Interactions between the human C-Reactive Protein and lipid-coated nanoparticles. **N. L. Chon**, **E. R. Kim**, H. Lin, S. Pezeshki

182. Characterizing the binding of enzyme inhibitors at the molecular and ensemble levels. **A. Radcliffe**, B. Pham, S. Cao, P. La, E. Sorin

- 183.** Molecular dynamics simulations of *Escherichia coli* ClC chloride ion transporters with different protonation states of critical residues. **C. Davis**, S. Pezeshki, H. Lin
- 184.** Structure-based design of small molecule inhibitors of Mcl-1 protein. **L. Tyk, C. Johnson-Sasso**, L. Julian, H. Lin
- 185.** Investigating the role of protein-protein interactions in transcriptional activity. **K. A. Norquest, M. Stoddard, Y. Reyna**, A. J. Bonham
- 186.** Structure-switching DNA biosensors for the investigation of oncogenic protein regulatory interactions. **M. R. Preusser, S. R. Schaffner, R. M. Masterson**, A. J. Bonham
- 187.** Optimization of electrochemical biosensors for small molecule and protein detection in biological fluids. **T. Santaus**, A. J. Bonham
- 188.** Mutation Studies on Inosine Monophosphate Dehydrogenase using Computational Methods. **R. S. Galega**, S. E. Braun-Sand
- 189.** Analysis of the combinatorial effects of a dual PI3-kinase/mTOR inhibitor PF-04691502 with the MEK inhibitor PD-0325901. **R. M. Addison**, T. Newton, T. Pitts, S. Leong
- 190.** Thermal denaturation of yeast hexokinase type II studies by DSC in Tris and HEPPSO buffers. **M. Malihi**, G. Kresheck, S. B. Braun-Sand
- 191.** Yeast hexokinase II enzyme kinetics using ultraviolet-visible spectroscopy. **L. Lata**, M. Bennes, S. Braun Sand
- 192.** Effects of surface modified titanium dioxide nanoparticles on a model land plant, *Arabidopsis thaliana*. **M. Nider**, E. Brown, **C. Chan**

**Westin Westminster
Ballroom Foyer
Undergraduate Posters: Environmental**

E. Mansfield, R. Richards, Organizers

9:00 - 11:00

- 193.** Binding energy of ammonia-sulfuric acid clusters in atmospheric nucleation. **N. L. Chon**, S. Lee, H. Lin
- 194.** Kinetic and Mechanistic Studies of the Heterogeneous Reaction of Linoleic Acid and Ozone and its Effects on Hygroscopicity and Redox Activity. **D. Langlois, S. Holladay**, G. Zeng

195. Low pressure distillation in microgravity using commercially available materials as phase separators. **J. Oviedo**, M. Cassidy, R. Charles, J. Donohoue, C. Turcios, J. A. Frost

196. Nuclear Magnetic Resonance spectroscopy in dynamic magnetic environments. **J. Donohoue**, **C. Turcios**, M. Cassidy, J. Oviedo, J. Frost

197. Method for the Extraction and Analysis of Triclosan and Triclocarban in Avian Egg Samples. **A. M. Anaya**, J. J. Sherburne, E. T. Furlong, D. W. Kolpin, C. A. Kinney

Westin Westminster
Ballroom Foyer
Undergraduate Posters: Nano

E. Mansfield, R. Richards, *Organizers*

9:00 - 11:00

198. Freeze casting of alumina composites. **H. M. Bowen**, O. Cervantes, A. E. Gash

199. Optimization of Aluminized Energetic Formulations. **E. K. Avjian**, B. K. Little, C. M. Lindsay

200. Synthesis of Liquid Repellant Fluorinated Silsesquioxane Containing Polymers. **M. Duff**, S. Ramirez, O. Lawal, S. T. Iacono

201. Directed Synthesis of Novel Symmetry-Breaking Helical Nanofilament Liquid Crystal. **A. Gamble**, J. Porada, E. Tsai, D. M. Walba

202. Synthesis of Superhydrophobic and Superoleophobic F-POSS Containing Polymers. **o. lawal**, s. ramirez

203. Bimetallic Carbides as Fuel Cell Catalysts. **J. Stacy**

204. Synthesis and functionalization of small silica nanoparticles. **R. Cherry**, A. Piper, S. Reed

205. Preparation of fluorinated bisphenol-based epoxy resins. **J. Neat**, H. Miller, S. Iacono, S. Kettwich

Westin Westminster
WB III
Fuels for the Future: Biomass II

A. Dean, *Organizer*

A. M. Herring, *Presiding*

1:30 206. Conversion of pentose-derived furans into hydrocarbon fuels. **L. Moens, D. K. Johnson**

