

# UC Santa Cruz

## Graduate Research Symposium 2018

### **Title**

Fourteenth Annual Graduate Research Symposium, Program, April 27, 2018

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A Division, of Graduate Studies

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*14th Annual*

# **Graduate Research Symposium**

April 27, 2018



*Fiat Lux!*

UC Santa Cruz • Division of Graduate Studies



## **Welcome to the 14th Annual Graduate Research Symposium!**

UC Santa Cruz is proud to showcase the superb research of our graduate students and to celebrate their academic achievements of the past year. UC Santa Cruz's annual Graduate Research Symposium gives us the opportunity to:

- Highlight outstanding graduate research across the spectrum of disciplines on campus
- Recognize graduate research being conducted in a wide range of programs and settings
- Celebrate the diversity and innovations of our graduate community
- Provide our graduate students with this opportunity to learn about the research of their colleagues and to encounter research findings in fields of inquiry related to their own
- Promote interdisciplinary research conversations among our graduate students

The Division of Graduate Studies is honored to be able to host this annual event in McHenry Library. Please use the adjacent map to find the oral and poster presentations listed in this program.

### **Event Judging**

A panel of judges will score presenters on their ability to convey the relevance and importance of their research or project to those both in and outside of their field in a meaningful manner.

### **Award Reception**

Join us for the Award Reception immediately following the judging on the foyer terrace and south lawn, where light refreshments by UCSC Catering and entertainment by graduate student Nelsen Hutchison and fellow musician Alex Ullman will be provided. Awards for the best presentations in each academic division will be granted: gift certificates to UCSC's Bay Tree Bookstore in the amount of \$100, sponsored by the academic deans. Two awards recognizing outstanding presentations in any discipline will also be awarded: 1) a \$250 cash Graduate Dean's award and 2) a \$500 cash award for the Chancellor's Graduate Research Prize.

Tyrus Miller  
Vice Provost and Dean of Graduate Studies

# Opening Remarks

**Quentin Williams**, associate vice chancellor for research, Office of Research, and distinguished professor of Earth and Planetary Sciences, officially starts the symposium. Join him in the southern area of Information Commons South, near the podium marked with a C on the map inside this program, at 1:20 p.m.



# Division of Graduate Studies

Tyrus Miller, vice provost and dean  
Sue Carter, associate dean  
Jim Moore, assistant dean  
Barbara Smee, executive assistant  
Judy Glass, reporting analyst  
Veronica Larkin, administrative assistant  
Marissa Maciel, admissions, social media,  
international students  
Michelle Montemayor, assistant  
administrative analyst

Rachel Neuman, director of graduate  
student life, Graduate Student Commons  
Sonya Newlyn, program assistant  
Kris West, director of graduate student  
services  
Nathan Westrup, senior director of  
development

# Thank You

The Division of Graduate Studies gratefully acknowledges **Anna Sher** (right), assistant director for assessment in Institutional Research, Assessment, and Policy Studies, for creating the judging rubric, providing digital scoring spreadsheets, and instructing the judges, and **Eve Crowhurst**, student employee in the graduate division, for her indefatigable effort to assign judges to presenters!



In addition, thanks are due to:

- Volunteer judges (see list next page)
- Division of Graduate Studies staff

- McHenry Library, Event Sponsor
- Division of Arts, Event Sponsor
- Baskin School of Engineering, Event Sponsor
- Division of Humanities, Event Sponsor
- Division of Physical & Biological Sciences, Event Sponsor
- Division of Social Sciences, Event Sponsor
- Marcus Thayer, Sarah Troy, Ryan Dzialo, and team, McHenry Library
- Juan Pérez and team, ITS-Learning Technologies
- Robert Kemp, Nico Feria, and team, Receiving Services
- Deborah Bryant and team, Transportation and Parking Services (TAPS)

# Judges

Brandon Allgood, Ph.D. physics '05  
Foundation Trustee and CTO, Numerate, Inc.

