



Student Poster Presentations: Undergraduate

U-1

Agent-Based Modeling of Phage-Assisted Continuous Evolution (PACE)

Dylan Maghini, Davidson College; Laurie Heyer, Davidson College; A. Malcolm Campbell, Davidson College

U-2

Building a Chemostat for Phage-Assisted Continuous Evolution (PACE)

Cody Herron, Davidson College; Todd Eckdahl, Missouri Western State University; Michael Brown, Missouri Western State University; Andrew M. Hunn, Missouri Western State University; Austin Sprague, Missouri Western State University; A. Malcolm Campbell, Davidson College; Laurie J. Heyer, Davidson College; Jeffrey L. Poet, Missouri Western State University

U-3

Validation of Phage Assisted Continuous Evolution (PACE)

Zach Shaver, Davidson College; Todd Eckdahl, Missouri Western State University; Anna Buser, Davidson College; Athena J. Davis, Missouri Western State University; Shelby Herner, Missouri Western State University; Andrew M. Hunn, Missouri Western State University; Hartlee Johnston, Davidson College; Owen Koucky, Davidson College; Dylan Maghini, Davidson College; Avery Umphreys, Missouri Western State University; A. Malcolm Campbell, Davidson College; Laurie J. Heyer, Davidson College; Jeffrey L. Poet, Missouri Western State University

U-4

Willow (*Salix nigra*) Pyrolysis Using an Inductively Heated Reactor

McKenna Benbow, LSU; Dorin Boldor, LSU AgCenter and Louisiana State University; Caroline Favrot, LSU; McKenna Benbow, LSU; Pranjali D. Muley, LSU AgCenter; Candice Ellison, LSU; Cosmin Marculescu, POLITEHNICA University of Bucharest, Romania

U-5

Adapting Phage Assisted Continuous Evolution (PACE) for Riboswitch Discovery

Athena Davis, Missouri Western State University; Todd Eckdahl, Missouri Western State University; Anna Buser, Davidson College; Shelby Herner, Missouri Western State University; Andrew M. Hunn, Missouri Western State University; Hartlee Johnston, Davidson College; Owen Koucky, Davidson College; Zach Shaver, Davidson College; Avery Umphreys, Missouri Western State University; A. Malcolm Campbell, Davidson College; Laurie J. Heyer, Davidson College; Jeffrey L. Poet, Missouri Western State University

U-6

Characteristics of dairy waste-water derived algal lipid-protein precipitate utilized as a bovine feed supplement

Justin Marriott, Tyler Marlar, Michael Hansen, Ashik Sathish, Ronald Sims Ph.D., Utah State University

U-7

Building and Improving a Nitrate Biosensor Promoter

Shuk Hang (Grace) Li, Davidson College; Malcolm Campbell, Davidson College

U-8

Treatment of Dairy Wastewater Through Nutrient Uptake: Convergence of Waste Management and Algal Systems

Zachary Fica, Utah State University; Ron Sims, Utah State University

U-9

Bioremediation of Petrochemical Wastewater using Cyanobacteria

Drew Porter, Utah State University; Andrew Walters, Utah State University; Ronald Sims, Utah State University

U-10

EDEN: A Novel Approach to Plant Growth in Space

Zachary Jensen, Emilee Madsen, Elizabeth Sherman, Danny Froerer, Tyler Marlar, Sarah Baldwin, Kristen Carr, Donovan Crane, Tina Holyoak, Patick Mortola, Tyrel Rupp, Nathan Stacey, Mitch Turner, Rees Fulmer and Timothy Taylor, Utah State University

U-11

Characterization of Purple Non-Sulfur Bacteria for Application in Wastewater Treatment

Andrew Walters, Utah State University

U-12

Impedance Biosensor Platform for Rapid Detection of Low Concentration of Salmonella

Mohammed Ferris Dweik, University of Missouri, Columbia

U-13

Synthesizing Microcarriers as a Platform for the Pharmaceutical Delivery of Quercetin for Antiviral Applications

Taylor Eggertsen, Utah State University; Arther Hart, Utah State University; William Johnson, Utah State University; Dr. David Britt, Utah State University; Dr. Elizabeth Vargis, Utah State University

U-14***Mechanical Stress Induces the Expression of Angiogenic Factors in Retinal Pigment Epithelial Cells***

Kara Swenson, Utah State University; Elizabeth Vargis, Department of Biological Engineering, Utah State University

U-15***Growing Retinal Pigment Epithelial Cells on a Recombinant Spider Silk Membrane***

Harshit Singh, Chase Paterson, and Dr. Elizabeth Vargis, Utah State University

U-16***Biocompatible Tooth Sealants: Modification and Analysis***

Stephen Sadler, Christopher Ruben, Emily Jesgarz, Austin Simmons, Grant Harris, Utah State University

U-17***Engineering and characterization of 3D printed elastic implantable materials***

Angela Clyde, Utah State University; Adreann Peel, Utah State University; Ty Nicholas, Utah State University; Zachary Ellsworth, Utah State University; Dr. David Britt, Utah State University; Dr. Yu Huang, Utah State University; Dr. Craig Day, Utah State University

