

Student Accomplishments for 2004-2005

On-Campus Biology Summer Research Program (BSRP) Summer, 2004

Christina Albizati (Senior) Mentor: Dr. Charles Peterson
Integrating the physiology and ecology of animals

Reid Collins (Senior) Mentor: Dr. James Bricker
DNA isolation and genetic characterization of corn snake and whitetailed deer specimens

Michael Coppola (Sophomore) Mentor: Dr. Amanda Norvell
Molecular identification and characterization of a weak hypomorphic allele of squid

Paul Discepola (Sophomore) Mentor: Dr. Amanda Norvell
Molecular identification and characterization of a weak hypomorphic allele of squid

Patrick Discepola (Junior) Mentor: Dr. James Bricker
DNA isolation and genetic characterization of corn snake and whitetailed deer specimens

Brian Dunn (Senior) Mentor: Dr. Janet Morrison
Natural enemies and competition in native and invasive nonnative forest plant interactions

Kevin Gershuny (Senior) Mentor: Dr. James Bricker
DNA isolation and genetic characterization of corn snake and whitetailed deer specimens

Daisy Gomez (Senior) Mentor: Dr. Charles Peterson
Integrating the physiology and ecology of animals

Sean Halloran (Senior) Mentor: Dr. Janet Morrison
*Tritrophic interactions: a mycophagous beetle's role in the plant-pathogen interaction between the grass *Andropogon virginicus* and the smut fungus *Sporisorium ellisi**

Kaycie Hopkins (Sophomore) Mentor: Dr. Marcia O'Connell
Preparation and analysis of two genes involved in translational control during zebrafish embryogenesis

Rob Kral (Junior) Mentor: Dr. Janet Morrison
*Tritrophic interactions: a mycophagous beetle's role in the plantpathogen interaction between the grass *Andropogon virginicus* and the smut fungus *Sporisorium ellisi**

Kerri Matthes (Junior) Mentor: Dr. Amanda Norvell
Molecular identification and characterization of a weak hypomorphic allele of squid

Christopher Matulewicz (Senior; funded by Sea Grant) Mentor: Dr. Dennis Shevlin
Antioxidant production by microalgae

Kerry Mauck (Senior) Mentor: Dr. Janet Morrison
Natural enemies and competition in native and invasive nonnative forest plant interactions

KellyMarie McCartney (Senior) Mentor: Dr. Janet Morrison
Natural enemies and competition in native and invasive nonnative forest plant interactions

Kelly Pfeiffer (Sophomore) Mentor: Dr. Marcia O'Connell
Preparation and analysis of two genes involved in translational control during zebrafish embryogenesis

Michael Pesa (Junior) Mentor: Dr. Charles Peterson
Integrating the physiology and ecology of animals

Peter Pak (Junior) Mentor: Dr. Dennis Shevlin
Life cycle of the parasitic smut fungus Sporisorium ellisii

Jason Salamandra (Senior) Mentor: Dr. Jeffrey Erickson
Serotonin and the development of breathing behavior: ventilatory testing in serotonin-deficient Pet1 knockout mice

Nimit Saraiya (Senior) Mentor: Dr. Jeffrey Erickson
Serotonin and the development of breathing behavior: ventilatory testing in serotonin-deficient Pet1 knockout mice

On-Campus Independent Study Projects (academic year):

Joseph Agugliaro Mentor: Dr. Howard Reinert
A GIS-based characterization of timber rattlesnake (Crotalus horridus) overwintering hibernacula.

Christine Albizzati Mentor: Dr. Charles Peterson
Body size and growth rates of a New Jersey turtle community.

Patricia Blanco Mentor: Dr. Howard Reinert
Comparative water loss in relation to age in timber rattlesnakes, Crotalus horridus.

Clint Cappiello Mentor: Dr. Amanda Norvell
Phenotypic and molecular characterization of the hypomorphic squid κ_{12} allele.

Reid Collins Mentor: Dr. James Bricker
Isolation and amplification of microsatellite loci in the corn snake (E. guttata).

Kevin Gershuny Mentor: Dr. James Bricker
Isolation and amplification of microsatellite loci in the corn snake (E. guttata).

Daisy Gomez Mentor: Dr. Charles Peterson
Buoyancy regulation two species of turtles.

Sean Halloran Mentor: Dr. Janet Morrison
A study of the factors influencing infection by Sporisorium ellisii in a population of Andropogon virginicus.

Elizabeth Kozakiewicz Mentor: Dr. Charles Peterson
Affects of feeding on metabolic rates of Anolis carolinensis.

Ashley Kruegl Mentor: Dr. Charles Peterson
Metabolic costs of embryonic development in turtles.