Noriko Aso  
Associate Professor, History Department

Kevin Bell  
Research Fellow, Faculty, Rachel Carson College

Natalie Benamou, B.A. philosophy '14  
Founder and CEO, Art2EDU

Gwynn Benner  
Assistant Vice Provost, Student Success

Tim Bensch  
Director of Development, Physical & Biological Sciences Division

Christy Caldwell  
Science Librarian, University Library

Stephanie Casher  
Department Manager, Literature Department

Theodore Coddling  
Assistant Dean, Planning and Resource Mgmt. Division of Undergraduate Education

Andrea Cohen  
Special Projects Manager  
Office of the Campus Provost and EVC

Gerardo Cortes  
Postdoctoral Scholar

Rachel Deblinger  
Director, David Kirk Digital Scholarship Commons  
University Library

Suzana Djurcilov, Ph.D. philosophy '01  
Data Visualization Engineer, SGI

Kendra Dority, Ph.D. literature '16  
Assistant Director, Center for Innovations in Teaching & Learning (CITL)

Olof Einarsdottir  
Professor, Chemistry and Biochemistry

Julian Fernald  
Director, Institutional Research, Assessment & Policy Studies

Becky George  
Assistant Vice Provost, Global Engagement

Carrie Haber  
Assistant Dean, Planning & Academic Programs  
Physical & Biological Sciences Division

David Hansen, B.A. politics, economics  
Senior Consultant, Health Industry Consulting, Inc.

Kamil Hasan  
Foundation Trustee, Vice Chair  
General Partner, Granite Hill India Opportunities Fund & Inovus Capital Partners

Scott Hernandez-Jason  
Director, News and Media Relations  
University Relations

Andrea Hesse  
Director, Academic Computing

Zia Isola  
Director, CBSE Research Mentoring Institute (RMI),  
Biomolecular Science & Engineering

Leslie Kern  
Director, Faculty Instructional Technology Center

John Koster, M.S. ocean sciences '17  
Marine Science Technician, USGS  
Pacific Coastal and Marine Science Center

Carolyn Lagattuta  
Communications & Marketing Executive Assistant,  
Photographer, University Relations

Matthew Mednick  
Executive Director, Academic Senate

Lisa Nielsen  
Director, Marketing Communications  
University Relations

Richelle Noroyan  
Community Relations Representative  
University Relations  
Santa Cruz City Councilmember

Monica Parikh  
Director, Summer Sessions

Irena Polić  
Managing Director, The Humanities Institute

Jen Quick-Cleveland  
Postdoctoral Scholar

Virginia Rivera  
Senior Director, Gift Planning, University Relations

Vikram Sahai  
Foundation Trustee  
Independent Technology Adviser

Linda Scholz  
Campus Diversity Officer

Steven Stein  
Assistant Vice Chancellor  
Human Resources

Michael Tassio  
Academic Affairs Analyst

Shirley Truong  
Principal Analyst, Institutional Research, Assessment & Policy Studies

Randolph E. Wedding  
Foundation Trustee and Retired Senior Managing Director, Office of the CIO UC Regents

Aaron Zachmeier  
Instructional Designer, ITS-Learning Technologies

# Live Oral Presentations

Presentation Room 1  
Library 2320

1:30 pm

**Rakshit Agrawal**, *Engineering, Computer Science*

Learning User Intent from Action Sequences on Interactive Systems

**John Armstrong**, *Social Sciences, Environmental Studies*

Climate Change Policymaking: Local Control and Transformation of the Electricity System

**Erik Bernardino**, *Humanities, History*

Creating Morals, Erasing Workers: U.S. Immigration Laws and Women Migrants in the U.S.-Mexico Borderlands

**Carver Bierson**, *Physical and Biological Sciences, Earth Sciences*

Understanding the effect of Venus's sulfuric acid clouds on atmospheric chemistry

2:30 pm

**Bristol Cave-LaCoste**, *Humanities, History*

"Living Openly and Notoriously": The Sexual Policing of Migrant Women

**Anna Lowe**, *Physical and Biological Sciences, Ocean Sciences*

Do they stay or do they go? The journey of kelp rockfish larvae off the central California coast

**Jennifer Day**, *Social Sciences, Psychology*

Applying Theories of Face Identity and Expression to Digital Face Representations

**Yohei Rosen**, *Engineering, Biomolecular Engineering and Bioinformatics*

Fast computational methods to describe genetic alleles, loci and haplotypes

**David Coulter**, *Physical and Biological Sciences, Astronomy and Astrophysics*

Discovery of the First Electromagnetic Counterpart to a Gravitational Wave Source

# Live Oral Presentations

Presentation Room 2  
Library 2353

1:30 pm

**Julianne Foxworthy**, *Social Sciences, Education*

Investigating Teacher Follow-Up Moves in Whole Class Mathematics Discussions

**Szilard Gyalay**, *Physical and Biological Sciences, Earth Sciences*

What Lies under the Shells of Saturn's Icy Moons?

