

**Chemical Engineering  
Harrington Auditorium  
9:00 AM – 11:30 AM  
Poster Session**

**The Separation of Microplastics by Froth Flotation**

Kayla Carpenter, Lauren Eppinger, Paige Mesick  
Advisor: Laila Abu-Lail

**Examining the Influence of Lipid Nanoparticle Composition on Their Thermodynamic Properties Using Differential Scanning Calorimetry and pKa Analysis**

Abigail Deichert, Julia Dowd, Caitlyn Swartz  
Advisor(s): Christina Bailey-Hytholt, Ronald Grimm, Chemistry and Biochemistry

**Encapsulation of Lithium in a Nanocarrier for Use During Pregnancy and Lactation**

Cameron Carlin, Kayla Condon, Sarah Ossing, Violet Smiarowski  
Advisor(s): Christina Bailey-Hytholt, Diana Alatalo, Biomedical Engineering

**Formulating Liposomes for Increased Antimicrobial Activity Towards *Staphylococcus Epidermidis***

Mae Felkner, Emily Pimentel, Kate Stoncius, Hannah Wolfgang  
Advisor(s): Christina Bailey-Hytholt, Elizabeth Stewart

**Assessment of Lipid Nanoparticle Structure**

Warren Callen, Steven Robinson  
Advisor: Christina Bailey-Hytholt

**Effects of Glucose Oxidase (Gox) on Synthetic Honey**

Gabriel Garbes, Jonathan Martin  
Advisor: Susan Roberts

**Automated Shearing Devid for the Control of Aggregation in *Taxus Chinensis* Suspension Cultures**

Jada Smith, Deah Zajmi  
Advisor: Susan Roberts

**Effect of Magnetism on Astaxanthin Production in *Xanthophyllomyces Dendrorhous***

Eric Kasischke  
Advisor: Eric Young

**ABS Plastic Cannot be Recycled Infinitely**

Zachary Maynard  
Advisor(s) David DiBiasio, Nancy Burnham, Biomedical Engineering  
Professor Stefan Hengsberger and Professor Hans-Ulrich Sigenhaller of Haute école d'ingénierie et d'architecture de Fribourg.

**Molybdenum-Based Double Transition Metal MXenes: A DFT Analysis of Properties**

Benjamin Traverso

Advisor: Aaron Deskins

**Catalytic Hydrothermal Liquefaction of Wastes**

Candy Zhang

Advisor: Michael Timko, Aidin Panahi

**Unlocking Bamboo's Biofuel Potential: A Delignification and Crystallinity Study Using Deep Eutectic Solvent Pretreatment**

Kathleen Buek, Tyler Gambon, Zachary Manfredi

Advisor: Michael Timko

**Waste to Energy: Understanding the Effects of Radical Initiators, Hydrothermal Liquefaction Pathways**

Joelis Velez Diaz

Advisor: Michael Timko, with Alex Maag, Geoffrey Tompsett

**Stranded Gas Valorization**

Ethan Fox

Advisor(s): Nikolaos Kazantzis, Michael Timko

**Renewable Hydrochar Adsorbent**

Lili Hellerman, Andrew Troup

Advisor: Michael Timko

**Co-Hydrothermal Liquefaction of Food Waste and Lignin**

Skyler Kauffman

Advisor(s): Michael Timko, Alex Maag

**Catalytic Upgrading of the Hydrothermal Liquefaction Aqueous Phase Using Zeolites**

Alex Mosley, Oamfah Suwannapong, Jia Yazon

Advisor: Michael Timko

**Visible Light Functionalization and Degradation of Plastics**

Lucas Bazydola

Advisor(s): Michael Timko, Patricia Musacchio, Chemistry and Biochemistry

**Mechanical Strength of Bamboo Fiber Biocomposites Within a Biorefinery Concept**

Clayton Hanlon, Chase Herberich, Jacob Kayser, Terrence McFarland

Advisor(s): Michael Timko, Nima Rahbar, Civil, Environmental and Architectural Engineering

**Recycling Used Canola Oil into 3D Printing Resin**

Thomas Dell'Aera, Jessica Feeney, Richard Franzen, Daniel Shea, Emily Sollecito

Alex Maag, Mehul Bhatia, Mechanical and Materials Engineering

**Production and Uses of Hydrochar from Fermented Fruit Waste**

Emily Brindisi, Samantha Dubord, Evelyn Kellum, Leah Harnisch-Weidauer

Advisor: Stephen Kmiotek

**Reactive Packed Bed Safety: Experimental Evaluation of  $TiCl_4$  Passivation for Metal Hydrides**

Alexander Greally, Gavin Maloney, Jonathan Santos, Adrianna Tagayun

Advisor(s): Stephen Kmiotek, Andrew Teixeira

**Evaluating PFAS Treatment Processes**

Max Elwell, Madeline Goggin, Patrick McKenna, Nathan Raymond

Advisor(s): Stephen Kmiotek, John Bergendahl, Civil, Environmental and Architectural Engineering

\*\*\* Not Presenting in Chemical Engineering\*\*\*

**Analyzin PFAS Concentrations Along the Blackstone River Wathershed (*presenting in EVE*)**

Noelle Noons, Alec Parish

Advisor: Stephen Kmiotek, John Bergendahl, Civil, Environmental and Architectural Engineering

**Design and Analysis of an Automated Wine Bottle Opener (*presenting in BME and ME*)**

Frank Almeida (BME), Cameron DiMeglio, Patrick King, Luke Rogers (ME)

Advisors: David DiBiasio, Kristen Billiar (Biomedical Engineering), Mustapha Fofana (Mechanical Engineering)

\*\*\*\* Not Presenting\*\*\*

**Dust Explosion of Niacin in the Animal Feed Industry (*not presenting*)**

Joshua Roberts

Advisor: Stephen Kmiotek

**Defining the Characteristics of Optical Sensors Dissolved Organic Matter Monitoring (*not presenting*)**

Rachel Cabral

Advisor: Stephen Kmiotek

**Study of the Hydrodynamics of Wastewater Treatment Plant Reactors (*not presenting*)**

Maya Vartabedian

Advisor: Stephen Kmiotek

**Analysis of Plasma Etching in Semiconductors (*not presenting*)**

Nicholas Culkin

Advisor: Stephen Kmiotek