1:50 207. Computational Studies of Conserved Binding Motifs for Cellulase Enzymes. **S. V. Sambasivarao, D. M. Granum, C. M. Maupin**

2:10 208. Effect of Hydrogen on the Vapor-Phase Upgrading of Lignin Pyrolysis Products. **A. Stanton, K. Iisa**

2:30 209. Separation technologies used in production of biofuels. **A. J. Eckles**

2:50 210. Hydrogenation of biomass pyrolysis lignin to fuel intermediates. **R. J. French**

3:10 211. Co-liquefaction of Shengli Coal and Corn Stalk. **F. Zhang, D. Xu, Y. Wang, M. Fan**

FRIDAY AFTERNOON

Westin Westminster

WB IV

Friday Lunch Keynote

E. Mansfield, *Presiding*

12:00 212. Nanoparticles for Therapeutics and Diagnostics. **V. M. Rotello**

Westin Westminster

WB II

Chemical Education

J. Barbera, *Organizer*

K. Knaus, *Presiding*

1:30 Introductory Remarks.

1:35 222. Organic chemistry principles in context – A new kind of text. **M. M. Green**

1:55 223. Organic Chemistry Principles in Context: carbocations from high octane fuel to lanosterol; carbanions from fat and sugar catabolism to the synthesis of isopentenyl diphosphate - a backwards approach. **M. M. Green**

2:15 224. Chemistry Textbooks and Their Influence on General Chemistry Instruction. **A. Leontyev**, J. Suits

2:35 225. Flipped organic chemistry classroom. **R. Link**

2:55 Intermission.

3:15 226. Nano First with Atoms First. **D. S. Heroux**

3:35 227. Activity design for learning with interactive simulations: How much guidance is too much? **J. M. Chamberlain**, K. Lancaster, R. Parson, K. K. Perkins

3:55 228. Development And Use of an ACS Practice Full-Year Organic Chemistry Exam Delivered Via Clicker With Instantaneous Feedback. **V. Fishback**

4:15 229. Student created course content based on YouTube videos. **M. W. Liberatore**

4:35 230. Flip-Teaching: Preliminary Findings of a Study with an Undergraduate Organic Chemistry Class. **M. A. Christiansen**

4:55 231. Structural And Functional Organization of Instructor Introductions to Curved Arrow Formalism. **V. Fishback**, L. Jones

Westin Westminster
Cotton Creek I
Environmental Chemistry

E. Mansfield, R. Richards, *Organizers*
J. Kearns, *Presiding*

1:30 232. Herbicide uptake by biochars produced from traditional kiln and low-cost gasifier systems: applications in sustainable decentralized water treatment for developing communities. **J. Kearns**, K. Shimabuku, R. Noikaew, S. Niamjan, N. Reents, E. Mansfield, D. Rutherford, H. McLaughlin, D. Knappe, R. S. Summers

2:00 233. Water-soluble components from biochars: Environmental implications. **C. E. Rostad**, D. W. Rutherford, C. N. Kelly, R. L. Wershaw

2:20 234. Chlorine residual control using biochars to facilitate sustained safe water consumption and wastewater discharges. **R. B. Mahoney**, R. Summers

2:40 235. Thermogravimetric Characterization of Biochar Materials. **E. Mansfield**, J. Kearns

3:00 Intermission.

3:15 236. CO₂ capture and failure characteristics of K₂CO₃/Al₂O₃ in the continuous solid circulation mode. **Y. WU**, X. Chen, M. Fan, W. Dong

3:35 237. K-Ti sorbent based CO₂ separation approach. **A. M. Tuwati**

Westin Westminster

Flatirons

Forensic Chemistry

E. Mansfield, R. Richards, Organizers

K. M. Elkins, Presiding

1:30 Introductory Remarks.

1:35 238. Modifying blood spatter and fingerprint experiments for the forensic science laboratory. **S. M. Will**, S. J. Bonetti

1:55 239. Hydrophobic and hydrophilic ionic liquid mixtures used for explosive analytes. **Y. I. Sarmiento**, H. A. Miller, C. Bridge, M. J. Salyards

2:15 240. Using colorimetric solid-phase extraction (CSPE) to improve presumptive drug testing. **A. A. Hill**, R. J. Lipert

2:35 Intermission.

