FALL FRONTIERS
A RESEARCH POSTER EXHIBITION

THE 4TH ANNUAL FALL CELEBRATION OF UNDERGRADUATE SCHOLARSHIP, INNOVATION, AND CREATIVITY

October 26, 2016
5:00 p.m. – 7:00 p.m.
Wilbur Cross South Reading Room

UConn
ENRICHMENT PROGRAMS
OFFICE OF UNDERGRADUATE RESEARCH
Sponsored by
The University of Connecticut

Office of Undergraduate Research
Enrichment Programs
Honors Program
About Frontiers in Undergraduate Research

The Office of Undergraduate Research has sponsored the Frontiers in Undergraduate Research Poster Exhibition each spring for the past nineteen years. In Spring 2016, over 260 students presented posters for 225 research projects. The projects spanned the disciplines and included both independent research and work done in collaboration with other undergraduates as well as graduate student and faculty mentors.

The Office of Undergraduate Research is pleased to sponsor the 4th Annual Fall Frontiers Poster Exhibition. With tremendous growth in the number of undergraduate researchers and increased funding available to students, this annual Fall poster exhibition provides another opportunity for UConn’s top student researchers to share their exciting work.
4th Annual Fall Frontiers Poster Exhibition

Poster Exhibition

Wednesday, October 26, 2016
5:00 p.m. – 7:00 p.m.

Introduction and Welcome

Caroline McGuire, Director, Office of Undergraduate Research

Keynote Speaker

Christian Brückner, Professor and Department Head, Chemistry

Closing Remarks

Jennifer Lease Butts, Assistant Vice Provost, Enrichment Programs, and Director, Honors Program
Student Posters and Presenters

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. In some cases students work with faculty outside their school or college; in most cases, research is grouped according to the student's major.

1. Documenting the Burner Subculture: Photographs of the Hawaii Fire Artists
Michael Amato, Art - Photography
Advisor: Janet Pritchard, Associate Professor, Art and Art History

2. Fear: The Culture
Raeanne Nuzzo, Art - Graphic Design
Advisor: Mary Banas, Visiting Assistant Professor, Art and Art History

3. An Exploration of Kitschy Architecture and Retro Americana
Alana Valdez, Art - Illustration
Advisor: Kathryn Myers, Professor, Art and Art History

Samantha Mairson, Digital Media and Design
Advisor: Clarissa Ceglio, Assistant Professor, Digital Media and Design

Tara Lokke, History
Advisor: Fiona Vernal, Associate Professor, History

Elena Boushée, History
Advisor: Sylvia Schafer, Associate Professor, History
7. The Economics of Certification and Quality Disclosure  
Joseph Roessler, Economics and Mathematics  
Advisor: Talia Bar, Assistant Professor, Economics  

8. Political Parties and Women's Rights in Turkey  
Rubayet Lasker, Political Science and Human Rights  
Advisor: Zehra Arat, Professor, Political Science  

Amy Saji, Political Science  
Advisor: Kimberly Bergendahl, Assistant Professor in Residence, Political Science  

10. An Ethnographic Analysis of Workers at The Interval House in Hartford Connecticut: A Survey of Domestic Violence Staff and their Psyche  
Neha Pawar, Physiology and Neurobiology  
Advisor: Garry Lapidus, Associate Professor of Pediatrics and Public Health, UConn School of Medicine  

11. Navigating and Understanding Healthcare: The Importance of Health Insurance Literacy and Community Health Workers  
Grace Lee, Molecular and Cell Biology  
Advisor: Reinaldo Rojas, Visiting Assistant Professor, Urban and Community Studies  

12. Evaluating Rural Knowledge, Constraints and Perceptions on Cervical Cancer Screening: A Study in Rural South India  
Akshayaa Chittibabu, Physiology and Neurobiology  
Advisor: Bandana Purkayastha, Professor, Sociology
13. The NICU Parent Risk Evaluation and Engagement Model and Instrument for Neonates
Nefeli Makris, Nursing
Advisor: Jacqueline McGrath, Professor and Associate Dean, Nursing

14. Diversity in the World of Education
Isabella Horan, Pre-Teaching - Elementary Education and English
Advisor: Susan Payne, Associate Clinical Professor, Curriculum and Instruction
Advisor: Mia Hines, Academic Advisor, Neag School of Education
Advisor: Dominique Battle-Lawson, Academic Advisor, Neag School of Education