**Saugher Nojan**, *Social Sciences, Sociology*

**Shimul Chowdhury**, co-presenter, *Arts, Digital Arts and New Media*

Muslim Students Capture Campus Climate: A Photovoice Project

**Nedda Saremi**, *Engineering, Biomolecular Engineering & Bioinformatics*

A Puma is a Mountain Lion is a Cougar is a Mountain Screamer

**Andrei Tcancenco**, *Humanities, History*

Communist Morality and National Upheaval in the U.S.S.R.: 1985–1991

2:30 pm

**Benjamin Lehmann**, *Physical and Biological Sciences, Physics*

Can electrons bump into dark matter?

**Mitchell Winter**, *Arts, Visual Studies*

Optics of American Empire: James Ricalton and Stereoscopic Ethnography in Early Twentieth-Century India, 1888–1907

**Elizabeth Goldman**, *Social Sciences, Psychology*

Once Helpful, Always Helpful? Infants' Expectations about Helping and Hindering Behavior across Scenarios

**Alison Tang**, *Engineering, Biomolecular Engineering and Bioinformatics*

Full-length characterization of isoforms to investigate cancer-associated mutations

**Grant Koch**, *Physical and Biological Sciences, Chemistry and Biochemistry*

Property-Based Selection of Membrane Permeable Macrocyclic Scaffolds in a DNA-Encoded Library



# Live Oral Presentations

Presentation Room 3  
Library 2359

1:30 pm

**Kylie Kenner**, *Social Sciences, Education*

A Community College Intervention Program: The Affordances and Challenges of an Educational Space of Resistance

**Cynthia Tibbetts**, *Humanities, Philosophy*

Can We Care Better?: Exploring the limits of our capacity to care for others

**Roger Volden**, *Engineering, Biomolecular Engineering and Bioinformatics*

R2C2: Increasing the Accuracy of MinION Sequencing Reads

**Luz de Wit**, *Physical and Biological Sciences, Ecology and Evolutionary Biology*

Potential public health benefits from cat eradications on islands

2:30 pm

**Suraiya Jetha**, *Social Sciences, Anthropology*

Friendship and Nation in Norway

**Keegan Farrell**, *Arts, Digital Arts and New Media*

WHITENESS: Exploring how mixed-race individuals who appear to be white bear witness to persistent racism in a “post-racial” society

**Cara Vennari**, *Physical and Biological Sciences, Earth Sciences*

Mineral Physics: How We Understand the Structure of the Deep Earth

**Rachel Zuercher**, *Physical and Biological Sciences, Ecology and Evolutionary Biology*

Coastal marine ecosystem connectivity: pelagic to kelp forest subsidies

**Sharmistha Guha**, *Engineering, Statistics and Applied Mathematics*

Understanding Human Creativity with Brain Networks



# Poster Presentations

*Alphabetical by division/school, program,  
last name*

## **Baskin School of Engineering**

*Biomolecular Engineering & Bioinformatics*

**Charles Cole** Poster 28

Tn5Prime, a Tn5-based 5' capture method for single-cell RNA-seq

**Paloma Medina** Poster 2

Estimating the Prevalence of Wolbachia in Arthropod and Nematode Taxa

*Computer Engineering*

**Alexey Munishkin** Poster 36

Scalable Markov chain approximation for a safe intercept navigation in the presence of multiple vehicle

*Computer Science*

**Kathryn Dahlgren** Poster 13

Towards Not Re-Inventing the Wheel: Managing Data Management Tools

*Electrical Engineering*

**Brian Giraldo** Poster 14

Atomic layer deposition of non-conformal low dimensional ZnO thin films

**Manping Jia** Poster 19

Proton Conductivity of Biomaterials

**John Selberg** Poster 25

A Non-Enzymatic Glucose Sensor Actuated by Electronic pH Modulation

*Statistics & Applied Mathematics*

**Matthew Heiner** Poster 17

Bayesian Model Selection for Markov Chains using Sparse Probability Vectors

**Michael Lavell** Poster 24

The Richtmyer-Meshkov Instability with Unknown Magnetic Field Topology

**Sutirtha Sengupta** Poster 6

Effect of rotation on fingering convection in stellar and planetary interiors

## **Humanities**

*Feminist Studies*

**Jessica Calvanico** Poster 5

New Orleans's Girl Problems: The House of the Good Shepherd and the Origins of Juvenile Justice

