

**Sunday, June 15, 2008**

**5:00 PM - 10:00 PM**

**Mixed Poster Session I**

Grand Ballroom III

Organizer: Eric T. Sevy, Brigham Young University

- 1** Water Chemistry of the Yakima River: Incorporating Real World Research into the K-12 Schools. **Jacob B. Johnson**, Central Washington University
- 2** Chemical Kinetics: A Turbidimetric Approach to Solving Rate Order with Microlab 10-Color Colorimeter. Kellie Mullen, Terry Helland Jr. and **Timothy L. Sorey**, Central Washington University
- 3** Pseudo-Rate Reaction: Reaction of Ni/pada with NH<sub>3</sub>. **Terry Helland Jr.**, Kellie Mullen and Timothy L. Sorey, Central Washington University
- 4** Projecting Polarimeter for Classroom and Laboratory. **Edward Bain**, Duane Scholz and Timothy L. Sorey, Central Washington University
- 5** Hydrolysis and Coulometry. **Grant Overby** and Timothy L. Sorey, Central Washington University
- 6** Water Hydrolysis and Coulometry. **Zhenya Balandova** and Timothy L. Sorey, Central Washington University
- 7** Integrating Green Chemistry Practices into An Introductory Chemistry Lab. **ACS Student Affiliate Chapter of Utah State University**, Utah State University
- 8** Poster withdrawn.
- 9** Characterization of Naphthenic Acids Solubilized during Hot Water Extraction of Bitumen from Asphalt Ridge Oil Sands. **C. Dustin Clark** and Charley C. Langley, Utah State University - Uintah Basin
- 10** Mechanistic Investigation of the Photochemical Rearrangement of Cinnamyl Acetate. **Katie Comstock**, Nathan Bennett and Steven Fleming, Brigham Young University
- 11** Synthesis of Novel Resorcin[4]Arenes and Their Coordination Chemistry. **Ian D. Kihara**, Joseph S. Gardner and Joshua J. Pak, Idaho State University

- 12** Aggregation Behavior of Cyanine Dyes In Aqueous Solution. **Hussein Samha**, David Baumann, Bryan Clark and Jared Garlick, Southern Utah University
- 13** Muscle Membrane Lipid Changes In Response to Exercise. **Brad A. Roberts**, Daniel R. Sims, Dr. Steven G. Wood and Dr. Matthew R. Linford, Brigham Young University
- 14** Enantioselective Synthesis of Hasubanan Alkaloids Utilizing An Asymmetric Allylation. **Daniel K. Nielsen**, Laura L. Nielsen, Spencer B. Jones and Steven L. Castle, Brigham Young University
- 15** Crystalline "Candy-Canes": A Foray into Multi-Zone Crystal Composites. **Kathryn E. Dorst**<sup>1</sup>, S. Russell Seidel<sup>1</sup>, Sara B. Spector<sup>1</sup>, Abigail V. Hunter<sup>2</sup> and Richard T. Wilkens<sup>1</sup>, (1)Dowling College, (2)Berry College
- 16** Crown Ethers: A Light Twist on An Old Molecule. **Jeffery Hess**, Endrit Shurdha and Joshua J. Pak, Idaho State University
- 17** Effects of a P32T Mutation on Human RdgB Protein Activity. **Hadega Aamer**<sup>1</sup>, Katie Barber<sup>1</sup>, Richard Cunningham<sup>2</sup> and Nicholas E. Burgis<sup>1</sup>, (1)Eastern Washington University, (2)State University of New York
- 18** Computational Insight into the Mechanism of Grignard Formation In Hydrocarbon Media. **Jennifer Teixeira**, K. W. Housley, J. J. Zamora and R. W. Holman, Idaho State University
- 19** Microwave-Assited Synthesis of Phenylene-Bridged Aminophospine Ligands. Kelsey R. Seipel, **Zed H. Platt**, Minh Nguyen and Andrew W. Holland, Idaho State University
- 20** Metal Selectivity for Two Phosphorous Functionalized Silica Polyamine Composties. **Chauncey A. Means**, Edward Rosenberg, Mark Hughes and Varadharajan Kailasam, University of Montana
- 21** Supersonic Jet Spectroscopy. **Benjamin Kent Steinmetz**, Taylor Cline, Nathan Killpack and Steven R. Goates, Brigham Young University
- 22** Synthesis and Analysis of Metal and Metal Oxide Nanoparticles. **Jared Manwaring**, Juliana Boerio-Goates, Rebecca E. Olsen and Brian F. Woodfield, Brigham Young University
- 23** Towards the First Completely Biodegradable Baby Diaper. Preparation of N1,N1'-(alkane-1,4-diyl)Bis(N1-(3-aminopropyl)Propane-1,3-Diamines) by the Catalytic Hydrogenation of 3,3',3'',3'''-(alkane-1,4-diylbis(azanetriyl))Tetrapropanenitriles. **Elmera Peyman** and Travis T. Denton, Eastern Washington University

- 24** The Thermodynamics of the Frustrated Antiferromagnet  $Gd_2Ti_2O_7$ . **Christopher R. Lee**, Claine Snow, Brian F. Woodfield and Juliana Boerio-Goates, Brigham Young University
- 25** Investigation of Non-Aqueous Capillary Electrophoresis as a Separation Technique for Neutral Compounds. **Ben Brenning** and David C Collins, Brigham Young University - Idaho
- 26** Mechanistic Insights into the Diastereoselective Reduction of  $\alpha$ -Fluoroimines. **Whitney R. Hess**, Jennifer Teixeira and Todd Davis, Idaho State University
- 27** Towards Tumor Cell Targeted, Non-Viral Gene Delivery Agents. Preparation of Polyhydroxypolyamines by the BH<sub>3</sub>-THF Mediated Reduction of Polyhydroxypolyamides. **Whitney R. Pinches**, Eastern Washington University
- 28** Studies of Germanium Sulfide Thin Film Deposition. **Patrick J. Whitham**, René Rodriguez, BarJean Phillips and Lisa Lau, Idaho State University
- 29** Synthesis of (*E*)-Ethyl 4-(diethoxyphosphoryl)-4-Oxobut-2-Enoate, a Potential Precursor to Structurally Restricted Analogues of the Neurotransmitter Glutamate. **Daniel L. Dodge**, Alex Pentecost and Travis T. Denton, Eastern Washington University
- 30** Enantioselective Deuteration of Glycols. **Aaron M. Wilkinson**, Idaho State University
- 31** Development of Novel Compounds for the Treatment of Alzheimer's Disease: Synthesis of 2-(pyridin-3-yl)-1*H*-Benzo[D]Imidazole Analogues of GTS-21, a Potent and Selective  $\alpha 7$  Nicotinic Acetylcholine Receptor Ligand. **Matthew M. Duda**, Daniel L. Dodge, Whitney R. Pinches and Travis T. Denton, Eastern Washington University
- 32** Synthesis and Study of Novel Ruthenium Complexes for Use In Dye Sensitized Solar Cells. **Benjamin P. Donahoo**, Dominic X. Denty, Stephanie Nielson, Lisa Lau, Dr. Rene G. Rodriguez and Dr. Joshua J. Pak, Idaho State University
- 33** Photoreactivity of Pyridinium Bis-Retinoid Compounds. **Bryce Harbertson** and Jeremy Koontz, Brigham Young University

- 34** 4,4'-Disubstituted-2,2'-Bipyridine Pt(II) Complexes: Synthesis and Efficacy of Novel Cisplatin Analogs against Cancer Cell Lines. Byron L. Bennett<sup>1</sup>, Alok Bhushan<sup>1</sup>, Lai James C K<sup>1</sup>, **David Grigg**<sup>1</sup>, Brandon Grover<sup>1</sup>, Vikas Sehdev<sup>1</sup>, Gilmore Sara<sup>1</sup>, Van Vo<sup>2</sup> and Casey Hall<sup>2</sup>, (1)Idaho State University, (2)University of Nevada - Las Vegas
- 35** Preparation of Microporous and Mesoporous Silica Supported Metal Oxide Catalysts Using Custom-Made Ionic Liquids as Templates. **Robert A. Haerr**<sup>1</sup>, Divakara Soorly Gopala<sup>1</sup>, Rama R. Bhattacharjee<sup>2</sup> and Ryan Richards<sup>1</sup>, (1)Colorado School of Mines, (2)COLORADO SCHOOL OF MINES
- 36** Sample Preparation Methods for Detecting and Identifying Bacteria Using Matrix-Assisted Laser Desorption/Ionization Time-of-Flight Mass Spectrometry. Robert S. Brown, Philip J. Silva, **Amanda Bingham** and Valerie Harris, Utah State University
- 37** Degradation of Organophosphates Pesticide Methyl Parathion (MP) by Bacillus Species Under the Laboratory Conditions. **Nisar Ahmed Kanhar**, EL-25 BIE USU
- 38** Uptake of Lipid-Coated Microbubbles by Tumors: Drug Delivery by Receptor-Mediated Endocytosis. **Joseph S. D'Arrigo**, Cav-Con Inc. and CCT Pharma
- 39** Photocycloaddition of Silyl-Tethered Allenes. **Crystal Ward** and Steven Fleming, Brigham Young University
- 40** Biosynthesis of the 3,4-Dihydroxybenzoate Moieties of Petrobactin by Bacillus Anthracis. David T. Fox<sup>1</sup>, Kinya Hotta<sup>2</sup>, Cindy C. Browder<sup>3</sup>, Chu-Young Kim<sup>2</sup>, Pat J. Unkefer<sup>1</sup>, Cliff J. Unkefer<sup>1</sup> and **Andrew T. Koppisch**<sup>1</sup>, (1)Los Alamos National Laboratory, (2)National University of Singapore, (3)Northern Arizona University
- 41** Synthesis of Benzothiazole Appended Pyrazoles. **Stanton Q. Smith** and Walter A. Stull, Virginia Military Institute
- 42** Tuning the Optical Properties of Chromonic Mesogens for the Fabrication of Broad Spectrum Polarizer. Gyan Aryal, Liming Huang and **Suk-Wah Tam-Chang**, University of Nevada, Reno
- 43** In Vitro AP-Endonuclease 1 Is Involved In Repair of DNA Single Strand Breaks Containing 3'-Terminal Guanidinohydantoin and Spiroiminodihydantoin Lesions. **Xin Chen**, James G. Muller and Cynthia J. Burrows, University of Utah

