

**CeRM 44 Technical Program**  
**S. Kaganove and A. Mueller, Program Chairs**

**WEDNESDAY MORNING**

**Material Characterization Using Spectroscopy and Imaging I**

ET Building

ET 153

M. Chai, *Organizer*

**8:30 1.** Characterization of medium-sized chlorophosphazene rings. D. J. Bowers, B. D. Wright, V. Scionti, A. Schultz, M. J. Panzner, B. C. Katzenmeyer, C. Wesdemiotis, W. J. Youngs, **C. A. Tessier**

**9:00 2.** Compositional heterogeneity of polymers by size exclusion chromatography-infrared spectroscopy. **M. A. Rickard**, J. Kiefer, D. Meunier

**9:30** Coffee break.

**10:00 3.** Discrete frequency infrared microspectroscopy and imaging with a tunable quantum cascade laser. **M. R. Kole**, R. K. Reddy, M. V. Schulmerich, M. K. Gelber, R. Bhargava

**10:30 4.** Spectroscopic characterization of a novel cisplatin analog: Pt(II) complex with salicylic acid. **M. Chai**, E. K. Gorski, J. Liang

**Materials from Renewable Bio-sources I**

ET Building

ET 138

B. Howell, P. B. Smith, *Organizers*

**8:30 5.** An Introduction to Eco Bio Plastics Midland. **A. Merrington**

**9:00 6.** Biomaterial-derived hyperbranched poly(ester)s. **T. Zhang**, B. A. Howell, P. B. Smith, A. Dumitrascu

**9:30** Coffee break.

**10:00 7.** Plasticizers from renewable tartaric acid. **W. Sun**, B. A. Howell

**10:30 8.** Journalist's view of the biobased chemicals industry. **M. McCoy**

**Polymer-Based Nanomaterials/Nanocomposites**

ET Building

ET 128

T. Chatterjee, *Organizer*

**8:30 9.** Modulus and fracture strength measurements on nanoscale RO membranes using crack wrinkling method. **R. C. Cieslinski**, A. Roy, H. Wu, C. Reinhardt

**9:00 10.** Polymer based nanocomposites for nonlinear optical applications. **A. Sarkar**

**9:30** Coffee break.

**10:00 11.** Self-consistent field theory modeling of polymer-clay nanocomposites. **V. V. Ginzburg**

**10:30 12.** Dynamics of nanoparticles in polymer solutions and melts. **A. Mukhopadhyay**

## Sustainability - Philosophical and Technical Perspectives

Moore Hall

Moore 120

J. Falender, *Organizer*

**8:30** 13. Poverty of sustainability. **J. M. Hill**

**9:00** 14. Dow Corning's sustainability journey. **J. L. Waldron**

**9:30** Coffee break.

**10:00** 15. Life Cycle Assessment methodology used to estimate carbon balance of silicone industry. **J. L. Princing**

**10:30** 16. Driving innovation for sustainability. **R. K. Helling**

## Advances in Nano-Structured Functional Materials

ET Building

ET 132

D. Karpovich, *Organizer*

**9:00** 17. Improving the catalytic activity of semiconductor nanocrystals through selective domain etching. **E. Khon**

**9:30** Coffee break.

**10:00** 18. Glyconanoparticle aided detection of  $\beta$ -Amyloid by magnetic resonance imaging and attenuation of  $\beta$ -Amyloid induced cytotoxicity. **H. Kouyoumdjian**, D. C. Zhu, M. H. Eldakdouki, K. Lorenz, J. Chen, W. Li, X. Huang

**10:30** 19. Synthesis and characterization of PbS nano sheets. **G. B. Bhandari**, **K. Subedi**, D. Jiang, R. O'Dell, N. Reilly, A. T. Zayak, L. Sun

## Photonics for Energy I

ET Building

ET 116

A. Sarkar, R. Guda, *Organizers*

K. Nanjundiah, *Organizer; Presiding*

**10:00** 20. Silicon and graphene based semiconductor nanostructures for energy efficient emitters. **A. Neogi**, R. Shah, A. Singh, J. Perez

**10:30** 21. Matrix encapsulated nanocrystal solids for light-harvesting and light-emitting applications. **M. Zamkov**

## Plenary Talk

Moore Hall

Moore Kiva (130)

**11:00** 22. Building Blocks for a Sustainable Future: A European Perspective. **M. Vermeulen**

## WEDNESDAY AFTERNOON

## Computational Methods Applied to Materials, Structural Biology, and Drug Design

ET Building

ET 132

S. Trohalaki, *Organizer*

**1:30** 23. Towards the blackbox computation of magnetic exchange coupling parameters in polynuclear transition-metal complexes. **J. J. Phillips**, J. E. Peralta

**2:00** 24. Towards accurate parametrization of imidazolium based ionic liquid potentials. **O. N. Starovoytov**, H. Torabifard, G. A. Cisneros

**2:30 25.** Investigation of peptide inhibitors of Clostridium Difficile Toxin B: Differentiating between mechanisms by computational methods, functionalizing to irreversibility. **R. Swett**, G. A. Cisneros, A. L. Feig

**3:00** Coffee break.

**3:30 26.** Towards a deeper understanding of enzyme reactions using the coupled ELF/NCI analysis: Application to DNA repair enzymes. **D. Fang**, R. Chaudret, J. Piquemal, A. Cisneros

**4:00 27.** Predictive computational methods for charge transfer in functionalized silsesquioxanes: Building blocks for photovoltaic applications. **H. Phillips**, S. Zheng, E. Geva, B. Dunietz

**4:30 28.** Effect of edge oxidation on Li adsorption in graphene nanoribbons. **C. Uthaisar**, D. J. Hicks, V. Barone

## **Inorganic Chemistry**

Moore Hall

Moore Kiva (130)

M. Benvenuto, *Organizer*

**1:30 29.** Synthesis of a series of multi-dentate ligands, all incorporating 2,6-diaminotoluene or 1,3-diaminobenzene, and ligand-metal complexes incorporating them. **A. Koglin**, D. Schupbach, M. A. Benvenuto

**2:00 30.** Divalent metal coordination polymers containing long-spanning dipyrildypiperazine ligands: Threaded loops, self-penetrated nets, and other novel topologies. **R. L. LaDuca**, M. E. Robinson, G. A. Farnum, J. L. Meyer, A. L. Pochodylo

**2:30 31.** Spectroscopic studies of Zn-hydrolase inhibitor complexes analogs and related models. **D. L. Tierney**

**3:00** Coffee break.

**3:30 32.** CO<sub>2</sub> hydration by a de novo designed zinc metalloenzyme. **V. M. Cangelosi**, V. L. Pecoraro

**4:00 33.** Effects of “non-innocent”  $\alpha$ -diimine ligands on low oxidation state indium centres. **C. J. Allan**, B. F. Cooper, H. J. Cowley, J. M. Rawson, C. L. Macdonald

**4:30 34.** Utilizing de novo design to create a redox active copper peptide. **J. Plegaria**, W. Leibl, C. Tard, A. Quaranta, M. Duca, V. Pecoraro

