

 University of Connecticut

FRONTIERS

IN UNDERGRADUATE RESEARCH

**FIFTEENTH ANNUAL
POSTER EXHIBITION**

A CELEBRATION OF SCHOLARSHIP, INNOVATION,
CREATIVITY, AND COLLABORATION

April 13, 2012

3:30 p.m. to 4:30 p.m.

April 14, 2012

12:00 p.m. to 3:00 p.m.

Wilbur Cross North and South Reading Rooms

Sponsored by
The University of Connecticut

Office of Undergraduate Research
Enrichment Programs
Honors Program

About Frontiers in Undergraduate Research

The Frontiers Poster Exhibition is a multidisciplinary research forum and the largest showcase of undergraduate research, scholarship, and creative projects at the University of Connecticut. Frontiers 2012 is the fifteenth annual Frontiers event sponsored by the Office of Undergraduate Research (OUR). This year's poster exhibition includes 198 students presenting posters for 160 research projects.

The projects span the disciplines and include both independent research and work done in collaboration with other undergraduates as well as graduate student and faculty mentors. The presenters are among the top students at UConn and include Honors students, University Scholars, winners of OUR funding competitions, and winners and nominees of prestigious national scholarships. We hope you enjoy meeting our wonderful students and learning about their exciting work.

About the Office of Undergraduate Research

The Office of Undergraduate Research (OUR) exists to encourage and support undergraduate research at the University of Connecticut. Our office provides information and resources to encourage all students to pursue undergraduate research, as well as several funding programs to support the students and their faculty mentors.

Many of the Frontiers presenters have received financial support for their projects from the OUR, which awarded more than \$301,200 in 2010-2011 to students for their research work over the summer and during the academic year. These awards are funded by the Office of Undergraduate Research with generous support from the Deans of the schools and colleges, the Provost's office, and private donors.

Schedule of Events

Poster Exhibition

Friday, April 13, 2012

3:30 p.m. – 4:30 p.m.

Saturday, April 14, 2012

12:00 p.m. – 3:00 p.m.

Student and Faculty Reception

Friday, April 13, 2012

5:00 p.m. – 6:00 p.m.

Welcome

Dr. Gwen Pearson

Office of Undergraduate Research

Closing Remarks

Dr. Lynne Goodstein

Associate Vice Provost for Enrichment
Programs; Director, Honors Program

Alphabetical Listing of Presenters with Poster Numbers

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Poster Listing by School or College

This listing of projects includes the undergraduate student authors and their faculty mentors. Many projects also include the contributions and mentorship of dedicated graduate students and post-doctoral scholars.