- 44** Two New Diterpene Phenols from Incense Cedar Heartwood (*Calocedrus Decurran*s). **Sheeba Veluthoor**<sup>1</sup>, Shujun Li<sup>1</sup>, Rick G. Kelsey<sup>2</sup>, Marc C. Dolan<sup>3</sup>, Nicholas A. Panella<sup>3</sup> and Joe Karchesy<sup>1</sup>, (1)Wood Science and Engineering, (2)USDA Forest Service, (3)Centers for Disease Control and Prevention
- 45** Structural Characterization of Glycopeptide Analogs Related to Enkephalin. **Muthu Dhanasekaran**, Charles M. Keyari and Robin Polt, University of Arizona
- 46** Designing Stable Blood-Brain Barrier-Permeable Glycosylated Enkephalin Analogues for Treatment of Central Nervous Pain. **Yingxue Li**<sup>1</sup>, Edward J. Bilsky<sup>2</sup> and Robin Polt<sup>1</sup>, (1)University of Arizona, (2)University of New England
- 47** Determination of <sup>13</sup>C Incorporation In Palmitic Acid Produced by *Myc*<sup>+/+</sup> and *Myc*<sup>-/-</sup> Rat Fibroblasts Cultured with <sup>13</sup>C Glucose as the Sole Carbon Source Using Gas Chromatography/Mass Spectrometry. Gina Hinton<sup>1</sup>, **Anne Kizerian**<sup>1</sup>, Karen Grant<sup>1</sup>, James A. Campbell<sup>2</sup> and Eric Hoppe<sup>3</sup>, (1)Columbia Basin College, (2)Pacific Northwest National Laboratory, (3)Pacific Northwest Laboratories

**5:00 PM - 10:00 PM**

**Opening Mixer**

Grand Ballroom II

**Monday, June 16, 2008**

**Division of Computers in Chemistry and Physical Chemistry**

**8:00 AM - 12:00 PM**

**Inhomogeneous Electrolytes I**

Grill Room

Organizers: Douglas Henderson, Brigham Young University, Bob Eisenberg, Rush University Medical Center

**8:00** Welcoming Remarks.

- 8:05 48** New Measurements of the Workman Reynolds Freezing Potential Between Ice and Dilute Salt Solutions, for Both Polycrystalline Ice and Single Ice Crystal Faces. **A. D. J. Haymet** and P. W. Wilson, Scripps Institution of Oceanography
- 8:30 49** Study of Polar Fluids from the Yukawa Dipolar Molecular Model. **O.H. Scalise**, La Plata University
- 8:55 50** Water Adsorption in Ion-Bearing Nanopores. **Gren Patey**<sup>1</sup>, Greg Lakatos<sup>1</sup> and Glenn Torrie<sup>2</sup>, (1)University of British Columbia, (2)Royal Military College of Canada
- 9:20 51** Water-Alcohol Mixtures: What Have We Learnt from Molecular Simulations. **Ivo Nezbeda**, Academy of Sciences
- 9:45** Break.
- 10:15 52** Electrowetting at the Nanoscale. **Alenka Luzar**<sup>1</sup>, Dusan Bratko<sup>2</sup>, Christopher D. Daub<sup>2</sup> and Kevin Leung<sup>3</sup>, (1)Virginia Commonwealth University, (2)Virginia Commonwealth University, (3)Sandia National Laboratories
- 10:40 53** Taming Coulomb Interactions In Models for Nonuniform Ionic Fluids and Water. **John D. Weeks**, University of Maryland
- 11:05 54** Numerical Methods for Approximating Electrostatic Interactions. **Jaydeep P. Bardhan**, Argonne National Laboratory
- 11:30 55** Grand Canonical Monte Carlo Investigations of the Electrical Double Layer In Molten Salts. Stanislaw Lamperski<sup>1</sup>, Jacek Klos<sup>1</sup> and **Christopher W. Outhwaite**<sup>2</sup>, (1)A.Mickiewicz University, (2)University of Sheffield

## **Chemical Education**

**8:00 AM - 5:00 PM**

### **POGIL Workshop**

Grand Ballroom I

Organizer: Matt A. Peterson, Brigham Young University

**8:00 AM - 11:00 AM**

### **Undergraduate Programming - Graduate School Breakfast**

Grand Ballroom II

Organizer: Eric T. Sevy, Brigham Young University

## Organic Chemistry

8:20 AM - 12:00 PM

### Total Synthesis and Synthetic Methodology I

Grand Ballroom IV

Organizers: Steven L. Castle, Brigham Young University, Merritt B. Andrus, Brigham Young U

**8:20** Introductory Remarks.

**8:30 56** Enantioselective Organocatalytic Tandem Reactions. **Wei Wang**, Liansuo Zu, Hexin Xie, Jian Wang and Hao Li, University of New Mexico

**9:10 57** Asymmetric Enolate Transformations Under Phase-Transfer Catalysis. **Merritt B. Andrus**, Brigham Young U

**9:50** Break.

**10:10 58** From Targets to Strategies and Back Again: Some Examples from Complex Molecule Synthesis. **Andrew J. Phillips**, University of Colorado

**10:50 59** Complex Natural Products as a Driving Force for Discovery In Organic Chemistry. **Brian Stoltz**, California Institute of Technology

## Physical Chemistry

8:30 AM - 12:20 PM

### Atmospheric & Environmental Chemistry I

Grand Ballroom III

Organizer: Jaron C. Hansen, Brigham Young University

**8:30 60** Sunlight initiated atmospheric chemical reactions. **Veronica Vaida**, University of Colorado-Boulder

**9:30 61** Near-IR Kinetic Spectroscopy (IRKS) of the HO<sub>2</sub> and C<sub>2</sub>H<sub>5</sub>O<sub>2</sub> Self and Cross Reactions. **Aaron C. Noell**<sup>1</sup>, L. S. Alconce<sup>1</sup>, D. J. Robichaud<sup>1</sup>, M. Okumura<sup>1</sup>, S. P. Sander<sup>1</sup>, F. J. Grieman<sup>2</sup>, Craig Taatjes<sup>3</sup> and D.L. Osborn<sup>3</sup>, (1)California Institute of Technology, (2)Pomona College, (3)Sandia National Laboratories

**10:00** Break.

- 10:20 62** Computational Study on the Existence of Organic Peroxy Radical-Water Complexes. **Jared Matthew Clark**<sup>1</sup>, Jaron C. Hansen<sup>1</sup>, Alecia M English<sup>1</sup> and Joseph S. Francisco<sup>2</sup>, (1)Brigham Young University, (2)Purdue University
- 10:50 63** Computational Study on Peroxy Radical Species and Peroxy Radical-Water Complexes Derived from 2-Z Hexenal. Mathew Snow<sup>1</sup>, Seong-Cheol Lee<sup>1</sup>, Derek Osborne<sup>1</sup>, Ryan S DaBell<sup>1</sup>, Jared Clark<sup>2</sup> and **Jaron C. Hansen**<sup>2</sup>, (1)Brigham Young University - Idaho, (2)Brigham Young University
- 11:20 64** Imaging Studies of the Photodissociation Dynamics of Halogen Oxides. **Simon W. North**, Texas A&M University
- 11:50 65** Secondary Organic Aerosol Formation from Reactions of Tertiary Amines with Nitrate Radicals. **Mark E. Erupe**<sup>1</sup>, Philip J. Silva<sup>1</sup>, Derek Price<sup>1</sup>, Quentin Malloy<sup>2</sup>, Qi Li<sup>2</sup>, Bethany Warren<sup>2</sup> and David R. Cocker<sup>2</sup>, (1)Utah State University, (2)University of California, Riverside

## **Inorganic Chemistry**

**8:30 AM - 12:00 PM**

## **Nanoscale Materials**

Uinta II

Organizer: Adam T. Woolley, Brigham Young University

- 8:30 66** Toward the Fabrication of Nanopatterns of Anisotropic Organic Semi-Conducting Materials. Delfin Mahinay, Liming Huang and **Suk-Wah Tam-Chang**, University of Nevada, Reno
- 9:05 67** Separation of Charged Samples In Nanofluidic Channels. **Debashis Dutta**, University of Wyoming
- 9:40 68** Block Copolymer Templated Nanoparticle Arrays for Fluorescence Imaging. **Randall M. Stoltenberg** and Zhenan Bao, Stanford University
- 10:15** Break.
- 10:35 69** Gold and Silver Nanocrescents as Tunable Sensing and Spectroscopy Platforms. **Jennifer S. Shumaker-Parry**, University of Utah

**11:10 70** DNA-Templated Nanomaterials and Constructs. **Adam T. Woolley**<sup>1</sup>, Hector A. Becerril<sup>2</sup>, Jacob T. Stewart<sup>1</sup>, Elisabeth Pound<sup>1</sup> and Yanli Geng<sup>1</sup>, (1)Brigham Young University, (2)Stanford University

## **Analytical Chemistry**

**8:30 AM - 12:00 PM**

### **The Next Generation of Analytical Surface Scientist I**

Uinta I

Organizer: John C. Conboy, University of Utah

**8:30 71** Electrochemical Texturization and Doping of Poly(3-hexylthiophene) (P3HT) Films for Photovoltaic Applications. **Erin L. Ratcliff**, Judith L. Jenkins and Neal R. Armstrong, University of Arizona