## **Materials Characterization Using Spectroscopy and Imaging II**

ET Building

ET 153

M. Chai, *Organizer*

**1:30 35.** Poly(1-chloro-1-fluoroethylene) and poly(vinyl fluoride): Advances in <sup>1</sup>H/<sup>13</sup>C/<sup>19</sup>F triple resonance 3D-NMR characterization. **F. J. Wyzgoski**, L. Li, X. Li, B. Zhang, P. L. Rinaldi, E. McCord

**2:00 36.** NMR analysis on synthesis of amphiphilic polysaccharide. **L. Fu**

**2:30 37.** In situ NMR titration techniques for analyzing polyprotic macromolecules. **D. Holycross**, **M. Chai**

**3:00** Coffee break.

**3:30 38.** Atomic force microscopy of polyethyleneimine modified single-walled carbon nanotubes. **D. Holycross**, M. Chai

**4:00 39.** Measurement of pseudocontact shifts in natively diamagnetic proteins modified with paramagnetic tags. **R. Arachchige**

**4:30 40.** Automated high throughput tribometer for friction, adhesion, and wear measurements. **V. Kalihari**, L. McCarty

## Materials from Renewable Bio-sources II

ET Building

ET 138

B. Howell, P. B. Smith, *Organizers*

- 1:30 41.** Reducing petroleum content in automotive seating foam. **K. Zhang**, J. T. McEvoy, E. F. Fabrizio
- 2:00 42.** Preparation strategies of biobased polyurethanes. **R. Narayan**, E. Hablot, D. Graiver
- 2:30 43.** Kinetic, computational, mechanistic and synthetic implications of the diol-Ritter reaction: Diols as surrogates for epoxides and cyclic sulfates in the regioselective synthesis of vicinal-aminoalcohols. **W. J. Kruper**, D. Arriola, J. R. Briggs, B. Bell, R. Froese, J. Klosin, J. MacDonald, M. Ondari
- 3:00** Coffee break.
- 3:30 44.** Green synthesis of aromatics from biomass using pyrolysis and catalysis. **C. M. Saffron**, S. Kelkar, R. M. Kriegel, T. J. Pinnavaia
- 4:00 45.** Building block chemistry for the biomass refinery of the future: Aqueous reductive upgrading to make fuels and chemicals, while buffering solar/wind energy production. **J. E. Jackson**, C. Lam, Z. Li, C. M. Saffron, M. Garedew
- 4:30 46.** NMR characterization of biobased, hyperbranched polyesters. **P. B. Smith**, T. Zhang, P. K. Martin, S. J. Martin, B. A. Howell

## Photonics for Energy II

ET Building

ET 116

K. Nanjundiah, *Organizer*

R. Guda, A. Sarkar, *Organizers, Presiding*

- 1:30 47.** Ultrafast studies of single metal and semiconductor nanostructures. **G. V. Hartland**
- 2:00 48.** Charge transfer-state formation and deactivation in d<sup>6</sup> metal polypyridyl complexes: Fundamental issues and applications in solar energy conversion. **J. K. McCusker**
- 2:30 49.** Monitoring local electric fields at interfaces and in proteins via two-photon fluorescence spectroscopy. **G. Ramakrishna**
- 3:00** Coffee break.
- 3:30 50.** Predicting the reliability of solar modules and components. **R. Gaston**, J. C. Stevens, K. Nanjundiah
- 4:00 51.** Nano-bio photocatalyst for hydrogen evolution based on bacteriorhodopsin and TiO<sub>2</sub>/Pt. **P. Wang**, S. Balasubramanian, R. Schaller, T. Tijana Rajh, E. Rozhkova
- 4:30 52.** Olefin based encapsulant materials for photovoltaic modules. **K. Nanjundiah**, J. Naumovitz, M. White, T. Burns

## Raman Spectroscopy: Moving Out of the Lab and Into the Field and Clinic

ET Building

ET 128

M. Tecklenburg, S. Deram, *Organizers*

- 1:30 53.** Cellular contrast in breast tissue biopsies with Raman spectroscopy and imaging. **M. Schulmerich**, M. Walsh, M. Kole, A. Kajdacsy-Balla, K. Tangella, R. Bhargava
- 2:00 54.** Raman spectroscopy measurements of pathological minerals. **K. Esmonde-White**, E. Keller, M. Morris, B. Roessler
- 2:30 55.** Validating in vivo Raman spectroscopy of bone in human subjects. **F. W. Esmonde-White**, K. A. Esmonde-White, M. D. Morris
- 3:00** Coffee break.

**3:30 56.** Raman spectroscopy of photopolymers: A four-dimensional exploration. **J. L. Jessop**

**4:00 57.** Engineering SERS-based nanosensors for chemical fingerprinting down to the single-molecule level. **I. E. Sizemore**, A. C. Stahler, J. D. Baker, K. M. Dorney, C. B. Anders

**4:30 58.** Label-free detection of individual macromolecular assemblies by surface-enhanced Raman spectroscopy. **S. M. Asiala**, Z. D. Schultz

## WEDNESDAY EVENING

### Poster Session: Computational Methods Applied to Materials, Structural Biology, and Drug Design

ET Building

ET Hallway

S. Trohalaki, B. Fahlman, *Organizers*

#### 5:00 - 7:00

**59.** Effect of using a chiral Lewis acid catalyst on the stereoselective synthesis of a substituted acyl pyrrolidine. **A. Dewyer**, M. C. Milletti

**60.** Effects of solvation on the overall binding strength of PAI-1 and its polyphenolic inhibitors. **J. Campbell**, M. C. Milletti

**61.** Effect of a methyl substituent on product stereoselectivity in an aza-Cope – Mannich reaction. **A. N. Chionis**, M. C. Milletti

**62.** Choosing a valid molecular mechanics method to model the PAI-1 protein. **B. Jewell**, M. C. Milletti

**63.** Energy profile of an aza-Cope Mannich tandem reaction leading to a substituted acylpyrrolidine. **A. Winkler**, M. C. Milletti

**64.** Effect of water molecules on the binding interactions between PAI-1 and its inhibitors. **M. G. Sadowsky**, M. C. Milletti

**65.** Investigation of van der Waals interactions in alkaline metal adsorption on low-dimensional porous graphene. **B. M. Williams**, C. Uthaisar, V. Barone

**66.** An assessment of DFT approximations for the characterization of spin-forbidden reactions. **B. A. Abate**, J. E. Peralta

**67.** Predictive models for the better understanding of oxime-reactivation for organophosphate inactivated Acetylcholinesterase. **E. X. Esposito**, T. R. Stouch, T. Wymore, J. D. Madura

### Poster Session: Advances in Nano-Structured Functional Materials

ET Building

ET Hallway

D. Karpovich, B. Fahlman, *Organizers*

#### 5:00 - 7:00

**68.** Suppressed defect scattering of charge carriers in PbS nanocrystal films encapsulated into CdS matrices. **P. Moroz**, N. Kholmicheva, B. Mellott, G. Liyanage, M. Zamkov

