

Student Research Projects

Tyler Bauer
Alternative feeds to RAS systems
Mentor: Dr. Rich Niesenbaum
Funded By: Provost's Grant for Faculty-Student Collaborative Research

Emily Bayer
Gonadogenesis and sleep regulation? Investigating novel roles of the conserved nuclear receptor fax-1 in *Caenorhabditis elegans*
Mentor: Dr. Bruce Wightman
Funded By: NSF REU Award, Muhlenberg College Provost's Office, Muhlenberg College Biology Department

Macauley Breault
An investigation of chitosan-based injectable systems containing nanoporous bioactive glass powder
Mentor: Dr. Himanshu Jain (Lehigh University)
Funded By: National Science Foundation

Ramzy Burns
Identification of the SOD1 D90A Mutation in Patient with Amyotrophic Lateral Sclerosis by Whole Exome Analysis
Mentor: Dr. Glenn Gerhard
Funded By: Penn State Hershey

Alexa Carollo
Investigating the Photodissociation of Hydroxocobalamin Using Steady State and Time Resolved UV-Visible Spectroscopy
Mentor: Dr. Roseanne Sension, University of Michigan
Funded By: National Science Foundation Research Experience for Undergraduates

Tim Carroll
Using Extracellular Recordings to Determine the Function of the Lateral Proto-cerebrum in *Neobellieria bullata*
Mentor: Dr. Patrick Williams
Funded By: Neuroscience Collaborative Research Program

Joshua Clement
Community-Led Development in Bulongwa, Tanzania
Mentor: Dr. Krista Bywater
Funded By: Summer Research Grant from the Dean of Academic Life

Nicole Cronin
Characterizing Lasers for Cooling
Mentor: Dr. Nicholas Bigelow
Funded By: University of Rochester NSF PHY-1156339

James Custer
Frictional Properties of Graphene on a Functionalized Rough Surface
Mentor: Jessica Spear, Dr. James Batteas, Texas A&M University
Funded By: National Science Foundation

Edward Cruz (with Matthew Mikula)
Aquaponics
Mentor: Dr. Rich Niesenbaum
Funded By: Muhlenberg College Biology Department

Patrick Fligge
Canopy gap Size and the Growth of *Microstegium vimineum* in Eastern Hardwood Forests: Effects on Habitat Diversity
Mentor: Dr. Rich Niesenbaum

Nathan Frick (with Jacob Miller-Sobel and Cimarron Sharon)
The Effects of Cycloheximide and Extinction on Memories Linked by Sensory Preconditioning and a Predator-Based Fear Response
Mentor: Dr. Gretchen Gotthard
Funded By: Lake Road Fellowship

Evan Gassaway
Lincomycin Biosynthesis: Identifying and Characterizing the enzymatic product of LmbX
Mentor: Dr. Keri Colabroy
Funded By: Provost's Grant for Faculty-Student Collaborative Research

Bess Glickman
Cognitive Effects of Estrogen Replacement in the Aged Rhesus Macaque
Mentor: Martha Neuringer, PhD
Funded By: Oregon National Primate Research Center
NSI Summer Undergraduate Apprentice Fund; NIH (R24)

Rebecca Golden
The Effects of Nerve Growth Factor (NGF) on Human Neuroblastoma SY5Y-TrkA Cells Cultured in Rotary Bioreactors
Mentor: Robert Redden, Dr. Garrett Brodeur, and Dr. Edward Doolin
Funded By: CHOP Summer research program

Max Greenberg
The Relationship of Body Mass and Cortisol Levels in Nesting Tree Swallows (*Tachycineta bicolor*)
Mentor: Dr. Paul Meier
Funded By: Summer Research Grant from the Dean of Academic Life

Greg Hamersky (with Michael Quach and Tyler McKechnie)
Herbal Extracts and GABA: The Role of Passionflower in Modulating the GABA_A Receptor
Mentor: Dr. Jeremy Teissere
Funded By: Neuroscience Collaborative Research Program

Benjamin Kimmelman
A Tale of Two Signals: Inflow and Outflow with the PHENIX Muon Piston Calorimeter
Mentor: Dr. Brett Fadem
Funded By: NSF-RUI Award Number 1209240

