

# FALL FRONTIERS

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**A RESEARCH POSTER EXHIBITION**



**THE INAUGURAL FALL CELEBRATION OF  
UNDERGRADUATE SCHOLARSHIP, INNOVATION,  
AND CREATIVITY**

**October 23, 2013**

**5:00 p.m. – 7:00 p.m.**

**Wilbur Cross South Reading Room**

# UConn

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**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 sixteen years. In Spring 2013, over 215 students presented posters for 175 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.

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

# **1st Annual Fall Frontiers Poster Exhibition**

## **Poster Exhibition**

Wednesday, October 23, 2013  
5:00 p.m. – 7:00 p.m.

## **Introduction and Welcome**

**Caroline McGuire**, Interim Director, Office of Undergraduate Research

## **Keynote Speaker**

**Michelle Williams**, Associate Vice President for Research

## **Closing Remarks**

**Jennifer Lease Butts**, Assistant Vice Provost, Enrichment Programs, and Director, Honors Program

# **Student Posters and Presenters**

## **1. Photo-Initiated Chemical Deposition**

Marta Chlus

Major: Chemical Engineering

Zachary Rom

Major: Chemical Engineering

Daniel Gifford

Major: Chemical Engineering

Advisor: Aravind Suresh, Assistant Professor in Residence, Chemical and Biomolecular Engineering

## **2. Adaptive Immune Response to Neo-Antigens Generated *In Vivo* by Spontaneous Mutations**

Rory Geyer

Major: Molecular and Cell Biology

Advisor: Pramod Srivastava, Professor, Department of Immunology, School of Medicine; Director, Center for Immunotherapy of Cancer and Infectious Disease; and Director, Neag Cancer Center, University of Connecticut Health Center

Additional Advisor: Siu-Pok Yee, Assistant Professor, Genetics and Developmental Biology, University of Connecticut Health Center

## **3. The Effects of Temperature Frequency and Magnitude on *Hyla Versicolor***

D. Cristina Macklem

Major: Biological Sciences

Jason O'Connor, Graduate Student, Natural Resources

Advisor: Tracy Rittenhouse, Assistant Professor, Natural Resources and the Environment

## **4. The Role of Estrogen in the Early Male Gonad**

Robert Stickels

Major: Molecular and Cell Biology

Advisor: Rachel O'Neill, Professor, Molecular and Cell Biology

Additional Advisor: Andrew Pask, Associate Professor, Zoology, University of Melbourne, Australia

## **5. Teaching Rats a Temporal Sequence in a Radial Water Maze**

Shang Lin (Tommy) Lee

Majors: Biological Sciences and Psychology

Brian Timmerman

Major: Psychology

Advisor: Etan Markus, Professor and Associate Department Head,  
Psychology

## **6. Gene Copy Number in Transgenic Maize**

Sarah Gilbert

Major: Molecular and Cell Biology

Advisor: Christopher Bonin, Senior Biochemist and Plant Analysis  
Lead, Agrivida

## **7. Light Activated Squaraine Dye Protein Scissors**

Divya Iyer

Major: Structural Biology and Biophysics

Advisor: Challa Kumar, Professor, Chemistry

Additional Advisor: Bobbi Stromer, Graduate Student, Chemistry

## **8. Design and Characterization of a Pulsed Valve for Deflection/Cooling of CaF via Bichromatic Forces**

Tony Le

Majors: Physics and Mathematics

Advisor: Edward Eyler, Professor, Physics

## **9. Post-Translational Modifications of the XLR3 Protein**

Emily Clancy

Major: Diagnostic Genetic Sciences

Advisor: Michael O'Neill, Associate Professor, Molecular and Cell  
Biology

Additional Advisor: Robert Foley, Graduate Student, Molecular and  
Cell Biology

**10. A Resource for Analyzing Neuropeptide Function in *Caenorhabditis elegans***

Dominika Bajguz

Major: Molecular and Cell Biology

Advisor: Amy Vashlishan Murray, Assistant in Molecular Biology, Massachusetts General Hospital

Additional Advisor: Joshua Kaplan, Professor, Neurobiology, Massachusetts General Hospital

**11. Characterizing the Role of the U12-type Spliceosome in the Developing Retina**

Jesse Wang

Major: Physiology and Neurobiology

Advisor: Rahul Kanadia, Assistant Professor, Physiology and Neurobiology

Additional Advisor: Ashley Kilcollins, Graduate Student, Physiology and Neurobiology

**12. Cell Non-autonomous Neuronal Regulation of Polyglutamine Protein Aggregation in *C. elegans***

Anthony Viola

Major: Exercise Science

Walker Morison

Major: Exercise Science

Advisor: Elaine Lee, Assistant Professor, Kinesiology

**13. Assessment of Neurite Growth in Methacrylated Collagen Gels with Patterned Stiffness**

Stephanie Knowlton

Major: Biomedical Engineering

Advisor: David Shreiber, Professor, Biomedical Engineering, Rutgers University

Additional Advisor: Kathryn Drzewiecki, Graduate Student, Biomedical Engineering, Rutgers University

