

# The Frost Symposium, Summer 2023

Cal Poly – Department of Chemistry and Biochemistry

Friday, August 18<sup>th</sup>, 2023 -- 9:00 am – 3:00 pm

## **Oral Session 1: 9:00-11:05**

Building 180, Room 101

## **Poster Session: 11:15-12:30**

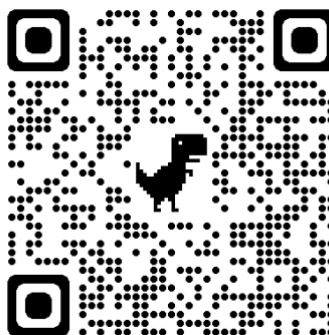
Building 180, 4<sup>th</sup> Floor Atrium

## **Lunch: 12:00-1:00**

Building 180, 4<sup>th</sup> Floor Atrium

## **Oral Session 2: 1:00-3:00**

Building 180, Room 101



scan here for digital program

## Oral Session 1: 9:00 am – 11:05 am

Building 180, Room 101

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

9:00 am: Session Begins

9:10 am: Opening Remarks

Dean Wendt – Dean of the Bailey College of Science and Mathematics

Philip Bailey – Director of the Frost Fund

9:30 am: Light and Brimstone: The Role of Structural Effects on the Spectroscopy of Dithiocarboxylates. **Oz Levin Alkaitis, AJ Kinsella-Johnson, Taylor Haynes, David Zigler**

9:42 am: Comparative Analysis of "NRPS" Protein Expression Under Control of Different Operons. **Chris Cummings, Katharine Watts**

9:54 am: Covalent Adaptable Networks - Isocyanurate Project. **Hannah Negri, Hayden Ankrum, Leslie Hamachi**

10:06 am: *BREAK (10 minutes)*

10:16 am: Analyzing the Health Effects of Particulate Matter Using a DTT Assay. **Shivaang Vyas, Matthew Zoerb**

10:28 am: Ring Opening of 1-arylbicyclo[3.1.0]hexanyl Derivatives. **Meekaela Berrios, Eric Kantorowski**

10:40 am: 2D COF Paints. **Sachi Ottoes, Estela Osorio-Garcia, Nathan Wong, Brian Tinkle, Leslie Hamachi**

10:52 am: Modeling the Effects of Yeast Strains on Batch Fermentation Kinetics. **Finn Butler, Michael Heying**

Poster Session: 11:15 am – 12:30 pm

Bldg. 180, 4<sup>th</sup> floor atrium

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

Revising the Standard Method of Sample Preservation for Marine Carbonate Chemistry Analysis. **Kel Mussetter, Daphne Moon, Brent Boone, Emily E. Bockmon**

Analysis of Polypeptide Secondary Structure Changes Based on Environmental pH. **Blake Maxon, Ayla Gharavi, Tammy Campbell**

Attempted Synthesis of a Strained Diyne Toward Extended Polycyclic Aromatic Hydrocarbons. **Jordan Ford, Kaylie Carpizo, Emeline Robbins, Derik Frantz**

Synthesis and Reactivity of a Twisted Quadrilateral Comprising Quaterphenyl and Butadiyne Units. **Grant Dickinson, Sasha Rovinsky, Emily Auten, Derik Frantz**

Covalent Adaptable Networks: Dynamic Covalent Bonding in Isocyanurates. **Hannah Negri, Hayden Ankrum, Olive Rosplock, André Lagron, Leslie Hamachi**

Sterically Hindered Carboxylic Acid Catalysts in Colloidal COF-300 Synthesis. **Alexis Mojica, Zoe Jackson Delos Angeles, Brian Tinkle, Nathan Wong, Kyla Carlson, Dean Kim, Alison Chew, Brendan Posson, Leslie Hamachi**

pH Sensing with COF Pigments in Water-Based Latex Paint. **Sachi Ottoes, Alison Chew, Estela Osorio-Garcia, Robert Orta, Leslie Hamachi**