SOUTH READING ROOM

School of Engineering

1. Activated Carbon Nanofiber Nonwovens for Microbial Fuel Cells

Breanne Muratori, Chemical Engineering

Seetha Manickam, Graduate Student, Chemical Engineering

Udayarka Karra, Graduate Student, Environmental Engineering

Advisor: Jeffrey McCutcheon, Assistant Professor, Chemical Engineering and

Baikun Li, Associate Professor, Environmental Engineering

2. Porous Concrete Performance: Water Quality

Malcolm Smith, Environmental Engineering

Advisor: Timothy Vadas, Assistant Professor, Environmental Engineering

3. EPA Soil Stabilization Research in Nicaragua

Dana Boyer, Environmental Engineering

Scott Cipoletti, Civil Engineering

Advisor: Maria Chrysochoou, Assistant Professor, Environmental Engineering

4. Sustainable Erosion Control in Developing Countries Using Industrial By-products

Scott Cipoletti, Civil Engineering

Advisor: Maria Chrysochoou, Assistant Professor, Civil Engineering

5. Temporal Nonlinearities for Amplitude Modulation Coding in the Unanesthetized Rabbit Inferior Colliculus

Peter Boutros, Biomedical Engineering

Advisor: Monty Escabi, Associate Professor, Biomedical Engineering

6. Mechanical properties of chordae tendineae in human and animal models

Kaitlyn Clarke, Biomedical Engineering

Thuy Pham, Graduate Student, Biomedical Engineering

Shamik Bhattacharya, Post-doc, Mechanical Engineering

Advisor: Wei Sun, Assistant Professor, Mechanical Engineering

7. Biomechanical Analysis of Healthy and Abnormal Aortic Tissue

Stephany Santos, Biomedical Engineering

Advisor: Wei Sun, Professor, Biomedical Engineering

8. Thermoelectric Effects in Phase Change Memory

Azer Faraclas, Electrical Engineering

Advisor: Ali Gokirmak, Assistant Professor, Electrical Engineering

9. Solar DC-DC Converter

Rosario Scalise, Electrical Engineering

Tomasz Walczak, Electrical Engineering

Advisor: Sung-Yeul Park, Assistant Professor, Electrical Engineering

10. Intelligent Multi-Agent Power Distribution Management System

Kunihiro Muto, Electrical Engineering

Matthew Meehan, Electrical Engineering

Patrick Fam, Electrical Engineering

Advisor: Sung Yeul Park, Assistant Professor, Electrical Engineering

11. Volatility in mRNA Secondary Structure as a Design Principle for Antisense

Erik Johnson, Chemical Engineering

Advisor: Ranjan Srivastava, Associate Professor, Chemical Engineering

12. Fluorescent Nanofibrous Membrane for the Ultra-Sensitive Detection of Explosives

Anthony La, Chemical Engineering

Advisor: Yu Lei, Associate Professor, Chemical Engineering

13. The Preparation of Silver-Based Nanomaterials through Electrochemistry and Wet-Chemistry

Honorio Valdes Espinosa de los Monteros, Chemical Engineering

Advisor: Yu Lei, Associate Professor, Chemical Engineering

14. Preparation of 1-D Nanostructures via Wet Chemistry

Daniel Manuzzi, Chemical Engineering

Liang Su, Graduate Student, Chemical Engineering

Advisor: Yu Lei, Associate Professor, Chemical Engineering

15. Determination of Radial Force and Coefficient of Friction with a Self-Expanding Transcatheter Aortic Valve Stent

Andrew Reynolds, Biomedical Engineering

Joseph Mummert, Graduate Student, Biomedical Engineering

Eric Sirois, Graduate Student, Mechanical Engineering

Advisor: Wei Sun, Professor, Mechanical Engineering

16. Electrochemical Investigation of Carbonate Selective Catalyst for Room Temperature Carbonate Fuel Cells

Michael Ignatowich, Chemical Engineering

Advisor: William Mustain, Assistant Professor, Chemical Engineering

17. Experimental Sensitivity Map Generation and Improving Image Accuracy for Electrical Capacitance Tomography

Donald Karg, Mechanical Engineering

Advisor: Robert Gao, Pratt & Whitney Endowed Chair, Mechanical Engineering,

and Zhaoyan Fan, Research Assistant Professor, Mechanical Engineering

18. A Methodology of Measuring Coronary Flow in a Porcine Aortic Root Using a Pulsatile Flow Loop

Joseph Calderan, Biomedical Engineering

Eric Sirois, Graduate Student, Mechanical Engineering

Advisor: Wei Sun, Assistant Professor, Mechanical Engineering

School of Agriculture and Natural Resources

19. Investigating the potential of plant-derived molecules for controlling multi-drug resistant *Acinetobacter baumannii*

James Gaffney, Animal Science

Anup Kollanoor Johny, Post-Doc, Animal Science

Advisor: Kumar Venkitanarayanan, Professor, Animal Science

20. Effects of Reverse Electron Transport on NADH Formation and Metmyoglobin Reduction

Charlene Van Buiten, Nutritional Sciences

Ranjith Ramanathan, Graduate Student, Animal Science

Advisor: Richard Mancini, Assistant Professor, Animal Science

21. Improving the Quantification of Proanthocyanidins from Food

Elizabeth Wallett, Nutritional Sciences

Anna Roto, Nutritional Sciences

Advisor: Bradley Bolling, Assistant Professor, Nutritional Sciences

22. Postprandial Glucose and Insulin Responses Following Low-Fat Milk Ingestion in Individuals with Metabolic Syndrome

Sarah Kranz, Allied Health Sciences

Katie Lainas, Pathobiology

Kevin Ballard, Post-Doc, Nutritional Sciences

Advisor: Richard Bruno, Associate Professor, Nutritional Sciences

23. The Role of Adiponutrin Single Nucleotide Polymorphisms on the Genetic Predisposition to Fatty Liver in Dairy Cattle

Molly Viner, Animal Science

Advisor: Heather White, Assistant Professor, Animal Science

24. Characterization of Blood Vitamins and Metabolites during the Transition to Lactation in University of Connecticut Dairy Cattle

Kaylin Belskie, Animal Science

Zoe Wichman, Animal Science

Advisor: Heather White, Assistant Professor, Animal Science

25. Effects of intrauterine growth retardation, due to poor maternal nutrition, on gene expression in adipose tissue

Stephanie Spignesi, Animal Science

Advisor: Kristen Govoni, Assistant Professor, Animal Science

26. Effects of Intrauterine Growth Retardation, due to Poor Maternal Nutrition, On Gene Expression and Differentiation in Osteoblasts and Adipocytes

Dana Kaelin, Animal Science

Advisor: Kristen Govoni, Assistant Professor, Animal Science

27. Effects of Intrauterine Growth Retardation Due to Poor Maternal Nutrition on Gene Expression in Muscle Tissue

Stephanie Tornaquindici, Animal Science

Advisor: Kristen Govoni, Assistant Professor, Animal Science

28. Direct Sub-Lethal Effects of the Oil Dispersant Corexit and Oil in the Eastern Oyster

Lindsay Jasperse, Molecular and Cell Biology

Katherine Tsantiris, Environmental Science

Advisor: Sylvain De Guise, Associate Professor, Pathobiology, and Milton Levin, Assistant Professor, Pathobiology

29. Validations of PCR Primers for Bovine Pluripotent Genes

Derek Marotta, Animal Science

Erik Carter, Pathobiology

Advisor: Xiuchun Tian, Associate Professor, Animal Science

30. Mastering Techniques of Laboratory Research with Genetic Material

Brian Carson, Animal Science

Advisor: Cindy Tian, Associate Professor, Animal Science

31. A "Helpless" System for the Generation of Recombinant Vaccinia Viruses

Ethan Sarnoski, Pathobiology

Advisor: Paulo Verardi, Assistant Professor, Pathobiology

32. Magnetic-Beaded Antibody Facilitation of Recombinant Vaccinia Virus Production

Peter Larson, Pathobiology

Advisor: Paulo Verardi, Assistant Professor, Pathobiology

33. Inducible Recombinant Vaccinia Virus Utilizing the Tetracycline Operon to Control the Essential Genes A3L and E8R

Brittany Jasperse, Molecular and Cell Biology

Advisor: Paulo Verardi, Assistant Professor, Pathobiology

34. Viral Immune Evasion Through Host Gene Hijacking

Minh Phan, Pathobiology

Advisors: Paulo Verardi, Assistant Professor, Pathobiology; Antonio Garmendia, Professor, Pathobiology; and J. Peter Gogarten, Distinguished Professor, Molecular and Cell Biology