**9:00 72** Toward Understanding the Plasma Deposition of Carbon Nitride Materials through Surface, Interface, and Gas-Phase Diagnostics. **J. M. Stillahn** and Ellen R. Fisher, Colorado State University

**9:30 73** Current-Volume AFM. A Novel Technique for Interrogating Interfaces with AFM. **P. Alexander Veneman** and Neal R. Armstrong, University of Arizona

**10:00** Break.

**10:15 74** Colloidal Crystals as Substrates for TIRF Studies of hDOR. **Angela R. Soemo** and Mary J Wirth, University of Arizona

**10:45 75** Using Surface Functionalization to Control Nanoparticle Assembly. **Rajesh Sardar**, UNIVERSITY OF UTAH

**11:15 76** Confocal Raman Microscopy of the Interfacial Region of Liquid Chromatographic Stationary Phase Materials. **Jennifer L. Gasser-Ramirez** and Joel M. Harris, University of Utah

**9:00 AM - 5:00 PM**

### **ACS Workshop - Career Services**

Ski Shop

**Organic Chemistry**  
**9:00 AM - 12:00 PM**  
**Poster Session - Organic**  
Tent

Organizer: Matt A. Peterson, Brigham Young University

- 77** Glycosylated Neurotensin Analogs Exhibit Subpicomolar Potency in the Pharmacoresistant Model of Epilepsy. **Hee-Kyoung Lee**, Liuyin Zhang, Misty D. Smith, H. Steve White and Grzegorz Bulaj, University of Utah
- 78** Intrastrand Cross-Links Generated by Oxidation of 8-Oxo-Adenine in Hairpin DNA. **Michael J. Cross**, Yu Ye, James G. Muller and Cynthia J. Burrows, University of Utah
- 79** Polyamine Amino Acids: Synthesis of a Neurotensin Analog Containing Lysine-Spermine. **Liuyin Zhang** and Grzegorz Bulaj, University of Utah
- 80** Engineering Subtype Selectivity In Systemically-Active Galanin Analogs. **Charles R. Robertson**, H. Steve White and Grzegorz Bulaj, University of Utah
- 81** Analysis of the Products from the Arylation of Deoxyguanosine and DNA by Phenols Under Oxidative Conditions. **Aaron M. Fleming**, Xiaoyun Xu, Arunkumar Kannan, James Muller and Cynthia Burrows, University of Utah
- 82** Synthesis and Subsequent Identification of Mangostin Glycosides In Mangosteen Fruit. **Amornmart Jaratrungtawee**<sup>1</sup>, Orapin Komutiban<sup>1</sup> and Edward B. Walker<sup>2</sup>, (1)Srinakharinwirot University, (2)Weber State University
- 83** Synthesis of New Kanamycin B Analogs with Surprising Antifungal Activity. **Marina Y. Fosso**<sup>1</sup>, Tom C.W. Chang<sup>1</sup>, Jon Y. Takemoto<sup>2</sup>, Mekki Bensaci<sup>2</sup> and Yukie Kawasaki<sup>2</sup>, (1)Utah State University, (2)USU
- 84** Rational Design of Aminoglycosides Peptidomimetics. **Sarah Shepard** and Young Wan Ham, Brigham Young University
- 85** Sonication-Based Studies of Solution Phase and Solid Phase Synthesis of Oligosaccharides. **Christabel T. Tanifum** and Tom C.W. Chang, Utah State University
- 86** Macrocycles for Ion and Organic Molecule Sensors. **Pamela J. Shapiro**, Wei-Chun Hung and Brendan Twamley, University of Idaho

- 87** Synthesis and Pharmacological Activity of New  $\mu$  And  $\delta$  Opioid Glycopeptides. **Lajos Z. Szabó**<sup>1</sup>, Jean M. Bidlack<sup>2</sup>, Edward J. Bilsky<sup>3</sup> and Robin Polt<sup>1</sup>, (1)University of Arizona, (2)The University of Arizona, (3)University of New England
- 88** Route to 1,2,3-Triazoles Via Copper(I)-Catalyzed Cycloaddition. **Desiree E. Mendes** and Allen M. Schoffstall, University of Colorado at Colorado Springs
- 89** The Effects of Noni (*Morinda citrifolia* L.) Fruit Juice on Opioid and  $\beta$ -Adrenergic Receptors: Its Potential Mechanisms for Possible Effects on Alcohol and Substance Abuse. **'Afa K. Palu**, Brett J. West and Jensen Jaraka, Tahitian Noni International
- 90** Synthesis and Anticancer Activity Studies of Cycloamine Derivatives. **Jianjun Zhang**, Utah State University
- 91** Evaluation of the Antimalarial Activity of Prodiginines. **Mamoun M. Alhamadsheh** and Kevin A. Reynolds, Portland State University
- 92** The Inhibitory Effects of Noni (*Morinda citrifolia* L.) Fruit Juice Preparations on *Trichomonas Foetus* and *Actinomyces Viscosus* in Vitro. **'Afa K. Palu**, Brett J. West and Jaraka Jensen, Tahitian Noni International

## **Chemical Education**

**11:00 AM - 12:30 PM**

### **Undergraduate Programming - Careers In Chemistry Panel Discussion**

Grand Ballroom II

Organizer: Eric T. Sevy, Brigham Young University

**11:00** Welcoming Remarks.

**11:05** Panel Discussion. Panel members are: **Matthew Kriech** – ATK Launch Systems, **Jay Henry** – Utah State Crime Lab, **Jason I. Henderson** – Frontier Scientific, Inc., **John Higuchi** – Aciont, **John Holladay** – Pacific Northwest National Lab and Department of Energy

**12:00 PM - 1:00 PM**

### **NOR Board Meeting**

Boardroom

## **Analytical Chemistry**

**1:00 PM - 5:20 PM**

### **Mass Spectrometry & Ion Chemistry**

Grill Room

Organizers: Daniel E. Austin, Brigham Young University, David V. Dearden, Brigham Young University

- 1:00 93** Design and Performance of a Halo Ion Trap Mass Analyzer. **Miao Wang**<sup>1</sup>, Daniel E. Austin<sup>1</sup>, Samuel E. Tolley<sup>2</sup>, Brett J. Hansen<sup>1</sup>, Aaron R. Hawkins<sup>1</sup> and Milton Lee<sup>1</sup>, (1)Brigham Young University, (2)Torion Technologies, Inc.
- 1:20 94** Novel Planar Ion Traps with Resistive Electrodes. **Ying Peng**<sup>1</sup>, Ivan W. Miller<sup>1</sup>, Zhiping Zhang<sup>1</sup>, Brett J. Hansen<sup>1</sup>, Samuel E. Tolley<sup>2</sup>, Milton L. Lee<sup>1</sup>, Aaron R. Hawkins<sup>1</sup> and Daniel E. Austin<sup>1</sup>, (1)Brigham Young University, (2)Torion Technologies, Inc.
- 1:40 95** Applications of a Hand-Portable Gas Chromatograph-Toroidal Ion Trap Mass Spectrometer. **Jesse A. Contreras**<sup>1</sup>, Jacolin A. Murray<sup>1</sup>, Tai V. Truong<sup>1</sup>, Jon A. Kimball<sup>1</sup>, Delbert J. Eatough<sup>1</sup>, Aaron N. Nackos<sup>1</sup>, Calvin H. Bartholomew<sup>1</sup>, Christopher R. Bowerbank<sup>2</sup> and Milton L. Lee<sup>1</sup>, (1)Brigham Young University, (2)Torion Technologies Inc.
- 2:00 96** Advances in Source Technology for Improving the Sensitivity, Stability and Quantitation of ESI-MS. **Ryan T. Kelly**, Jason S. Page, Keqi Tang and Richard D. Smith, Pacific Northwest National Laboratory
- 2:20 97** Porous Polymer Monolith Nanospray for the Study of Noncovalent Complexes. **Nannan Fang** and David V. Dearden, Brigham Young University
- 2:40 98** Variable Energy Sustained off-Resonance Irradiation (SORI) Activation: Comparison of Variable Amplitude and Variable Time Methods. **David V. Dearden**, Chadin L. Dejsupa, Fan Yang, Jacob Voelkel and McKay Allred, Brigham Young University
- 3:00** Break.