#### **14. Fabrication and Testing of Transcatheter Aortic Valves Using Different Leaflet Materials**

Michele Dalena

Major: Biomedical Engineering

Advisor: Wei Sun, Associate Professor, Mechanical Engineering

Additional Advisor: Eric Sirois, Graduate Student, Mechanical Engineering

#### **15. Development of a Tissue Treatment and Sorting Protocol in the Fabrication of Transcatheter Aortic Valves**

Rachel Adams

Major: Biomedical Engineering

Advisor: Wei Sun, Associate Professor, Mechanical Engineering

Additional Advisor: Eric Sirois, Graduate Student, Mechanical Engineering

#### **16. Blowoff Detection in Turbulent Jet Flames**

Victoria Kallsen

Major: Mechanical Engineering

Advisor: Michael Renfro, Associate Professor and Associate Department Head, Mechanical Engineering

Additional Advisor: Kathryn Gosselin, Graduate Student, Mechanical Engineering

#### **17. Lansoprazole Induced Occlusions of Nasogastric Feeding Tubes are Dependent on Dosage Form and Suspending Vehicle**

Claudia Napiorkowska

Major: Pharmacy

Ilona Salamucha

Major: Pharmacy

Advisor: Robin Bogner, Associate Professor, Pharmaceutical Sciences



## **18. Formation of Nano-Amorphous Solid Dispersions**

Kenechi Unachukwu

Major: Pharmacy

Advisor: Diane Burgess, Distinguished Professor, Pharmaceutical Sciences

Additional Advisor: Sumit Kumar, Graduate Student, Pharmaceutical Sciences

## **19. Accounting Factors Affecting the Adoption of IFRS in Brazil, India, and China**

Catrina Shea

Majors: Accounting and Political Science

Advisor: Mohamed Hussein, Professor and Department Head, Accounting

## **20. Speech and Language Processing Differences Among Impaired and Unimpaired Populations**

Julia Drouin

Major: Speech, Language, and Hearing Sciences

Advisor: Emily Myers, Assistant Professor, Speech, Language, and Hearing Sciences

Additional Advisor: Rachel Theodore, Assistant Professor, Speech, Language, and Hearing Sciences

## **21. Latino/Latin American Transnational Narratives of War and Violence**

Krisela Karaja

Majors: English and Spanish

Advisor: Guillermo Irizarry, Associate Professor, Literature, Culture and Languages

## **22. Indigenous Environmental Justice through Human Rights: Extractive Industries, the Navajo Nation, and UNDRIP**

Mary Mackie

Majors: Political Science and Human Rights

Advisor: Barbara Gurr, Assistant Professor in Residence, Women's, Gender, and Sexuality Studies

Additional Advisor: Prakash Kashwan, Assistant Professor, Political Science

## **23. On the Semantics of Natural Language Conjunction**

Michael Jacques

Major: Linguistics and Philosophy

Advisor: Jon Gajewski, Associate Professor, Linguistics

## **24. Empire of Slavery: The 1926 Slavery Convention**

Robert (RJ) Anderson

Majors: Individualized Major-International Development and Human Rights

Advisor: Cathy Schlund-Vials, Associate Professor, English, and Director, Asian American Studies Institute

## **25. Transitioning to UConn: The New Husky Study**

Angelina Hernandez

Majors: Psychology and Human Development & Family Studies

Advisor: Crystal Park, Professor, Psychology

## **Alphabetical Listing of Presenters with Poster Numbers**

Adams, Rachel – 15  
Anderson, Robert (RJ) – 24  
Bajguz, Dominika – 10  
Chlus, Marta – 1  
Clancy, Emily – 9  
Dalena, Michele – 14  
Drouin, Julia – 20  
Geyer, Rory – 2  
Gifford, Daniel – 1  
Gilbert, Sarah – 6  
Hernandez, Angelina – 25  
Iyer, Divya – 7  
Jacques, Michael – 23  
Kallsen, Victoria – 16  
Karaja, Krisela – 21  
Knowlton, Stephanie – 13  
Le, Tony – 8  
Lee, Shang Lin (Tommy) – 5  
Mackie, Mary – 22  
Macklem, D. Cristina – 3  
Morison, Walker – 12  
Napiorkowska, Claudia – 17  
Rom, Zachary – 1  
Salamucha, Ilona – 17  
Shea, Catrina – 19  
Stickels, Robert – 4  
Timmerman, Brian – 5  
Unachukwu, Kenechi – 18  
Viola, Anthony – 12  
Wang, Jesse – 11

## **Special Thanks**

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Susan Herbst, *President, University of Connecticut*

Mun Choi, *Provost and Executive Vice President for Academic Affairs*

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

Cheryl Cranick, *Communications, Honors Program*

Student Volunteers for the Fall Frontiers Poster Exhibition

## **Office of Undergraduate Research**

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