Light and Brimstone: A Study into the Photochemistry of Dithiocarboxylates. **Riya Nigudkar, Kelsey Blechen, Kara Webb, Taylor Haynes, David Zigler**

Light and Brimstone: The Role of Structural Effects on the Spectroscopy of Dithiocarboxylates. **Oz Levin Alkaitis, AJ Kinsella-Johnson, Makisig Velasquez, Taylor Haynes, David Zigler**

Set-up of a Local High-Performance Computing Cluster. **Harvir Singh Kalat, Alexander Ong, AJ Kinsella-Johnson, Taylor Haynes, David Zigler**

Hammett study of Cyclopropanation of 1-arylindenes and 1-aryl-3,4-dihydronaphthalenes. **Meekaela Berrios, Eric Kantorowski**

Preparation and Ring Opening of Benzofused Arylcyclopropanes. **Emma Langworthy, Kay Herlihy, Sophia Yurchenko, Eva Voss, Nadia Gardizi, Meekaela Berrios, Eric Kantorowski**

Development of "Off-the-Shelf" Bioluminescent Reporters. **Katy Byron, Nicole Murdock, Kai Winstead-Leroy, Joanna Laird**

Homology Model-Assisted Analysis of ATP Conserved Binding Pockets and Glycine Incorporation on a Polyketide Substrate. **Yiu-Ming Wu, Ashley McDonald**

Accelerating State Vector Simulation for Quantum Chemistry. **Tyler Brady, Nick Stair**

Synthesis of Improved Guest Molecule for Dual-Stimuli Release of Therapeutics from Hydrogels and Challenges with Synthesizing Asymmetric Disulfides. **Emma Sundahl, David Martinez, Peter Reist, Sandra Ward**

Learn by Cloning: Optimizing Gibson Assembly and Purification of NRPS Proteins. **Claire Meeds, Katharine Watts**

Expression and Purification of Putative Amino Acid Ligases for the Biosynthesis of TLN-05220. **Reese Le**, Ylleana Goduco, Katharine Watts

Analyzing Learning Outcomes of Gibson Assembly Independent Project in the Biochemistry Classroom. **Sam Catania**, Chris Cummings, Claire Meeds, Katharine Watts

Biodegradable Nanocomposites for Food Packaging Applications. **Michael Friend**, Camden Webb, Shanju Zhang

Lunch: 12:00 pm – 1:00 pm

Bldg. 180, 4<sup>th</sup> floor atrium

Oral Session 2: 1:00 pm – 3:00 pm

Building 180, Room 101

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

1:00 pm: Session Begins

1:10 pm: Biodegradable Nanocomposites for Food Packaging Applications. **Michael Friend**, Shanju Zhang

1:22 pm: Light and Brimstone: A Study into the Photochemistry of Dithiocarboxylates. **Riya Nigudkar, Kelsey Blechen, Kara Webb**, Taylor Haynes, David Zigler

1:34 pm: Development of "Off-the-Shelf" Bioluminescent Reporters. **Nicole Murdock**, Joanna Laird

1:46 pm *BREAK (10 minutes)*

1:56 pm: CAPTURE Cloning to Biosynthesize a Complex Polyketide. **Kate Weckwerth**, Katharine Watts

2:08 pm: Preparation and Ring Opening of Benzofused Arylcyclopropanes. **Emma Langworthy, Kay Herlihy**, Eric Kantorowski

2:20 pm: Colloidal COF-300 Synthesis with Sterically Hindered Carboxylic Acid Catalysts. **Alexis Mojica, Zoe Jackson Delos Angeles, Robert Orta**, Leslie Hamachi

2:32 pm: Closing Remarks

*We gratefully acknowledge support from the William and Linda Frost Fund  
in the Cal Poly Bailey College of Science and Mathematics*