- 3:20 99** Structure and Reactivity of F-Element Complexes. **Gary S. Groenewold**, Idaho National Laboratory
- 3:50 100** An Experimental and Computational Study of the Effects of Vibration and Collision Energy on the Reaction of State-Selected  $\text{NO}_2^+$  with Acetylene. **Jason Boyle** and Scott L Anderson, University of Utah
- 4:10 101** Absolute Hydration Energies of  $\text{Zn}^{2+}$ . **Theresa E. Cooper**, D. R. Carl and P. B. Armentrout, University of Utah
- 4:30 102** Energetics and Mechanisms of the Fragmentation of Alkali Cationized Amino Acids and Peptides. **Peter B. Armentrout**, Amy C. Heaton and Sha J. Ye, University of Utah
- 4:50 103** Histidine and Arginine as Radical Traps In Electron Capture by Gas-Phase Peptide Ions. **Frantisek Turecek**<sup>1</sup>, Xiaohong Chen<sup>1</sup>, Subhasis Panja<sup>2</sup>, Steen Brondsted Nielsen<sup>2</sup>, Preben Hvelplund<sup>2</sup> and Bela Paizs<sup>3</sup>, (1)University of Washington, (2)University of Aarhus, (3)German Cancer Research Center

### **1:00 PM - 4:00 PM**

#### **Poster Session - Inorganic**

Tent

Organizer: Matt A. Peterson, Brigham Young University

- 104** Effect of Metals In  $\text{TiO}_2$  Photosensitization. **Lisa D. Lau**, Ben Donahoo, Joshua J Pak and Rene Rodriguez, Idaho State University
- 105** Electrochemical, Structural, and Computational Studies of a Diiron Hydrogenase Mimic, ( $\mu$ -Norbornane-2-exo,3-exo-dithiolato)Diironhexacarbonyl. **Benjamin J. Petro**<sup>1</sup>, Noriko Okumura<sup>2</sup>, Nadine E. Gruhn<sup>1</sup>, Gary S. Nichol<sup>1</sup>, Paul A.J. Goodyer<sup>1</sup>, Richard S. Glass<sup>1</sup>, Dennis H. Evans<sup>1</sup> and Dennis L. Lichtenberger<sup>1</sup>, (1)The University of Arizona, (2)Kinjo University
- 106** Probing the Active Site of Metal Oxide Supported Gold Nanoparticles. **Christopher A. Cadigan**<sup>1</sup>, Zhi Li<sup>1</sup> and Ryan M. Richards<sup>2</sup>, (1)Colorado School of Mines, (2)School of Mines
- 107** Gold-Based Drugs: Identifying, Characterizing and Optimizing Au(I)-Biomolecule Adducts. **Mark R. Karver** and Amy M. Barrios, University of Utah

- 108** Design Modifications at the Surface of Silica Polyamine Composites. **Jessica Wood**, Edward Rosenberg, Jesse James Allen and Mark Hughes, University of Montana
- 109** Structural Effects on Surface Characteristics and Interactions of Polyamine Composite Materials. **Jesse James Allen**, Edward Rosenberg, Jessica Wood and Mark Hughes, University of Montana
- 110** Synthesis and Characterization of Nanoscale Metal Organic Frameworks. **Johanna L. Crane**, University of Puget Sound and Wenbin Lin, University of North Carolina
- 111** Coordination Chemistry of 2,5-Di(4-pyridinyl)Thiophene and 2,5-Di(4-pyridinyl)Furan at Re(I): Characterization of Non-Linear Macromolecular Building Blocks. **Byron L. Bennett**<sup>1</sup>, Roger A. Rennels<sup>2</sup>, Austin Pettit<sup>1</sup>, Vincent J. Catalano<sup>3</sup> and Matt May<sup>1</sup>, (1)Idaho State University, (2)University of Nevada, Las Vegas, (3)University of Nevada, Reno
- 112** Effect of the Secondary Environment on the Chemistry of Ni(II) Complexes: Relevance to Acireductone Dioxygenases. **Katarzyna Grubel**<sup>1</sup>, Amy Fuller<sup>1</sup>, Atta M. Arif<sup>2</sup> and Lisa M. Berreau<sup>1</sup>, (1)Utah State University, (2)University of Utah
- 113** Thioester Hydrolysis Reactivity of a Binuclear Fe(III)Zn(II) Complex. **James J. Danford**, Piotr Dobrowolski and Lisa M. Berreau, Utah State University

## **Chemical Education**

**1:00 PM - 4:00 PM**

### **Undergraduate Programming - Eminent Scientist Symposium**

Grand Ballroom II

Organizer: Eric T. Sevy, Brigham Young University

- 1:00 114** Bioorganic Chemistry Research. A Pathway to An Exciting and Fulfilling Career (What Could a Beginning Graduate Student Initiate?). **Morris J. Robins**, Brigham Young University
- 2:00 115** Analytical Applications of Vibrational Spectroscopy. **Peter R. Griffiths**, University of Idaho
- 3:00 116** Going Nonlinear to Study Important Environmental Processes at Water Surfaces. **Geraldine L. Richmond**, University of Oregon

## Physical Chemistry

1:20 PM - 5:20 PM

### General Physical Chemistry

Uinta II

Presider: H. Laine Berghout, Weber State University

- 1:20 117** Links Between Molecular Structure and Performance at Interfaces. **James E. Patterson**, Brigham Young University
- 1:40 118** Variation In Plasma Catalytic Reduction of NO<sub>x</sub> with Catalytic Material. **Michelle M. Morgan** and Ellen R. Fisher, Colorado State University
- 2:00 119** Photoemission Studies Investigating the Interfacial Electronic Structure of Organic/Inert Substrate Interfaces. **Justin Sambur** and Bruce A. Parkinson, Colorado State University
- 2:20 120** Uncovering Structure-Function Relationships in Disordered Donor/Acceptor Photovoltaic Materials. **John K. Grey**, University of New Mexico
- 2:40 121** Photovoltaic Testing of Novel Dyes In DSSCs. **Anna R. Hoskins**<sup>1</sup>, Dominic Dent<sup>1</sup>, Ben Donahoo<sup>1</sup>, Lisa Lau<sup>1</sup>, Alan W. Hunt<sup>2</sup>, Joshua J. Pak<sup>1</sup> and Rene G. Rodriguez<sup>1</sup>, (1)Idaho State University, (2)Idaho Accelerator Center
- 3:00 122** Gold Nanoparticles Supported on MgO(111) Nano-Sheets and Their Activity In the Aerobic Oxidation of Benzyl Alcohol. **Zhi Li**<sup>1</sup>, Christian Kübel<sup>2</sup>, Juncheng Hu<sup>1</sup> and Ryan Richard<sup>1</sup>, (1)Colorado School of Mines, (2)Fraunhofer Institute for Production Technology and Applied Materials Research (IFAM)
- 3:20** Break.
- 3:40 123** Low-Temperature Calorimetric Investigation of Iron Storage In Ferritin. **Claine L. Snow**, Brian F. Woodfield, PhD and Juliana Boerio-Goates, Brigham Young University
- 4:00 124** Heat Capacity of Melanothallite. **Thomas J. Parry**, Juliana Boerio-Goates, Brian F. Woodfield and Trenton F. Walker, Brigham Young University

- 4:20 125** Time-Resolved Absorption Recovery Dynamics of  $\text{IBr}^-(\text{CO}_2)_n$  Cluster Anions. **Joshua P. Darr**, Joshua P. Martin, Matthew A. Thompson, Robert Parson and W. Carl Lineberger, University of Colorado
- 4:40 126** Time-Resolved Infrared Studies of Weak Metal Carbonyl Solvent Intermediates. **Carolyn Sheffield**, Richard Gates and Matthew C Asplund, Brigham Young University
- 5:00 127** SC-MEH MO Calculations on the Molecules  $\text{Nd}_2$  and  $\text{U}_2$ . **Edward A. Boudreaux Sr.** and Eric C. Baxter, University of New Orleans

## Organic Chemistry

**1:20 PM - 5:00 PM**

### Total Synthesis and Synthetic Methodology II

Grand Ballroom IV

Organizers: Merritt B. Andrus, Brigham Young U, Steven L. Castle, Brigham Young University

- 1:20 128** Synthetic Studies of the Welwitindolinone Alkaloids. **John Louis Wood**, Colorado State University
- 2:00 129** Targeting Natural Products at 4700 Feet above Sea Level. **Jon Rainier**, University of Utah
- 2:40 130** Adventures In Total Synthesis: Amphidinolides  $\text{B}_1$  and  $\text{B}_2$ . **Rich G. Carter**, Liang Lu and Wei Zhang, Oregon State University
- 3:20** Break.
- 3:40 131** Addition/cycloisomerization of Propargyl Cyanamides; Efficient Access to the 2-Aminoimidazole Core. **Ryan Looper**, University of Utah
- 4:20 132** New Strategies for the Synthesis of Unusual Peptides and Alkaloids. **Steven L. Castle**, Brigham Young University

## Physical Chemistry

**1:30 PM - 5:20 PM**

### Atmospheric & Environmental Chemistry II

Grand Ballroom III

Organizer: Jaron C. Hansen, Brigham Young University

- 1:30 133** Health Effects of Particulate Matter Air Pollution. **C. Arden Pope III**, Brigham Young University
- 2:30 134** Source Apportionment Using Data from the 1-Hour Average Measurement of Source Relevant Gases and PM<sub>2.5</sub> Mass and Composition. **Delbert J. Eatough**, Brigham Young University
- 3:00 135** Measurement of Amines and Other Particulate Composition Over a Six Year Period in Cache Valley, Utah. **Derek J. Price**, Mark E. Erupe and Philip J. Silva, Utah State University
- 3:30** Break.
- 3:50 136** Observations of Airborne Pollutants and Deposition during the 2006 Rocky Mountain Airborne Nitrogen and Sulfur (RoMANS) Study. **Jeffrey L. Collett Jr.**<sup>1</sup>, Katie Beem<sup>1</sup>, Suresh Raja<sup>1</sup>, Florian Schwandner<sup>1</sup>, Christian Carrico<sup>1</sup>, Taehyoung Lee<sup>1</sup>, Courtney Taylor<sup>1</sup>, Amy Sullivan<sup>1</sup>, Gavin McMeeking<sup>1</sup>, Ezra Levin<sup>1</sup>, Sonia Kreidenweis<sup>1</sup>, Derek Day<sup>1</sup>, Jenny Hand<sup>1</sup>, Bret Schichtel<sup>2</sup> and William Malm<sup>2</sup>, (1)Colorado State University, (2)National Park Service
- 4:20 137** Design and Characterization of a Two-Stage Human Subject Exposure Chamber. **Roman Kuprov**, David Buck, Daniel Brown, Delbert Eatough and Jaron Hansen, Brigham Young University
- 4:50 138** Application of Synchrotron X-Ray Fluorescence Analysis Microscopy to the Study of Atmospheric Aerosols. **Kevin D. Perry**, University of Utah