*History*

**Kiran Garcha** Poster 18

Bringing the Vanguard Home: The Role of Children, Home, and Family in the Black Panther Party

**Amy Hart** Poster 32

Creating a Socialist, Feminist Utopia in 1840's Ohio: A Case Study of the Nineteenth-Century Intentional Community Movement

**Donald Hickey** Poster 31

Ambrose Bierce: Bedeviled Reconciliation

**Daniel Joesten** Poster 20

"By the Accident of Birth": British Subjects, Free State Citizens, and the Irish Diaspora in Britain, 1922-1950

**Muiris MacGiollabui** Poster 15

Global Exile: The Diaspora of the United Irishmen, 1791-1827

**Nicole VanderMeer** Poster 30

Pervasive Species: The Mongoose, Visualities, and Empire (1869-1936)

*History of Consciousness*

**Justin Gilmore** Poster 12

Contesting the Idea of Productivity in the Workers' Movement

*Linguistics*

**Jennifer Bellik** Poster 26

Vowels in Turkish onset clusters: Mind or matter?

# Poster Presentations

*Alphabetical by division/school, program,  
last name*

## Humanities continued

### *Linguistics continued*

**Deniz Rudin** Poster 7  
Rising Imperatives

### *Literature*

**Yuki Obayashi** Poster 22  
Remembering to Forget: The Hiroshima  
Maidens Project

**Sarah Papazoglakis** Poster 8  
Doing Good, Behaving Badly: Fictions of  
American Philanthropy

**Ka-eul Yoo** Poster 29  
Hansen's Disease Body as an Arena of Cold  
War: The Case of Korean Poet Han Ha-Wun

## Physical & Biological Sciences

### *Chemistry & Biochemistry*

**Ana Kareh** Poster 33  
Isostructural lanthanide metal-organic  
frameworks based on biphenyldicarboxylic  
acid

**Eaindar Soe** Poster 9  
Synthesis and Characterization of Cationic  
Silver Quinoxaline Coordination Polymers

### *Ecology & Evolutionary Biology*

**Katherine Dale** Poster 27  
The Secret Life of Larval Fish: A Geocaching  
Adventure

### *Molecular, Cell, & Developmental Biology*

**Ofir Stefanson** Poster 23  
Novel Method of Plasmid Delivery to Mouse  
Bladder Urothelium

**Atesh Worthington** Poster 3  
**Taylor McCann**, co-presenter  
The Role of IL7ra in Innate Immune Cell  
Development

## Social Sciences

### *Anthropology*

**Thomas Banghart** Poster 11  
From shore to mountain: a comparison of  
prey selection and processing at two Middle  
Period (c. 2800–900 BP) sites from Santa  
Cruz County, California

### *Education*

**Salvador Huitzilopochtli** Poster 1  
Student Appropriation of Teacher Talk Moves  
and Mathematical Tools in a Discursively  
Based Classroom

### *Environmental Studies*

**Allyson Makuch** Poster 4  
Barriers and Flows: Epistemological and  
Cartographical Challenges to "Seeing" the  
Landscape of California Cannabis