**69.** Construction of tailored 1-D gold nanoparticle superstructures via peptide bundling. **C. Zhang**, C. Song

**70.** Inorganic solids of PbS nanocrystals exhibiting bright emission in infrared region. **U. Rijal**, G. Liyanage, P. Moroz, M. Zamkov

**71.** Synthesis and characterization of ultrasmall PbS nanocrystals. **N. Reilly**, D. Jiang, G. Bhandari, K. Subedi, R. O'Dell, L. Sun

**72.** In-situ ligand removal for solution processing of inorganic nanocrystal films. **E. Bastola**, P. Uprety, P. Moroz, M. Zamkov

**73.** Boron- and nitrogen-doped graphene nanoribbons via oxidative unzipping of doped multi-walled carbon nanotubes. **Z. B. Grim**, B. D. Fahlman

## Poster Session: Inorganic Chemistry

ET Building

ET Hallway

M. Benvenuto, B. Fahlman, *Organizers*

**5:00 - 7:00**

**74.** Probing phosphate-metal interactions by using Raman spectroscopy. **P. M. Lebron**

**75.** Probing carboxylate-zinc interaction using Vibrational Spectroscopy. **J. Tolentino**

**76.** Spectroscopic studies of zinc hydrolases, their Co(II)-substituted analogs and related models. **A. R. Marts**, T. M. Woodruff, R. Venna, D. L. Tierney

**77.** Metal-mediated reduction of borazines: Towards reversible hydrogen storage systems. **T. J. Carter**, N. K. Szymczak

**78.** Metal-organic framework by phthalocyanine panels and their catalytic activity on organic sulfids. **S. Jianrattanasawat**, J. W. Kreft, G. Mezei

**79.** Molecularly woven materials from metal-organic precursors. **J. Hachem**, G. Mezei

**80.** Synthesis of a series of multi-dentate ligands and ligand-metal complexes all utilizing 4,4'-diaminodicyclohexylmethane. **S. Maurice**, M. Husain, O. El-Ghondi, A. Mordi, S. Vella, N. Wilchivsky, S. Murff, D. Schupach, M. A. Benvenuto

**81.** Plasmon-exiton interactions in metal/semiconductor core/shell heteronanostructures. **T. Hopkins**, S. Lambright, M. Zamkov, B. Smith, P. Anzenbacher

**82.** Insights into the nature of "non-innocent" nitrogen-based ligands: A case study using univalent phosphorus synthons. **S. C. Kosnik**, C. L. Macdonald

**83.** Complexes and reactivity of Ge(II) dications with small molecules. **J. H. Nguyen**, C. L. Macdonald

## Poster Session: Material Characterization Using Spectroscopy and Imaging

ET Building

ET Hallway

M. Chai, B. Fahlman, *Organizers*

**5:00 - 7:00**

**84.** X-ray and vibrational spectroscopy of alkyl groups covalently bonded to gallium phosphide (111)B. **E. S. Brown**, S. L. Peczonczyk, S. Maldonado

**85.** Characterization of elastin-like polypeptide (ELP) films. **A. R. Graves**, R. Hissam

**86.** Resistivity and mobility of Colloidal PbS quantum-dot films and their dependence on linker molecules. **R. A. O'Dell**, T. Jiang, L. Sun

**87.** NMR investigation of encapsulation of NSAIDs with various core-based G4 PAMAM dendrimers. **R. Hoyle**, S. O'Donald, M. Chai

**88.** Structure-photophysical property relationships of stilbenevinyl silsesquioxanes (SQs) and their oligomeric analogs in solution and solid state. **J. C. Furgal**, J. Jung, N. Abeyasinghe, E. Yi, M. Bahrami, T. Goodson III, R. Laine

**89.** Super-resolution spectroscopic imaging of Au<sub>25</sub> single nanoclusters in solid phase using ultrafast two photon excited fluorescence near-field scanning optical microscopy. **N. Abeyasinghe**, S. Kumar, R. Jin, T. Goodson III

**90.** Spectroscopic characterization of novel "sweet" salicylic acid dendrimers. **D. Wims**, M. Chai

## Poster Session: Photonics for Energy

ET Building

ET Hallway

K. Nanjundiah, A. Sarkar, R. Guda, B. Fahlman, *Organizers*

### 5:00 - 7:00

**91.** Design and development of silver nanoparticles and nanoshell additives for photonics applications. **J. Chai**, J. P. Godschalx, S. E. Keinath, A. Sarkar, C. Lysogorski, O. Pentenrieder

**92.** Nanoparticle-embedded polymer films: In situ synthesis, films with monodisperse nanoparticles, and optical Limiting. **S. Rahman**, B. Uurban, S. Butler, A. Neogi, A. Sarkar

**93.** Photophysical and electrochemical properties of novel DCDHF chromophores with enhanced molar extinction coefficients and photochemical stability. **T. A. Khattab**, R. J. Twieg, K. D. Singer, B. Valle, R. Bramante

**94.** Enhancing power conversion efficiency in dye-sensitized solar cells by adding DNA to the mix. **M. M. Pollum**, A. Adhia, C. E. Crespo Hernández

**95.** Dynamics and two-photon absorption cross-sections of chromophore-DNA complexes. **S. H. AlOtaibi**, R. Guda, A. M. Asiri

**96.** Multiphoton fluorescence spectroscopy to monitor the unfolding of the green fluorescent protein. **I. Y. Alja'afreh**, G. Ramakrishna, D. L. Huffman

**97.** Graphene oxide/zinc oxide nanocomposites as dissolved oxygen sensors. **J. A. Hasan**

**98.** Two-photon absorption properties of coumarin dyes in cationic, anionic and neutral micelles – role of local electric fields. **S. Bairu**, R. Guda

**99.** Ultrafast dynamics and two-photon absorption properties of chromophore-functionalized TiO<sub>2</sub> nanoparticles: p-type vs n-type coumarin. **E. Mghanga**, R. Guda, F. Abebe, E. Sinn, G. Wiederrecht

**100.** Temperature-dependent absorption and ultrafast luminescence dynamics of Bi-icosahedral Au<sub>25</sub> clusters. **V. D. Thanthirige**, M. Devadas, S. Bairu, E. Sinn, G. Ramakrishna

## Poster Session: Polymer-Based Nanomaterials/Nanocomposites

ET Building

ET Hallway

T. Chatterjee, B. Fahlman, *Organizers*

### 5:00 - 7:00

**101.** Investigation of the self assembly of amphiphilic block copolymer micelles by nuclear magnetic resonance spectroscopy. **A. Nimmagadda**, **G. M. Wilmes**

**102.** Responsive nanoparticles of elastin-like polypeptides for theranostic applications. **J. T. Cole**, N. B. Holland

**103.** Diffusion of nanoparticles in synthetic and biopolymer solutions. **I. Kohli**, A. Mukhopadhyay

## Poster Session: Raman Spectroscopy: Moving Out of the Lab and Into the Field and Clinic

ET Building

ET Hallway

M. Tecklenburg, S. Deram, B. Fahlman, *Organizers*

### 5:00 - 7:00

**104.** In situ Raman spectroscopic observation of sequential hydrolysis of stannous chloride to abhurite, hydromarchite, and romarchite. **M. Grandbois**, X. Chen

**105.** Vibrational spectra and first principles structure of carbonated apatite. **M. M. Tecklenburg**, B. Pavan

106. Investigation of polymer stabilized silver nanoparticles for SERS detection of drugs. **M. M. Tecklenburg**, H. Madupalli

## THURSDAY MORNING

### Symposium on Silicon Science and Technology I

Education & Human Services Bldg. (EHS)

French Auditorium

G. Lu, *Organizer, Presiding*

7:30 Light breakfast.