## **Analytical Chemistry**

**2:00 PM - 5:00 PM**

### **The Next Generation of Analytical Surface Scientist II**

Uinta I

Organizer: John C. Conboy, University of Utah

- 2:00 139** Chemical Modification of the Glass Nanopore Membrane Surface for Ion Channel Recordings. **Anna Schibel** and Henry S. White, University of Utah
- 2:30 140** Cross-Linked Phospholipid Coatings In Micron-Sized Channels for Spatially Discrete Bioassays and Protein Separations. **Elisabeth Mansfield** and Craig A. Aspinwall, University of Arizona

**3:00 141** Sum-Frequency Vibrational Spectroscopy for the Study of Membrane Biophysics: Thermodynamics of Phospholipid Flip-Flop. **Timothy C. Anglin Jr.** and John C. Conboy, University of Utah

**3:30** Break.

**3:45 142** Correlating Molecular Orientation Distributions and Electrochemical Kinetics In Subpopulations of An Immobilized Protein Film. **Zeynep Ozkan Araci**<sup>1</sup>, Anne F. Runge<sup>1</sup>, Walter J. Doherty III<sup>2</sup> and S. Scott Saavedra<sup>3</sup>, (1)University of Arizona, (2)Linköping University, (3)Univerisity of Arizona

**4:15 143** Sequencing DNA with Glass Nanopore Membrane. **Hao Sun** and Henry, S. White, University of Utah

**5:30 PM - 6:00 PM**

**Industrial Innovation Award Symposium**

Grand Ballroom IV

**5:30 144** Industrial Innovation Award Address. **S.P. Chauhan**<sup>1</sup>, W. D. Samuels<sup>2</sup>, H. Nicholas Conkle<sup>1</sup> and Melissa S. Roshon<sup>1</sup>, (1)Battelle Memorial Institute, (2)Battelle Northwest

**6:00 PM - 10:00 PM**

**Awards Banquet**

Grand Ballroom II/III

**Tuesday, June 17, 2008**

**7:00 AM - 8:00 AM**

**Director's Breakfast**

Grand Ballroom II

**8:00 AM - 11:55 AM**

**ACS Leadership Workshop**

Ski Shop

## **Environmental Chemistry**

**8:00 AM - 12:00 PM**

### **Biofuels & Bioproducts I**

Uinta II

Organizers: John Holladay, PNNL/DOE, Timothy L. Hubler, Pacific Northwest National Laboratory

**8:00 145** An Overview of the U.S. Department of Energy Research Aimed at Production of Biofuels. **Paul Grabowski**, Department of Energy

**8:30 146** An Overview of Biofuels: Properties and Applications. **Kevin T. Hodgson**, University of Washington

**9:00 147** Biobased Products and Fuels Research at the University of Tennessee – the University of Tennessee Bioenergy Initiative. **Timothy G. Rials** and Joseph J Bozell, The University of Tennessee

**9:30** Break.

**10:00 148** Development of a Feedstock Assembly System for Optimizing Biofuels Conversion Processes. **Judy K. Partin** and J. Richard Hess, Idaho National Laboratory

**10:30 149** Catalyst Development for Conditioning Biomass Derived Syngas. **Kimberly Magrini**, Whitney Jablonski, Matthew Yung, Yves Parent, Luc Moens, Joel Pankow and Singfoong Cheah, National Renewable Energy Laboratory

**11:00 150** Transformations of Biomass In Specialized Solvents. **Joseph B. Binder**<sup>1</sup>, Ronald T. Raines<sup>1</sup>, John Holladay<sup>2</sup>, Z. Conrad Zhang<sup>2</sup>, James F. White<sup>2</sup> and Michel J. Gray<sup>2</sup>, (1)University of Wisconsin-Madison, (2)Pacific Northwest National Lab

## **Organic Chemistry**

**8:00 AM - 12:00 PM**

### **Frontiers In Medicinal Chemistry: Synthesis, Discovery, and Mechanism of Action I**

Grand Ballroom III

Organizer: Matt A. Peterson, Brigham Young University

**8:00** Welcoming Remarks.

- 8:05 151** From An African Tree to the Clinic: The Combretastatins. **George R. Pettit**, Arizona State University
- 9:00 152** Marine Natural Products Chemical Libraries and Cancer Drug Discovery. **Chris M. Ireland**, University of Utah
- 9:40** Break.
- 10:00 153** 2',3'-Dideoxy Nucleoside Analogues: A Versatile Family of Biomedical Nucleosides. **Morris J. Robins**, Brigham Young University
- 10:40 154** Overcoming Drug Resistance In Cancer Cells. **Seth D. Rose**<sup>1</sup>, Rosemarie F. Hartman<sup>1</sup>, Haiyong Han<sup>2</sup> and Yu Zhao<sup>2</sup>, (1)Arizona State University, (2)Translational Genomics Research Institute
- 11:20 155** Total Synthesis of Natural Products of Biological Intrigue. **Robert M. Williams**, Colorado State University

## **Analytical Chemistry**

**8:00 AM - 2:00 PM**

## **Materials & Surface Chemistry I**

Uinta I

Organizer: Matthew R. Linford, Brigham Young University

- 8:00 156** Nanostructural Issues and Heterogeneous Electron Transfer at Self-Assembled Alkanethiolate Monolayers on Gold. **Marc D. Porter**, University of Utah, Adam J. Bergren, University of Alberta, Grant A. Edwards, Northern Kentucky University and Erik J. Cox, Institute for Material Research and Engineering
- 8:30 157** Organometallic Chemistry on Silicon Nanoclusters: Synthesis, Quantum Confinement & Technological Potentials. **Naoto Shirahata**, National Institute for Materials Science
- 9:00 158** Plasma Treatment and Silane Vapor Deposition - a **SMART**® Approach to Surface Modification. **Ken Sautter**, Yield Engineering Systems
- 9:30** Break.
- 9:50 159** Supramolecular Construction from Surface Molecular Array to Novel Nanomaterials. **Katsuhiko Ariga**, World Premier International (WPI) Research Center for Materials Nanoarchitectonics (MANA)

**10:20 160** Towards Engineering Materials with Higher Definition for Delivery of Bioactive Agents. **Hamid Ghandehari**, University of Utah

**10:50 161** Printing of High Quality Protein and Lipid Microarrays Using a Continuous Flow Microspotter. **Bruce Gale**, Adam Miles, Mark Eddings, Sriram Natarajan, Josh Eckman and David Myszka, University of Utah

**11:20** Break.

**11:30 162** Diamond-Based Photonic Crystal Lattices In Iridescent Beetle Scales. **Michael H. Bartl**, Jeremy W. Galusha and Lauren R. Richey, University of Utah

**12:00** Lunch.

**1:00 163** Vertically Aligned Carbon Nanotube Scaffolding for High Aspect Ratio Microelectromechanical Sensors and Actuators. **Robert Davis**, Brigham Young University

**1:30 164** Plasma Diffusion into Narrow Gaps to Create Surfaces with Gradient Chemistries. **Matthew R. Linford**<sup>1</sup>, Feng Zhang<sup>1</sup>, Li Yang<sup>1</sup>, Robert Davis<sup>1</sup> and Ken Sautter<sup>2</sup>, (1)Brigham Young University, (2)Yield Engineering Systems

## **Chemical Education**

**8:15 AM - 10:00 AM**

### **General Chemical Education Session**

Grand Ballroom I

Presider: Fern Caka, Utah Valley State College

**8:15** Welcoming Remarks.

**8:20 165** The Biology and Chemistry of Brewing: An Interdisciplinary Course. **Paul Hooker**, Westminster College

**8:40 166** Are There Any Chemical Reactions Where Relativistic Mass Loss Can Be Observed?. **James G. Eberhart**, University of Colorado at Colorado Springs

**9:00 167** The Chemistry of Crime Scene Investigation. **Robyn M. Hyde**, Westminster College

- 9:20 168** Effects of the Contact Angle Simulation (CA-SIM) on Students' Mental Model and Perception of Hydrogen Bonding and Contact Angle Concepts. **Niwat Srisawasdi**, Mahidol University, Jerry P. Suits, Univ of Northern Colorado and Loretta L. Jones, University of Northern Colorado
- 9:40 169** A Second SpectrUM of Interactive Activities for NCW. **Nicholas R. Natale**, Holly Truitt, Kathleen M. George, Krispen Nelson, Rebecca Schaffer and Charles M. Thompson, University of Montana

## Organic Chemistry

**8:30 AM - 12:00 PM**

### General Organic Session

Grill Room

Presider: Kevin P. Gable, Oregon State University

- 8:30 170** Synthesis of Anchored 2,3,5-Trifluoro-7,7,8,8-Tetracyanoquinodimethane (F3TCNQ) for Application as Organic Molecular Dopants In OLEDs. **Phillip K. Koech**, Asanga B. Padmaperuma, Xiuyu Cai, Jonathan L. Male, Jens Darsell, Glen E. Fryxell and Linda S. Sapochak, Energy and Efficiency Division, Pacific Northwest National Laboratory
- 9:00 171** Progress toward a Total Synthesis of Celogentin C. **Bing Ma**, Brigham Young University
- 9:30 172** Novel Radical-Polar Crossover Reaction Applied to the Progress towards Total Synthesis of Acutumine. **Fang Li**, Brigham Young University
- 10:00** Break.
- 10:30 173** Glycosylation of Enkephalins Produces Mixed Opioid Agonists at the Mu, Delta & Kappa Opioid Receptors. **Charles M. Keyari**<sup>1</sup>, Brian I. Knapp<sup>2</sup>, Jean M Bidlack<sup>2</sup>, Edward J. Bilsky<sup>3</sup>, John Lowery<sup>3</sup> and Robin Polt<sup>1</sup>, (1)University of Arizona, (2)University of Rochester Medical Center, (3)University of New England
- 11:00 174** Progress towards the Synthesis of the Celogentin C Left-Hand Ring. **Dmitry Litvinov**, Brigham Young University
- 11:30 175** Dienyl Ceramide: Synthesis and Biological Evaluation with Embryonic Cell of *Manduca Sexta*. **Shang-U Kim**, Emily Ricq, Lynne A. Oland and Robin Polt, University of Arizona

