

The Frost Symposium, Summer 2022

Cal Poly – Department of Chemistry and Biochemistry

Friday, August 12th, 2022 -- 9:00 am – 2:00 pm

Oral Session 1: 9:00-10:40

Building 180, Room 101

Poster Session: 11:00-12:30

Building 180, 4th Floor Atrium

Lunch: 12:00-1:00

Building 180, 4th Floor Atrium

Oral Session 2: 1:00-2:00

Building 180, Room 101

Oral Session 1: 9:00 am – 10:40 am

Building 180, Room 101

(Title, **Presenting Author(s)**, Adviser)

9:00 am: Session Begins

9:10 am: Opening Remarks

9:16 am: Synthesis of a twisted quadrilateral comprising two p-quaterphenyls and two butadiynes. **Grant Dickinson**, Derik Frantz

9:28 am: Light and Brimstone: Part 1 - Measuring the background quantum yield of dithiocarboxylate photochemistry. **Olivia Madrigal**, **Riya Nigudkar**, **Kelsey Blechen**, **Kelsey Thibault**, Taylor Haynes

9:40 am: Light and Brimstone: Part 2 - Method development and preliminary results of dithiocarboxylate photochemistry. **Kelsey Blechen**, **Kelsey Thibault**, **Olivia Madrigal**, **Riya Nigudkar**, David Zigler

9:52 am: BREAK (10 minutes)

10:02 am: Developing a DTT Assay to Measure Oxidative Potential of Particulate Matter. **Bethanne Atkinson**, **Shivaang Vyas**, Matthew Zoerb

10:14 am: Competition kinetics for cyclopropanation of 1-arylindenes, 2-arylindenes, and 1-aryl-3,4-dihydronaphthalenes. **Audrey Klein**, **Thomas Tang**, Eric Kantorowski

10:26 am: Ring opening of substituted arylcyclopropanes. **Meekaela Berrios**, **Kylee Dismuke Rodriguez**, Eric Kantorowski

Poster Session: 11:00 am – 12:30 pm

Bldg. 180, 4th floor atrium

(Title, **Presenting Author(s)**, Adviser)

Characterizing Undergraduate Research Experiences and Outcomes in STEM (CUREOS).

Jordan Bates, Edgardo Hernandez, Christian Rivas, Andrea Somoza-Norton, Dan Bachrach, Anya L. Goodman

COF-300 Morphology Control Using Substituted Benzoic Acid Catalysts. **Dean M. Kim, Alexis F. Mojica, Kyla J. Carlson**, Alison C. Chew, Leslie S. Hamachi

Water Purification with Covalent Organic Frameworks. **Alyssa Chew**, Alison Chew, Brendan Posson, Donna Tran, Leslie S. Hamachi

Manipulating the Mechanical Properties of Kombucha Leather. **Brandon Ngo**, Daisy Kamp, Hannah Martin, Amanda Tsai, Leslie S. Hamachi

Color change in polychromic diacetylene lipid vesicles after UV polymerization. **Sydney Lee**, Eric M. Jones

Competition Kinetics for Cyclopropanation of 1-Arylindenes, 2-Arylindenes, and 1-Aryl-3,4-dihydronaphthalenes. **Audrey Klein, Meekaela Berrios, Thomas Tang, Kylee Dismuke Rodriguez**, Eric J. Kantorowski

Beyond Wax Printing: Fabrication of Paper-Based Microfluidic Devices Using a Thermal Transfer Printer. **Ryan A. Ruiz**, Jorge L. Gonzalez, Miguel Vazquez-Alvarado, Nathaniel W. Martinez, Andres W. Martinez

MD-SAPT: Quantum Chemistry Based Post-Processing Analysis Software for Molecular Dynamics. **Alia Lescoulie, Astrid Yu**, Ashley Ringer McDonald

Synthesis of asymmetric disulfides for preparing responsive supramolecular amphiphiles. **James Schroeder, Emma Sundahl, Sandra Ward**

Synthesis of asymmetric polyethylene glycols for stimuli responsive hydrogel crosslinkers. **Grace Babonas, Nathan Kuhn, Sandra Ward**

Media optimization and Cas12a assisted cloning in *Micromonospora echinospora*. **Kate Weckwerth**, Eirene Ednacot, Katharine Watts

Spore isolation and gene cloning from the Actinobacteria *Micromonospora echinospora*. **A.J. Kinsella Johnson**, Maria Goduco, Katharine Watts

Optimization of protein expression and purification to study non ribosomal peptide synthetases. **Jack Reynolds**, Wilson Yeung, Chris Cummings, Ava Sanderson, Claire Meeds, Katharine Watts

Defining osmolyte effects on myoglobin thermal stability to build and refine predictive models. **Kae Nurge**, Michael Heying, Steven P. Wilkinson

Purification of PaeR from *Clostridioides difficile* for thermodynamic characterization of DNA binding. **Kirsten Elliott**, Kae Nurge, Samantha de la Fuente, Steven P. Wilkinson

Anti-Corrosion Polyurethane Coatings Reinforced by Functionalized Graphene Oxide. **Sudeep Louis, Jacob Krynock**, Shubham Gupta, Shanju Zhang

Light and Brimstone: Photochemistry of dithiocarboxylates. **Kelsey Thibault, Kelsey Blechen, Olivia Madrigal, Riya Nigudkar**, M. Taylor Haynes, David F. Zigler

Lunch: 12:00 pm – 1:00 pm

Bldg. 180, 4th floor atrium

Oral Session 2: 1:00 pm – 2:00 pm

Building 180, Room 101

(Title, **Presenting Author(s)**, Adviser)

1:00 pm: Session Begins

1:10 pm: Synthesis and characterization of polymeric mixed ion-electron conduction materials. **Abigail Slimp, Nika Bondar**, Shanju Zhang

1:22 pm: The Effect of Carboxylic Acid Sterics and Electronics on Colloidal COF-300 Synthesis. **Alexis Mojica, Kyla Carlson, Dean Kim, Alyssa Chew**, Leslie S. Hamachi

1:34 pm: Manipulating the Mechanical Properties of Kombucha Leather. **Brandon Ngo**, Leslie S. Hamachi

1:46 pm: Project CUREOS: Characterizing Undergraduate Research Experiences and Outcomes in STEM. **Edgardo Hernandez, Jordan Bates**, Anya L. Goodman

1:58 pm: Closing Remarks

We gratefully acknowledge support from the William and Linda Frost Fund