8:00 107. Materials strategies for printable hybrid electronic circuitry. **T. J. Marks**

8:45 108. Silicon clathrates: Interesting crystal structures with potential technological applications. **G. S. Nolas**

9:30 Coffee break.

9:45 109. Porous silicon particles for drug delivery. **B. Godin**

10:30 110. Fascinating silicones and their impact on coatings. **D. T. Liles**

11:15 111. Performance science of silicone on high performance building facades. **L. D. Carbary**

### Biomedical Polymers in Regenerative Medicine

ET Building

ET 116

B. Li, J. Li, *Organizers*

8:30 112. Conversion of Platinum(II) compounds to Platinum(IV) prodrugs. **P. Chhetri**, B. A. Howell

9:00 113. Electrospun scaffolds for endothelial colony forming cell and mesenchymal stem cell development. **J. Li**

9:30 Coffee break.

10:00 114. Hyaluronan coated nanoparticles for deep tumor penetration and targeted drug delivery. **X. Huang**, M. El-dakdouki, E. Pure

10:30 115. Bone tissue regeneration using biodegradable polymer scaffolds. **A. Jayasuriya**

### Electrochemistry and Related Technology for Energy and Environmental Applications I

Moore Hall

Moore 120

B. Pate, T. Gregory, *Organizers*

8:30 116. Electrocatalytic upgrading of fast pyrolysis biomass liquid via solid polymer electrolyte electrolyzer. **C. Lam**, J. E. Jackson, C. M. Saffron

9:00 117. Improved PEM fuel cells. **D. Hucul**, A. Merrington

9:30 Coffee break.

10:00 118. The electrochemistry of organometallic manganese CO<sub>2</sub> reduction electrocatalysts. **B. Dhakal**, D. A. Kurtz, G. A. Felton

10:30 119. Anodic alkene coupling with organo-rhenium electrocatalyst and cathodic reduction induced alkene hydration reactions. **D. Chong**, J. P. May, J. Liu, R. E. Sammelson



## Polymer Degradation, Flammability, and Combustion I

ET Building

ET 132

B. Howell, *Organizer*

**9:00 120.** Thermal liability of general purpose poly(styrene). **B. A. Howell**

**9:30** Coffee break.

**10:00 121.** New developmental class of brominated polymeric flame retardants. M. Beach, D. Beaudoin, I. Beulich, D. Gorman, J. Hull, **B. King**, J. Kiefer, S. Kram, R. Leng, C. Lukas, T. Morgan, B. Stobby, M. Matteucci

**10:30 122.** Monomer distribution and depletion in vinylidene chloride copolymerization. **D. E. Beyer**, P. B. Smith, J. Kosman, C. Thieme, B. A. Howell

## Analytical Chemistry I

ET Building

ET 138

A. Mueller, *Organizer*

**10:00 123.** Monovalent and divalent salt effects on thermogelation of aqueous hypromellose solutions. **N. Almeida**

**10:30 124.** Relating the bioactivity of black raspberry extracts at various stages of ripeness with NMR-based metabolomic studies. **F. J. Wyzgoski**, L. Paudel, J. C. Scheerens, R. N. Reese, P. L. Rinaldi, M. M. Giusti, A. M. Channon, J. K. Hardy, J. A. Bomser

## Green Chemistry I

ET Building

ET 153

G. Ruger, J. Manley, *Organizers*

**10:00 125.** Green(er) chemistry: Alternative to potassium dichromate as a redox titrant in the Analytical Chemistry Lab. **D. W. Randall**, L. K. Garibay

**10:30 126.** Designing a green laboratory manual for General Chemistry I course. **S. I. Ayesb**

## Plenary Talk

Moore Hall

Moore Kiva (130)

**11:00 127.** Sustainable Decision Making. **M. E. Jones**

## THURSDAY AFTERNOON

### Poster Session: Silicon Science and Technology

ET Building

ET Hallway

G. Lu, B. Fahlman, *Organizers*

**12:00 - 1:30**

**128.** Carbon-to-carbon [1,2]-silyl migration in alpha silyl allylic alcohols triggered by epoxidation. **M. I. Amado Sierra**, L. Mori-Quiroz, R. E. Maleczka

**129.** Polymethylhydrosiloxane (PMHS) as a reductant in metal-catalyzed hydrostannations. **A. J. Baker**, B. Ghosh, R. E. Maleczka

130.  $^1\text{H}$ - $^{29}\text{Si}$  HMBC NMR-identification and quantification of *cis* and *trans* isomers in aminophenyl double decker silsesquioxanes. **B. W. Schoen**, D. Holmes, A. Y. Lee

### Poster Session: Analytical Chemistry

ET Building

ET Hallway

A. Mueller, B. Fahlman, *Organizers*

12:00 - 1:30

131. Development of an x-ray microfluidic flow cytometer for single cell metal analysis. **A. M. Crawford**, P. Kurecka, A. Deb, J. Penner-Hahn

132. NMR characterization of Poly(2,3,4-tri-O-acetyl- $\alpha$ -D-glucopyranose). **L. Li**

133. Analytical Chemistry online and in the field, how is that possible? **D. J. LeCaptain**

134. Quantifying the accumulation of silver nanoparticles in freshwater crayfish tissue by inductively coupled plasma optical emission spectrometry (ICP-OES). **C. McDonald**, J. Dagher, A. Stahler, S. Brittle, Z. Gagnon, I. Sizemore

135. Comparing the longitudinal impacts of three formats of Michigan State University general chemistry courses. **R. Tauscher**, R. Sweeder

### Poster Session: Biochemistry

ET Building

ET Hallway

A. Mueller, B. Fahlman, *Organizers*

12:00 - 1:30

136. Studying the potential contributions of ligand functional groups cooperativity in ligand-protein binding: Cooperativity between a H-bonding group and hydrophobic side chains in a series of thrombin inhibitors. **A. M. Said**, D. G. Hangauer

137. Effect of bioisosteric replacement on ligand functional group cooperativity within a series of thrombin inhibitors: Replacing  $-\text{C}=\text{O}$  group with  $-\text{SO}_2-$  group. **A. M. Said**, D. G. Hangauer

138. Chemoenzymatic synthesis of an analogue of the potent antifungal mycosubtilin. **M. Srivastava**, J. Scaglione, D. Heyl-Clegg