**Physical Chemistry**  
**9:00 AM - 12:00 PM**  
**Poster Session - Physical**  
Tent

Organizer: Adam T. Woolley, Brigham Young University

- 176** Relaxation of Highly Vibrationally Excited Tri- and Tetrafluorobenzene by Collisions with CO<sub>2</sub>. **Alan Johnson** and Eric T. Sevy, Brigham Young University
- 177** Factors That Affect Molecular Surface Structure. **Alexander D. Curtis**, L. Robert Baker, Sarah B. Moxley, Brad J. Nielson and James E. Patterson, Brigham Young University
- 178** Nanostructured Metal Oxides Possessing the (111) Facet for Methanol Decomposition to Hydrogen and Carbon Dioxide. **April R. Corpuz**, Ryan Richards and Juncheng Hu, Colorado School of Mines
- 179** STM Luminescence Imaging of Organic Light Emitting Devices. **Dehong Hu**, Asanga Padmaperuma, Xiuyu Cai, Hong Qiao and Paul Burrows, Pacific Northwest National Laboratory
- 180** Heterogeneous Catalysts for Energy and Environment Applications. **Lucia M. Petkovic**, Daniel M. Ginosar, Harry W. Rollins, Kyle C. Burch, Sergey N. Rashkeev and Helen H. Farrell, Idaho National Laboratory
- 181** Mechanism of Thalidomide Interactions with Dna/rna. **Dayle M.A. Smith**<sup>1</sup>, R. W. Holman<sup>2</sup>, Jessie Byers<sup>2</sup>, Jennifer Teixeira<sup>2</sup> and Thu Nguyen<sup>1</sup>, (1)Whitman College, (2)Idaho State University
- 182** Collisional Energy Transfer from Highly Vibrationally Excited Fluorobenzenes to CO<sub>2</sub>: Fluorine-Substitution Effect In Benzene Structure on the Energy Transfer Probability Distribution Function. **Kilyoung Kim** and Eric T. Sevy, Brigham Young University
- 183** Heterogeneous Wheel Shaped Cu<sub>20</sub>-Tungstophosphate ([Cu<sub>20</sub>Cl(OH)<sub>24</sub>(H<sub>2</sub>O)<sub>12</sub>(P<sub>8</sub>W<sub>48</sub>O<sub>184</sub>)]<sub>25</sub>-) Catalyst for Solvent-Free Aerobic Oxidation of N-Alkane. **Lifang Chen**, Juncheng Hu and Ryan Richards, Colorado School of Mines
- 184** Calculated UV-Vis Absorption Characteristics of 13-Cis-Retinal Lysine Complex. **Jeffrey Mottishaw**, Lisa Lau, Rene Rodriguez and Caryn Evilia, Idaho State University

- 185** Structure and Orientation of the 1-Alkyl-3-Methylimidazolium Cation at the Room Temperature Ionic Liquid/SiO<sub>2</sub> Interface. **Julie B. Rollins**, Brian D. Fitchett and John C. Conboy, University of Utah
- 186** Toward Bulk Materials with a Negative Index of Refraction In the Visible. **Subhadeep Roy**, Thomas Magnera and Josef Michl, University of Colorado, Boulder
- 187** Experimental and Computed Fluorescence In Single-Trp Mutants of Normal and Modeled Disease-Like Prion Protein. **Carl A. Fahlstrom**<sup>1</sup>, Jessica Gilbert<sup>2</sup>, Michele A. McGuirl<sup>2</sup>, Greg Gillispie<sup>3</sup>, Patrik R. Callis<sup>1</sup> and Lee H. Spangler<sup>1</sup>, (1)Montana State University, (2)University of Montana, (3)Fluorescence Innovations, Inc.
- 188** Protein-Mediated Lipid Flip-Flop In a Phospholipid Bilayer Measured by Sum-Frequency Vibrational Spectroscopy. **Krystal L. Brown**, Timothy C. Anglin and John C. Conboy, University of Utah

## **Inorganic Chemistry**

**9:00 AM - 12:00 PM**

### **Supramolecular Chemistry I**

Grand Ballroom IV

Organizer: Roger G. Harrison, Brigham Young University

- 9:00 189** Ligand Effects on the Chemistry of Ni(II) Complexes of Relevance to Acireductone Dioxygenases. **Lisa M. Berreau**<sup>1</sup>, Katarzyna Rudzka<sup>1</sup>, Ewa Szajna-Fuller<sup>1</sup>, Katarzyna Grubel<sup>1</sup>, Bonnie Chambers<sup>1</sup> and Atta M. Arif<sup>2</sup>, (1)Utah State University, (2)University of Utah
- 9:30 190** Design of Molecular Hosts for the Selective Binding of Trivalent and Tetravalent Cations. **Aravamudan S. Gopalan** and Hollie K. Jacobs, New Mexico State University
- 10:00** Break.
- 10:15 191** Aryl-Acetylene Scaffolding as Receptors In Supramolecular Chemistry. **Michael M. Haley**, University of Oregon
- 10:45 192** Anion Binding and Transport by Multipoint Cationic Resorcinarenes. **Roger G. Harrison**, John D Lamb, Joseph S Gardner, Cheryl A Morris, Kirk T Morris, Martin Condon-Sheridan, Jeremiah N West and Bibhutoosh Adhikary, Brigham Young University

**11:15 193** Drugs, Tetrazoles, and Molecular Recognition. **Fraser Hof**,  
University of Victoria

## **Analytical Chemistry**

**10:00 AM - 11:40 AM**

### **General Analytical Session I**

Grand Ballroom I

Presider: Fern Caka, Utah Valley State College

**10:00 194** Studying Mixture and Process Factors In the Same Designed Experiment. **William D. Kappelle**, Objective Design of Experiments

**10:20 195** Amino Modified Diamond as a Highly Durable Stationary Phase for Solid Phase Extraction. **Gaurav Saini**<sup>1</sup>, Li Yang<sup>1</sup>, Michael Vail<sup>2</sup>, Milton Lee<sup>1</sup> and Matthew Linford<sup>1</sup>, (1)Brigham Young University, (2)US Synthetic

**10:40 196** C<sub>18</sub> Phases on Diamond for Liquid Chromatography and Solid Phase Extraction. **Landon Wiest**<sup>1</sup>, Gaurav Saini<sup>1</sup>, Michael Vail<sup>2</sup> and Matthew Linford<sup>1</sup>, (1)Brigham Young University, (2)US Synthetic

**11:00 197** Effects of Mobile Phase Compressibility on the Speed and Efficiency of Supercritical Fluid Separations. **L. Robert Baker**, Andrew W. Orton, Marisa A. Stark, Brent A. Horn and Steven R. Goates, Brigham Young University

**11:20 198** The Effect of Temperature Gradients on Speed and Efficiency In Supercritical Fluid Separations. **Nicole M. Taylor**<sup>1</sup>, Jordan Smith<sup>1</sup>, John-David McElderry<sup>2</sup> and Steven R. Goates<sup>1</sup>, (1)Brigham Young University, (2)University of Michigan

**12:00 PM - 1:00 PM**

### **WCC Luncheon**

Boardroom

Organizer: Juliana Boerio-Goates, PhD, Brigham Young University

## **Environmental Chemistry**

**1:00 PM - 5:00 PM**

### **Biofuels & Bioproducts II**

Uinta II

- 1:00 199** Commercial Products from Olefin Metathesis of Renewable Seed Oils. **Richard L. Pederson**, Materia Inc
- 1:30 200** Glycerin as a Renewable Feedstock for Epichlorohydrin Production. the GTE Process. **John R. Briggs**, Bruce M. Bell, Robert M. Campbell, Suzanne M. Chambers, Phil D. Gaarenstroom, Jeffrey G. Hippler, Bruce D. Hook, Ken Kearns, John M. Kenney, Jack Kruper, Jim Schreck, Curt N. Theriault and Chuck Wolfe, The Dow Chemical Co.
- 2:00 201** Catalyst for the Hydrogenolysis of Glycerol to Propylene Glycol. **Alan Zacher**<sup>1</sup>, John Holladay<sup>2</sup>, John G. Frye Jr.<sup>1</sup>, Aaron A. Oberg<sup>1</sup> and James F. White<sup>2</sup>, (1)Pacific Northwest National Laboratory, (2)PNNL/DOE
- 3:00** Break.
- 3:30 202** High Throughput Catalyst Screening for Bioproducts Process Development. **Richard Thomas Hallen** and Alan R. Cooper, Pacific Northwest National Laboratory
- 4:00 203** Methyl Ester Ethoxylates - Vegetable Oil Based Surfactants. **Nick, E. Kob**, Huntsman

## **Analytical Chemistry**

**1:00 PM - 4:00 PM**

### **Poster Session - Analytical**

Tent

Organizer: Adam T. Woolley, Brigham Young University

- 204** Micropatterned Fluid Lipid Bilayers Created Using a Continuous Flow Microspotter. **Kathryn Smith** and John C. Conboy, University of Utah
- 205** Analysis of Agricultural Emissions at a Cache Valley Poultry Facility. Hanh Dinh, Jon Dalglish, **Heidi Dudley** and Philip J. Silva, Utah State University
- 206** The Determination of Hydrogen In M5™ Cladding Samples. **Jeffrey F. Berg**, INL Materials and Fuels Complex
- 207** A General Surface Modification Method for Polymer Microchips Using Thin Polymer Films with Entrapped Hydroxypropyl Cellulose. **Xiuhua Sun**, Weichun Yang and Adam T Woolley, Brigham Young University