Joan Lee Mentor: Dr. Amanda Norvell
A genetic screen to identify modifiers of the sqd mutation.

Stephen Marshall Mentor: Dr. Marcia O'Connell
An analysis of the effect of inhibition of the GDNF/Ret pathway on kidney development in zebrafish.

Kerry Mauck Mentor: Dr. Janet Morrison
A study of the role of plant native status in Eastern deciduous understory plant/plant-enemy interactions.

Matthew Molski Mentor: Dr. Amanda Norvell
klar and Glued work together in the localization of gurken during Drosophila oogenesis.

- Nicole Morino** Mentor: Dr. James Bricker
Isolation and amplification of microsatellite loci in the whitetailed deer (Odocoileus virginianus)
- Brett Picciotti** Mentor: Dr. James Bricker
Extraction of diatom DNA as a marker for water quality.
- Rajsekar Rajaraman** Mentor: Dr. Amanda Norvell
The enhancement and suppression of the SqdS isoform through genetic screening.
- Jason Salamandra** Mentor: Dr. Jeffrey Erickson
Effects of elevated environmental temperature on Pet1 deficient mice and its connection to Sudden Infant Death Syndrome.
- Nimit Saraiya** Mentor: Dr. Jeffrey Erickson
Effects of elevated environmental temperature on Pet1 deficient mice and its connection to Sudden Infant Death Syndrome.
- Erin Scaglione** Mentor: Dr. Janet Morrison
A study of plantpathogen interactions between Andropogon virginicus and Sorosporiumellisii
- Elenonora Teplinsky** Mentor: Dr. Donald Lovett
Sequencing elongation factor in the crab, Callinectes Sapidus, for use as a housekeeping gene
- Stephanie Tischler** Mentor: Dr. James Bricker
Extraction of diatom DNA as a marker for water quality.
- Deborah Ubele** Mentor: Dr. Janet Morrison
A study of plantpathogen interactions between Andropogon virginicus and Sorosporiumellisii
- Elisa Wolenuk** Mentor: Dr. Howard Reinert
Determinism of age using skeletochronology of temperate rattlesnakes versus tropical rattlesnakes.

Research Projects

- Mary Abaskharoun**
UMDNJ Department of Pharmacology and Physiology
Comparative Study of the Transfection Efficiencies of DMRIEC and FuGENE 6 in AtT20 Cells
- Jesse Allert**
Pharmacopeia Biology Department
Screening of Kinases Under Different Assay Technologies
- Laura Belanger**
Pharmacopeia
Rhodamine vs. Fluorescein: A Comparison of Two Fluorescence Polarization Assays in the Search for Kinase Inhibitors
- Clint D. Cappiello**
Albert Einstein College of Medicine Department of Pathology
Investigation of the Microsporidian Encephalitozoon cuniculi Aquaporin Protein: Functional and Localization Analysis in Xenopus Oocytes in Conjunction with Production of a Cross Reacting Antibody
- Kristina Cossaboon**
US Department of Agriculture, National Resource Conservation Services

Diane Dalo

University of North Carolina School of Medicine, Chapel Hill, NC
*Laboratories for Reproductive Biology, Department of Cell & Development Biology, PGK2:
Immunoprecipitation of a Novel Sperm Glycolytic Enzyme*

Jesse Donovan

Thomas Jefferson University, Kimmel Cancer Center
Characterizing the interaction of nNOS peptide with Dyein Light Chain 8

Erika Howard

New Jersey Forensic Science Technology Complex
The Methods and Applications of Forensic DNA Typing

Cliff Fulmer

Synaptic Pharmaceutical Corp.
High content screening assays for Gprotein coupled receptors

Krzysztof Glomski

U Buffalo Health Center
Primary epithelial cultures from repeated epilation mice exhibit normal DNA damage response

Michael Green

Princeton University
Examining Chaperonin Substrate Polypeptide Binding Interactions

Mirjana Jojic

University of Utah Department of Biology
Bypass 1 – A Plant Protein Involved in Leaf Development – Contains One Protease Resistant Domain

Ashley Kruegl

Coastal Conservation Research Program, The Wetlands Institute
Scute Anomalies in the Northern Diamondback Terrapin, Malaclemys terrapin terrapin

Joan Lee

Marine Biological Laboratory, Woods Hole, MA
Role of methyl farnesoate in osmoregulation in estuarine crabs.