U-18***Morphology Engineering of ZnO Nanoparticle as Anti-microbial Fluorescent Probes***

Adam Talbot, Gregory Jensen, James Gayer, Zane Bellows

U-19***Characterization of the Effects of Radiation on Skeletal Muscle Cells***

Lori Caldwell, Utah State University

U-20***Nanoscale conjugates for the mitigation of oxidative stress***

Jeannette Rodriguez, Clemson University; Brendan Ward, Clemson University; Dmitry Gil, Clemson University; Vladimir Ivanov, Kurnakov Institute of General and Inorganic Chemistry, Clemson University

U-21***Developing an Apparatus for the Treatment of Plantar Fasciitis***

Jack McGreevey, Benjamin Shumpert, Edward Bear, Isaac Baum, Elyssa Bakker, Paul Garson, Omar Abdeladl, Vladimir Reukov, PhD, Clemson University

Student Poster Presentations: Graduate

G-1

Correlation of Carbon Dots' Light-Activated Antimicrobial Activities and Fluorescence Quantum Yields

Mohamad AL Awak, NCCU; Liju Yang, Pharmaceutical Sciences, Biomanufacturing Research Institute and Technology Enterprise (BRITE), North Carolina Central University; Mohamad M. Al Awak, Pharmaceutical Sciences, Biomanufacturing Research Institute and Technology Enterprise (BRITE), North Carolina Central University, Durham, NC 27707, USA; Ping Wang, Department of Chemistry and Laboratory for Emerging Materials and Technology, Clemson University, Clemson, South Carolina 29634, USA; Shengyuan Wang, Pharmaceutical Sciences, Biomanufacturing Research Institute and Technology Enterprise (BRITE), North Carolina Central University, Durham, NC 27707, USA; Yongan Tang, Department of Mathematics and Physics, North Carolina Central University, Durham, NC 27707, USA; Ya-Ping Sun, Department of Chemistry and Laboratory for Emerging Materials and Technology, Clemson University, Clemson, South Carolina 29634, USA; Liju Yang, Pharmaceutical Sciences, Biomanufacturing Research Institute and Technology Enterprise (BRITE), North Carolina Central University, Durham, NC 27707, USA.

G-2

Aqueous synthesis of silica-spider silk nano-composite materials

Abul Bashar Mohammad Giasuddin (presenting Author), Thomas I. Harris, Randolph V. Lewis, David W. Britt (Corresponding Author), Utah State University

G-3

Proposed DEP-Raman device for simultaneous trapping and identification of bacteria

Cynthia Hanson, Utah State University; Elizabeth Vargis, Utah State University

G-4

Piriform Spider Silk Production

Cole Peterson, Utah State University; Dr. Randy Lewis, Utah State University

G-5

Comparison of Alginate Hydrogel and Microcarriers for In Vitro Modeling of Microgravity-Induced Muscle Atrophy

Charles Harding, Utah State University; Elizabeth Vargis, Utah State University

G-6

An aqueous solvation method for recombinant spider silk proteins and the investigation of novel derived materials

Thomas Harris, Utah State University; Deven Smuin, Utah State University; Breton Day, Utah State University; Danielle Gaztambide, Utah State University; Nate Needham, Utah State University; Stacia Christy, Utah State University; Ashley Ruben, Utah State University; Justin Jones, Utah State University; Randolph Lewis, Utah State University

G-7

Novel Methods to Produce Large Recombinant Spider Silk Proteins

Nathan L. Hebert, Utah State University; Justin A. Jones, Utah State University; Randolph V. Lewis, Utah State University

G-8

Bioproducts from petroleum refinery waste and optimization of anaerobic digestion

Iegor Pererva, Anna Doloman, Ronald C Sims, Charles D Miller, Utah State University

G-9

Controlled Delivery of a Therapeutic Glycosaminoglycan for Amelioration of Radiation-Induced Proctitis-Associated Pain

Mark Martin Jensen, Department of Bioengineering, NSF Graduate Research Fellow, University of Utah; Wanjian Jai, Division of Urology, Section of Pediatric Urology, University of Utah; Kyle J. Isaacson, Department of Bioengineering, University of Utah; Austin Schults, Division of Urology, Section of Pediatric Urology, University of Utah; Joseph Cappello, Department of Pharmaceutics and Pharmaceutical Chemistry, University of Utah; Glenn D. Prestwich, Department of Medicinal Chemistry, University of Utah; Siam Oottamasathien, Department of Surgery and Division of Pediatric Urology, Primary Children's Hospital; Hamidreza Ghandehari, Department of Pharmaceutics and Pharmaceutical Chemistry, University of Utah

G-10

Dual-responsive, biomimetic nanogels for controlled release of cancer drugs

Kyle Isaacson, University of Utah; M. Martin Jensen, University of Utah; Alex Watanabe, University of Utah; Bryant Green, University of Utah; Teresa Ta, University of Utah; Joseph Cappello, University of Utah; Hamid Ghandehari, University of Utah

G-11

Secretion of bioplastic polymers from methanotrophic bacteria grown using methane gas