- 208** Noni Juice Increases Athlete Endurance Via Antioxidant Mechanism. **Brett J. West** and C. Jarakae Jensen, Tahitian Noni International
- 209** Plasma Processes with CH<sub>3</sub>OH. **Kristina J. Trevino** and Ellen R. Fisher, Colorado State University
- 210** Lipid Membrane Induced Asymmetry. **Michael Cooper** and John C. Conboy, University of Utah
- 211** Development and Optimization of An Extraction Protocol for the Analysis of the Saccharomyces Cerevisiae Metabolome by GC-MS. **James E. Cox**, University of Utah
- 212** Detecting Organic Compounds Coated on Inorganic Particles. **Sileola Akinsiku-Ogunlaja** and Philip J. Silva, Utah State University
- 213** Effects of Pressure and Solvent on Stationary Phase Structure In High Performance Liquid Chromatography Studied by Sum-Frequency Generation. **L. Robert Baker**, Alexander D. Curtis, Jason W. Workman, Arthur D. Quast and James E. Patterson, Brigham Young University
- 214** Label-Free Detection of Protein Adsorption at Solid/Liquid Interface by UV-Visible Sum Frequency Generation Spectroscopy. **Trang T. Nguyen** and John C. Conboy, University of Utah
- 215** Integrated Immunoaffinity/Preconcentration/Electrophoresis Microdevices for Trace Protein Analysis. **Weichun Yang**, Xiuhua Sun and Adam T. Woolley, Brigham Young University
- 216** Stability Study of the Tobacco-Specific Nitrosamine 4-(Methylnitrosamino)-1-(3-pyridyl)-1-Butanol (NNAL) Concentrations In Urine Samples Stored at Various Temperatures. **Yang Xia** and John T Bernert, Centers for Disease Control and Prevention

## **Organic Chemistry**

**1:30 PM - 5:20 PM**

### **Bio-Organic Chemistry I**

Grand Ballroom II

Organizers: Young Wan Ham, Brigham Young University, Heidi R. Vollmer-Snarr, Brigham Young University

Presider: Young Wan Ham, Brigham Young University

**1:30**      Introductory Remarks.

- 1:40 217** Developing Inhibitors of Protein Tyrosine Phosphatases for Treatment of Autoimmunity. **Divya Krishnamurthy**<sup>1</sup>, Roza Kazemi<sup>2</sup>, Sayantan Mitra<sup>2</sup>, Edoardo Fiorillo<sup>2</sup>, Valeria Orru<sup>2</sup>, Stephanie Stanford<sup>2</sup>, Nunzio Bottini<sup>2</sup>, Nouri Neamati<sup>2</sup> and Amy M. Barrios<sup>1</sup>, (1)University of Utah, (2)University of Southern California
- 2:20 218** The All-Trans Retinal Dimer Forms as a Byproduct of A2E and Novel Pyridinium Bisretinoid Synthesis. **Heidi R. Vollmer-Snarr**, Mary L. Alvarez and Junping Gao, Brigham Young University
- 3:00** Break.
- 3:20 219** Probing Peptide Self-Assembly with Nonnatural Amino Acids. **Bradley L. Nilsson**, Xianfeng Gu and Derek Ryan, University of Rochester
- 4:00 220** Modulation of Function In a Minimalist Heme-Binding Membrane Protein. **Giovanna Ghirlanda**, Arizona State University
- 4:40 221** Structural Diversity In the Isoprenoid Pathway. **C. Dale Poulter**, University of Utah

**1:30 PM - 5:10 PM**

**Frontiers In Medicinal Chemistry: Synthesis, Discovery, and Mechanism of Action II**

Grand Ballroom III

Organizer: Matt A. Peterson, Brigham Young University

- 1:30 222** Targeting Cancer with CES2- and Plasmin-Activated Doxazolidine. **Tad H. Koch**<sup>1</sup>, Benjamin L. Barthel<sup>1</sup>, Brian T. Kalet<sup>1</sup>, Daniel L. Rudnicki<sup>1</sup>, David J. Burkhart<sup>1</sup>, Daniel C.F. Chan<sup>2</sup> and Zhiyong Zhang<sup>2</sup>, (1)University of Colorado, (2)University of Colorado Denver
- 2:10 223** Optical Lymph Node Imaging: From the Chemistry Bench to the Operating Room Table. **Charles B. Grissom**<sup>1</sup>, James M. McGreevy<sup>2</sup>, Robert H. I. Andtbacka<sup>2</sup>, Manfai Lee<sup>1</sup>, Shawn C. Owen<sup>1</sup>, Hsaio-Nung Chen<sup>1</sup> and Yao Shi<sup>1</sup>, (1)University of Utah, (2)University of Utah School of Medicine
- 2:50** Break.

- 3:10 224** Glycopeptides. from Neurotransmitters to Pharmaceuticals Via Membrane Hopping. **Robin Polt**, University of Arizona, Edward J. Bilsky, University of New England, Jean M. Bidlack, The University of Arizona and S. Stephen Negus, Alcohol & Drug Abuse Research Center
- 3:50 225** Synthesis and QSAR Studies of CADA Analogs with CD4 down-Modulating and Anti-HIV Activities. **Thomas W. Bell**, University of Nevada
- 4:30 226** Carbohydrates: Versatile Building Blocks for Diversity-Oriented Synthesis of Bioactive Compounds. **Tom Chang**, USU

### **Division of Computers in Chemistry and Physical Chemistry**

**1:30 PM - 5:00 PM**

#### **Inhomogeneous Electrolytes II**

Grill Room

Organizers: Douglas Henderson, Brigham Young University, Bob Eisenberg, Rush University Medical Center

- 1:30 227** Inhomogeneous Electrolytes: New Formalism and Exact Results. **Dung Di Caprio**<sup>1</sup>, Myroslav Holovko<sup>2</sup> and Jean Pierre Badiali<sup>1</sup>, (1)University Paris 6, CNRS, ENSCP, (2)Institute for Condensed Matter Physics
- 1:55 228** Semi-Empirical Evidence for a Contact Value for the Charge Profile of An Inhomogeneous Charged Hard Sphere System near An Electrode. **Lutful B. Bhuiyan**, University of Puerto Rico and Douglas Henderson, Brigham Young University
- 2:20 229** Self-Consistent Combination of the Three-Dimensional RISM Theory of Molecular Solvation with Analytical Gradients and the Amsterdam Density Functional Package. **Sergey Gusarov** and Kovalenko A. Kovalenko, National Institute for Nanotechnology
- 2:45 230** Molecular Solvation Theory for Electrochemistry of Nanoporous Electrodes. **Andriy Kovalenko**, National Institute for Nanotechnology
- 3:10** Break.
- 3:40 231** Ion Specific Effects at Aqueous Interfaces. **Dusan Bratko**, Virginia Commonwealth University and University of California, Berkeley

- 4:05 232** Coupling the Nernst-Planck Equation to Monte Carlo Simulations to Explain Selectivity in Ca Channels and in Charged Pores in Plastic. **Dezso Boda**<sup>1</sup>, Monika Valisko<sup>1</sup>, Douglas Henderson<sup>2</sup>, Dirk Gillespie<sup>3</sup>, Wolfgang Nonner<sup>4</sup> and Bob Eisenberg<sup>3</sup>, (1)University of Pannonia, (2)Brigham Young University, (3)Rush University Medical Center, (4)Miller School of Medicine University of Miami
- 4:30 233** Ion Selectivity in a Biological Calcium Channel: The Ryanodine Receptor. **Dirk Gillespie**, Rush University Medical Center

### **Chemical Education**

**1:30 PM - 5:00 PM**

#### **Innovative Strategies for Computer-Assisted Learning I**

Grand Ballroom I

Organizer: Matt A. Peterson, Brigham Young University

Presider: Dr. Steven G. Wood, Brigham Young University

- 1:30 234** Innovative Strategies for Computer Assisted Learning -- McGraw-Hill Publishers. **John J. Mathews**, McGraw-Hill Publishers
- 2:10 235** Increase Learning Gains by Using WileyPLUS with CATALYST. **Amanda Wainer**, John Wiley & Sons, Inc.
- 2:50** Break.
- 3:10 236** MasteringChemistry. **Bart Stewart**, Pearson Education
- 3:50 237** The OWL Electronic Homework System. **William Vining**, SUNY College at Oneonta

### **Inorganic Chemistry**

**1:30 PM - 5:00 PM**

#### **Supramolecular Chemistry II**

Grand Ballroom IV

Organizer: Roger G. Harrison, Brigham Young University

- 1:30 238** The Influence of Neutral Guests on Cation Binding In Cation-Capped Cucurbiturils: A Gas Phase Experimental and Computational Study. **David V. Dearden**, Fan Yang, Jacob Voelkel, Jamie Olsen, Mckay Allred and Chadin L. Dejsupa, Brigham Young University

- 2:00 239** Supramolecular Arsenic Coordination Chemistry. **Darren W. Johnson**, University of Oregon
- 2:30 240** Cavitand Based Supramolecular Chemistry. **Joshua J. Pak**, Idaho State University
- 3:00** Break.
- 3:15 241** Molecular Squares with Octahedral Corners as Potential Synthons for Higher Dimensional Structures. Jeramie Adams<sup>1</sup>, **B. Patrick Sullivan**<sup>1</sup> and Andrew S. Del Negro<sup>2</sup>, (1)University of Wyoming, (2)Pacific Northwest National Laboratories
- 3:45 242** Capacity-Adjustable Anion Exchange Macrocycles. **Jing Wang**, John D. Lamb and Roger G. Harrison, Brigham Young University

**5:00 PM - 7:00 PM**

**Undergraduate Programming - LN2 Ice Cream Social**

Grand Ballroom IV

Organizer: Eric T. Sevy, Brigham Young University

**6:00 PM - 7:30 PM**

**RMR Board Meeting**

Boardroom

Presider: Patricia Schumann, ImaRx Therapeutics, Inc.