**K. Aysha Peterson** Poster 21  
Root-mediated soil fertility and carbon  
sequestration in agroecosystems

### *Psychology*

**Rebekkah Gross** Poster 34  
Situational features influence college  
students' evaluations about helping

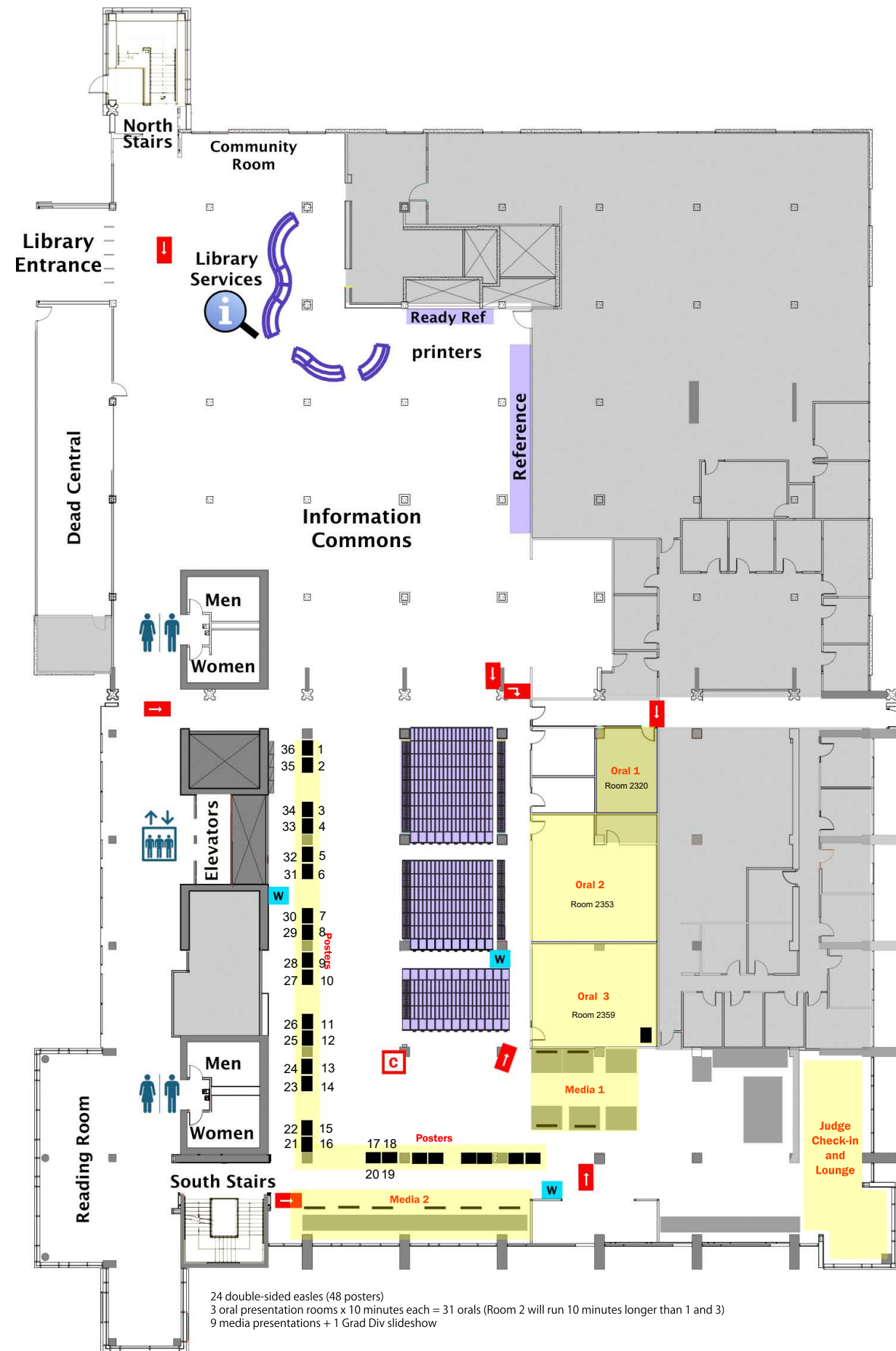
**Giselle Laiduc** Poster 10  
Culturally Relevant Growth Messages  
Unexpectedly Undermine Women's Help-  
Seeking in STEM

**Tiffany Lockett** Poster 35  
School and neighborhood factors  
influencing low-income, male adolescents'  
criminalization outcomes

**Ibette Valle** Poster 16  
"You Never Become Fully Independent":  
Family Roles and Independence in  
First-Generation College Students



## McHenry Library, Second Floor



## MultiMedia Presentations

## Media 2 Area

**Kavi Duvvori**, *Arts, Digital Arts and New Media*

Exploring Algorithmically Mediated Language Games

**Taylor Kirsch**, *Humanities, History*

“A Place Where We Should Be”: Indigeneity and Attempted Erasure in Past and Present  
 New England Landscapes

**Priscilla Martinez**, *Humanities, History*

Chinese Roots Amidst the Saguaros: Public Memory and Community Identity in Chinese  
 Tucson

**Michael Saccone**, *Physical & Biological Sciences, Physics*

Finding Monopoles in Artificial Spin Ice

Please join us at the Graduate Research Symposium Award Reception on the terrace and south lawn of McHenry Library from 4:00 to 6:00 p.m. Musical entertainment by Nelsen Hutchison, graduate student, and Alex Ullman. Winners will be announced at 4:15 p.m.