35. An Assessment of Ichthyofauna in an Artisanal Fishing Zone in the Golfo de Chiriquí

Kathleen Carey, Animal Science

Rubén González, SIT Panama Program, Academic Director

Advisor: Steven Zinn, Professor, Animal Science

College of Liberal Arts and Sciences

36. Habituation Effects in Attention Modification Training for Obsessive-Compulsive Disorder

Olivia Bogucki, Psychology

Advisor: Kimberli Treadwell, Associate Professor, Psychology

37. Longitudinal Changes in Pronoun Reversal in Children with Autism Spectrum Disorder and Typically Developing Children

Michelle Cheng, Psychology

Advisors: Letitia Naigles, Professor, Psychology; Deborah Fein, Professor, Psychology; Neha Khetrapal, Research Assistant, Macquarie University, Australia; Katherine Demuth, Professor (CORE) and Honorary Associate, Macquarie University, Australia

38. Developmental Changes in Joint Attention in Typically Developing Children and Children with Autism Spectrum Disorders

Kimberly Ellison, Psychology

Saime Tek, Post-Doc, Kennedy Krieger Institute, Johns Hopkins University
Advisor: Letitia Naigles, Professor, Psychology

39. Language-Specific Tuning of Audiovisual Integration in Early Development

Barbara Gruenbaum, Psychology

Advisor: Heather Bortfeld, Associate Professor, Psychology

40. Differential Latencies Across Training Days in Response to Manipulation of Emotional Context

Sharon Casavant, Physiology and Neurobiology

Youstina Youssef, Cognitive Science

Advisor: Etan Markus, Professor, Psychology

41. Dissociating Place Cell Activity across the Dorsal and Ventral Regions of the Hippocampus

Kevin Mastro, Biological Sciences

Jamal Carobert, Physiology and Neurobiology

Xiao Li, Psychology

Nickie Paul, Graduate student, Psychology

Advisor: Etan Markus, Professor, Psychology

42. The Effect of Arc Knockdown on a Hippocampal Place Task

Emily Szkudlarek, Psychology

Paul Ericson, Psychology

Krista Wolffer, Animal Science

Brandy Schmidt, Graduate Student, Psychology

Advisor: Etan Markus, Professor, Psychology

43. Dorsal CA1 Arc Knockdown Effects on Exploration and Memory

Thomas Feldtmose, Psychology
Phoebe Menacherry, Molecular and Cell Biology
Brandy Schmidt, Graduate Student, Psychology
Advisor: Etan Markus, Professor, Psychology

44. Changes in hippocampal theta rhythm during place-task learning in rats

Matthew Howe, Physiology and Neurobiology
Greg Newman, Psychology
Amanda Swanson, Graduate Student, Psychology
Advisor: Etan Markus, Professor, Psychology

45. Why Can't That Rat Remember Where He's At? Understanding Proactive Interference Using a Delayed-Match-to-Place Radial Water Maze Task

Shang Lin Lee, Biological Sciences and Psychology
Danielle Pulli, Psychology
Nicholas Paul, Graduate Student, Psychology
Advisor: Etan Markus, Professor, Psychology

46. Cell Size Distribution in the MGN and Associated Auditory Processing Deficits in EPO Treated and Untreated HI Injured Rodents

Mariah Elliott, Psychology
Michelle Alexander, Graduate Student, Psychology
Advisor: R. Holly Fitch, Associate Professor, Psychology

47. Anxiety and Social Interaction in BXD Mice

Ashley Bonet, Biological Sciences
Dongnhu Truong, Graduate Student, Psychology
Advisor: Roslyn Holly Fitch, Associate Professor, Psychology

48. The Effects of Varying Ketamine Doses and Delays on Memory Consolidation

Ryan Tabtabai, Biological Sciences
Advisor: James Chrobak, Professor, Psychology

49. Differential Arc expression across the dorsal-ventral axis of the hippocampus by emotional context

Vishal Gohel, Physiology and Neurobiology
Neiha Kidwai, Biological Sciences
Advisor: Amanda Swanson, Graduate Student, Psychology

50. Undergraduate Students' Experiences of Personal Growth through the Mentoring of Youth

Samantha Eisenberg, Human Development and Family Studies

Sara Johnson, Graduate Student, Human Development and Family Studies

Advisor: Preston Britner, Professor, Human Development and Family Studies

51. Does opening family and juvenile courts increase the media attention they receive?

Joseph Levy, Human Development and Family Studies

Advisor: Preston Britner, Professor, Human Development and Family Studies

52. Professional Development Needs of Early Childhood Providers: A Focus Group Study

Cristin Caparotta, Human Development and Family Studies

Advisor: Anne Farrell, Associate Professor, Human Development and Family Studies

53. Predictors of Fear of Recurrence in Colorectal Cancer Survivors

Lindsey LaFemina, Human Development and Family Studies

Katrina Nygren, Communication Sciences

Elizabeth Tagg, Graduate Student, Human Development and Family Studies

Advisor: Keith Bellizzi, Assistant Professor, Human Development and Family Studies