139. Hypothesis driven-single nucleotide polymorphism-search (HD-SNP-S). **R. Swett**, A. A. Elias, G. Dyson, G. A. Cisneros

140. Secondary amines containing one aromatic nitro group: Preparation, nitrosation, sustained nitric oxide release, and the synergistic effects of released nitric oxide and arginase inhibitor on vascular smooth muscle cell proliferation. **B. Curtis**, T. Payne, D. E. Ash, D. K. Mohanty

### Poster Session: Biomedical Polymers in Regenerative Medicine

ET Building

ET Hallway

B. Li, J. Li, B. Fahlman, *Organizers*

12:00 - 1:30

141. Preparation of redox/pH dual stimuli-responsive hydrogels based on carboxymethyl chitosan. **Y. Sun**, **Y. Yin**, D. Wu, M. Liu, Z. Ye

142. Isothermal crystallization of polycaprolactone / polyhedral oligomeric silsesquioxane composites. **D. Kool**

143. Preparation and characterization of stimuli-responsive poly(N-isopropylacrylamide)/poly(ethylene glycol) dimethacrylate composites. **K. Greenman**, J. Liu, B. Li

144. Cellular behavior in response to polyhedral oligomeric silsesquioxane-based hybrid nanocomposites. **J. Fan**

145. Evaporation dynamic of liquid droplet on nano/microstructured surface of polyhedral oligomeric silsesquioxanes-based copolymers. **J. Liu**

146. Examination of pre-osteoblast response to variations in electrospun polymer nanocomposite substrates. **A. J. Bauer**, J. Liu, J. Fan, B. Li

### Poster Session: Dendrimers and Hyperbranched Polymers

ET Building

ET Hallway

C. Lee, B. Fahlman, A. Sharma, *Organizers*

12:00 - 1:30

147. Functionalized hyperbranched polyesters for coating applications. **A. Dumitrascu**, J. Chai, P. Smith, R. Bubeck, P. Dvornic, S. Keinath, A. Sarkar

148. Microwave assisted azide-alkyne “Click Chemistry” for synthesis of dendritic antioxidants without copper contamination. **R. Held**, C. Y. Lee, W. Du

149. Synthesis and characterization of polyresorcinol and its possible copolymerizations with polyethylene glycol. **D. A. Hills**, A. Mueller

### Poster Session: Electrochemistry and Related Technology for Energy and Environmental Applications

ET Building

ET Hallway

B. Pate, T. Gregory, B. Fahlman, *Organizers*

12:00 - 1:30

150. Experimental evidences of multiple electron transfer  $\text{Fe}^{2+}/\text{Fe}^{4+}$  cathode for Li-ion batteries. **S. R. Bruno**, C. K. Blakely, J. B. Clapham, V. V. Poltavets

151. Electrochemical properties of oxidized graphene nanoribbons obtained from oxidative unzipping of multiwalled carbon nanotubes. **D. J. Hicks**, **P. A. Medina**, C. Uthaisar, V. Barone, B. D. Fahlman

152. Electrochemical impedance spectroscopy and photoelectrochemical investigation of improved water oxidation by  $\alpha\text{-Fe}_2\text{O}_3$  with NiO overlayer. **K. M. Young**, T. W. Hamann

### Poster Session: General Chemistry

ET Building

ET Hallway

A. Mueller, B. Fahlman, *Organizers*

12:00 - 1:30

153. CMU Organic Discussion Group (CODG) – Continuing education for organic chemistry faculty and advanced graduate students. **W. L. Dilling**

154. Enantiodifferentiating photocyclodimerization of 2-anthracenecarboxylate – A CODG seminar-discussion. **W. L. Dilling**

### Poster Session: Green Chemistry

ET Building

ET Hallway

G. Ruger, J. Manley, B. Fahlman, *Organizers*

12:00 - 1:30

- 155.** Degradation of ethinyl estradiol in water using TAML iron coordination compounds. **M. Mills**, K. Arias, A. Baynes, S. Jobling, T. J. Collins, R. Gil, A. Ryabov
- 156.** Removal of arsenic and perchlorate from water. **C. Ho**, A. Mueller
- 157.** High throughput synthesis of 1,3-diialkylglycerols: Six Sigma study. **A. L. Krasovski**, I. Graf, T. Kalantar, R. Krystosek
- 158.** Tangential flow filtration of colloidal silver nanoparticles: A novel “green” nanotechnology laboratory experiment. **K. M. Dorney**, J. D. Baker, M. L. Edwards, I. E. Sizemore
- 159.** Selective borylation of sp<sup>2</sup> C-H bonds that are ortho or meta to sterically diminutive substituents. **S. L. Miller**, A. G. Chotana, J. A. Fritz, R. E. Maleczka, M. R. Smith
- 160.** Kinetics of mixed Ethanol/n-Butanol esterification of Butyric Acid with Amberlyst 70 and p-Toluene sulfonic acid: Emergence of common rate constants for esterifications. **A. Santhanakrishnan**, D. Miller, C. T. Lira, L. Peereboom
- 161.** Kinetics of Mixed Ethanol/n-Butanol Esterification of Butyric Acid with Amberlyst 70 and p-Toluene Sulfonic Acid and Emergence of a Unified Rate Constant for esterification of butyric acid. **A. Santhanakrishnan**, D. Miller

### Poster Session: Physical Chemistry

ET Building

ET Hallway

D. Randall, B. Fahlman, *Organizers*

**12:00 - 1:30**

- 162.** Removal of nonionic surfactants from aqueous solution by ultrafiltration. **J. D. Roach**
- 163.** Effects of various linker moieties in porphyrin polymers for use in organic photovoltaic devices: A computational investigation. Z. L. Dunn, M. A. Hammer, A. C. Ernst, **B. J. Topham**, T. M. Perrine
- 164.** Predictive computational methods for charge transfer in organic optoelectronic materials. **H. Phillips**, **F. DeVine**, S. Zheng, E. Geva, B. Dunietz
- 165.** Photophysical studies in a non-covalently linked zinc N-confused porphyrin dimer-perylenediimide triad. **J. Joseph**, R. Altamimi, R. Acharya, D. A. Modarelli
- 166.** Substituent effects on the band gap and donor ability of porphyrin based systems for polymeric OPV applications: A computational analysis. **M. A. Hammer**, Z. L. Dunn, B. J. Topham, T. M. Perrine

### Analytical Chemistry II

ET Building

ET 138

A. Mueller, *Organizer*

- 1:30** **167.** Supercritical carbon dioxide extraction and refining of beeswax. **G. N. Gachumi**, D. E. Raynie
- 2:00** **168.** Development of metalloporphyrin-based electrocatalysts for gasotransmitter detection. **J. A. Bennett**
- 2:30** **169.** Introducing new fully-integrated TGA-GC-MS and TGA-FTIR systems for characterization of materials including polymers, petrochemicals, biomass, and more. **R. Pieper**
- 3:00** Coffee break.
- 3:30** **170.** Chromatographic method development and Validation and process impurity identification for the phosphorylation of menadiol: The road towards sustainable pharmaceutical processes. **S. D. Van Arnum**, H. J. Niemczyk, C. Chang, M. B. Casani, J. P. Cziepel
- 4:00** **171.** Using High Performance Liquid Chromatography to analyze fruit and vegetables for chlorpyrifos. **K. Tuttle**, C. Daugherty
- 4:30** **172.** Analysis of chlorpyrifos in water samples using gas chromatography. **C. N. Daugherty**, K. E. Tuttle

