

## POSTER PRESENTATIONS

**\*Please Note: Poster presenters are permitted to set up in the Pre-Function area beginning at 9:30 am on Friday, March 8, 2013. The room will be open to attendees at 12:00pm on Friday, March 8, 2013 to view the posters prior the competition at 4:40pm on Saturday, March 9, 2013.\***

### General Poster Session

#### 1. Impact of hypoxia and physical confinement on glioblastoma cancer stem cells

Ruth Herrera-Perez (Presenting author), David Jaroch, Rajtarun Madangopal, Soo Ha, Kari Clase, Jenna Rickus, (Corresponding author), Associate Professor of Agricultural and Biological Engineering, Purdue University

#### 2. Agent-Based Models for Synthetic Biology

Laurie J. Heyer, A. Malcolm Campbell, Andrew Lantz, Tucker Whitesides, Jonah Galeota-Sprung, Davidson College; Todd T. Eckdahl, Jeffrey L. Poet, Missouri Western State University

#### 3. Coupling of single-walled carbon nanotubes with near-infrared radiation inactivates Bacillus anthracis spores and stimulates spore germinations

Xiuli Dong, Biomanufacturing Research Institute and Technology Enterprise (BRITE) and Department of Pharmaceutical Sciences, North Carolina Central University; Yongan Tang, Marvin Wu, and Branislav Vlahovic, Department of Physics, North Carolina Central University

#### 4. Development of a Cost-effective Impedance Immunosensor for Rapid and Specific Screening of Avian Influenza Virus H5N1 Asian Field Strain

Ronghui Wang, University of Arkansas; Xiaofei Yan, China Agricultural University; Zhanming Li, Zhejiang University; Yuntao Li, Chinese Academy of Sciences; Peirong Jiao, South China Agricultural University; Dong An, China Agricultural University; Mauhua Wang, China Agricultural University; Ming Liao, South China Agricultural University; Yanbin Li, University of Arkansas

#### 5. X-ray excited luminescence properties and applications of Gd<sub>2</sub>O<sub>3</sub>:Eu nanophosphors

Chaoming Wang, Ming Su, University of Central Florida

#### 6. Mesophilic Anaerobic Co-Digestion of Swine Manure with Swithgrass and Wheat Straw for Methane Production

Zhimin Liu, Jorge Gontupil, Mr. Darwin, Angelica Pura, Jay J. Cheng, North Carolina State University

### Undergraduate Student Poster Competition Session

#### 1. Physiological Methods for Maximal Fatty Acid Production in Genetically Engineered Cyanobacteria

Travis Saari, Michigan State University; Victoria Work, Colorado School of Mines; Dr. Matt Posewitz, Colorado School of Mines

#### 2. Baseline evaluation of groundwater quality in central New York in the face of shale gas development

Anne Elise Creamer, Lauren McPhillips, Cornell University Department of Biological and Environmental Engineering; M. Todd Walter, Cornell University Department of Biological and Environmental Engineering, Cornell University Soil and Water Lab

**3. Using E. coli to Determine Optimal DNA Design for Metabolite Production**

Ben Clarkson, Becca Evans, Betsy Gammon, Meredith Nakano, Caroline Vrana, Laurie J. Heyer, A. Malcolm Campbell, Davidson College

Caleb Carr, David Carr, Eddie Miles, Jerrad Morton, Sachith Polpitaya, Kamay Trueblood, Todd T. Eckdahl, Jeffrey L. Poet, Missouri Western State University

**4. Sustainable Green Roof Irrigation using Wastewater**

Samuel Frey, Environmental Engineering Department, University of Connecticut; J. Suen, R. Munoz-Carpena,

Agricultural and Biological Engineering Department, University of Florida; E.S. McLamore, Agricultural and Biological Engineering Department, University of Florida

**5. Developing Assembly Methods for Genetic Circuits used to Optimize Metabolic Pathways**

Ben Clarkson, Becca Evans, Betsy Gammon, Meredith Nakano, Caroline Vrana, Laurie J. Heyer, A. Malcolm Campbell, Davidson College

Caleb Carr, David Carr, Eddie Miles, Jerrad Morton, Sachith Polpitaya, Kamay Trueblood, Todd T. Eckdahl, Jeffrey L. Poet, Missouri Western State University

**6. A Nano-Zeolite Sensor to Detect Surfactants, a Contribution to Microbial Remediation Feasibility Studies**

Katelyn S. Ward, Dr. Eric S. McLamore, Prachee Chaturvedi, Stephanie Burrs, Shige Taguchi, Diana Vegas, University of Florida

**7. A Nanomaterial-Mediated Biosensor for Measuring Sarcosine**

Grace Justinvil, Stephanie L. Burrs, Diana Vanegas, Eric S. McLamore, University of Florida

**8. Effectiveness of Phenolic Acids Derived from Coconut Oil on Amyloid-beta Inhibition**

Steven Vance, University of Kentucky/University of South Carolina

**9. Bioenergy Landscape Design to Minimize Cultivation Emissions and Production Expenses**

Thai N. Dinh, University of Oklahoma; John L. Field, Colorado State University; Keith H. Paustian, Colorado State University

**10. Arachnicoli: Production and Purification of Spider Silk Proteins in Escherichia coli**

Ryan Putman, Asif Rahman, Charles Barentine, Andrea Halling, Brian Smith, Federico Rodriguez, Elizabeth Martinez, Thomas Harris, Cameron Copeland, Cody Tramp, Joshua T. Ellis, Charles D. Miller, Utah State University; Kathleen Miller, Logan High School; Swetha Chandrasekar, Cooper Union; Jamal Abdinor, University of Utah

**Graduate Student Poster Competition Session**

**1. Simulation of micro particle movement and alignment in an electric field**

Yu Zhao, Johnie Hodge, Guigen Zhang, Clemson University, Bioengineering department, Clemson University

**2. The Effect of Agricultural-Based Nitrogen Sources on Production of Biohydrogen by Thermotoga Neapolitana**

Louis Hill, Caye Drapcho, Clemson University

**3. Development of Flavin-based Fluorescent Proteins for Biological Imaging**

Arnab Mukherjee, Kevin B. Weyant, Joshua Walker, John Ossyra, Kaustubh D. Bhalerao, Charles M. Schroeder (corresponding), Department of Chemical and Biomolecular Engineering, University of Illinois at Urbana-Champaign

4. **Cellular Responses to Anti-cancer Drug in 3D and 2D Cell Cultures**  
Goral Trivedi, William Tyson, Liju Yang, North Carolina Central University
5. **Effect of Gold/Copper Sulfide Core/Shell Nanoparticles on Bacillus Anthracis Spores**  
Addae Ebenezer, Marquita Lilly, Eric McCoy, North Carolina Central University; Chang Yang, Wei Chen, Physics, University of Texas at Arlington
6. **Pinewood activated char for mitigation of p-cresol**  
Lalitendu Das, Dr. Praveen Kolar, Dr. John. J. Classen, Dr. Jason A. Osborne, North Carolina State University
7. **Optrode biosensors for in vivo sucrose monitoring in plants**  
Leyla Nesrin Kahyaoglu, Rajtarun Madangopal, Cliff Weil, Jenna L. Rickus, Purdue University
8. **Electroactive Polymer-based Nanocomposites For Multi-analyte Amperometric Biosensors**  
Rajtarun Madangopal, Matthew C. Stensberg, Nicholas Pulliam, D. Marshall Porterfield, Jenna L. Rickus, Purdue University
9. **Nature-inspired porous silica biomaterials for precision size exclusion at the mammalian cell surface**  
Jennifer L. Kahn, Jenna L. Rickus, Purdue University
10. **Oxygen consumption as a rapid bioindicator of changes in water quality using Daphnia magna embryos**  
Matthew Stensberg (Presenting), Michael Zeitchek, Kul Inn, Maria Sepulveda, D. Marshall Porterfield (Corresponding), Purdue University; Eric McLamore, University of Florida at Gainesville
11. **Solvent Selection and Recovery for Liquid-Liquid Extraction of Acetic Acid and Water**  
Mahdieh Aghazadeh, Abigail Engelberth, Purdue University
12. **Engineered B-Cell Biosensor for Specific, Sensitive and Rapid Detection of E. coli O157:H7**  
Ling Wang, Yanbin Li, University of Arkansas, Zhejiang University; Byung-Whi Kong, Ronghui Wang, Kaiming Ye, Sha Jin, University of Arkansas
13. **Nanobead and aptamer based QCM biosensor for rapid detection of avian influenza virus**  
Luke Brockman, Ronghui Wang, Jacob Lum, Lisa Kelso, and Yanbin Li, University of Arkansas
14. **Investigation of Media Ingredients and Water Sources for Algae CO<sub>2</sub> Capture at Different Scales to Demonstrate the Correlations Between Lab-scale and L**  
Tabitha Graham, Czarena Crofcheck, Aubrey Shea, Michael Montross, University of Kentucky Biosystems and Agricultural Engineering; Mark Crocker, University of Kentucky Center for Applied Energy Research, Rodney Andrews, University of Kentucky Center for Applied Energy Research, Biosystems and Agricultural Engineering
15. **Evaluation of the Antimicrobial Properties and Biocompatibility of Polypropylene Mesh Conjugated with Gold Nanoparticles**  
Ross Hartter, Dr. Sheila Grant, Dr. Shramik Sengupta, University of Missouri
16. **Economic production of Polyhydroxyalkanoates in Escherichia coli**  
Asif Rahman, Ronald C. Sims, Charles D. Miller, Utah State University

- 17. Characterization of the herboxidiene biosynthetic gene cluster in *Streptomyces chromofuscus* ATCC 49982**  
Jia Zeng, Lei Shao, Jiachen Zi, Jixun Zhan, Department of Biological Engineering, Utah State University
- 18. Characterization of the Pradimicin A Biosynthetic Pathway**  
Kandy Napan, Whitney Morgan, Jixun Zhan, Department of Biological Engineering, Utah State University; Thomas Anderson, Jon Takemoto, Department of Biology, Utah State University
- 19. Isolation and characterization of anaerobic microorganisms from the Logan City Wastewater Lagoon System for the production of high value bioproducts.**  
Joshua T. Ellis, Neal Hengge, Ronald C. Sims, and Charles D. Miller, Utah State University
- 20. Phycocyanin Production by Cyanobacterial Biofilms Cultured in Oilfield Wastewater (Produced Water)**  
Jonathan Wood, Ronald Sims, Jon Takemoto, Dong Chen, Utah State University
- 21. Antisense RNA: A Metabolic Switch for Controlling the Gene Expression**  
Hadi Nazem-Bokaee, Ryan S. Senger, Virginia Tech
- 22. Fine-tuning Bacterial Gene Expression using Antisense RNA**  
Hadi Nazem-Bokaee, Ryan S. Senger, Virginia Tech
- 23. Thermoresponsive Pervaporation Membranes Enabled by Hyperbranched Polyglycerols and Elastin Like Protein Conjugates**  
Juliet Kallon and Darlene Taylor, North Carolina Central University