15. Importance of Social Network Ties in Ad-Hoc Team Composition: Implications for Individual Team Member Performance
Emily Roller, IMJR: Consumer Judgment and Decision Making
Advisor: Dev Dalal, Assistant Professor, Psychology, University at Albany, State University of New York

16. Competitive Modeling: Predicting Counterproductive Work Behavior with the Theory of Planned Behavior and the Prototype Willingness Model
Ryan Thibodeau, Psychological Sciences
Advisor: Dev Dalal, Assistant Professor, Psychology, University at Albany, State University of New York

17. The Relation Between Personal Bullying Experience with Evaluations of Various Response Strategies to Exclusion Bullying Scenarios
Samantha Lawrence, Psychological Sciences and Human Development and Family Studies
Advisor: Alaina Brenick, Assistant Professor, Human Development and Family Studies
18. Joint Action and Attention in Preschoolers Explored through Gameplay
Taylor Chesnet, Speech, Language, and Hearing Sciences
Brittany Chiu, Psychological Sciences and Sociology
Alexandra Piel, Physiology and Neurobiology
Advisor: Adam Sheya, Assistant Professor, Psychological Sciences

19. An Analysis of Gesture Comprehension in Adults with Autism Spectrum Disorder and Typical Development
Caitlin Emmett, Speech, Language, and Hearing Sciences
Advisor: Inge-Marie Eigsti, Associate Professor, Psychological Sciences

20. Effect of Intensive Reading Treatment Compared to Intensive Language Action Therapy for Persons with Chronic Mild Aphasia
Samantha Coulombe, Speech, Language, and Hearing Sciences
Advisor: Jennifer Mozeiko, Associate Professor, Speech, Language, and Hearing Sciences

21. Effects of Attention on Lexically-Informed Perceptual Learning for Speech
Jacqueline Ose, Secondary Biology Education
Advisor: Rachel Theodore, Assistant Professor, Speech, Language, and Hearing Sciences

22. Polysyllabic Word Spelling
Marissa Gadacy, Psychological Sciences and Human Development and Family Studies
Advisor: Devin Kearns, Assistant Professor, Educational Psychology

23. Phonetic Integration: Does Sound-Shape Correspondence Affect Phonetic Identification?
Jessica Joseph, Psychological Sciences
Advisor: Eiling Yee, Assistant Professor, Psychological Sciences
Advisor: Emily Myers, Associate Professor, Speech, Language, and Hearing Sciences
24. Attractors to Faculty Positions within Higher Education Institutions for Women in Athletic Training
Leah Sampson, Athletic Training
Advisor: Stephanie Mazerolle, Assistant Professor, Kinesiology

25. Social Influences of Top High School Baseball Prospects’ College-Professional Decision
Max Klein, Sport Management
Advisor: Joseph Cooper, Assistant Professor, Educational Leadership

26. Bilingual Spanish-English Marketing as a Catalyst for Cultural Awareness: The Effect on Parents in the Toy Market
Margo Bailey, Marketing
Advisor: Robin Coulter, Professor and Department Head, Marketing

27. SquareOne: Change the World with Each Other
Mahir Rana, Computer Science and Engineering
Alexander Ajayi, Finance
Advisor: Steven Williams, Visiting Instructor, Accounting

28. Pairing T Cell Receptor α and β Sequences Using Combinatorial Pooling and Min-Cost Flows
Tyler Daddio, Computer Science and Engineering and Mathematics
Advisor: Ion Mandoiu, Associate Professor, Computer Science and Engineering

29. Modeling Tsunami Run-Up and Draw-Down on a Beach
Dylan Smith, Mathematics
Advisor: Sergei Fomin, Professor, Mathematics, California State University, Chico

30. Investigation of Electrostatic Interactions in Determining Conformational Behavior of Carbocyclic and Heterocyclic Compounds
Zachary Stempel, Chemistry
Advisor: William Bailey, Professor, Chemistry
31. Optimization of the Microwave Synthesis and Characterization of Sodium Tungsten Bronze Materials
Jessica Murdzek, Chemistry
Advisor: Steven Suib, Distinguished Professor, Chemistry and Director, Materials Science Institute

32. On the Cutting Edge of Oxoammonium Salt Oxidations
Vincent Pistritto, Chemistry and Music
Advisor: Nicholas Leadbeater, Associate Professor, Chemistry

33. Molecular Dynamics Simulations of Human Cardiac Calsequestrin and the Mutation E39K
Gabriella Reggiano, Chemistry
Advisor: Michael Grabe, Associate Professor in Residence, Department of Pharmaceutical Chemistry, University of California, San Francisco