2:50 241. Detection of mitochondrial DNA single nucleotide polymorphisms in the undergraduate forensic laboratory using real-time PCR and agarose gel electrophoresis. **K. M. Elkins**

3:10 242. Use of the polymerase chain reaction to probe low copy number stochastic results in the undergraduate forensic laboratory. **K. M. Elkins**

3:30 243. Metrology in the Forensic Science Curriculum. **J. Messman**

Westin Westminster
WB IV
Heterocyclics and Bioorganic Synthesis

N. Natale, Organizer, Presiding

1:30 244. Accessing and Harnessing Metalated Intermediates toward the Syntheses of Heterocycles. **E. M. Ferreira**

2:10 245. Bioreductive Prodrugs for the Treatment of Atypical Teratoid and Rhabdoid Tumors. S. Meyer, D. Birks, N. Foreman, **P. Reigan**

2:50 246. Aziridinomitosen cytotoxicity: Role of the C6/C7 electrophilic sites. **D. L. Warner**, S. M. Rink, C. Mallory

3:30 Intermission.

3:50 247. Small-Molecule and Peptide Inhibitors of the Toll-Like Receptors. **H. Yin**

4:30 248. Specialty chemical manufacture: On becoming a captain of industry. **L. J. Westrum**

5:10 Concluding Remarks.

Westin Westminster
Cotton Creek II
Nano Science and Nano Technology

E. Mansfield, R. Richards, Organizers
B. Trewyn, R. Farrer, Presiding

1:30 249. Effect of mesoporous silica nanoparticle morphology on human red blood cell membrane. **M. Joglekar**, R. A. Roggers, Y. Zhao, B. G. Trewyn

1:50 250. Highly efficient photo-assisted reduction of Cr(VI) by heat-treated polyacrylonitrile nanofibers. **E. D. Holt**, N. Shaham Waldmann, Y. Paz

2:10 251. Direct laser writing of conductive 2d structures: Toward the fabrication of 3d microcircuits using direct laser writing. **R. A. Farrer**, D. Bemis, K. Isberg, M. Bender

2:50 252. Surface functionization and immobilization of titania nanotubes/ silica surfaces with zinc or cobalt using simple organic molecules as sensors. **A. Sathyapalan**

3:10 Intermission.

3:25 253. Challenges of solution synthesis of copper zinc tin sulfide nanocrystals. **G. P. Wheeler**, S. Fredrick, S. Riha, A. Prieto

3:45 254. New developments in the utilization of mesoporous nanoparticle materials in the sequestration and delivery of biomolecules from viable plant and microorganism systems. **B. G. Trewyn**

4:25 255. Recent Development in the Preparation, Modification and Photocatalytic Application of TiO₂. **Y. Wang**, M. Tang, M. Fan

4:45 256. Nanostructured surfaces, catalysis and green chemistry. **R. M. Richards**

Westin Westminster

Ballroom Foyer

Undergraduate Posters: Analytical

E. Mansfield, R. Richards, Organizers

2:00 - 4:00

257. Examining structure-function relationships in branched silane-based organogelators using infrared spectroscopy. **J. M. Quiring**, A. J. Carr, K. S. McCain

258. Dye sensitized solar cells: Characterization of metal ligation to monolayers of surface based ligands on titanium dioxide. **C. N. Sherer**, K. S. McCain

259. Developing an *in situ* method to characterize the reaction of silanes to titanium dioxide using attenuated total reflectance infrared spectroscopy. **C. S. Herrera**, K. S. McCain

260. Determination of binding constants of an adenosine meisenheimer complex with γ -Cyclodextrin by UV and LIF capillary electrophoresis. **T. K. Lawson**, **M. M. Hunstiger**, P. W. Tschida, T. K. Green

261. Binding constant determination between trinitrophenylated adenosine and γ -cyclodextrins using fluorescence spectroscopy. **P. W. Tschida**, M. M. Hunstiger, T. K. Lawson, Z. Dai, T. K. Green

262. High-resolution absorption spectra of disubstituted ¹²C and ¹³C glyoxal at UV-visible wavelengths. **N. R. Goss**, R. M. Thalman, G. S. Tyndall, J. W. Hannigan, R. Volkamer

263. Isolation and structure elucidation of a styrylpyrone from the polypore mushroom *Phaeolus schweinitzii*. **J. R. Andersen**, M. W. Bernart, E. C. Wogenstahl

**Westin Westminster
Ballroom Foyer
Undergraduate Posters: Inorganic**

E. Mansfield, R. Richards, *Organizers*

2:00 - 4:00

264. Variations in salt mixtures to elucidate the mechanism of a salt flux synthesis for metal carbides. **G. R. Waetzig**, S. M. Schmuecker, B. M. Leonard

265. Synthesis of unusual mixed valent $[\text{Pd}^{\text{I,II}}_2(-\text{N,S-pyS})_3(\text{P,P-dppm})]$ and $[\text{Pd}^{\text{I,II}}_2(-\text{N,S-bzimS})_2(\eta^1\text{-S-bzimS})(\text{PPh}_3)_3]$ complexes containing heterocyclic-2-thiolates. T. S. LOBANA, **A. KAUR**, R. J. BUTCHER, A. CASTINEIRAS