54. Individual and Family Factors Associated with Quality of Life in Survivors of Colorectal Cancer

Kelsie Colpitts, Human Development and Family Studies

Steven Schmidt, Graduate Student, Human Development and Family Studies

Elizabeth Tagg, Graduate Student, Human Development and Family Studies

Advisor: Keith Bellizzi, Assistant Professor, Human Development and Family Studies

55. Expectations and Realities of Legal Advocating for Children

Olivia Hebenstreit, Human Development and Family Studies

Advisor: Anita Garey, Associate Professor, Human Development and Family Studies

56. Young African-American Children's Representations of The Father Role in Low-income Households

Shawnae Thompson, Human Development and Family Studies

Advisor: JoAnn Robinson, Professor, Human Development and Family Studies

57. Does the observed working alliance of children in Jumpstart with their UConn student mentors predict the quality of the shared reading experience?

Lauren Reilly, Human Development and Family Studies

Advisor: JoAnn Robinson, Professor, Human Development and Family Studies

58. An Exploratory Study of Preschoolers' Language and Literacy Skills and Their Experiences in Dialogic Reading Epochs

Stephanie Godbout, Human Development and Family Studies

Advisor: JoAnn Robinson, Professor, Human Development and Family Studies

59. How Divorced Parents' Mental Health Affects Children's Academic Achievement and Overall Well-Being Post-Divorce

Anne Lee, Human Development and Family Studies

Victoria McDougal, Graduate Student, Human Development and Family Studies

Advisor: Edna Brown, Professor, Human Development and Family Studies

60. How Parent Child Relationship Satisfaction and Time Spent with Child Post-Divorce are Associated with Parent's Mental Health

Jennifer Barney, Human Development and Family Studies

Alison Wong, Graduate Student, Human Development and Family Studies

Advisor: Edna Brown, Professor, Human Development and Family Studies

61. Associations between Men's and Women's Relationship Quality and Mental Health Over Time

Tavia Briscoe, Human Development and Family Studies

Victoria McDougal, Graduate Student, Human Development and Family Studies

Alison Wong, Graduate Student, Human Development and Family Studies

Advisor: Kari Adamsons, Assistant Professor, Human Development and Family Studies

62. Life After Loss: Experiences Following the Death of a Young Adult Spouse

Allegra Levine, Human Development and Family Studies

Advisor: Thomas Blank, Professor, Human Development and Family Studies

63. Couples Dealing with Post-prostate Cancer Sexual Issues

Eliza Dollard, Pharmacy

Advisor: Thomas Blank, Professor, Human Development and Family Studies

64. Latino Men and Prostate Cancer Health Disparities

Nubar Hanessian, Biological Sciences

Livja Koka, Biological Sciences

Siobhan O'Malley, ACES

Emily Pearson, Allied Health Sciences

Gabriel Byer-Alcorace, Graduate Assistant, Psychology

Advisor: Marysol Ascencio, Associate Professor, Human Development and Family Studies, and Professor Thomas Blank, Human Development and Family Studies

65. Understanding Couple Dynamics in Cancer Survivorship: A Pilot Study

Courtney Beyers, Nursing

Advisor: Thomas Blank, Professor, Human Development and Family Studies

66. Prosocial Competencies, Ethnic-Racial Socialization, and School Adjustment among Caribbean and South/Central American Immigrant Children: A Preliminary Investigation

Gabrielle Phillips, Human Development and Family Studies

Advisor: Annamaria Csizmadia, Assistant Professor, Human Development and Family Studies

HALLWAY

School of Fine Arts

67. University of Connecticut Historical Collection of Costumes and Textiles Virtual Museum

Angela Armijo, Design and Technical Theater

Advisor: Laura Crow, Professor, Design and Technical Theater

68. 2011 Prague Quadrennial of Performance Design and Space

Allison McGrath, Design and Technical Theater

Advisor: Laura Crow, Professor, Design and Technical Theater

School of Engineering

69. Bicycle Modification to Transport and Simultaneously Purify Water For Use In Developing Regions

Lior Trestman, Biomedical Engineering

Anton Nikiforov, Chemistry

Daniel Pfisterer, ACES

Advisor: Jeffrey McCutcheon, Assistant Professor, Chemical Engineering

70. Forward Osmosis for Refugee Camps and Disaster Relief Scenarios

Ethan Butler, Chemical Engineering

Advisor: Jeffrey McCutcheon, Assistant Professor, Chemical Engineering

Neag School of Education

71. Kindergarten Mathematics: An Observational Study of Learning Centers in Diverse School Settings

Juliana MacSwan, Elementary Education

Advisor: M. Katherine Gavin, Associate Professor, Educational Psychology; Tutita Casa, Assistant Professor, Educational Psychology; Fabiana Cardetti, Assistant Professor, Mathematics; Catherine Little, Associate Professor, Educational Psychology

