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

Abbott, Katherine--142
Adinolfi, Joseph--78
Ali, Syed--125
Armijo, Angela--67
Balsinger, Olivia--77
Barney, Jennifer--60
Bauer, Timothy--128
Belisario, Christian--105
Belskie, Kaylin--24
Beyers, Courtney--65
Bogucki, Olivia--36
Bonet, Ashley--47
Boutros, Peter--5
Boyer, Dana--3
Breuer, Gregory--159
Briscoe, Tavia--61
Brzoska, Antoni--145
Butler, Ethan--70
Byron, Evan--101
Calderan, Joseph--18
Camire, Casey--132
Caparotta, Cristin--52
Capizzi, Jeff--157, 160
Carey, Kathleen--35
Carlson, Colin--137
Carobert, Jamal--41
Carson, Brian--30
Casavant, Sharon--40
Cheng, Michelle--37
Chhaya, Nisarg--119
Chowdhury, Rukshana--83
Cipoletti, Scott--4
Clarke, Kaitlyn--6
Colangelo, Carmine--77
Colpitts, Kelsie--54
Cordone, Alexis79
Darragh, Kelsey--157
Das, Samik--123
Dollard, Eliza--63

Doran, Sarah150
D'souza, Ryan--103
Duffy, Erin--120
Edward, Amelia--128
Eisenberg, Samantha--50
Ericson, Paul--42
Elliott, Mariah--46
Ellis, Emily--144
Ellison, Kimberly--38
Fam, Patrick--10
Faraclas, Azer--8
Feldtmose, Thomas--43
Field, Patrick--128
Fikiet, Marisia--125
Fryxell, David--143
Funk, Emily--136
Gaffney, James--19
Gaudio, Matt--141
Gero, Patrick--138
Giardina, John--93
Gileau, Elizabeth--146
Godbout, Stephanie--58
Goetjen, Alexandra--97
Gohel, Vishal--49
Green, Anna--102
Greenberg, David--92
Gruenbaum, Barbara--39
Guerrera, Elizabeth--128
Guha, Jennifer--96
Ha, Michael--84
Haider, Romana--95
Han, Katherine--111
Hanessian, Nubar--64
Harris, Rachel--113
Harris, Sarah--75
Hebenstreit, Olivia--55
Hennessy, Briana--73
Horvath, Dayton--134
Howe, Matthew--44
Huizenga, Megan--152
Ignatowich, Michael--16
Jahn, Kelly--148
Jasperse, Brittany--33
Jasperse, Lindsay--28
Jensen, Christopher--83
Johnson, Tess--88
Johnson, Joshua--127
Johnson, Erik--11
Kaelin, Dana--26
Karg, Donald--17
Kascak, Lauren--151
Keerthy, Divya--114
Kelly, Elizabeth--80
Khan, Munzareen--112
Kidwai, Neiha--49
King, Annie--83
Kovner, Rothem--154
Kovacevic, Mary--83
Kranz, Sarah--22
La, Anthony--12
LaFemina, Lindsey--53
Lafreniere, Lucien--85
Lainas, Katie--22
LaRossa, Cassie--149
Larson, Peter--32
Le, Hien--116
Leblanc, Allie--160
Lee, Anne--59
Lee, Shang Lin--45
Lee, Christopher--130
Leonard, Julia--74
Levine, Allegra--62
Levy, Joseph--51
Lewkowicz, Karol--82
Li, Xiao--41
Lincoln, Stephen--133
Lindsay, William--118
Longacre, Alexandra--126
Lovallo, Dana--72
MacSwan, Juliana--71
Mahonski, Sarah--81
Malik, Yasemin--83
Mangano, Jared--83
Manuzzi, Daniel--14
Marotta, Derek--29
Marrotte, Alex--100
Masson, Jarrett--113
Mastro, Kevin--41
Matlin, Laura--147
McGrath, Allison--68
Meehan, Matthew--10
Menacherry, Phoebe--43
Millar, Danielle--156
Minge, Alex--122
Minutolo, Nicholas--99
Monos, Timothy--131
Muratori, Breanne--1
Muto, Kunihiro--10
Narcisse, Quenton--77
Negus, Meghan--129
Newman, Greg--44
Nowak, Victoria--153
Nygren, Katrina--53
Ojukwu, Elizabeth--98
Oppenheimer, Leah--91
Oravecz, Sarah--158
Pallay, Sara--155
Parmelee, Caitlin--77
Patel, Nikisha--135
Pérez-Segura, Rafael--90
Peters, John--117
Petrino, Alessandra--78
Phan, Minh--34
Phansalkar, Ragini--104
Phillips, Tiffany--108
Pulli, Danielle--45
Purcell, Laura--128
Ramic, Amina--83
Reese, Tyler--145
Reeves, Daniel--89
Reilly, Lauren--57
Reynolds, Andrew--15
Robishaw, Courtney--77
Rogi, Caroline--121
Roto, Anna—21
Roy-O'Reilly, Meaghan--109
Saha, Purbita--77
Samnani, Hina--94
Santos, Stephany--7
Sarnoski, Ethan--31
Sarnoski, Ethan--31
Sarnoski, Ethan--31
Sarnoski, Ethan--31
Sarnoski, Ethan--31
Schellenbaum, Amy--76
Schwegman, David--87
Shah, Samip--110
Shepack, Alexander--140
Simonich, Claire--86
Smith, Charlotte--115
Smith, Malcolm--2
Snell, Jessica--107
Spignesi, Stephanie--25
Szkudlarek, Emily--42
Tabtabai, Ryan--48
Talbot, Ethan--161
Thomas, Georgia--139
Thompson, Shawnae--56
Tornaquindici, Stephanie--27
Trestman, Lior--69
Tsantiris, Katherine--28
Valdes Espinosa de los Moneros, Honorio--13
Van Buiten, Charlene--20
Viner, Molly--23
Wallett, Elizabeth--21
Walczak, Tomasz--9
Wichman, Zoe--24
Wolffer, Krista--42
Woomer, Adam124
Yu, Diane—106
Yousseff, Youstina—40
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 Icthyofauna 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

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

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. Grynавiski, 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 Guerrera, 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

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
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 Oravecz, 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
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