

# Student Accomplishments for 2009 - 2010

## On Campus Research – MUSE Program, Summer 2009

<b>Deering, Camille</b> Crayfish ecology	Mentor: Dr. Keith Pecor
<b>Fang, Christina</b> Analysis of GLD-1 protein turnover rate in the <i>C. elegans</i> germ line	Mentor: Dr. Sudhir Nayak
<b>Fiaschi, Michela</b> Analysis of GLD-1 protein turnover rate in the <i>C. elegans</i> germ line	Mentor: Dr. Sudhir Nayak
<b>Firnberg, Maytal</b> An analysis of the two <i>zsqd</i> genes in zebrafish: roles and regulation	Mentor: Dr. Marcia O'Connell
<b>Fraze, Lauren</b> Populations of plants and their pathogens in the wild	Mentor: Dr. Janet Morrison
<b>Goldstein, Zachary</b> Conservation genetics of freshwater mussels	Mentor: Dr. Curt Elderkin
<b>Harth, Jacquelyn</b> Populations of plants and their pathogens in the wild	Mentor: Dr. Janet Morrison
<b>Jackrel, Sara</b> Habitat characteristics of the pine snake, <i>Pituophis m. melanoleucus</i>	Mentor: Dr. Howard Reinert
<b>Kaufner, Michael</b> 1) Modulation of gene expression in blue crabs' response to changes in seawater salinity; 2) Post-translational modification of the enzyme Na <sup>+</sup> , K <sup>+</sup> -ATPase in blue crabs exposed to changes in seawater salinity	Mentor: Dr. Donald Lovett
<b>King, Dana</b> Analysis of GLD-1 protein turnover rate in the <i>C. elegans</i> germ line	Mentor: Dr. Sudhir Nayak
<b>Markowski, Danny</b> 1) Modulation of gene expression in blue crabs' response to changes in seawater salinity; 2) Post-translational modification of the enzyme Na <sup>+</sup> , K <sup>+</sup> -ATPase in blue crabs exposed to changes in seawater salinity	Mentor: Dr. Donald Lovett
<b>Middleton, Sarah</b> 1) Continued studies of nicotine influences on auto-resuscitation responses to hypoxia-induced apnea in serotonin-deficient pet-1 knockout mice; 2) Gene dosing and maternal behavior: Is there a heterozygous phenotype in the Pet-1 mouse strain?	Mentor: Dr. Jeffrey Erickson
<b>Muca, Vilma</b> An analysis of the two <i>zsqd</i> genes in zebrafish: roles and regulation	Mentor: Dr. Marcia O'Connell
<b>O'Keefe, Kimberly</b> Habitat characteristics of the pine snake, <i>Pituophis m. melanoleucus</i>	Mentor: Dr. Howard Reinert
<b>Reichard, Emily</b> 1) Continued studies of nicotine influences on auto-resuscitation responses to hypoxia-induced apnea in serotonin-deficient pet-1 knockout mice; 2) Gene dosing and maternal behavior: Is there a heterozygous phenotype in the Pet-1 mouse strain?	Mentor: Dr. Jeffrey Erickson
<b>Zetterstrom, Cara</b> Conservation genetics of freshwater mussels	Mentor: Dr. Curt Elderkin

## **OFF-CAMPUS SUMMER RESEARCH INTERNSHIPS, Summer 2009**

(Poster presentations, December 2, 2009)

### **Lauren M. Anllo**

Robert Wood Johnson Graduate School of Biomedical Sciences, Department of Pathology  
“Molecular mapping of a novel morphogenesis gene in *Caenorhabditis elegans*”

### **Amy Dooley**

Union County Prosecutor’s Office Forensic Laboratory, Elizabeth, NJ  
“Comparative Study of DNA Extraction Techniques from Dilute Bloodstains”

### **Sisi Gao**

Sam Houston State University, Department of Biological Sciences, Huntsville, TX  
“The effect of melatonin on the metabolic rate of the bearded dragon, *Pogona vitticeps*”

### **Alec Good**

Virginia Tech, Macromolecules and Interfaces Institute, Blacksburg, VA  
“Investigating polyplex stability and thermodynamics for gene delivery using electrophoresis”

### **Jumana Jaloudi**

University of Massachusetts Medical School, Department of Medicine, Worcester, MA  
“Does alcohol binge drinking affect liver functions?”