34. Titanium Catecholates as Chromophores
Carolyn Mastriano, Chemistry
Advisor: Christian Brückner, Professor and Department Head, Chemistry

35. Development of Biodegradable Magnesium-PLGA Composites for Bone Tissue Engineering
Thomas Xu, Chemistry
Advisor: Syam Nukavarapu, Assistant Professor, Department of Orthopaedic Surgery, Institute for Regenerative Engineering, UConn Health

36. Gradient Osteochondral Matrix: Growth Factor Release and In Vitro Characteristics
Marisa Boch, Chemical Engineering and Molecular and Cell Biology
Advisor: Syam Nukavarapu, Assistant Professor, Orthopaedic Surgery, Institute for Regenerative Engineering, UConn Health
37. Identifying Potential Growth Factors to Trigger Limb Regeneration Responses in Mammals
Ayesha Ejaz, Biological Sciences
Advisor: Caroline Dealy, Associate Professor, Department of Reconstructive Sciences, Department of Orthopaedic Surgery, Center for Regenerative Medicine and Skeletal Development, UConn Health

38. Control Methods for Two Robots
Gregory Bicknell, Mechanical Engineering
Advisor: Xu Chen, Assistant Professor, Mechanical Engineering

39. Smartphone-Compatible Magnetic Focusing for Detection of Circulating Tumor Cells
Ashwini Joshi, Biomedical Engineering
Advisor: Savas Tasoglu, Assistant Professor, Mechanical Engineering and Biomedical Engineering

40. Engineered Bispecific Antibodies to Inhibit HIV-1 Infection
James Chapman, Chemical Engineering
Advisor: Richard Sutton, Associate Professor of Medicine, Department of Internal Medicine, Yale University School of Medicine
Advisor: Yi-Jun Zhang, Associate Research Scientist in Medicine, Department of Internal Medicine, Yale University School of Medicine

41. Discovery of IncRNA-Encoded Peptidome in Mouse Kidney Inner Medulla
Cameron Flower, Biomedical Engineering
Advisor: Mark Knepper, Senior Investigator, National Heart, Lung, and Blood Institute, National Institutes of Health

42. Curcumin Loaded Injectable Hydrogel: Formulation and Antioxidant Activity Evaluation and Review
Sana Suhail, Biomedical Engineering
Advisor: Shalini Gohil, Post-doctoral Fellow, Institute for Regenerative Engineering, UConn Health
43. Unexpected Role of Interferon-γ In Regulating Neuronal Connectivity and Social Behaviour
Sayeda Najamussahar (Sahar) Peerzade, Biomedical Engineering
Advisor: Vladimir Litvak, Assistant Professor, Department of Microbiology and Physiological Systems, University of Massachusetts Medical School

44. Effect of Milk Sphingomyelin on LPS-mediated Inflammation in RAW264.7 Macrophages
Caitlin Porter, Nutritional Sciences
Advisor: Christopher Blesso, Assistant Professor, Nutritional Sciences

45. Understanding the Role of SR-B1 in Lipid Metabolism and Inflammation
Christina Jiang, Nutritional Sciences and Molecular and Cell Biology
Advisor: Christopher Blesso, Assistant Professor, Nutritional Sciences

46. Dietary Walnuts Linked to Decrease in Intestinal Inflammation in Mouse Model of Colitis
Alyssa Matz, Molecular and Cell Biology
Advisor: Masako Nakanishi, Research Associate, Center for Molecular Medicine, UConn Health
Advisor: Daniel Rosenberg, Professor of Medicine, Center for Molecular Medicine, UConn Health

47. Assembly and Lipid Binding of ERMES Subunit Mdm12
Adrian Coscia, Molecular and Cell Biology
Advisor: Nathan Alder, Associate Professor, Molecular and Cell Biology
Advisor: Victoria Robinson, Associate Professor, Molecular and Cell Biology
48. A Better Future in Mind: CB2SH3(-) Overexpression Recruits Gephyrin to the GABAergic Postsynapse
John Bear, Jr., Physiology and Neurobiology and Molecular and Cell Biology
Advisor: Angel de Blas, Professor, Physiology and Neurobiology

49. B-1 Cell Generation in Transgenic Mouse Model of Sickle Cell Disease
Christina Cotte, Molecular and Cell Biology and Pathobiology
Advisor: Steven Szczepanek, Assistant Professor, Pathobiology and Veterinary Science