72. High School and University Student Attitudes in Spanish Classrooms

Dana Lovallo, Secondary Spanish Education and Spanish

Advisor: Manuela Wagner, Associate Professor, Modern and Classical Languages

73. Getting to the Why: Teacher Practices that Support Mathematically Sound Student Justifications

Briana Hennessy, Secondary Education

Advisor: Megan Staples, Assistant Professor, Secondary Education

74. Connecticut Special Education Teacher Roles in the Implementation of Scientifically Research Based Interventions

Julia Leonard, Special Education

Advisor: Michael Faggella-Luby, Assistant Professor, Special Education

College of Liberal Arts and Science

75. Educator Preparation to Respond to the Needs of Homeless Children & Youth: Perceptions of School Personnel

Sarah Harris, Secondary Social Studies Education, History, Psychology

Advisors: Catherine Little, Associate Professor, Department of Educational Psychology; Dr. Peter Baldwin, Associate Professor, History; Dr. Preston Britner, Professor, Human Development and Family Services; and Dr. Diane Quinn, Associate Professor, Psychology

76. Magazine Piece on the Investigation of the Antecedents, Aftermath and Implications of Orthopedic Injuries in Female High School Athletes

Amy Schellenbaum, Journalism

Advisor: Maureen Croteau, Professor, Journalism

77. State of the Everglades

Caitlin Parmelee, Journalism

Courtney Robishaw, Journalism

Olivia Balsinger, Journalism

Purbita Saha, Ecology and Evolutionary Biology

Quenton Narcisse, Journalism

Carmine Colangelo, Journalism

Advisor: Robert Wyss, Associate Professor, Journalism

78. An examination of services for adults with autism in Connecticut for purposes of journalistic news reports

Alessandra Petrino, Journalism

Joseph Adinolfi, Journalism

Advisor: Marcel Dufresne, Associate Professor, Journalism

79. Imagining the Afterlife: Literature and Eschatology in England, 1500-1700

Alexis Cordone, Biological Sciences

Advisor: Clare King'oo, Assistant Professor, English

80. Getting by in Depressed Times: Concord, Massachusetts in 1842

Elizabeth Kelly, American Studies

Advisor: Robert Gross, James L. and Shirley A. Draper Professor of Early American History, History

NORTH READING ROOM

School of Pharmacy

81. The Role of the Cannabinoid Receptor Carboxy-Terminus

Sarah Mahonski, Molecular and Cell Biology

Advisor: Debra Kendall, Department Head and Distinguished Professor, Pharmacy

82. Intrusive Characterization of Granular Mixing in a Novel Mixer Karol

Lewkowicz, Pharmacy

Yunfeng Zhu, Graduate Student, Pharmacy

Advisor: Bodhi Chaudhuri, Associate Professor, Pharmacy

83. Parametric and Scale Up Studies on High Shear Wet Granulation

Yasemin Malik, Molecular and Cell Biology

Christopher Jensen, ACES

Mary Kovacevic, Pharmacy

Amina Ramic, Pharmacy

Jared Mangano, ACES

Rukshana Chowdhury, Pharmacy

Annie King, ACES

Saurabh Sarkar, Graduate Student, Pharmacy

Apurva More, Graduate Student, Pharmacy

Advisor: Bodhi Chaudhuri, Assistant Professor, Pharmacy

84. L-menthol inhibits respiratory irritation by cigarette smoke irritants targeting diverse chemosensory receptors

Michael Ha, Pharmacy

Advisor: John Morris, Board of Trustees Distinguished Professor, Pharmacy

College of Liberal Arts and Sciences

85. Benevolent Advocacy: The Extent of True Representation in National Latino Advocacy Organizations

Lucien Lafreniere, History

Advisor: Juhem Navarro-Rivera, Professor, Political Science

86. Compromised Equality: Sex Discrimination and the Battle for Constitutional Rights

Claire Simonich, Political Science

Advisor: Virginia Hettinger, Associate Professor, Political Science

87. Measuring Human Rights: Domestic Legal Guarantees Relating to Violence against Women

David Schwegman, History

Advisor: David Richards, Associate Professor, Political Science

88. Public Views on Ethical Consumption

Tess Johnson, Political Science

Advisor: Samuel Best, Associate Professor, Political Science

89. The Federal Response to Fiscal Distress in the States: An Historical Perspective

Daniel Reeves, Political Science

Advisor: Jeffrey D. Grynviski, Associate Professor, Political Science

90. Welfare Benefit Selection Using a Multidimensional Poverty Measurement: A Case Study of the *Bolsa Familia* Conditional Cash Transfer Program in Brazil

Rafael Pérez-Segura, Economics

Advisor: Susan Randolph, Associate Professor, Economics

91. Genocide in the Classroom: How transitional societies are affected by the quality of genocide education

Leah Oppenheimer, Individualized Major

Advisor: Glenn Mitoma, Assistant Professor in Residence, Human Rights Institute

92. Social and Economic Rights Fulfillment Index

David Greenberg, Economics

Advisor: Susan Randolph, Associate Professor, Economics

93. Quantifying the Association between Diet and Coronary Heart Disease Risk in the United States

John Giardina, Economics

Advisor: Dennis Heffley, Professor, Economics

94. The "Right to Food Campaign" in India: Its Evolution and Impact on Party Politics

Hina Samnani, Finance

Advisor: Shareen Hertel, Associate Professor, Political Science

95. Economic Rights of Migrant Domestic Workers: A Comparison of Singapore and the United States

Romana Haider, Political Science

Advisors: Shareen Hertel, Associate Professor, Political Science; and Bandana Purkayastha, Professor, Sociology