266. Synthesis of a heterometallic trimer comprising a dithioleneplatinum(II) linked to palladium(II) terpyridine subunits. **M. Cohn**, B. W. Smucker

267. Synthesis and characterization of tetrakis(phenazine)platinum(II) tetrafluoroborate. **E. Selvik**, B. W. Smucker

268. Intense and broad absorption of a supramolecular complex comprising terpyridine-platinum(II) acetylide bridged by porphyrin. **A. Harvey**, S. L. Gould, B. W. Smucker

269. Borate-polymer crosslinking: Significance and delay studies. S. Carlson, **D. Schubert**

**Westin Westminster
Ballroom Foyer
Undergraduate Posters: Organic**

E. Mansfield, R. Richards, *Organizers*

2:00 - 4:00

270. Porphyrin synthesis for use in nanomachines. **A. Hellman**, M. Moore, S. Gould

271. New revolution: exploring rotation in a solid state molecular gear. **B. Clinton**, R. Clark, S. Gould

272. Synthesis of porphyrins for nanomachines. **S. Lee**, M. Moore, S. Gould

273. Effects of Branching and Linker Lengths on Silicon Containing Bisurea Organogelators. **K. Wattenbarger**, A. J. Carr

- 274.** Synthesis and characterization of mono and di-substituted Silane bis-urea organogelators. **C. Corey**, A. J. Carr
- 275.** Branching out: Synthesis and characterization of branched-ester containing bis-urea organogelators. **R. Wright**, A. J. Carr
- 276.** Multivalent dendrimeric peptides as new biomarker probes for the detection of cancer metastasis. **S. K. Coulup**, J. P. Saludes, H. Yin
- 277.** Synthesis of disubstituted 1,2,3-triazoles. **B. Hamill**, M. Calvin, A. M. Schoffstall
- 278.** Microwave-assisted Diels-Alder reaction of a 1,2,3-triazole. **R. Haugberg**, C. Asay, A. M. Schoffstall
- 279.** Synthesis of N-Substituted 3,5-Bis(arylidene)-4-piperidones. **R. M. Lucero**, R. Martinez
- 280.** Rheology and Viscosity Scaling of UCARE™ Polymers. **M. W. Donnelly**, M. Hailemichael, M. W. Liberatore

**Westin Westminster
Meadowbrook I
Chemistry of Brewing**

M. Connors, Organizer, Presiding

2:30 281. Flavor Development During Fermentation. **T. Eppard**

2:50 282. Hop Chemistry in the Brewhouse and Beyond. **R. Christiansen**

3:10 283. The Flavor Stability of Beer: Potential Chemical Changes in Packaged Beer and Relevant Analytical Techniques. **D. Sedin**

3:30 284. Brewing: The Art of Science. **T. Casey**

3:50 285. Managing Fermentation Congener Profiles for Whiskey Production. **J. Via**

4:10 Discussion.

SATURDAY MORNING

**Westin Westminster
WB II**

Chemical Education

J. Barbera, *Organizer*

J. Chamberlain, *Presiding*

8:00 Introductory Remarks.

8:05 286. Dye-sensitized solar cells in the undergraduate chemistry curriculum. **T. M. Pappenfus**

8:25 287. Examination of the inverse electron-demand character of the Diels-Alder reaction of tetrazines, both experimentally and computationally using a frontier orbital analysis. **M. Druelinger, S. M. Schelble, D. Dillon**

8:45 288. Singapore Student Understanding of Chemistry Laboratory Safety Using Questionnaires and Interviews. **W. Schatzberg, B. Zhang**

9:05 289. Lessons from the overhaul of a lower division laboratory program. **R. Link, K. Edwards**

9:25 Intermission.

9:45 290. Expanding the STEM pipeline: How to sow and grow successful ACS Project SEED programs. **S. J. Bonetti, S. M. Schelble**

10:05 291. Integrating the NSF community college transfer student scholarship program at UNC. **R. T. Macaluso, K. A. Pacheco, S. W. Anderson**

10:25 292. Vertical mentoring and collaboration: structure for faculty advancement in the academy. **K. M. Elkins, S. M. Schelble, W. Flemon**

10:45 293. Trends in Ph.D. productivity and diversity in top-50 chemistry departments. **S. Laursen, T. J. Weston**

11:05 294. Changing campus culture via green chemistry. **M. B. Jones**

11:25 295. Poeticizing chemistry: Getting the general public interested in chemistry in a world of dirty power plants, pesticides, and chemical super-funds. **K. [.] Eister**