50. F.I.S.H. Model (Fluorescent Imaging Screen for Hepatotoxicity): Validation of IVIS Imaging for Drug-Induced Liver Injury in Zebrafish
Matthew Lin, Biological Sciences
Advisor: Li Wang, Professor, Physiology and Neurobiology

51. The Effect of Vibration on Hand Therapy Outcomes in Chronic Stroke Patients
Paris Pruitt, Molecular and Cell Biology
Advisor: Na Jin Seo, Associate Professor, College of Health Professions, Occupational Therapy, Medical University of South Carolina

52. The Effects of COMT Gene Variations on Effort-Related Motivational Behavior in a Transgenic Mouse Model
Suzanne Cayer, Physiology and Neurobiology
Advisor: John Salamone, Distinguished Professor, Psychological Sciences

53. The Role of Adenosine in Motivational Symptoms of Depression: Studies on the Effects of Preladenant in Animal Models
Sarah Ferrigno, Psychological Sciences and Molecular and Cell Biology
Advisor: John Salamone, Distinguished Professor, Psychological Sciences
54. A Putative Role of Light Detection by Hemocytes in the Hawaiian Bobtail Squid-Vibrio fischeri Symbiosis
Matthew Cucurello, Molecular and Cell Biology
Advisor: Spencer Nyholm, Associate Professor, Molecular and Cell Biology

55. Influence of Caspase 3 Inhibition and 3-Dimensional Hydrogel Culture on Transplanted Satellite Cell Fate
Dinkar Ahuja, Molecular and Cell Biology
Advisor: David Goldhamer, Professor, Molecular and Cell Biology

56. Development of Proximity Ligation Assay for Investigation of Cannabinoid Receptor 1
Caitlin Jagla, Molecular and Cell Biology
Advisor: Debra Kendall, Distinguished Professor, Pharmaceutical Sciences

57. High Efficiency Production of 1,3-Propanediol by Recombinant E. coli
Summit Singhaviranon, Molecular and Cell Biology and Chemical Engineering
Advisor: Jonathan Klassen, Assistant Professor, Molecular and Cell Biology
Advisor: Richard Parnas, Professor, Chemical and Biomolecular Engineering

58. Immunogenicity Assessment of Human Embryonic Stem Cell Derived Mesenchymal Stem Cells
Tessa Kell, Pathobiology
Advisor: Shalyn Campellone, Senior Scientist, ImStem Biotechnology

59. Screening Maize Expressed Fiber Degrading Enzymes for Improved Animal Nutrition
Rebecca Pranger, Molecular and Cell Biology
Advisor: Christopher “Kit” Bonin, Senior Biochemist & Plant Analysis Lead, Agrivida, Inc.
60. The Phylogenetic Structure in Four Chloroplast Loci Confirms the Polyphyly of *Physcomitrium pyriforme* (Bryophyta) in North America
Satpal Jutla, Biological Sciences
Advisor: Bernard Goffinet, Professor, Ecology and Evolutionary Biology

61. Investigating Phenotypic Results of RNA Interference on Cap-n-Collar and Wnt6 genes in *Tribolium castaneum*
Limmond Ayisi, Jr., Biological Sciences
Advisor: Elizabeth Jockusch, Professor, Ecology and Evolutionary Biology

62. Temporal Differences in Avian Carrying Rate of Adelgidae Crawlers
Nicholas Russo, Ecology and Evolutionary Biology
Advisor: Morgan Tingley, Assistant Professor, Ecology and Evolutionary Biology
Advisor: Chris Elphick, Associate Professor, Ecology and Evolutionary Biology
Advisor: Nathan Havill, Research Entomologist, Northern Research Station, United States Department of Agriculture, Forest Service

63. Investigating the Influence of Red Tide Algae on Prey Selection of Marine Copepod *Acartia tonsa*
Jessica Griffen, Environmental Science and Ecology and Evolutionary Biology
Advisor: Hans Dam, Professor, Marine Sciences

64. How Does Plumage Color Vary in Red-Winged Blackbirds?
Genevieve Nuttall, Ecology and Evolutionary Biology
Advisor: Morgan Tingley, Assistant Professor, Ecology and Evolutionary Biology
Advisor: Chris Elphick, Associate Professor, Ecology and Evolutionary Biology
Alphabetical Listing of Presenters with Poster Numbers

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Special Thanks

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Jennifer Lease Butts, Assistant Vice Provost for Enrichment Programs and Director of the Honors Program

Student Volunteers for the Fall Frontiers Poster Exhibition

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