### **Ian Kahane**

Woodhull Medical Center, Department of Anesthesiology and Pain Management, Brooklyn, NY  
“Factors that affect the rate of epidural catheter insertion in pregnant women”

### **Gulden Kaplan**

Rutgers University, Department of Molecular Biology and Biochemistry, New Brunswick, NJ  
“Screening for roles of conserved *Caenorhabditis elegans* microRNAs (miRNAs) in models of injury-induced neuronal necrosis”

### **Jordan M. Kirsch**

St. Luke’s-Roosevelt Hospital, Department of Emergency Medicine, New York, NY  
“An analysis of the efficiency of intubation by direct laryngoscopy comparing patient c-spine immobilization, neck trauma, and morbid obesity.”

### **Steven Markos**

Drexel University College of Medicine, Department of Neurobiology and Anatomy, Phila, PA  
“Neurofilament dephosphorylation and microglial activation following traumatic brain injury in the immature rat”

### **Varun Nakhate**

UMDNJ, Department of Cell Biology and Molecular Medicine, Newark NJ  
“Identifying the effect of mutated *rfa1-1* and *rfa2* genes on the *ddc2-S4* phenotype suppression in *Saccharomyces cerevisiae*”

**Kimberly Parks**

Whitney Laboratory for Marine Bioscience, St. Augustine, FL  
“Palmitoylation regulates subcellular localization of metastasis suppressor proteins”

**Mihir Patel**

UMDNJ University Hospital, Emergency Department, Newark, NJ  
“The early institution of airway pressure release ventilation in Acute Respiration Distress syndrome”

**Reema Patel**

UMDNJ, Department of Molecular Biology, Stratford, NJ  
“Regulating expression of cyclin-O isoforms with treatments of cell proliferating and DNA damaging agents”

**Kelly Salmon**

Rutgers University, Department of Biology, Camden, NJ  
“Phylogeographic study of leeches in New Jersey”

**Joseph Sarhan**

Yale University School of Medicine, Department of Cardiology, New Haven, CT  
“Involvement of hnRNP in LFA-1-mediated T cell cytokine mRNA stabilization”

**Emily Stumpf**

American Museum of Natural History, Sackler Institute for Comparative Genomics, NY  
“Genetic identification of shark catches in Belizean fisheries”

**Nicholas P. Tarangelo**

Weill Cornell Medical College, Division of Immunology, Department of OB-GYN, NYC, NY  
“Allele frequency polymorphism of the MBL codon 54 in American and Brazilian populations “

**Corey Tong**

Case Western Reserve University Hospital Medical Center, Dept of Radiation Oncology, Cleveland, OH  
“Construction of a DNA plasmid containing modified restriction sites for mismatch repair”

**Crystal Wall**

University of Rochester, Department of Environmental Medicine, Rochester, NY  
“Behavioral phenotyping of a mouse model of Batten disease”

**Sarah Wolfson**

Rutgers University Marine Field Station, Little Egg Harbor Inlet, NJ  
“Spatial changes in epiphytic growth on *Zostera marina* in the Barnegat Bay-Little Egg Harbor estuary”

**Jason Wong**

Weill Cornell Medical College, Department of Dermatology, NYC, NY  
“N-Acetyl-S-famesyl-L-cysteine (AFC) inhibits cytokine production in HMEC-1 cells and may inhibit cytokine production in human neonatal microvascular endothelial cells”