Eli Levin

Sam Houston State U.
Comparison of Microflora in Upper Digestive Tracts of Wild and Captive Copperhead and Cottonmouth Rattlesnakes

Stephen D. Marshall

UMDNJ, Microbiology and Molecular Genetics, New Jersey Medical School
Human Cytomegalovirus Can Be Reactivated In Cancer Patients Undergoing Therapy With Trichostatin A

Robin Normart

New Jersey Forensic Techn Ctr
Extraction and quantification of DNA using the slotblot hybridization procedure (QuantiBlot), and detecting and assigning allele designations to the amplification products using a capillary electrophoresis instrument.

Darshita Patel

University of Alabama/Birmingham, Gregor Fleming Cystic Fibrosis Research Center
Nebulization treatments of nonCF and CF mice with different Saline Vehicles: Determination of Safety/Tolerability and Quantification of Zinc and ATP

Haroon Rahimi

Robert Wood Johnson Medical SchoolUMDNJ/Rutgers University
Investigation of Mu/Delta Opioid Receptor Heterodimers and the Effect of the ORL Receptor on Neurogenesis in the Adult Mouse

Stephanie Routson

Philadelphia College of Osteopathic Medicine (PCOM)
The Effects of AntiTumor Necrosis Factor Medication v. DMARD Therapy on the Body Cell Mass of Female Rheumatoid Arthritis Patients

Karla A. Santora

UMDNJ/Stratford, Department of Molecular Biology
Biochemical and Genetic Analysis of the lin28 Pathway

Jaclyn Schwalm

Fox Chase Medical Center
Characterization of Telomere Maintenance Mechanism in Liposarcomas

Stephanie Senkewicz

New Jersey State Police Criminalistics
Trace Evidence "FTIR Spectroscopic Analysis of Polydimethylsiloxane (PDMS) In Sexual Assault Cases"

Anup Shah

Drexel University College of Medicine
The Effect of Calmodulin Inhibition on Axon Growth

Wim Shih

Vincogen Corporation
Proteomics: Development of an HIV gp41 Microarray Assay

Shawn Silverstein

NJSP Office of Forensic Sciences
STR Typing in Forensic Analysis

Mark Strohmaier

UMDNJ
Tcell exacerbation of spinal cord injury through regulation of DNA binding proteins

Christopher Tanner

Marine Biological Laboratory, Woods Hole, MA
Role of methyl farnesoate in osmoregulation in estuarine crabs.

Eleonora Teplinsky

Kimmel Cancer Center Thomas Jefferson University
Effect of mutant RET/PTC3 fusion gene on cytokine activation.

Katherine Uyhazi

University of Basel, Biozentrum Department of Cell Biology Basel, Switzerland CH4056
Role of Mab21 in Drosophila eye development

Erin Nicolle Welfel

Department of Microbiology, Kimmel Cancer Center, Thomas Jefferson University
Optimization of Protocol for Assessing CellFree Antigen Processing

Lauren Yannarello

Montgomery Co Coroner's Office

Christina Zelasko
Texas A&M University
Gene Silencing in Saccharomyces cerevisiae

Papers presented at TriBeta District Convention

Stephen D. Marshall and Marcia O' Connell (Winner of First Place Award).
An analysis of the effect of inhibition of the GDNF/Ret pathway on kidney development in Zebrafish.

Joan J. Lee, Krzystof Glomski, Christopher A. Tanner, David W. Borst, Donald Lovett.
Hemolymph levels of Ca²⁺ may modulate methyl farnesoate levels in the green crab Carcinus maenas.

Papers presented by students at Other Meetings

SACNAS National Conference in Texas
Sigma Xi Research Honor Society Conference in Montreal
NJMS Annual Summer Research Cancer Symposium in Newark
"Biology of the Rattlesnakes" symposium at Loma Linda, University in California
Atlantic Estuarine Research Society meeting in Maryland
Annual Meeting of the Society for Integrative and Comparative Biology in San Diego

Published Abstracts

Lee, J.J., Glomski, K., Tanner, C.A., Borst, D.W., Lovett, D. Hemolymph levels of Ca²⁺ may modulate methyl farnesoate levels in the green crab Carcinus maenas. *Integrative and Comparative Biology* 44(6):718.

Published papers

Journal of Clinical Pediatrics
Nature Genetics

Awards

Barry Goldwater National Scholarship

Krzystof Glomski
Michael Green

Phi Kappa Phi National Graduate Fellowship

Katherine Uyhazi

Department of Biology Award Recipients

Seniors:

Clint Cappiello
Brian Luke
Stephen Marshall
Kerry Mauck
Karla Santora
Christopher Tanner
Katherine Uyhazi
Christina Zelasko

Juniors:

Krzysztof Glomski
Danielle Mercurio
Janet Pullockaran
Marc Vogel

Sophomores:

Hasan Danish
Michael Rossetti
Kristin Zelle