Discovery and Characterization of Novel Anelloviridae Protein Activities and Their Potential Cancer-Selective Toxicity
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Advisor: Destin Heilman

Silanes Form Strong Bonds to UiO-66 Metal-Organic Framework Surfaces
Abigail Berube
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Investigating the Role of Exosomes in the Development of Neuromuscular Junctions
Adam McKnight
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Exploring the effects of CBD on C. elegans with 6-OHDA induced Parkinson’s Disease to determine potential therapeutic implications
Amanda Holbrook and Claire Behning
Advisor: Suzanne Scarlata, Jill Rulfs, and Michael Buckholt

Investigating the Role of Plasmalogens in C. elegans
Anna Hickman, and Sofi Murray
Advisor: Carissa Olsen

Overexpression of ATF1 in Brewer’s Yeast for an Increase in Production of Select Esters
Brandon Rein and Olivia Wallace
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Phosphatidylinositol-4-Phosphate Domain Properties in Asymmetric Giant Unilamellar Vesicles
Catherine Reynolds
Advisor: Arne Gericke

Investigating an in vivo murine model of microglial senescence
Christina Tsillas
Advisor: Robert Dempski

Establishing a Zebrafish Model for Venous Malformations
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Investigating the Catalytic Activity of SARM1
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Sustaining Silicon’s Charge-Carrier Lifetimes through Nb2Ox5 and Organic Silane Passivation
Emma Pellerin
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Morphological Effects of Stretch on Actin Cytoskeleton in Cocultured Neuronal and Smooth Muscle Cells
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Advisor: Suzanne Scarlata

The Role of PLCβ1 in the Relocalization of EGR-1
Grace Hadley
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Drug-Herb Interactions between Artemisia annua Tea, Caffeine, and Acetaminophen
Hannah Duncan and Sophia Togneri
Advisor: Suzanne Scarlata and Pamela Weathers

The Synthesis and Properties of a Zinc Photocage Containing Aminoquinoline
Isaac Frederique
Advisor: Shawn Burdette

Bioconjugation of Aliphatic Amino Acids
Ishani Bedre
Advisor: Patricia Musacchio

Synthesis of Zinc Photocaged Thioester Molecules for Biological Applications
Jason White
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Copper homeostasis in Salmonella enterica: cloning, expression, and purification of CopA transporter and CueO cuproprotein
Jeffrey Marsh
Advisor: Jose Arguello
Determining the Relationship between DNA Double Strand Breaks and Apoptosis: Implications for Cancer Therapy
Jillian Earley
Advisor: Jose Arguello and Sharon Carter (Umass Medical)

Cellular Stress and Thioredoxin
John Gabelmann
Advisor: Jose Arguello and Natalie Farny

Coarse-grain lattice technique for studying protein-ligand binding
Jon Aronoff
Advisor: George Kaminski and Jennifer Mortensen

Development of Method to Determine EDTA Concentration
Katherine Jones
Advisor: Christopher Lambert

Interactions of Human VPS45 with Partner SNARE Proteins
Kimberly Huaman
Advisor: Arne Gericke and Mary Munson

Investigation into Ionic and Photoredox Reactions of Sulfoxonium Ylides
Kyra Tripp
Advisor: Anita Mattson

Trafficking of the Dopamine Transporter
Lali Berelashvili
Advisor: Suzanna Scarlata, Jeanine Skorinko, and Haley Melikian (UMass)

Analyzing Cannabinoid Content in Hemp Plants
Lauren Balukonis
Advisor: Anita Mattson

Exploring the Role of GolT and GolB Proteins in Copper Homeostasis in Salmonella: Generation of E. coli Clones for Protein Expression
Leo Zhu
Advisor: Jose Arguello

Bamboo for Mining Reclamation and Renewable Energy
Marissa Desir and Yiyi Wu
Advisor: Anita Mattson and Robert Krueger

Differentiating SH-SY5Y Cells into Mature Human Neurons
Natalia Wierzbicki
Advisor: Robert Dempski

Development of a C-H Acylation Reaction in Batch and in Flow
Rachel Swanson
Advisor: Patricia Musacchio and Andrew Teixeria

Surface Functionalization of 1DL Materials
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Advisor: Ron Grimm

Phosphatidylinositol Phase Behavior in the Presence of Bivalent Cations
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Advisor: Arne Gericke

Hypo-Osmotic Stress Impact on Cell Circadian Rhythms
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Advisor: Suzanne Scarlata

Proximity Labelling Identifies Novel Cell Cycle Specific Interactions of Retinoblastoma Protein
Misha Rashkoskii
Advisor: Jose Arguello and Amity Manning