## On Campus Research – Academic Year 2009 - 2010

- Asprec, Lawrence** Mentor: Dr. Dennis Shevlin  
Genetic variability of *Sporisorium ellisii* and life cycle of *S. everhartii*
- Avery, Diana** Mentor: Dr. Dennis Shevlin  
Life cycle and genetic variability of *Sporisorium ellisii*
- Balbin, Jerome** Mentor: Dr. Jeffrey Erickson  
5HT receptor expression in the serotonin-deficient *Pet-1* knockout mouse:  
Optimizing the immunohistochemical technique
- Bushi, Sharon** Mentor: Dr. Sudhir Nayak  
Optimization of screen for bioactive small molecule proteasome inhibitors utilizing the *C. elegans* germ line
- Conte, Samantha** Mentor: Dr. Jeffrey Erickson  
Gene function and maternal behavior: An analysis of the *Pet-1* heterozygous mouse
- Dave, Meneka** Mentor: Dr. W. S. Klug  
Cell cycle analysis of theoretical cancer stem cells
- Deering, Camille** Mentor: Dr. Keith Pecor  
The use of conspecific and heterospecific alarm cues by virile crayfish (*Orconectes virilis*)  
from an exotic population
- DeGenova, Sarah** Mentor: Dr. Sudhir Nayak  
Regulation of GLD-1 accumulation in the *C. elegans* germ line
- Firnberg, Maytal** Mentor: Dr. Marcia O'Connell  
An analysis and comparison of four homologous *sqd*-like genes in *D. rerio*
- Fourounjian, Paul** Mentor: Dr. Janet Morrison  
The relationship between white-tailed deer impact and native and non-native plant species composition in five  
suburban/exurban forests
- Gao, Sisi** Mentor: Dr. Luke Butler  
Structural differences between juvenile and adult body feathers in songbirds
- Goldwaser, Eric** Mentor: Dr. Sudhir Nayak  
Optimization of screen for bioactive small molecule proteasome inhibitors utilizing the *C. elegans* germ line
- Good, Alec** Mentor: Dr. W. S. Klug  
Investigating the stability and thermodynamics of polyplex formation for poly(1-vinylimidazole) using gel  
electrophoresis
- Gulden, Kaplan** Mentor: Dr. Darrell Killian  
Genetic mapping and characterization of sm138, a mutant that affects *C. elegans* sex-specific neurons
- Harth, Jacquelyn** Mentor: Dr. Janet Morrison  
Smut fungus infection and detection in the perennial grass *Andropogon virginicus*
- Hreha, Jeremy** Mentor: Dr. Curt Elderkin  
A preliminary investigation of microsatellite DNA loci in the freshwater mussel *Elliptio complanata*, in the  
Susquehanna and Delaware rivers: Genetic diversity and population structure

<b>Kakarla, Veena</b> Diatom DNA extraction as a method of pollution detection	Mentor: Dr. Jim Bricker
<b>Kalbag, Neil</b> Reproductive interference between native and exotic crayfish in New Jersey	Mentor: Dr. Keith Pecor
<b>Kaufer, Michael</b> Molecular biology of crab osmoregulation	Mentor: Dr. Donald Lovett
<b>Keleman, Evan</b> Temperature selection following food ingestion by northern water snakes, <i>Nerodia sipedon sipedon</i>	Mentor: Dr. Howard Reinert
<b>Kierstead, Andrew</b> Molecular biology of crab osmoregulation	Mentor: Dr. Donald Lovett
<b>King, Dana</b> Optimization of screen for bioactive small molecule proteasome inhibitors utilizing the <i>C. elegans</i> germ line	Mentor: Dr. Sudhir Nayak
<b>Marshall, Craig</b> Compensation or cospecialization of anti-predator defense in threespine stickleback fish ( <i>G. aculeatus</i> )	Mentor: Dr. Matthew Wund
<b>Mehta, Hiral</b> Translational regulation of <i>Drosophila</i> oogenesis through polyadenylation of maternal mRNA transcripts of <i>grk</i> and <i>sqd</i>	Mentor: Dr. Amanda Norvell
<b>Middleton, Sarah</b> Length constraints of multi-domain proteins in metazoans	Mentor: Dr. Sudhir Nayak
<b>Muca, Vilma</b> Translational control in two <i>sqd</i> -like genes in zebrafish early development	Mentor: Dr. Marcia O'Connell
<b>O'Keefe, Kimberly</b> Habitat utilization by the northern pine snake, <i>Pituophis m. melanoleucus</i> , in the New Jersey pine barrens	Mentor: Dr. Howard Reinert
<b>Parmar, Rawinder</b> Assessing genetic variability within a population of <i>Sporisorium ellisii</i> using lssr primers	Mentor: Dr. Dennis Shevlin
<b>Pastino, Alexandra</b> The use of con- and hetero-specific alarm cues by virile crayfish ( <i>Orconectes virilis</i> ) from an exotic population	Mentor: Dr. Keith Pecor
<b>Patel, Swapnil</b> Investigation of the roles of two <i>sqd</i> -like genes in zebrafish ( <i>Danio rerio</i> )	Mentor: Dr. Marcia O'Connell
<b>Pinnelas, Rebecca</b> Physical activity is a predictor of mortality in renal transplant recipients	Mentor: Dr. W. S. Klug
<b>Porecha, Rakhee</b> Characterizing cancer stem cells: Gap junction analysis	Mentor: Dr. W. S. Klug
<b>Pulido, Linda</b> The role of microtubules in patterning the dorsal-ventral axis of the <i>Drosophila</i> oocyte	Mentor: Dr. Amanda Norvell
<b>Raikundalia, Milap</b> Assessing genetic variability within a population of <i>Sporisorium ellisii</i> using lssr primers	Mentor: Dr. Dennis Shevlin
<b>Rapp, Kenneth</b> Phylogeography of <i>Lampsilis cariosa</i> along a portion of the Atlantic slope drainage	Mentor: Dr. Curt Elderkin

- Rass, Alex** Mentor: Dr. Curt Elderkin  
Phylogeography of *Lampsilis cariosa* along a portion of the Atlantic slope drainage
- Reichard, Emily** Mentor: Dr. Jeffrey Erickson  
Serotonin deficiency and auto-resuscitation: The effects of nicotine exposure during prenatal development
- Sarhan, Joseph** Mentor: Dr. Donald Lovett  
Modulation of alpha and beta Na<sup>+</sup>/K<sup>+</sup>-ATPase in osmoregulation of *Callinectes sapidus*
- Sblendorio, Joanna** Mentor: Dr. Janet Morrison  
The relationship between white-tailed deer impact and native and non-native plant species composition in five suburban/exurban forests
- Scaduto, Christine** Mentor: Dr. Tracy Kress  
The role of snu66 in coordinating steps of gene expression
- Seo, Young Il** Mentor: Dr. Amanda Norvell  
From front to back: Axis formation of *Drosophila* oocytes and the role of Grk and Sqd
- Sheth, Maunil** Mentor: Dr. Marcia O'Connell  
Preliminary investigation of the maternally inherited zorba protein in *Danio rerio*
- Song, Tim** Mentor: Dr. Sudhir Nayak  
Length constraints of multi-domain proteins in metazoans
- Thomas, Rachel** Mentor: Dr. Jim Bricker  
Diatom DNA extraction as a method of pollution detection
- Wolfson, Sarah** Mentor: Dr. Keith Pecor  
Reproductive interference between native and exotic crayfish in New Jersey
- Wong, Jason** Mentor: Dr. Janet Morrison  
Assessing genetic variation in the grass *Andropogon virginicus*
- Wood, Susan** Mentor: Dr. Matthew Wund  
Ancestral plasticity of trophic morphology in threespine stickleback fish

### **2010 Biology Department Awards**

The Biology Department congratulates the following seniors who have been named as the recipients of the Biology Department's 2010 Awards. Thanks for your fine performance, and for raising the caliber of the department!

#### **Uyhazi Award for Academic and Service Excellence in Biology**

Presented to **Kimberly Parks**, with **Alex Arnouk** receiving Honorable Mention

#### **Conor Moran Award**

Presented to **Jerome Balbin**, with **Katie Parisio** receiving Honorable Mention

#### **Joseph Vena Award**

Presented to **Sara Jackrel**, with **Lauren Anllo** receiving Honorable Mention

#### **Becton Dickinson Award**

Presented to **Joseph Sarhan**, with **Alexandra Pastino** receiving Honorable Mention

#### **Geraldine Crowley-Crorkin Johnson and Johnson Award**

Presented to **Emily Nowicki**, with **Dana King** receiving Honorable Mention

#### **Faculty Award**

Presented to **Janine Bernardo**, with **Jeremy Hreha** receiving Honorable Mention