12th Annual Graduate Research Symposium
April 29, 2016

Fiat Lux!

UC Santa Cruz • Division of Graduate Studies
Welcome to the 12th Annual Graduate Research Symposium!

UC Santa Cruz is proud to showcase the superb research of our graduate students and to celebrate their academic achievements in the past year. We’re especially pleased to be able to hold this event as part of Alumni Weekend.

UCSC’s annual Graduate Research Symposium gives us the opportunity to:

• Highlight the most outstanding graduate research across the whole spectrum of disciplines on our campus;
• Recognize advanced graduate research being conducted in a wide range of programs and settings;
• Celebrate the diversity and innovativeness of our graduate community;
• Provide our graduate students with the chance 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 the recently-renovated McHenry Library. Please use the adjacent map to find the oral, media and poster presentations listed in this program.

Event Judging
A panel of judges will score presenters on their ability to convey information in a meaningful manner to a non-expert audience, as well as the relevance/importance of their research and/or project to those in and outside of their field.

Awards Reception
Join us for the Awards Reception immediately following the Symposium on the South Lawn, where light refreshments will be provided. Awards for the best presentations in each academic division will be granted, including gift certificates to the UCSC Bookstore in the amount of $100, sponsored by the academic Deans, and $150, sponsored by the UCSC Alumni Association. Two awards recognizing outstanding presentations in any discipline will also be awarded: a $250 cash Graduate Dean’s award, and a $500 cash award for the Chancellor’s Graduate Research Prize.

Graduate Alumni Social
In celebration of Alumni Weekend, a Graduate Alumni Social will be held at the Graduate Student Commons following the Symposium. Please see the walking map on the back page of this program for directions to the GSC. Graduate Alumni and current graduate students are encouraged to come make new friends, reconnect with old friends, and learn more about the GSC while enjoying a refreshing cocktail. Drinks and appetizers will be provided.

Tyrus Miller
Vice Provost and Dean of Graduate Studies
Acknowledgements

Thank you to all who contributed to the success of this event...

All of our volunteer judges
McHenry Library, Event Sponsor
Alumni Association, 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
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Juan Perez and Team, Learning Technologies, Media Support
Karen Herrera, Diana Rivas and Dan Oliver, Event Assistance
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Media Presentation

Grace Barcheck, Earth Sciences
THE HEARTBEAT OF AN ICE SHEET: TURNING SCIENCE INTO SOUND
FROM THE WHILLANS ICE STREAM IN WEST ANTARCTICA
Oral/Live Presentations
Presentation Room 1
Library 2320

1:30 pm

Jess Whatcott, Politics
THE POLITICS OF INFORMED CONSENT IN CALIFORNIA WOMEN’S PRISONS

Eric Fischer, Economics
MONETARY SURPRISES, PORTFOLIO FLOWS, AND LIQUIDITY: A CASE STUDY OF BRAZIL, COLOMBIA, AND MEXICO

Jeremy Coupe, Computer Engineering
COMPUTING THE OPTIMAL RAMP AREA AIRCRAFT PUSH BACK TIME WINDOWS IN THE PRESENCE OF UNCERTAINTY

Larissa Marinho Eglem de Oliveira, Computer Engineering
CHARACTERIZING USER MOBILITY IN WIFI NETWORKS

Damla Ozcelik, Electrical Engineering
SPATIALLY MULTIPLEXED BIOPARTICLE DETECTION USING MULTIMODE INTERFERENCE

2:30 pm

Ben Spalding, Digital Arts & New Media
HYDRAS LIKE STORIES: MULTIPLAYER NARRATIVE DESIGN IN DIGITAL GAMES

Joshua Parks, Electrical Engineering
DIRECT INTEGRATION OF ACTIVE OPTOFLUIDIC ELEMENTS WITH CONVENTIONAL MICROFLUIDICS

Mike Jaris, Electrical Engineering
ULTRAFAST SPECTROSCOPY OF NANO SCALE SPINTRONIC DEVICES

Carver Bierson, Earth Sciences
DEEP INSIGHTS FROM SIMPLE OBSERVATIONS OF PLUTO AND CHARON

Michael Nayak, Earth Sciences
THE EVOLUTION OF GROOVES ON PHOBOS: FROM SUSPECTED ALIEN MONOLITH TO SESQUINARY IMPACT FEATURES
Oral/Live Presentations

Presentation Room 2
Library 2353

1:30 pm

**Jackson Tolins**, Psychology
LISTENING TO THE LISTENER: THE ROLE OF ADDRESSEE BACKCHANNELS IN DIALOGUE COMPREHENSION

**Mecaila Smith**, Education
PERSONAL STATEMENTS IN COMPETITIVE ENVIRONMENTS: INQUIRY INTO AUTHORSHIP USING SOCIOCULTURAL THEORIES OF IDENTITY AND THE LENS OF DIALOGISM

**Mary Thomas**, Visual Studies
SOCIALLY-ENGAGED ART HISTORY: MOVING VISUAL ANALYSIS OUTSIDE OF THE CLASSROOM

**Talia Waltzer**, Psychology
WHEN AND WHY IS IT WRONG TO COPY FROM OTHERS? VARIABILITY IN STUDENTS’ EVALUATIONS OF PLAGIARISM

**Alix Johnson**, Anthropology
THE CENTER FOR EMERGING WORLDS: PUBLIC-ACADEMIC ENGagements BEHIND THE HEADLINES

2:30 pm

**Mitchell Winter**, Visual Studies
ADORNING REALITY: THE POSTCOLONIAL POETICS AND PROBLEMS OF ALANKARA IN CONTEMPORARY CULTURAL STUDIES OF HINDU VISUALITY

**Sean Lawrence**, History
BEGRUDGING EMPIRE: BANKERS, BOURGEOIS SOCIETY, AND IMPERIAL GERMANY’S NEW PUBLIC ELITE

**Christina Corfield**, Film & Digital Media
INSTANT MESSENGER: THE PONY EXPRESS, MEDIA AND MODERN VIRTUALITY BEFORE THE AGE OF THE INTERNET

**Lisa Beebe**, Music
FROM OLD HANOI TO THE “HOTEL CALIFORNIA”: THE TRAVELING TALES OF THE VIETNAMESE DAN BAU MONOCHORD

**Kyuhyun Han**, History
PRECIOUS ANIMALS: STATE-WILDLIFE RELATIONS IN THE PEOPLE’S REPUBLIC OF CHINA, 1949–1965
Oral/Live Presentations

1:30 pm

Daniel Killam, Earth Sciences
HAPPY CLAMS THROUGH TIME: USING BIVALVE SHELLS AS A RECORD OF PHYSIOLOGY AND CLIMATE

Courtenay Ray, Ecology & Evolutionary Biology
INVADING CALIFORNIA: IMPACTS AND BEST MANAGEMENT PRACTICES FOR THE PERENNIAL GRASS, EHRHARTA ERECTA

Claire Masteller, Earth Sciences
HIGHS AND LOWS OF RIVERBEDS: QUANTIFYING THE IMPACT OF GRAIN-SCALE TOPOGRAPHY ON SEDIMENT TRANSPORT RATES IN AN EXPERIMENTAL RIVER

Juliano Calil, Ocean Sciences
MULTIDISCIPLINARY APPROACHES TO COASTAL CLIMATE ADAPTATION

2:30 pm

Carolyn Branecky, Earth Sciences
GEOTHERMAL HEAT FLOW IN THE WEST ANTARCTIC RIFT SYSTEM

Joseph Parks, Chemistry & Biochemistry
MOLECULAR MOTION CAPTURE OF HUMAN TELOMERASE CATALYSIS

Leah Schwiesow, Molecular, Cell, & Developmental Biology
ISCN-MEDIATED CONTROL OF THE HMURSTUV HEMIN UPTAKE SYSTEM IN YERSINIA PSEUDOTUBERCULOSIS

Mauricio Rojas-Andrade, Chemistry & Biochemistry
ANTIBACTERIAL ACTIVITY OF SILVER-COPPER ALLOY NANOPARTICLES: IN-VIVO EVIDENCE FOR REACTIVE OXYGEN SPECIES GENERATION

Cassidy Berk, Electrical Engineering
SELECTIVE CONTROL OF MAGNETIZATION PRECESSION IN MAGNETIC MULTILAYERS
**Poster Presentations**

*Alphabetical by program and last name*

**David Haan,** *Biomolecular Engineering & Bioinformatics*

IDENTIFYING NOVEL DRIVER GENES OF THE ALTERNATIVE LENGTHENING OF TELOMERES PATHWAY IN PEDIATRIC CANCER

**Yulia Newton,** *Biomolecular Engineering & Bioinformatics*

UCSC TUMORMAP: EXPLORING CANCER SIGNATURES ON AN INTERACTIVE DYNAMIC LANDSCAPE

**Arthur Rand,** *Biomolecular Engineering & Bioinformatics*

CYTOSINE METHYLATION VARIANT CALLING WITH MINION NANOPORE SEQUENCING

**Edward Rice,** *Biomolecular Engineering & Bioinformatics*

HIGHLY-CONTIGUOUS GENOME ASSEMBLY AND RNA-SEQ OF EMBRYONIC GONADS PROVIDE EVIDENCE OF ESTROGENIC REGULATION OF GENE EXPRESSION DURING TEMPERATURE-DEPENDENT SEX DETERMINATION IN THE AMERICAN ALLIGATOR

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

BEAR NECESSITIES: THE GENOME ASSEMBLY AND ANNOTATION OF THE SPECTACLED BEAR

**Staci Adams,** *Chemistry & Biochemistry*

OPTICAL AND MAGNETIC PROPERTIES OF METAL AND METAL-OXIDE NANOPARTICLES FOR BIOLOGICAL APPLICATIONS

**Tianyu Liu,** *Chemistry & Biochemistry*

FIRST DEMONSTRATION OF 3D PRINTED PERIODIC MACROPOROUS GRAPHENE AEROGELS AS SUPERCAPACITOR ELECTRODES WITH EXCEPTIONAL RATE CAPABILITY

**Bin Yao,** *Chemistry & Biochemistry*

FLEXIBLE TRANSPARENT SEMICONDUCTOR NANOPAPER FOR ENERGY STORAGE

**Daniel Alves,** *Computer Engineering*

TEMPORAL AND GEOGRAPHICAL INFLUENCE IN RTT PATTERNS

**Jun Chai,** *Computer Engineering*

HYBRID CONTROL ALGORITHMS FOR ROBUST POWER CONVERSION IN SMART GRIDS

**Sam Mansfield,** *Computer Engineering*

WIRELESS COMMUNICATION OVER TERRAIN

**Sean Phillips,** *Computer Engineering*

ESTIMATION AND SYNCHRONIZATION FOR MULTI-AGENT SYSTEMS USING TOOLS FOR HYBRID SYSTEMS

**Sean-Ryan Smith,** *Computer Science*

DYNAMIC ONLINE COMPUTERIZED NEUROPSYCHOLOGICAL TESTING SYSTEM

**Dmitry Rivkin,** *Computer Engineering*

MINIMUM ENERGY ATTITUDE CONTROL

**Sharon Rabinovich,** *Computer Engineering*

LEADER-FOLLOWER FOR FORMATION TESTING

**Cara Vennari,** *Earth Sciences*

HIGH PRESSURE RAMAN AND SINGLE CRYSTAL X-RAY DIFFRACTION OF THE ALKALI/CALCIUM CARBONATE, SHORTITE

**Eric Garcia,** *Ecology & Evolutionary Biology*

GENOMIC ANALYSIS OF DISJUNCT MARINE FISH POPULATIONS OF THE NORTHEASTERN PACIFIC AND SEA OF CORTEZ
Poster Presentations

Juan Diaz, Electrical Engineering
HIERARCHICAL MOTH-EYE ANTIREFLECTION COATINGS

David Fryauf, Electrical Engineering
GROWTH OF ULTRASMOOTH SILVER THIN FILMS DEPOSITED WITH A GERMANIUM NUCLEATION LAYER
Co-presenter: Juan Diaz

Paulo Quadri, Environmental Studies
NO WALLS BETWEEN CONIFERS IN MEXICO: HOW LOCAL ENVIRONMENTAL CONDITIONS MODULATE DISTRIBUTIONAL AND PHYSIOLOGICAL RESPONSES OF TREES TO CLIMATE CHANGE IN ALPINE MEXICO

Meg Eppel Gudgeirsson, History
DEFINE THE CHILD, DEFINE THE COMMUNITY: RAISING CHILDREN IN NINETEENTH-CENTURY RELIGIOUS COMMUNITIES

Martin Rizzo, History
NO SOMOS ANIMALES: INDIGENOUS SURVIVAL AND PERSISTENCE IN 19TH CENTURY SANTA CRUZ, CALIFORNIA

Amanda Wilson Bergado, History
RECONSIDERING “THE HATCHET MEN”: CHINESE AMERICAN CRIMINALITY DURING THE ERA OF CHINESE EXCLUSION

Delio Vasquez, History of Consciousness

Nathaniel Clair, Linguistics
AN ENRICHED ACCOUNT OF DIFFERENTIAL OBJECT MARKING: EVIDENCE FROM SPOKEN PERSIAN

Anna Greenwood, Linguistics
PHONETICS OR PHONOLOGY?
INVESTIGATING THE DRIVING FORCE BEHIND PHONETICALLY NATURAL PATTERNS

Chelsea Miller, Linguistics
LIMITED REACTIVATION IN NOUN PHRASE ELLIPSIS

Maho Morimoto, Linguistics
LISTENER ADAPTATION TO STRESS MISPLACEMENT IN ENGLISH

Jason Ostrove, Linguistics
THE PLACEMENT OF AGREEMENT CLITICS IN SAN MARTÍN PERAS MIXTEC

Jed Pizarro-Guevara, Linguistics
THE ROLE OF TAGALOG VERBAL AGREEMENT IN PROCESSING WH-DEPENDENCIES

Erik Zyman, Linguistics
ON THE LIMITS OF SYNTACTIC MOVEMENT: HYPERRAISING IN P’URHEPECHA

Kendra Dority, Literature
READING PRACTICES AND LANGUAGE POLITICS IN ANCIENT GREEK AND U.S. LATINA/O LITERATURES

Tsering Wangmo, Literature
THE RECONSTRUCTION OF CONTEMPORARY TIBETAN IDENTITY: TRADITION, NATIONALISM, AND FORMS OF BELONGING

Travis Conley, Microbiology & Environmental Toxicology
MANGANESE AND THE BRAIN: IMPACTS OF DEVELOPMENTAL MANGANESE EXPOSURE ON CATECHOLAMINERGIC RECEPTORS IN THE PREFRONTAL CORTEX
Poster Presentations

Alphabetical by program and last name

Jaime Hernandez, Microbiology & Environmental Toxicology
PHOTOARSENOTROPHY IN ACTION

Zeka Kuspa, Microbiology & Environmental Toxicology
MEASURING HANDLING STRESS AT MULTIPLE TIME SCALES IN THE CHRONICALLY LEAD-EXPOSED CALIFORNIA CONDOR

Gisele Miglioranza Rizzi, Microbiology & Environmental Toxicology
SKELETAL LEAD: IMPLICATIONS FOR EXPOSURE MONITORING IN CALIFORNIA CONDORS

Elektra Robinson, Molecular, