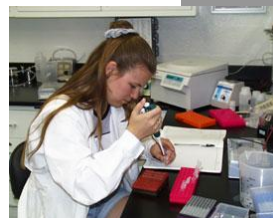


University of Delaware

The Scholars Poster Session is sponsored by the Undergraduate Research Program.

<http://urp.udel.edu>

Dr. Lynnette Overby, Faculty Director
Meg Meiman, Program Coordinator
Sarah Paylor, Graduate Assistant
Heather Silva, Graduate Assistant
Madhu Nandivada, Graduate Assistant



2009 UNDERGRADUATE RESEARCH SCHOLARS POSTER SESSION

*Friday,
April 24th, 2009
2:00-4:30 pm
Trabant University Center
Multipurpose Rooms
A, B, and C*

*Opening Remarks by Havidán
Rodríguez, Vice Provost for Academic
Affairs, at 2:00pm*



Sponsored by the Undergraduate
Research Program

Presenters listed by field of research:

SCIENCE

Agriculture and Natural Resources: Dillard^c, Gibson^c.

Animal & Food Sciences: Barnard^c, Brody, Clark, Gilinsky, Greenwalt, Hengst, Lagasse^h, Mirabito, Pesce, Phillips, Williams, Yoskowitz^c.

Biological Sciences: Barnette^{b,h}, Bayley^b, Carlberg^h, Dvorzhinskiy, Finger^b, Green^b, Joneja^b, Kasmariⁱ, Kissig^d, Martin^d, Napolitano^g, Nigro, Riscinti^{b,h}, Sandusky^b, Sloofman^{b,h}, Spence, Stull^b, Torres.

Bioresources Engineering: Dobbs^c, Redis^c, Seetharam^g, Williamson^c.

Chemistry & Biochemistry: Bazzoli^b, Blasdel^j, Davis^b, Hartman^b, Hmie^j, Larsen^f, Linton, Menger^b, Sforza^b, Styer^f, White^b, Wilson^j, Zucker^j.

Computer & Information Sciences: Alpert, Boyd.

Entomology & Wildlife Ecology: Barton^c, Dilworth^c, Hathaway^g, Reid^c, Stapley^c, Taylor.

Food and Resource Economics: McVey^c.

Health & Exercise Sciences: Darocki, McHugh, Mulrooney.

Geography: Mage^g.

Geology: Lanan^c, Maier.

Medical Technology: Golwala, Joerger, Kostielney, Mahmoud.

Physical Therapy: Flynn.

Physics & Astronomy: Flanagan, Stanev, Stengel, Watts.

Plant & Soil Sciences: Brown^c, Fernandez^c, Loprinzo^c.

Psychology: Greenberg, Missig, Pulinka.

ENGINEERING

Chemical Engineering: Baney, Bedolla, Brew, Jalan, Kroetsch, Quigley, Reinicker, Zagrobelny^a.

Civil & Environmental Engineering: Dalton, Dilworth^c, Eggleston^c, Lindemer^g, Vaicunas^c, Wilson^c, Wong^c.

Electrical & Computer Engineering: Churgin, Cohen^g, Girolami, Lange, McAuliffe, McGraw, Perez, Rodriguez, Vadhar.

Materials Science: Hackendorn, Huynh^g.

Mechanical Engineering: Bocchini, Iskra, Lindemer, Sargianis, Steelman.

Sponsored by:

a = Northeast Chemical Association

b = Howard Hughes Medical Institute

c = National Science Foundation

d = National Institute of Health

e = Delaware Water Resources Center

f = Beckman Foundation

g = University of Delaware Research Foundation

h = Charles Peter White Fellowship

i = Dean's Fund for Transforming Undergraduates:

Exploring a Career in Cancer Genetics

j = Chemistry and Biochemistry Alumni

Undergraduate Research Fellows Program

Presenters listed in alphabetical order.

Presenter	Department	Faculty Sponsor
Matthew Alpert	Computer & Information Sciences	John Case
<i>Genetic Programming. (87)</i>		
Michael Baney	Chemical Engineering	Thomas Epps, III
<i>Etching and nanoscale ordering in PS-b-PMMA block copolymer thin films. (80)</i>		
Alexandra Barnard	Animal & Food Sciences	William Saylor
<i>Assessing the presence of natural hormones in litter and excreta from broiler chickens. (17)</i>		
Brian Barnette	Biological Sciences	Vicky Funanage
<i>Methylation analysis of the G-C Rich DMPK gene: Causation for the severity difference between adult-onset and congenital Myotonic Dystrophy?. (47)</i>		
Elizabeth Barton	Entomology & Wildlife Ecology	Douglas Tallamy
<i>Butterfly attracting landscape plants. (23)</i>		
Edward Bayley	Biological Sciences	Ulhas Naik
<i>Investigation into the function of calcium-and integrin-binding (CIB) protein family members. (50)</i>		
Tyler Bazzoli	Chemistry & Biochemistry	Steven Brown
<i>Identifying biomarkers of the MHC gene to investigate chemosensory discrimination. (67)</i>		
Marco Bedolla	Chemical Engineering	Mark Barteau
<i>Role of silver on propylene epoxidation and propylene oxide decomposition. (77)</i>		
Gregory Blasdel	Chemistry & Biochemistry	Joseph Fox
<i>Exploring an iron-catalyzed road to enantiomeric purity in cyclopropanes. (68)</i>		
Peter Bocchini	Mechanical Engineering	Ajay Prasad
<i>Novel approach to control CO2 channel blockage in direct methanol fuel cells. (101)</i>		
Haley Boyd	Computer & Information Sciences	Lori Pollock
<i>Techniques for automatically mining word relationships in software. (88)</i>		
Kevin Brew	Chemical Engineering	Jochen Lauterbach
<i>Synthesis and analysis of bismuth molybdate catalysts. (81)</i>		
Lisa Brody	Animal & Food Sciences	Robert Dyer
<i>The relationship of involucrin, Ki-67 and p63 expression in type one collagen adherent and nonadherent populations of keratinocytes derived from dairy cow hoof tissue. (29)</i>		

Rebecca Brown Plant & Soil Science Pamela Green
MicroRNA (miRNA) association with environmental stresses in Arabidopsis. (28)

Megan Carlberg Biological Sciences Ethna Boyd
Functional characterization of a betaine/carnitine/choline transporter (BCCT) from the human pathogen Vibrio parahaemolyticus RIMD2210633. (41)

Matthew Churgin Electrical & Comp. Engineering Takashi Buma
Fabrication of a Fabry-Perot Etalon using carbon microspheres for sensitive ultrasound detection. (90)

Kyle Clark Animal & Food Sciences Calvin Keeler
Sequencing infectious laryngotracheitis virus using the Illumina genome analyzer. (32)

Jory Cohen Electrical & Comp. Engineering Xiaoming Li
Optimizing the matrix multiplication routine on CUDA. (94)

Sarah Dalton Civil & Environ. Engineering Sue McNeil & Rusty Lee
Hurricane evacuation in Delaware. (85)

Mark Darocki Health, Nutrition, & Ex Sciences David Edwards
The effects of acute ascorbic acid on endothelial function and arterial stiffness in patients with chronic kidney disease. (61)

Kyle Davis Chemistry & Biochemistry Neal Zondlo
Alpha-helical mimics to inhibit HIV-1 membrane fusion. (75)

Christen Dillard Agriculture & Natural Resources Gulnihal Ozbay
Water quality and bacterial monitoring at Delaware inland bays oyster gardening sites, Delaware. (15)

Erin Dilworth Civil & Environ. Engineering Gerald Kauffman
The UD WATER Project – East Campus I. (8)

Erin Dilworth Entomology & Wildlife Ecology Chris Williams
The effect of riparian corridor width on fish biodiversity in the White Clay Creek watershed, Delaware. (9)

Nicole Dobbs Bioresources Engineering Anastasia Chirnside
The UD WATER Project – Middle Campus IV & V. (4)

Aleksey Dvorzhinskiy Biological Sciences Diane Herson
Characterization of DTAC de-adapted Salmonella Enterica. (48)

Erik Eggleston Civil & Environ. Engineering Gerald Kauffman
The UD WATER Project – Middle Campus I, II, & III. (7)

Cristina Fernandez Plant & Soil Science Kyungsoo Yoo
Spatial and temporal integration of pollution history in the Christina River Basin using sediment cores from Bread and Cheese Island. (18)

Seth Finger Biological Sciences Ulhas Naik
Identification of the CIB1 compensatory molecule. (51)

Thomas Flanagan Physics & Astronomy Edmund Nowak
Magnetic sensor challenges. (105)

Sarah Flynn Physical Therapy Stuart Binder-Macleod
Predicting maximum force generating ability in healthy individuals. (56)

Aaron Gibson Agriculture & Natural Resources Gulnihal Ozbay
Use of artificial habitat for juvenile blue crabs, Callinectes sapidus in Delaware's inland bays. (16)

Marissa Gilinsky Animal & Food Sciences Limin Kung
Effect of a feed additive with antifungal properties on the aerobic stability of total mixed rations for dairy cows. (34)

Christine Girolami Electrical & Comp. Engineering Gonzalo Arce
Applications of the Lloyds Algorithm to digital multitoning. (89)

Sohil Golwala Medical Technology Michelle Parent
Characterization of protective convalescent serum generated from Yersinia infected mice. (59)

Kyle Green Biological Sciences Mary Farach-Carson
Differential ECM gene expression by parotid and submandibular salivary gland cells. (45)

Rachael Greenberg Psychology Jean-Philippe Laurenceau
Using the Specific Affect Coding System (SPAFF) to assess negative and positive marital interactions. (1)

Alicia Greenwalt Animal & Food Sciences William Saylor
Human selection and trait evolution in the chicken. (37)

Robert Hackendorn Materials Science Ismat Shah
Sb doped TiO₂-Ge nanocomposites for thermoelectric applications. (104)

Heather Hartman Chemistry & Biochemistry Joel Schneider
Inherent antibacterial activity of a β -Hairpin Peptide Hydrogel: The effect of the lysine side chain length on activity. (72)

Ryan Hathaway Entomology & Wildlife Ecology Christopher Williams
Native and invasive plant communities in riparian corridors. (25)

Brittany Hengst Animal & Food Sciences Tanya Gressley
Effect of intramammary antibiotic treatment of fresh cows on bacterial presence in quarter milk samples. (31)

Benjamin Hmiel Chemistry & Biochemistry Svilen Bobev
Synthesis and structural characterization of RE[Bi_xGe_{1-x}]₂ (RE = Y, Nd, Sm, Gd-Ho) intermetallic compounds. (66)

Kevin Huynh Materials Science Kristi Kiick
Cell-responsive elastomeric biomaterials from engineered polypeptides. (103)

Jennifer Iskra Mechanical Engineering Jill Higginson
The effect of speed and handrail use on reaction forces. (99)

Parag Jalan Chemical Engineering Jochen Lauterbach
Effects of particle size on catalyst activity for NH₃ decomposition. (82)

Torsten Joerger Medical Technology Michelle Parent
Understanding serotherapy-mediated cellular protection against Yersinia infection. (60)

Upasana Joneja Biological Sciences Wenlan Wang
Structural characterization of Survival Motor Neuron (SMN) protein. (55)

Allison Kasmari Biological Sciences Mary Farach-Carson
Identifying the potential gene targets of microRNAs involved in the metastasis of prostate cancer to bone. (46)

Megan Kissig Biological Sciences Ulhas Naik
Role of Junctional Adhesion Molecule-A (JAM-A) in the progression of Non-Alcoholic Fatty Liver Disease (NAFLD). (52)

Mollie Kostielney Medical Technology Mary Ann McLane
Eristostatin and its effect on natural killer cell lysis on melanoma. (57)

Andrew Kroetsch Chemical Engineering Christopher Roberts
Phase behavior of non-native protein aggregates. (83)

Grace Lagasse Animal & Food Sciences Robin Morgan
Sequence conservation and relatedness among microRNAs encoded by various isolates of Herpesvirus of turkeys and Marek's Disease virus. (36)

Kelsey Lanan Delaware Geological Survey Tom McKenna
The UD WATER Project – West Campus I. (5)

Corey Lange Electrical & Comp. Engineering Fouad Kiamilev
PC board design and power control circuit implementation. (93)

Tyler Larsen Chemistry & Biochemistry Joel Schneider
Inherently antibacterial hydrogels: Altering activity via Tryptophan/Arginine interactions. (73)

Matthew Lindemer Mechanical Engineering Jill Higginson
Effects of loading and speed on treadmill walking. (100)

Christina Lindemer Civil & Environ. Engineering Jack Puleo
Coastal imaging in Cape May, New Jersey. (86)

Samuel Linton Chemistry & Biochemistry Brian Bahnson
Prevention of aggregation of platelet-activating factor acetylhydrolase type II through site-directed mutagenesis. (64)

Samantha Loprinzo Plant & Soil Science Tom Sims
The UD WATER Project – West Campus II. (6)

Suzy Mage Geography Delphis Levia
The stemflow hydrochemistry of a beech-yellow poplar forest in northeastern Maryland. (20)

Alaa Mahmoud Medical Technology Mary McLane
Natural killer cell cytotoxicity towards melanoma cells when incubated with eristostatin. (58)

Nate Maier Delaware Geological Survey Scott Andres
Mobilization of phosphate in the Millsboro Pond system. (19)

Breonna Martin Biological Sciences Kenneth Van Golen
The effect of FTI treatment on Rho C GTPases on inflammatory breast cancer. (54)

Erin McAuliffe Electrical & Comp. Engineering Robert Rogers & Takashi Buma
Functional biomedical imaging using photoacoustic imaging techniques. (96)

Garret McGraw Electrical & Comp. Engineering Daniel Weile
Improving efficiency of time-domain integral equation methods for electromagnetic scattering. (97)

Liza McHugh Health, Nutrition, & Ex Sciences Thomas Kaminski
Postural sway and neuropsychological performance following an acute bout of soccer heading. (62)

Erin McVey Food and Resource Economics Steven Hastings
The impact of Delaware's Coastal Zone Act on water quality. (13)

David Meninger Chemistry & Biochemistry Sandeep Patel
Phase-transfer energetics across the water-DMPC membrane interface: Effects of non-additive electrostatics using charge equilibration models. (70)

Anne Mirabito Animal & Food Sciences Calvin Keeler
Transcriptional analysis of avian thrombocyte activation. (33)

Galen Missig Psychology Jeff Rosen
Peripheral oxytocin reduces acoustic startle in male rats: A model of post-traumatic stress disorder. (2)

Brianne Mulrooney Health, Nutrition, & Ex Sciences Christopher Modlesky
Greater structural compromise in the tibia than the femur in the involved lower extremity of individuals with hemiplegic cerebral palsy. (63)

Michael Napolitano Biological Sciences Fidelma Boyd
Vibrio Cholerae: Treasure islands of virulence factors. (42)

Samantha Nigro Biological Sciences Randall Duncan
Early signaling mechanisms in bovine articular chondrocytes (BACs) induced by mechanical stimulation. (43)

Camilo Perez Electrical & Comp. Engineering Takashi Buma
Characterization of the ultrasound pressure field transmitted by an axicon lens. (91)

Katie Pesce Animal & Food Sciences Robert Dyer
Expression of P63, alpha 6, beta 4 and alpha 3, beta 1 integrins in collagen type 1 adherent and non-adherent bovine claw horn producing keratinocytes. (30)

Rebecca Phillips Animal & Food Sciences William Saylor
Impact of dried distiller's grains in diets on the prevalence of E. coli in the gastrointestinal tract of poultry. (38)

Lauren Pulinka Psychology Jean-Philippe Laurenceau
Using the Specific Affect Coding System (SPAFF) to assess negative and positive marital interactions. (1)

John Quigley Chemical Engineering Jingguang Chen
Synthesis and characterization of WC on carbon paper using dry deposition techniques. (78)

Stracy Redis Bioresources Engineering Carmine Balascio
The UD WATER Project – East Campus II. (3)

Addison Reid Entomology & Wildlife Ecology Jacob Bowman
The effect of safety zones on white-tailed deer populations in Delaware. (21)

Aaron Reinicker Chemical Engineering Jingguang Chen
Synthesis of bimetallic carbides for use as direct methanol fuel cell anodes. (79)

Matthew Rodriguez Electrical & Comp. Engineering Takashi Buma
High resolution imaging of mouse bone samples using optical coherence tomography. (92)

Daniel Sandusky Biological Sciences Robert Akins
An evaluation of aortic cell growth in defined serum free and recommended serum-containing media with growth factors. (40)

James Sargianis Mechanical Engineering Michael Santare
Out of plane expansion of fuel cell membranes. (102)

Sunny Seetharam Bioresources Engineering Shreeram Inamdar
Quality of dissolved organic matter (DOM) in runoff from various watershed sources. (27)

Kevin Sforza Chemistry & Biochemistry Zhihao Zhuang
Expression and characterization of the Rad5 HIRAN domain in DNA repair and chromatin remodeling. (74)

Laura Sloofman Biological Sciences Catherine Kirn-Safran
Effects of diminished protein synthesis on bone anabolic response to load in RPL29-deficient mice. (49)

Carla Spence Biological Sciences Elizabeth Adams
The effects of fungal cell wall structure on innate immune recognition. (39)

Teodor Stanev Physics & Astronomy Barry Walker
Ultra-strong light field interactions: MeV photoelectrons from single atom response of Xn at 10^{19} W/cm². (107)

Sarah Stapley Entomology & Wildlife Ecology Greg Shriver
*Breeding ecology differences between wood thrush (*Hylocichla mustelina*) and gray catbirds (*Dumetella carolinensis*).* (22)

Kyle D. Steelman Mechanical Engineering Sunil Agrawal
Design and fabrication of micro air vehicles. (98)

Patrick Stengel Physics & Astronomy David Seckel
Detection of Askaryan radio pulses produced by cores of air showers. (106)

Jamie Stull Biological Sciences Melinda Duncan
The role of UPR in Connexin 50 mutants. (44)

Amy Styer Chemistry & Biochemistry Colin Thorpe
Thiol redox regulation in trypanosomes. (71)

Christopher Taylor Entomology & Wildlife Ecology Douglas Tallamy
DNA barcoding as a method for identifying caterpillar species. (24)

Jessica Torres Biological Sciences Erica Selva
The role of alg10 in the regulation of N-Glycosylation during Drosophila development. (53)

Neil Vadhar Electrical & Comp. Engineering Dennis Prather
DNA sequencing using microfluidics and pyrosequencing. (95)

Rachael Vaicunas Civil & Environ. Engineering Pei Chiu & Steven Dentel
Transport of pathogens in slow sand filtration. (10)

Adam Watts Physics & Astronomy Barry Walker
High intensity laser fields and technology. (108)

Sara White Chemistry & Biochemistry Neal Zondlo
Development of a protein kinase inducible domain for CDK5. (76)

Lauren Williams Animal & Food Sciences Limin Kung
The effect of exogenous enzymes on silage fermentation and fiber digestibility. (35)

Kishana Williamson Bioresources Engineering Eric Benson
Onset and cessation of rigor mortis and laying hens. (26)

Caitlin Wilson Civil & Environ. Engineering Steven Dentel
Exploring direct contact membrane distillation (DCMD) as for water purification. (11)

Ryan Wilson Chemistry & Biochemistry Brian Bahnson
Peroxiredoxin VI in complex with a transition inhibitor. (65)

Edwin Wong Civil & Environ. Engineering Steven Dentel
The effect of suspended solids on membrane scaling and performance in direct-contact membrane distillation. (12)

Adam Yoskowitz Animal & Food Sciences Kalmia Kniel
Removal and inactivation of pathogenic enteric viruses and parasites from water using zero-valent iron. (14)

Megan Zagrobelny Chemical Engineering Dionisios Vlachos
Reactor optimization for hydrogen production from biomass. (84)

Steven Zucker Chemistry & Biochemistry Murray Johnston
Characterization of carbonaceous airborne particulate matter in Wilmington, Delaware. (69)

- Additional Presenters: The ArtsBridge Scholars
Funded by the Dana Foundation

Faculty Sponsor: Lynnette Young Overby

Brittany Carson English Education
Julie Luzier English
Heather Silva English Education
SarahKim Vennard Biological Sciences

Creating Landscapes: A choreographic collaboration depicting three states. (109)
Creating Landscapes: Learning about Delaware through movement. (110)

- Additional Presenter: CHEP Scholar

Samantha Kugler Human Development & Family Studies Christine Ohannessian
Adolescent Delinquency and Parent-Adolescent Relations (111)

Notes