Chad Nielsen, Utah State University; Charles Miller, Utah State University

G-12

Novel use for Cement Production Byproduct as Chemical Coagulant and Flocculant

Alan Hodges, Utah State University; Jordan Wanlass, Utah State University; Ronald Sims, Utah State University

G-13

Functional characterization of three glycosyltransferases involved in the biosynthesis of Sch47554 and Sch47555

Ozkan Fidan, Utah State University; Riming Yan, Jiangxi Normal University; Gabrielle Gladstone, Utah State University; Du Zhu, Jiangxi Normal University; Jixun Zhan, Utah State University

G-14

Selective biotransformation of hydroxyquinolines by a fungal flavin-dependent halogenase

Jixun Zhan, Utah State University; Fuchao Xu, Utah State University

G-15

Electrospinning and Cross-Linking of Spider Silk Proteins

Dan Gil, Justin A. Jones, Randolph V. Lewis, Utah State University

G-16

Bioenergy from Microalgae Augmented Wastewaters: Effect of Inoculum

Jason Peterson, Utah State University; Ronald Sims, Utah State University

G-17

Engineered production of endocrocin and emodin in yeasts

Lei Sun, Department of Biological Engineering, Utah State University; Jixun Zhan, Department of Biological Engineering, Utah State University; Lei Sun

G-18

Induced VEGF Expression After Mechanical Disruption of Intracellular Junctions in RPE Cells

Farhad Farjood, Utah State University; Elizabeth Vargis, Department of Biological Engineering, Utah State University

G-19

Cationic Polymeric Micelle Nanoparticle for Combinatorial Therapy after Traumatic Brain Injury

Christian Macks, Clemson University; So Jung Gwak, Clemson University; Michael Lynn, Greenville Health System, and Jeoung Soo Lee, Clemson University

G-20

Cationic polymeric micelle nanoparticle for combinatorial therapy of drug and nucleic acid in treating glioblastoma multiforme

Angela A. Alexander-Bryant, Clemson University; Breanne Hourigan, Clemson University; Michael Lynn, Greenville Health System; Jeoung Soo Lee, Clemson University

G-21

Microalgae Cultivation in Produced Water for HTL Conversion into Biocrude Oil

Ben Peterson, Utah State University, Dr. Ron Sims, Utah State University, Dr. Charles Miller, Utah State University

Poster Presentations: Non-Competing

P-1

Purpose built 6L-300L single-use fermentors enable high throughput fermentation

J. Brown and N. Jones, Thermo Fisher Scientific, Logan, UT

P-2

Antibacterial Effects of Carbon Quantum Dots in Combination with Other Antimicrobial Reagents

Xiuli Dong, Biomanufacturing Research Institute and Technology Enterprise (BRITE) and Department of Pharmaceutical Sciences, N Carolina Central University; Liju Yang, Biomanufacturing Research Institute and Technology Enterprise (BRITE) and Department of Pharmaceutical Sciences, North Carolina Central University; Xiuli Dong, Biomanufacturing Research Institute and Technology Enterprise (BRITE) and Department of Pharmaceutical Sciences, North Carolina Central University, Durham, NC 27707; Mohamad Al Awak, Biomanufacturing Research Institute and Technology Enterprise (BRITE) and Department of Pharmaceutical Sciences, North Carolina Central University, Durham, NC 27707; Ya-Ping Sun, Department of Chemistry and Laboratory for Emerging Materials and Technology, Clemson University, Clemson, SC 29634; Liju Yang, Biomanufacturing Research Institute and Technology Enterprise (BRITE) and Department of Pharmaceutical Sciences, North Carolina Central University, Durham, NC 27707.

P-3

Exploring Carbon Dots' Antiviral Functions Against Norovirus

Xiuli Dong, Biomanufacturing Research Institute and Technology Enterprise (BRITE) and Department of Pharmaceutical Sciences, North Carolina Central University; Liju Yang, Biomanufacturing Research Institute and Technology Enterprise (BRITE) and Department of Pharmaceutical Sciences, North Carolina Central University; Xiuli Dong, Biomanufacturing Research Institute and Technology Enterprise (BRITE) and Department of Pharmaceutical Sciences, North Carolina Central University, Durham, NC 27707; Marsha Moyer, Biomanufacturing Research Institute and Technology Enterprise (BRITE) and Department of Pharmaceutical Sciences, North Carolina Central University, Durham, NC 27707; Fan Yang, Department of Chemistry and Laboratory for Emerging Materials and Technology, Clemson University, Clemson, SC 29634; Ya-Ping Sun, Department of Chemistry and Laboratory for Emerging Materials and Technology, Clemson University, Clemson, SC 29634; Liju Yang, Biomanufacturing Research Institute and Technology Enterprise (BRITE) and Department of Pharmaceutical Sciences, North Carolina Central University, Durham, NC 27707.

P-7

Computational Modeling of Articular Cartilage

Lia Howe, University of Missouri, Columbia

P-8

Characterization of biofilms and metabolites in a synthetic rhizosphere

Michelle Bonebrake, Utah State Univeristy; Kaitlyn Anderson, Utah State University; David Britt, Utah State University