96. Farmer Suicide in Maharashtra, India: Facts, Factors, and Possible Fixes

Jennifer Guha, Political Science

Advisor: Betty Hanson, Professor, Political Science

97. Characterization of Non-Toxic Latex and Toxic Silica Particle Uptake in Various Cell Lines

Alexandra Goetjen, Molecular and Cell Biology

Advisor: David Knecht, Professor, Molecular and Cell Biology

98. The Role of Actin Binding Proteins During Cell Motility

Elizabeth Ojukwu, Molecular and Cell Biology

Advisor: David Knecht, Professor, Molecular and Cell Biology

99. Determining the Mechanism by Which Cucurbitacin I Effects Cellular Motility and Gene Transcription

Nicholas Minutolo, Molecular and Cell Biology

Advisor: David Knecht, Professor, Molecular and Cell Biology

100. Measuring the Dynamics of Filamin Interaction with the Actin Cytoskeleton Using Photoconversion Microscopy

Alex Marrotte, Molecular and Cell Biology

Advisor: David Knecht, Professor, Molecular and Cell Biology

101. The Toxic Effects of Spherical Silica, Zinc Oxide Nanowires, and Iron Oxide on Alveolar Macrophages

Evan Byron, Molecular and Cell Biology

Advisor: David Knecht, Professor, Molecular and Cell Biology

102. Reconstructing ancient RNA reveals biased evolution of optimal growth temperature in the Thermotogales

Anna Green, Molecular and Cell Biology

Kristen Swithers, Graduate Student, Molecular and Cell Biology

Advisors: J. Peter Gogarten, Distinguished Professor, Molecular and Cell Biology; Kenneth Noll, Professor, Molecular and Cell Biology; Olga Zhaxybayeva, Asst. Professor, Biology, West Virginia University

103. The Search for Novel Centromere Proteins and Chromosome Segregation Regulators

Ryan D'souza, Biological Sciences

Advisor: Barbara Mellone, Assistant Professor, Molecular and Cell Biology

104. Tracking the Evolution of Essential Centromere Binding Proteins

Ragini Phansalkar, Biological Sciences

Advisor: Barbara Mellone, Assistant Professor, Molecular and Cell Biology

105. Elucidating the Role of the Ubiquitin Interacting Motif (UIM) in the *Drosophila melanogaster* protein CAL1

Christian Belisario, Biological Sciences

Advisor: Barbara Mellone, Assistant Professor, Molecular and Cell Biology

106. Investigating rhodopsin kinetic stability using membrane mimetic platforms

Diane Yu, Structural Biology and Biophysics

Advisor: Arlene Albert, Professor, Molecular and Cell Biology; and Nathan Alder, Asst. Professor, Molecular and Cell Biology

107. Inhibition of Semen-derived Enhancer of Virus Infection (SEVI) fibrillogenesis by zinc and copper

Jessica Snell, Molecular and Cell Biology

Advisor: Andrei Alexandrescu, Associate Professor, Molecular and Cell Biology

108. The Role of ATRX in Placentation and Sexual Differentiation

Tiffany Phillips: Biological Sciences and Asian Studies (Individualized major)

Advisor: Andrew Pask, Associate Professor, Molecular and Cell Biology

109. Metallothionein Gene Dose and the Immune Response

Meaghan Roy-O'Reilly, Molecular and Cell Biology

Advisor: Michael Lynes, Professor, Molecular and Cell Biology

110. Fungal Diversity on the Surface of Cheese

Samip Shah, Biological Sciences

Advisor: David Benson, Professor, Molecular and Cell Biology

111. Visualization and Comparison of Dicer Expression in Various Melanocytic Tumor Types

Katherine Han, Molecular and Cell Biology

Advisor: Soheil (Sam) Dadras, Assistant Professor, Genetics and Developmental Biology

112. A Role Of The Drosophila PGC-1 Homologue Spargel in Dopaminergic Neuroprotection Against Rotenone

Munzareen Khan, Cognitive Science, Physiology and Neurobiology

Advisor: Yih-Woei Fridell, Assistant Professor, Allied Health Sciences

113. Synaptic effects of the overexpression of collybistin and protocadherin in neurons of the cerebral cortex

Rachel Harris, Biological Sciences

Jarrett Masson, Biological Sciences

Celia Miralles, Staff, Physiology and Neurobiology

Advisor: Angel De Blas, Professor, Physiology and Neurobiology

114. The Role of Neurexins in the Organization of Synaptic Proteins

Divya Keerthy, Physiology and Neurobiology

Advisor: Angel deBlas, Professor, Physiology and Neurobiology

115. Steps Toward Direct Reprogramming of Fibroblasts to GABA-ergic Neurons

Charlotte Smith, Biological Sciences

Advisor: Joseph LoTurco, Professor, Physiology and Neurobiology

116. NaPi-II-Type (SLC34) Transporters are not present in Adult and Neonate Rat Choroid Plexus Cells

Hien Le, Physiology and Neurobiology

Amy Batallie, Post-Doc, Physiology and Neurobiology

Sonda Parker, Research Assistant, Physiology and Neurobiology

Advisor: Larry Renfro, Professor and Department Head, Physiology and Neurobiology

117. Age-Related Structural Changes to the Ependymal Layer Lining the Subventricular Zone Stem Cell Niche

John Peters, Biological Sciences

Brett Shook, Graduate Student, Physiology and Neurobiology

Advisor: Joanne Conover, Associate Professor, Physiology and Neurobiology

118. Correlating DNA and protein motifs: A new algorithm and its applications

William Lindsay, Physiology and Neurobiology

Advisor: Daniel Schwartz, Assistant Professor, Physiology and Neurobiology

119. Bipolar Interneurons are not produced in the absence of Citron Kinase in the Developing Rat Retina

Nisarg Chhaya, Physiology and Neurobiology

Advisor: Rahul Kanadia, Assistant Professor, Physiology and Neurobiology

120. Spectroscopic and Photophysical Analysis of Chloride Ion Pumping Mutants of Bacteriorhodopsin

Erin Duffy, Molecular and Cell Biology

Advisor: Robert Birge, Professor, Chemistry

121. Characterization and Prototype Development of Bacteriorhodopsin-Based Photonic Devices

Caroline Rogi, Molecular and Cell Biology

Jordan Greco, Graduate Student, Chemistry

Advisor: Robert Birge, Professor, Chemistry

122. Computer Modeling of Bacteriorhodopsin for Use in a Chemical Sensor Device

Alex Minge, Molecular and Cell Biology

Advisor: Robert Birge, Professor, Chemistry

123. The Sizing of Graphene Oxide Particles: Determining the distribution of graphene oxide particles under differing chemical conditions

Samik Das, Chemical Engineering

AJ Oyer, Graduate Student, Polymer Science

Advisor: Douglas Adamson, Associate Professor, Chemistry

124. Diazonium Synthesis of Nitrated Graphene Oxide

Adam Woomer, Chemistry

Advisor: Douglas Adamson, Associate Professor, Chemistry

125. Resonant Laser Ablation and its Signal Enhancing Effects

Marisia Fikiet, Chemistry

Syed Ali, Chemistry

Kehley Davies, Graduate Student, Chemistry

Danielle Cleveland, Graduate Student, Chemistry

Advisor: Robert Michel, Professor, Chemistry

126. Quantifying Evolutionary Progression of Stickleback Fish by Measuring Whole-body Sodium Concentration Using Flame Atomic Absorption Spectroscopy

Alexandra Longacre, Chemistry

Ramizahmed Desai, Biological Sciences

Advisor: Robert Michel, Professor, Chemistry

127. Elucidating the mechanism of antimigratory activity of cardiac glycosides

Joshua Johnson, Molecular and Cell Biology

Anniefer Magpusao, Graduate Student, Chemistry

Advisor: Mark Peczuh, Associate Professor, Chemistry

128. Fabrication and SIMPLEX Optimization of Nano-structured Surfaces for Surface-Enhanced Raman Spectroscopy

Patrick Field, Chemistry

Timothy Bauer, Chemical Engineering

Amelia Edward, Chemical Engineering

Elizabeth Guerrero, Chemistry

Laura Purcell, Chemistry

Advisor: Robert Michel, Professor, Chemistry

129. Esterification of Levulinic Acid

Meghan Negus, Chemical Engineering

Advisor: Nicholas Leadbeater, Associate Professor, Chemistry

130. Use of Continuous-Flow Processing as a Tool for Preparative Organic Chemistry

Christopher Lee, Biomedical Engineering

Advisor: Nicholas Leadbeater, Associate Professor, Chemistry

131. Application of Microwave Heating in the Undergraduate Teaching Laboratory

Timothy Monos, Chemistry

Advisor: Nicholas Leadbeater, Associate Professor of Chemistry, Chemistry

132. Developing New Approaches to Important Bond-Forming Reactions in Organic Chemistry

Casey Camire, Chemistry

Advisor: Nicholas Leadbeater, Associate Professor, Chemistry

133. Mapping the Binding Site of DX-52-1 to Radixin Using Site Directed Mutagenesis

Stephen Lincoln, Chemical Engineering

Advisor: Gabriel Fenteany, Associate Professor, Chemistry

134. Synthesis, Characterization, and Application of Photocatalytic Titania-based Aerogels for the Degradation of Volatile Organic Compounds

Dayton Horvath, Chemistry

Advisor: Steven Suib, Board of Trustees Distinguished Professor, Chemistry

135. Evolutionary Radiation of Protea

Nikisha Patel, Biological Sciences

Advisor: Kent Holsinger, Professor, Ecology & Evolutionary Biology

136. Sequencing of the intestinal aquaporin 1 gene in the alewife (*Alosa pseudoharengus*)

Emily Funk, Ecology & Evolutionary Biology

Advisor: Eric Schultz, Associate Professor, Ecology & Evolutionary Biology

137. Phenotypic plasticity and extinction risk in South African plants: a reaction norm approach to species distribution modeling

Colin Carlson, Ecology & Evolutionary Biology

Advisor: Carl Schlichting, Professor, Ecology & Evolutionary Biology

138. Biodiversity Complexity in the Australian "Tick Tock" Cicadas

Patrick Gero, Ecology & Evolutionary Biology

Advisor: Chris Simon, Professor, Ecology & Evolutionary Biology

139. The Anatomical basis for low Wood Density in Pelargonium

Georgia Thomas, Ecology & Evolutionary Biology

Advisor: Cynthia Jones, Professor, Ecology & Evolutionary Biology

140. Oviposition Site Choice in Anurans

Alexander Shepack, Ecology & Evolutionary Biology

Advisor: Mark Urban, Assistant Professor, Ecology & Evolutionary Biology

141. Exploring the Evolution of the Arthropod Labrum in the Red Flour Beetle, *Tribolium castaneum*

Matt Gaudio, Biological Sciences

Frank Smith, Graduate Student, Ecology & Evolutionary Biology

Advisor: Elizabeth Jockusch, Associate Professor, Ecology & Evolutionary Biology

142. Statistical Modeling of Seasonal Differences in Habitat Selection of Three Species of Terrestrial Gastropods

Katherine Abbott, Ecology & Evolutionary Biology

Advisor: Michael Willig, Director, Center for Environmental Sciences and Engineering and Professor, Dept. of Ecology and Evolutionary Biology

143. Salinity Preference of Alaskan Threespine Stickleback: Test for Divergence in Halotaxis between Ancestral and Landlocked Populations

David Fryxell, Biological Sciences

Advisor: Eric Schultz, Associate Professor, Ecology & Evolutionary Biology

144. Phylogeography on a Dynamic Landmass: mtDNA gene trees for *Kikihia cutora* species complex

Emily Ellis, Biological Sciences

Advisor: Chris Simon, Professor, Ecology & Evolutionary Biology

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College of Liberal Arts and Sciences

145. Analyzing Properties of the *C. elegans* Neural Network: Mathematically Modeling a Biological System

Tyler Reese, Mathematics

Antoni Brzoska, Mathematics

Daniel Kelleher, Graduate Student, Mathematics

Advisor: Alexander Teplyaev, Associate Professor of Mathematics

146. Spectral based clustering of time series of EEG recordings

Elizabeth Gileau, Mathematics/Statistics

Advisor: Nalini Ravishanker, Professor, Statistics

147. The Social Implications of Bisensory Impairments

Laura Matlin, Communication Sciences

Advisor: Kathleen Cienkowski, Associate Professor, Communication Sciences

148. Consistency of Attenuation Across Multiple Fittings of Custom and Non-Custom Earplugs

Kelly Jahn, Communication Sciences

John Byram, Graduate Student, Communication Sciences

Advisor: Jennifer Tufts, Assistant Professor, Communication Sciences

149. Cognitive Effects of a Cannabinoid (CB1) Receptor Inverse Agonist and Neutral Antagonist in an Animal Model

Cassie LaRossa, Biological Sciences

Advisor: James Chrobak, Associate Professor, Psychology

150. Ischemic Stroke Aphasia Model: Investigating Laterality of Language in Rodents

Sarah Doran, Molecular and Cell Biology

Louise McCullough, Associate Professor/Clinical, Neurology, UConn Health Center

Advisor: Holly Roslyn Fitch, Professor, Psychology

151. Reliability of auditory cortical neuron responses to sound rhythm

Lauren Kascak, Individualized Program, Systems of Cellular Neurobiology

Advisor: Read Lauren, Associate Professor, Psychology

152. Effort-related choice behavior is affected by pharmacological manipulations associated with depression: Effects of tetrabenazine.

Megan Huizenga, Psychology

Advisor: John Salamone, Professor, Psychology

153. The effects of tetrabenazine on effort-related choice behavior

Victoria Nowak, Psychology

Patrick Randall, Graduate Student, Psychology

Eric Nunes, Graduate Student, Psychology

Advisor: John Salamone, Professor, Psychology

154. Adenosine-dopamine interactions in the open field arena: Studies related to locomotion and anxiety

Rothem Kovner, Psychology

Patrick Randall, Graduate Student, Psychology

Advisor: John Salamone, Professor, Psychology

155. Caffeine and Memory: Should You Drink Caffeine While You Study or During the Test?

Sara Pallay, Animal Science

Nicholas Paul, Graduate Student, Behavioral Neuroscience

Advisor: Etan Markus, Professor, Psychology

School of Nursing

156. The Impact of Dietary Fat on Symptoms of Premenstrual Syndrome

Danielle Millar, Nursing

Advisor: Michelle Judge, Assistant Professor in Residence, Nursing

Neag School of Education

157. The Influence of the Blood Lipid-Lipoprotein Profile on Psychological Well Being

Kelsey Darragh, Allied Health Sciences

Jeff Capizzi, ACES

Beth Parker, Coordinator, Exercise and Genetics Collaborative Research Group

Priscilla Clarkson, Professor of Kinesiology, University of Massachusetts, Amherst

Paul D. Thompson, MD, Hartford Hospital

Advisor: Linda Pescatello, Professor, Kinesiology

158. The Socio-Medical Effects of Danish Smoking Rates

Sarah Oravec, Individualized Major

Advisor: Kenneth Fuchsman, Assistant Extension Professor, Continuing Studies

159. Implementing Computer Vision in Robot-Assisted Physical Therapy

Gregory Breuer, Structural Biology and Biophysics

Timothy Gifford, Graduate student, Psychology

Advisor: Anjana Bhat, Assistant Professor, Kinesiology

160. Relationships among Measures of Habitual Physical Activity, Cardiorespiratory Fitness, and Muscular Strength among Healthy Adults Across the Lifespan

Allie Leblanc, Allied Health Sciences

Jeff Capizzi, ACES

Beth Parker, Coordinator, Exercise and Genetics Collaborative Research Group

Paul D. Thompson, Hartford Hospital

Priscilla M. Clarkson, Professor of Kinesiology, University of Massachusetts, Amherst

Dr. Paul D. Thompson, MD, Hartford Hospital

Advisor: Linda Pescatello, Professor, Kinesiology

161. The Effects of Rectal Temperature and Hydration Status on Perceptual Ratings in Dehydrating Males

Ethan Talbot, Physiology and Neurobiology

Advisor: Lawrence Armstrong, Professor, Kinesiology

Special Thanks

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