Kathryn Kooistra
When Good Collisions Go Bad: Data Quality Assurance
Mentor: Dr. Brett Fadem
Funded By: NSF-RUI Award Number 1209240

Cyrus Kuschner
Uncovering GCN5's pathway of epigenetic control in *Arabidopsis thaliana*
Mentor: Dr. Amy Hark
Funded By: Summer Research Grant from the Dean of Academic Life

Erin Kreider
Gross anatomy and histology of the alimentary tract of the Cooper's Hawk (*Accipiter cooperii*) and the Red-tailed Hawk (*Buteo jamaicensis*)
Mentor: Dr. Daniel Klem, Jr
Funded By: Dr. John E. Trainer Scholarship for Summer Study in Biology

Dominic Lapadula
Identifying Potential Upstream Regulators of nhr-67 in *Caenorhabditis elegans*
Mentor: Dr. Bruce Wightman
Funded By: Summer Research Grant from the Dean of Academic Life

Andrew Malmgren
Utilizing Fish Waste in Sustainable Agriculture
Mentor: Dr. Rich Niesenbaum
Funded By: Dr. John E. Trainer Scholarship for Summer Study in Biology

Tyler McKechnie (with Greg Hamersky and Michael Quach)
Herbal Extracts and GABA: The Role of Passionflower in Modulating the GABA_A Receptor
Mentor: Dr. Jeremy Teissere
Funded By: Provost's Grant for Faculty-Student Collaborative Research

Matthew Mikula (with Edward Cruz)
Aquaponics
Mentor: Dr. Rich Niesenbaum
Funded By: Muhlenberg College Biology Department

Jacob Miller-Sobel (with Nathan Frick and Cimarron Sharon)
The Effects of Cycloheximide and Extinction on Memories Linked by Sensory Preconditioning and a Predator-Based Fear Response
Mentor: Dr. Gretchen Gotthard
Funded By: Neuroscience Collaborative Research Program

Kelcie Molchany (with Alyssa Schell and Chelsea Young)
Synthesis and Study of Peptoid-NSAID Conjugates with Enhanced Membrane Penetrability
Mentor: Dr. Sherri Young
Funded By: Provost's Grant for Faculty-Student Collaborative Research

Elizabeth Neary
George Egerton: A Biographical Study
Mentor: Dr. Grant Scott
Funded By: Summer Research Grant from the Dean of Academic Life

Katerina Pham (with Sarah Richardson)
Screening Lehigh Valley Area Ticks for Infection Disease Agents
Mentor: Dr. Marten Edwards
Funded By: Provost's Grant for Faculty-Student Collaborative Research

Nicole Pironi
Gastrointestinal hypoperfusion and impairment of postprandial hyperemia following SCI
Mentor: Dr. Gregory M. Holmes, Pennsylvania State College of Medicine in Hershey, PA.
Funded By: American Heart Association, National Institute of Neurological Disorders and Stroke

Michael Quach (with Greg Hamersky and Tyler McKechnie)
Herbal Extracts and GABA: The Role of Passionflower in Modulating the GABA_A Receptor
Mentor: Dr. Jeremy Teissere
Funded By: Neuroscience Collaborative Research Program

Stacy Radmore
An Ethnographic View of Suicide Among the Oglala Sioux Tribe of the Pine Ridge Reservation
Mentor: Dr. Chris Kovats-Bernat

Sarah Richardson (with Katerina Pham)
Screening Lehigh Valley Area Ticks for Infection Disease Agents
Mentor: Dr. Marten Edwards
Funded By: Lehigh Valley Hospital Scholars Program

Andrea Rommal
Investigation of Trevisan Extraction Theory and Framework
Mentor: Dr. Alan Mink
Funded By: NIST

Student Research Projects

Hudson Roth
 Attempted synthesis of a fluorescent lead (II) trapping coumarocryptand
 Mentor: Dr. Marsha Baar
 Funded By: Provost's Grant for Faculty-Student Collaborative Research