## Dendrimers and Hyperbranched Polymers

ET Building

ET 116

C. Lee, A. Sharma, *Organizers*

**1:30 173.** Dendrimer inspired systematic framework for unifying nanoscience: A predictive nanoparaperiodic system. **D. A. Tomalia**

**2:30 174.** Potent dendritic antioxidants devoid of pro-oxidant effects. **C. Y. Lee**, A. Sharma, R. L. Uzarski

**3:00** Coffee break.

**3:30 175.** Synthesis and characterization of hyperbranched polyfluorinated polymers. **M. J. Quast**

**4:00 176.** Silicon-containing hyperbranched polymers. **P. R. Dvornic**

**4:30 177.** Dendrimer electrophoresis. **A. Sharma**

## Electrochemistry and Related Technology for Energy and Environmental Applications II

Moore Hall

Moore 120

B. Pate, T. Gregory, *Organizers*

**1:30 178.** Design and fabrication of high capacity lithium-air batteries. **A. Sarkar**

**2:00 179.** Oxidation of multi-walled carbon nanotubes for improved specific capacity in lithium-ion anodes. **A. S. Antic**, V. Barone, B. D. Fahlman

**2:30 180.** Non-innocent group III metal electrodes for aqueous electrodeposition of crystalline III-V semiconductors. **E. J. Fahrenkrug**, J. Gu, S. Maldonado

**3:00** Coffee break.

**3:30 181.** Development of low-valent chromium species for the regeneration of B-N hydrogen storage materials. **T. J. Carter**, N. K. Szymczak

**4:00 182.** Exploring unique electrochemical properties of thin film N-doped tetrahedral amorphous carbon electrodes. **B. Whitman**

**4:30 183.** Chemically-modified diamond electrode surfaces: Effects of functionalized surface on molecular adsorption and electron transfer kinetics. **Y. Zhu**, G. M. Swain

## Green Chemistry II

ET Building

ET 153

G. Ruger, J. Manley, *Organizers*

**1:30 184.** Meeting the green chemistry aspirations of pharma through an academic-industrial collaboration aimed at advancing catalytic borylations. **R. E. Maleczka**, J. Albaneze-Walker, S. W. Krska, P. E. Maligres, D. Perera, S. M. Preshlock, F. Shen, M. R. Smith

**2:00 185.** Discovery and development of catalytic deborylations. **F. Shen**, S. W. Krska, R. E. Maleczka, P. E. Maleczka, D. Perera, M. R. Smith

**2:30 186.** Probing the regioselectivity of catalytic arene C–H borylations. **H. Li**, R. E. Maleczka, J. Oppenheimer, M. R. Smith

**3:00** Coffee break.

**3:30 187.** Scale creates challenges for chemicals from biomass. **M. Jones**

**4:00 188.** Toxicological considerations for designing greener chemicals. **M. Wood**

**4:30 189.** Michigan Green Chemistry Clearinghouse (MGCC), a open access portal to Green Chemistry resources. **D. G. Kovacs**, C. S. Boyd, L. Kaatz Chary, T. Easthope, C. Affeldt

## Physical Chemistry

Moore Hall

Moore 116

D. Randall, *Organizer, Presiding*

**1:30 190.** Probing dynamic Stokes shift using tunable chirped femtosecond pulses. **A. Konar**, V. V. Lozovoy, M. Dantus

**2:00 191.** Optimizing silver nanoparticle size and excitation wavelength for single-molecule SERRS-based detection. **K. M. Dorney**, J. D. Baker, S. Brittle, A. Williams, T. M. Bobka, A. C. Stahler, I. E. Sizemore

**2:30 192.** Parametrization of water potential based on a hybrid GEM/AMOEBAs model. **O. N. Starovoytov**, S. K. Burger, G. A. Cisneros

**3:00** Coffee break.

**3:30 193.** Influence of late transition metal doping on methane selectivity in Fischer-Tropsch catalysis. **P. C. Psarras**, D. W. Ball

**4:00 194.** Empirical correlations for estimating liquid heat capacity & liquid thermal conductivity of siloxane materials. **D. L. Morgan**

**4:30 195.** Towards accurate parametrization of imidazolium based ionic liquid potentials. **H. Torabifard**, O. N. Starovoytov, G. A. Cisneros

## Polymer Degradation, Flammability, and Combustion II

ET Building

ET 132

B. Howell, *Organizer*

**1:30 196.** Phosphorus esters derived from a carbohydrate source. **Y. Daniel**, B. A. Howell

**2:00 197.** Flame retardants based on a naturally-occurring polymer. **M. Alomari**, B. A. Howell, A. Dumitrascu, R. S. Opperman

**2:30 198.** Organobromine oligomer precursors from grape waste. **X. Han**, B. A. Howell

**3:00** Coffee break.

**3:30 199.** Carbon derived from vinylidene chloride copolymers. **L. Zhang**, B. A. Howell, D. E. Beyer

**4:00 200.** Environmentally-friendly flame retardants from a commercial triepoxide. **S. Lazar**, B. A. Howell

**4:30 201.** Phosphonated esters of tartaric acid. **K. M. Mikek**, B. A. Howell

## Start-up and Small Business Entrepreneurs: Tool Kit and Success Stories

ET Building

ET 128

J. Maclachlan, *Organizer*

J. Sabol, *Organizer, Presiding*

**1:30 202.** Business 101 for chemistry students. **J. Sabol**

**2:00 203.** How to best protect your intellectual property: patents vs trade secrets. **A. Zombeck**

**2:30 204.** Hazard communication standard and the global harmonization system. **G. Grubb**

**3:00** Coffee break.

**3:30 205.** Marketing strategy for start-ups and growing small businesses. **D. Zellner**, T. O'Brien

**4:00 206.** Handshake in Detroit launches the commercial silicones industry. **D. T. Liles**

**4:30 207.** Member benefits, programming, and entrepreneurial activities from the ACS Division of Small Chemical Businesses SCHB. **J. Sabol**

### **Symposium on Silicon Science and Technology II**

Education & Human Services Bldg. (EHS)

French Auditorium

G. Lu, *Organizer*

**1:30 208.** Mechanics of stretchable electronics. **Y. Huang**

**2:15 209.** Interfacial properties of silicones in consumer products. R. Panandiker, **B. A. Schubert**, N. J. Wagner, E. M. Furst, D. Li, P. Thareja, M. Hamersky, N. Whitely, C. Barrera, K. Kott

