The Frost Symposium, Summer 2023

Cal Poly – Department of Chemistry and Biochemistry
Friday, August 18th, 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, 4th Floor Atrium

Lunch: 12:00-1:00
Building 180, 4th 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**, **Makisig Velasquez**, 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: Colloidal COF-300 Synthesis with Sterically Hindered Carboxylic Acid Catalysts. **Alexis Mojica**, **Zoe Jackson Delos Angeles**, **Robert Orta**, 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, 4th floor atrium

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

Work Towards the Synthesis of Ester-Amide Acetylenedicarbonyls. **Joaquin Gonzalez**, Quinn Williams, Daniel Bercovici

Ds) - A Stimuli-Responsive Small Molecule Surfactant System. Gisele P. Guerrero, Cameron C. McMullen, **Erin A. Ituralde**, Joaquin G. Gonzalez, Julia E. Soeller, Daniel Bercovici

Investigating the Electronics on the Nucleophile Induced retro-[4+2] Fragmentation of Ylidenenorbornadienes. Cameron J. Fleischer, Quinn E. Williams, Scott J. L'Heureux, **Ashley N. Freeman**, **Danilo J. Alamillo**, **Joneaux H. Moore**, Daniel Bercovici

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-Performace 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-dihydronapthalenes. **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 Marinez**, **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, 4th 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: 2D COF Paints. **Sachi Ottoes**, **Estela Osorio-Garcia**, **Nathan Wong**, **Brian Tinkle**, 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