**Wednesday, June 18, 2008**

**Analytical Chemistry**

**8:00 AM - 12:00 PM**

**General Analytical Session II**

Uinta I

Presider: Ryan T. Kelly, Pacific Northwest National Laboratory

- 8:00 243** Trace Assay of <sup>232</sup>Th In Ultra-Pure Electroformed Copper. **E.E. Mintzer**, O.T. Farmer III, M. Liezers and Eric W. Hoppe, Pacific Northwest National Laboratory

- 8:20 244** The Association of Uranyl and Humates in Biphasic Systems. **Ray Von Wandruszka**, University of Idaho and Jeremy Riggle, Eastern Washington University
- 8:40 245** The Effect of Aggregation on the Reduction Potentials of Aqueous Humates and Fulvates. **Noel Palmer** and Ray von Wandruszka, University of Idaho
- 9:00 246** A New Approach towards the Oxidation of Cyclohexane Using Oxygen and Silica-Supported Gold Nanoparticles. **Rama R. Bhattacharjee** and Ryan M. Richards, COLORADO SCHOOL OF MINES
- 9:20 247** Thermal Characterization of Nanoparticles by Quartz Crystal Microbalances. **Aparna Kar**, Elisabeth Mansfield and Stephanie Hooker, NIST
- 9:40 248** Electron Tomography Study of Size Tunable Gold Nanorods Prepared In the Channels of Mesoporous Silica. **Zhi Li**, Colorado School of Mines, Christian Kübel, Fraunhofer Institute for Production Technology and Applied Materials Research (IFAM), Bremen, Germany, Vasile Pârvulescu, University of Bucharest and Ryan Richards, School of Mines
- 10:00** Break.
- 10:20 249** Photolithographically Patterned Carbon Nanotube Containing Polymer Thin Films for Sensing Applications. **Lei Pei**, Robert C. Davis, PhD and Matthew R. Linford, Brigham Young University
- 10:40 250** Chemical Patterning by Polymer Nanografting on Oxide Surfaces. **Brian Davis**, Hiram Conley, Katherine Hurd, Matthew Linford and Robert Davis, Brigham Young University
- 11:00 251** PDMS Transfer In Microcontact Printing as a Contrast Agent for ToF-SIMS Imaging. **Li Yang**<sup>1</sup>, Naoto Shirahata<sup>2</sup> and Matthew R. Linford<sup>1</sup>, (1)Brigham Young University, (2)National Institute for Materials Science
- 11:20 252** Supersonic Jet Spectroscopy of Fossil Fuels. **Taylor Cline**, Amber Johnstone-Gygi and Steven R. Goates, Brigham Young University
- 11:40 253** The Clouding of Anionic Surfactants in Acid Media. **Joey Charboneau** and Ray von Wandruszka, University of Idaho

## Division of Computers in Chemistry and Physical Chemistry

8:00 AM - 12:00 PM

### Inhomogeneous Electrolytes III

Grill Room

Organizers: Douglas Henderson, Brigham Young University, Bob Eisenberg, Rush University Medical Center

- 8:00 254** Molecular Dynamics Simulations of Na<sup>+</sup> Transport Free-Energy Profile for Gramicidin and Two Analogs. Morad Alawneh and **David Busath**, Brigham Young University
- 8:25 255** DNA Melting: Temperature Vs Mechanical Strain. **B. Montgomery Pettitt**, University of Houston
- 8:50 256** Configurational Entropy In Molecular Recognition. **Michael K. Gilson**, UMBI
- 9:15 257** A Model for Proton Transfer In Large-Scale Simulations. **Dean Wheeler** and Abishek Asthana, Brigham Young University
- 9:40** Break.
- 10:10 258** Probing Dynamics and Impedance of Inhomogeneous Electrolytes with Alternating-Current Non-Equilibrium Molecular Dynamics (AC-NEMD) Simulations. **Kwong-Yu Chan** and Qingyin Zhang, The University of Hong Kong
- 10:35 259** Fundamental Measure Theory for Charged Hard Spheres. **Roland Roth**, Max-Planck-Institut fuer Metallforschung Stuttgart
- 11:00 260** Confined Polyelectrolytes: Effects of Valence, Size and Correlations. **Jianzhong Wu**, University of California Riverside
- 11:25 261** Inhomogeneous Charged Colloids. **Andrij Trokhymchuk**<sup>1</sup>, Darsh Wasan<sup>2</sup>, Alex Nikolov<sup>2</sup> and Eckhard Spohr<sup>3</sup>, (1)Institute for Condensed Matter Physics of National Academy of Sciences of Ukraine, (2)Illinois Institute of Technology, (3)Universität Duisburg-Essen

## **Chemical Education**

**8:15 AM - 12:00 PM**

### **Innovative Strategies for Computer-Assisted Learning II**

Grand Ballroom I

Organizer: Matt A. Peterson, Brigham Young University

Presider: Dr. Steven G. Wood, Brigham Young University

**8:15 262** Using Online Assessment to Increase Students Learning Gains.  
**Ramesh Arasasingham**, University of California, Irvine

**8:45 263** Using Computer Technology for Teaching Organic and Bio-Organic Chemistry. **Steven Fleming**, Brigham Young University

**9:15 264** Do Dynamic Visualizations Help Students Understand Chemistry Concepts?. **Jerry P. Suits**, Univ of Northern Colorado

**9:45** Break.

**10:15 265** Computer-Based Workshops in General Chemistry. **Morton Z. Hoffman** and Alan D. Crosby, Boston University

**10:45 266** Using Computational Studies to Promote Interdisciplinary Learning. **Tricia D. Shepherd**, Westminster College

**11:15 267** A Text for the First-Year Chemistry Course Designed for the Net-Generation. **Steven Wood**, Lindsay Thayer, Austin Hadley, Kathryn Sadler, Natalie Jungkunz, Daniel Davidson and Stephen Stacey, Brigham Young University

## **Organic Chemistry**

**8:30 AM - 12:00 PM**

### **Bio-Organic Chemistry II**

Grand Ballroom II

Organizers: Young Wan Ham, Brigham Young University, Heidi R. Vollmer-Snarr, Brigham Young University

Presider: Heidi R. Vollmer-Snarr, Brigham Young University

**8:30** Introductory Remarks.

**8:40 268** Drug Discovery and Chemical Biology In Three-Dimensions. **Glenn D. Prestwich**, University of Utah

- 9:20 269** Natural Killer T Cell Stimulation by Microbial Glycolipids. **Paul B. Savage**, Shenglou Deng, Xiangtian Long, Yang Liu and Zhuo Zang, Brigham Young University
- 10:00** Break.
- 10:20 270** New, Knowledge-Based Antimalarial Leads. **Pradipsinh K. Rathod**, University of Washington
- 11:00 271** Do Spirohydantoins Form Base Pairs In DNA?. **Cynthia Burrows**, University of Utah

## **Inorganic Chemistry**

**8:30 AM - 12:00 PM**

### **General Inorganic Session**

Grand Ballroom IV

Presider: Lisa M. Berreau, Utah State University

- 8:30 272** Diphenyldithiophosphinic Acids as Actinide Extractants, a Density Functional Theory Investigation. **Michael T. Benson**, Adriana Dinescu, Dean R. Peterman and Megan L. Moser, Idaho National Laboratory
- 8:50 273** Arsenic & Selenium Recovery from Aqueous Systmes Using Nano-Porous Silica Polyamine Composites. **Varadharajan Kailasam** and Edward Rosenberg, University of Montana
- 9:10 274** The Thermodynamics of Reacting  $\text{VO}_3^-$  (aq) with 4-X-2,6-Pyridinedimethanol (X = H, Cl,  $\text{N}(\text{CH}_3)_2$ ) and with 2,6-Dipicolinic Acid. **Zachary N. Pickett** and William A Howard, University of Alaska Fairbanks
- 9:30 275** New Metal Ligand Luminescence Complexes Synthesized to Study Lipid Vesicles. **Ayesha Sharmin**, Edward Rosenberg and J. B. a Ross, University of Montana
- 9:50** Break.
- 10:10 276** Spontaneous Formation of Ternary I-III-VI Chalcogenide Nanoparticles Using Supercritical  $\text{CO}_2$ . **Rene G. Rodriguez**<sup>1</sup>, Joshua J Pak<sup>1</sup>, Lisa D Lau<sup>1</sup>, Robert V. Fox<sup>2</sup>, Alex Punnoose<sup>3</sup> and Aaron Thurber<sup>3</sup>, (1)Idaho State University, (2)Idaho National Laboratory, (3)Boise State University

**10:30 277** The Mechanism behind a Novel Two-Step Solid-State Method for Synthesizing Metal Oxide Nanoparticles. **Stacey J. Smith**, Qingyuan Liu, Juliana Boerio-Goates and Brian F. Woodfield, Brigham Young University

**10:50 278** Investigation of the Surface and Mechanical Properties of Ultra-Pure Electroformed Copper. **Eric W. Hoppe**, C. Chamberlin, M. Dahl, D. Edwards, D. Gerlach, J. Keaveney, E. Mintzer and A. Schemer-Kohrn, Pacific Northwest National Laboratory

**11:10 279** Novel Polyoxoanion Stabilized Gold and Silver Nanostructures. **Divakara Soorly Gopala**, Colorado School of Mines

**11:30 280** Intercalation of Well-Dispersed Gold Nanoparticles into the Walls of Mesoporous Silica: An Efficient Catalyst for Alcohols and Alkanes Oxidation. **Juncheng Hu**, Lifang Chen and Ryan M. Richards, School of Mines