**3:00** Coffee break.

**3:15 210.** The history of chemistry in Dow Corning. **J. R. Falender**

**4:00 211.** Application of Silicon Science to Advanced Semiconductors: Silicon Carbide Technology. **M. Loboda**

**4:45 212.** Silicon anodes for lithium batteries. **J. Yang**

## **FRIDAY MORNING**

### **Poster Session: Advances in Teaching College Chemistry**

ET Building

ET Hallway

D. Baker, J. Tomasik, B. Fahlman, *Organizers*

#### **8:30 - 10:30**

**213.** Using the writing-to-teach pedagogy in an introductory physical chemistry course: A design-based research approach. **K. Chen, M. Gysin, J. Feldblyum, B. Coppola, H. Phillips**

**214.** An overview of the impacts of a peer assistance center on tutors and students. **M. C. Martin, J. H. Tomasik, D. Linton, A. Feig**

**215.** Biogeochemistry of local watersheds: Honors projects incorporating both chemical and biological sciences for Walsh University's new environmental science program. **A. J. Heston, J. A. Clevinger, C. C. Clevinger, T. A. Izzo, Z. T. Beres**

**216.** Teaching through the use of discrepant events. **E. Lozanov**

**217.** Quantification of colloidal nanosilver by ICP-OES: A novel instrumental analysis and nanotechnology laboratory experiment. **J. L. Fraley, J. M. Dagher, J. D. Baker, S. Higgins, I. Sizemore**

**218.** Comparison of student ability to describe reaction kinetics in lecture- and context-based courses. **K. A. Jeffery, R. D. Sweeder, S. M. Frawley Cass**

**219.** Online homework with targeted instructional feedback leads to improved student learning outcomes. **M. Hentz**

### **Poster Session: Organic Chemistry**

ET Building

ET Hallway

A. Mueller, B. Fahlman, *Organizers*

#### **8:30 - 10:30**

**220.** Fluorinated amino-derivatives of the sesquiterpene lactone parthenolide, to gather mechanism of action data using  $^{19}\text{F}$  NMR. **J. R. Woods, H. Mo, A. A. Bieberich, T. Alavanja, D. A. Colby**

221. *o*-Nitrobenzenesulfonyl azide in the conversion of alcohols into alkyl azides. **O. S. Curry, A. Kwarkoh, H. J. Folkwein,** P. Norris
222. C-H insertion of rhodium-stabilized carbenoids on furanoses as a route to chiral natural product structures. **C. J. Tatebe, J. J. Mihaly, K. Kyei-Baffour,** M. Zeller, P. Norris
223. Synthesis and biological studies of neopetrosiamides as inhibitors of cancer cell invasion. K. M. Towle, **J. L. Chaytor,** H. Liu, P. Austin, M. Roberge, C. D. Roskelley, J. C. Vederas
224. Multi-stimuli responsive hydrazone type DCDHF-based chromophores as reversible molecular switches. **T. A. Khattab,** R. J. Twieg
225. A computational investigation into the formation of phenanthridine-fused quinazoliniminiums. **P. S. Filby,** S. Rayat
226. Synthesis and evaluation of novel inactivators of plasminogen activator inhibitor-1. **D. A. Weerakoon,** H. Y. Saraha, N. S. Guntaka, H. Anumala, S. J. Burke, J. Costa, M. Warnock, D. A. Lawrence, **C. D. Emal**
227. Electroactivated catalytic activation of alcohols to promote N-alkylation. **S. Bhatia,** J. N. Jackson
228. Synthesis of tenuifolin via cycloheptynedicobalt complexes. S. Djurdjevic, J. R. Green, **M. Mehdi**
229. Accessing a Heparin/HS library through divergent chemical and chemoenzymatic means. **S. B. Dulaney,** Z. Wang, M. El-Dakdouki, J. Kathawa, J. Liu, X. Huang

### Poster Session: Undergraduate Research

ET Building

ET Hallway

M. Theivanayagam, S. Brouet, B. Fahlman, *Organizers*

#### 8:30 - 10:30

230. Determination of a colorimetric paper-based test for deltamethrin and permethrin. **T. R. Finn,** E. A. Jensen
231. Iron removal from water using imprinted polymerization. **L. A. Line,** A. Mueller
232. Cigarette eco-toxicity in vernal ponds. **A. T. Goblirsch, T. Bennin, A. Jones,** R. B. Dowd
233. Deletion of the *yhfR* gene in *Bacillus subtilis* and its effects on isoprene and methylbutanol production. **T. S. Beyett,** T. L. Sivy
234. Synthesis and characterization of a biosurfactant. **A. Robertson,** A. Mueller
235. Green synthesis of precursor compounds, which are employed to fabricate of tin oxide coatings on glass: Application to photovoltaics. **L. Huie,** D. M. Giolando
236. Improving drug detection via polymer encapsulated silver nanoparticles. **B. Russell,** H. Madupalli
237. Construction and utilization of a Y-Tube Olfactometer to determine European honey bee (*Apis mellifera*) olfactory preferences. **J. C. Daley,** W. C. Wetzel, S. L. Galbraith-Kent, A. A. Clutterbuck
238. Trace metal analysis of bone ash, Portland cement, and human cremated remains by ICP-AES. **K. L. Sparks,** W. C. Wetzel, C. A. Currie
239. Synthesis of isotopic labeled bis(trispyrazolylborate) cobalt complex. **J. Bennett,** D. Tierney, R. McCarrick, T. Hageman
240. Synthesis of gold and silver nanoshell by in situ generation of seeds on silica core. **R. Teh,** K. Bandyopadhyay
241. Biosynthesis of metal nanoparticles by *Saccharomyces cerevisiae*. **S. Al-Azawi, C. Dagher,** C. Alexander, K. Bandyopadhyay, D. Bandyopadhyay
242. Electrospinning of hydrogel polysaccharide. **R. Stopka,** A. Mueller
243. Adsorption of azadirachtin on cellulose: Preparation of sustainable biomaterials. **O. A. Sieggreen,** D. S. Karpovich
244. Evaluation of water quality parameters in the lower Rouge River. **E. Hardy, M. Meszaros,** J. Bazzi, A. Bazzi



- 245.** Dual action cephalosporin: C-3 substitution of thymol on cefotaxime. **D. Stolicker**, S. Brouet
- 246.** Effects of magnesium on the formation of the bone mineral apatite. **S. Urbanawiz**
- 247.** Enzymatic activity of prolyl oligopeptidases from *Spirosoma linguale* after exposure to acidic environments. **B. Becker**, C. Hamilton
- 248.** In situ synthesis of bimetallic nanoparticle assemblies on functionalized surface. **D. Renard**, K. Bandyopadhyay
- 249.** Alternative energy through fuel cells: Computer simulations, dynamic modeling. **C. Alkevicius**
- 250.** Synthesis of novel carbohydrate polymer. **K. J. O'Hara**
- 251.** Synthesis of gold nanoparticles in solution using polyethyleneimine silane of varying chain length. **M. M. Micheletti**, K. Bandyopadhyay
- 252.** Catalytic activity of in situ generated palladium nanoparticle assembly. **B. K. Baidoun**, K. Bandyopadhyay
- 253.** El Salvador: A case study in opportunities for chemistry in sustainable development. **L. Vasquez**
- 254.** Studies towards the development of a colorimetric method for determination of bacterial concentration. **A. N. Nunn**, S. A. Brouet
- 255.** Applications of click chemistry: Synthesis of novel dual action antibiotics. **N. Swope**, S. Brouet
- 256.**  $\alpha_3$ DH<sub>3</sub>-GSGA-F31A, A de novo designed protein. **S. Caruso**, V. Cangelosi, V. Pecoraro
- 257.** Inorganic nanoparticle nucleation on copolymer matrices. **A. J. Kosteleski**, R. S. Hissam