Julian Rutkowski
 "Dude, Where's My Pions?" -- Modelling Pion Decay at the PHENIX Experiment
 Mentor: Dr. Brett Fadem
 Funded By: NSF-RUI Award Number 1209240 and a Provost's Grant for Faculty-Student Collaborative Research

Max Safran
 Synthesis of Polyynes by Laser Ablation of Graphite in Solution
 Mentor: Dr. Bruce Anderson
 Funded By: Provost's Grant for Faculty-Student Collaborative Research

Peter Schartel
 IDO1 and IFN- γ : Counteracting Control of Vascularization
 Mentor: Dr. Alexander J. Muller
 Funded By: Lankenau Institute for Medical Research

Alyssa Schell (with Kelcie Molchany and Chelsea Young)
 Synthesis and Study of Peptoid-NSAID Conjugates with Enhanced Membrane Penetrability
 Mentor: Dr. Sherri Young
 Funded By: Buzzard and Stehly Award

Michael Schramm
 Radical America: Populism and Socialism in the 1890s
 Mentor: Dr. Daniel Wilson
 Funded By: Summer Research Grant from the Dean of Academic Life

Cimarron Sharon (with Nathan Frick and Jacob Miller-Sobel)
 The Effects of Cycloheximide and Extinction on Memories Linked by Sensory Preconditioning and a Predator-Based Fear Response
 Mentor: Dr. Gretchen Gotthard
 Funded By: Summer Research Grant from the Dean of Academic Life

Zachary Shuler
 The Role of nhr-67 and glb-12 in the Development of *C.elegans* Uterus
 Mentor: Dr. Bruce Wightman
 Funded By: Dr. Jim Vaughan Award for Summer Study in Biology

Tasmi Siddiqua
 Use of Neuro Cognitive Enhancement Drugs by Non-medical Patients
 Mentor: Dr. Jeff Rudski
 Funded By: Neuroscience Collaborative Research Program

MariAnne Skolnik
 Light Yield Measurements of Heavy Photon Search (HPS) Muon Scintillator Hodoscope
 Mentor: Dr. Stepan Stepanyan
 Funded By: U.S. Department of Energy, Office of Science

Ian Smith
 Defining a Kinetic Mechanism for *S. lincolnensis* L-DOPA 2,3 dioxygenase
 Mentor: Dr. Keri Colabroy
 Funded By: Provost's Grant for Faculty-Student Collaborative Research

Paul Stathis
 Gross anatomy and histology of the alimentary tract of the Cooper's Hawk (*Accipiter cooperii*) and the Red-tailed Hawk (*Buteo jamaicensis*)
 Mentor: Dr. Daniel Klem, Jr
 Funded By: Provost's Grant for Faculty-Student Collaborative Research

Cora Wallace
 Quarks Gone Wild; Characterizing the Aftermath of the Hot Quark Matter Created at RHIC
 Mentor: Dr. Brett Fadem
 Funded By: NSF-RUI award 1209240

Michael Weber
 Designing and Optimizing a Multi-Step Synthesis for the Undergraduate Organic Lab
 Mentor: Dr. Marsha Baar
 Funded By: Provost's Grant for Faculty-Student Collaborative Research

Chelsea Young (with Kelcie Molchany and Alyssa Schell)
 Synthesis and Study of Peptoid-NSAID Conjugates with Enhanced Membrane Penetrability
 Mentor: Dr. Sherri Young
 Funded By: Provost's Grant for Faculty-Student Collaborative Research

Zachary Zimmerman
 Attempts at Purifying SUMOylated *S. lincolnensis* LmbX
 Mentor: Dr. Keri Colabroy
 Funded By: Provost's Grant for Faculty-Student Collaborative Research



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MUHLENBERG COLLEGE

Summer Research Poster Session

A Celebration of Student Scholarship

September 27, 2013

3:30-5:00 PM

Seeger's Union Event Space



Welcome to the summer research poster session! The posters presented today represent 8-10 week summer research projects performed by students in a variety of disciplines. Many students performed their summer work on campus and under the mentorship of a faculty member, others went off-campus for the summer to perform research at universities, hospitals and government facilities.

On-campus student research projects are typically funded through internal College grants, external funding secured by faculty members, or generous alumni. In addition, the College generously provides free dorm housing and one course credit.