### Plenary Talk

Moore Hall  
Moore Kiva (130)

- 10:30 258.** Development and Evaluation of a Novel Oral Amphotericin B Formulation for the Treatment of Systemic Fungal Infections and Drug-Resistant Visceral Leishmaniasis (VL). **K. M. Wasan**

## FRIDAY AFTERNOON

### Advances in Teaching College Chemistry I

ET Building  
ET 132  
D. Baker, J. Tomasik, *Organizers*  
B. Harkness, *Presiding*

- 1:00 259.** Developing a learning progression for energy in an undergraduate general chemistry course. **N. M. Becker**, M. M. Cooper
- 1:30 260.** Using animations to teach chemical kinetics in General Chemistry II. **L. Kolopajlo**
- 2:00 261.** Using assistive technology to help every student succeed. **N. Glazer**, Y. Glazer
- 2:30** Coffee break.
- 3:00 262.** Modernizing the chemistry curriculum: A logical approach for teaching hybridization and molecular geometry. **M. Ayoub**
- 3:30 263.** Investigation of correlation between student classroom success and ability to differentiate atoms from molecules. **N. Glazer**

### Advances in Teaching College Chemistry II

ET Building  
ET 128  
D. Baker, J. Tomasik, *Organizers*  
J. Tomasik, *Presiding*

- 1:00 264.** Comprehensive general chemistry demonstration: A constructivist assessment. **R. D. Sweeder**, K. A. Jeffery
- 1:30 265.** A longitudinal assessment of a learning progression for structure-property relationships – Chemistry, Life, the Universe, and Everything (CLUE). **S. M. Underwood**, M. M. Cooper, M. W. Klymkowsky
- 2:00 266.** Conducting appraisal case studies in general chemistry through social media. **A. M. Geyer**
- 2:30** Coffee break.
- 3:00 267.** Integrating electronic data collection into the biochemistry teaching laboratory. **S. M. Tremain**

### **Advances in Teaching College Chemistry III**

ET Building

ET 116

D. Baker, J. Tomasik, *Organizers*

J. Gittins, *Presiding*

- 1:00 268.** Electroless plating in the undergraduate curriculum. **C. J. Donahue**, C. (Cofan) Savu
- 1:30 269.** Simple LIBS spectrometer in general chemistry and instrumental analysis. **D. W. Randall**, R. T. Hayes, P. A. Wong
- 2:00 270.** Chemistry in context for engineers. **C. J. Donahue**
- 2:30** Coffee break.
- 3:00 271.** Nanotechnology and nanoscience laboratory experience at Wright State University. **M. L. Edwards**, D. Foose, S. Higgins, J. Deibel, H. Huang, S. Twill, I. Sizemore
- 3:30 272.** Carbon. **C. J. Donahue**

### **Chemistry and Global Health: Partnerships and Innovations in Combating Neglected Diseases**

ET Building

ET 153

P. Chhetri, *Organizer*

- 1:00 273.** Biochemical characterization of the Actin Crosslinking Domain (ACD) of MARTX from *Vibrio cholerae*. **S. J. Juris**
- 1:30 274.** Redox biology and drug development for Schistosomiasis. **D. Williams**
- 2:00 275.** Antiparasitic drug discovery using a hybrid open model. **M. Pollastri**
- 2:30** coffee break.
- 3:00 276.** Development and evaluation of a novel oral Amphotericin B formulation for the treatment of systemic fungal infections and drug-resistant visceral Leishmaniasis (VL). **K. M. Wasan**

### **Driving Life Science Innovation through Combinatorial Technologies**

Moore Hall

Moore 120

K. Brandstadt, G. Schalau, *Organizers*

- 1:00 277.** Application of an experiment knowledge base for managing experimental workflow. **N. Reynolds**
- 1:30 278.** Topical pharmaceutical formulation development: Merging combinatorial and traditional techniques. **H. Aliyar**, J. Lu, G. Loubert, G. Schalau
- 2:00 279.** Novel high throughput methods for early formulation studies. **K. Tsinman**
- 2:30** coffee break.
- 3:00 280.** Leveraging the power of high throughput screening to rapidly identify a diastereomeric salt for chiral resolution. **R. Jain**, D. Angrish, D. Floyd, P. Sun, Z. Wang

## Organic Chemistry

Moore Hall

Moore 116

A. Mueller, *Organizer*

**1:00 281.** Formation constants in C–H hydrogen bonding: Effects of CN, NO<sub>2</sub>, and CF<sub>3</sub> in aromatic compounds . **J. P. Lorand**

**1:30 282.** Asymmetric ring opening reaction of meso epoxides by macrocyclic Cr(III)-salen catalysts. **Y. Liu**, K. Kinslow, A. M. Sevde, J. Liang

**2:00 283.** Intramolecular Nicholas reactions in the preparation to dibenzocyclooctynedicobalt complexes: A formal synthesis of isoschizandrin. S. Djurdjevic, **J. R. Green**

**2:30** Coffee break.

**3:00 284.** Largazole analogues with modified surface recognition cap groups: Design, synthesis and biological activity. **J. Almaliti**, C. Hanigan, R. A. Casero Jr, L. Tillekeratne

**3:30 285.** Modification of activated carbon for the efficient removal of elemental and ionic mercury from coal fired power plant flue gas. **D. K. Mohanty**, C. Wade, J. Student

### **Re-examining Water Fluoridation: One of the 10 Greatest Public Health Achievements of the 20th Century or an Unnecessary, Outdated and Potentially Dangerous Public Health Initiative?**

ET Building

ET 138

K. Ling, *Organizer*

**1:00 286.** History and overview of the ongoing controversy surrounding water fluoridation in the United States. **K. L. Ling**

**1:30 287.** In situ raman spectroscopic observation of sequential hydrolysis of stannous chloride to abhurite, hydroromarchite, and romarchite. **H. H. Limeback**

**2:30** Coffee break.

**3:00 288.** Benefits and risks of community water fluoridation: A look at the evidence. **K. M. Thiessen**

### **Chemical Processes in the Fermented and/or Distilled Beverage Industry**

Moore Hall

Moore Kiva (130)

D. Lecaptain, T. Sivy, *Organizers*

**3:30 289.** Brewing up a business: The ins and outs of building a craft brewery in Michigan. **K. Peil**

**4:00 290.** Artisan Distilling. **K. A. Berglund**

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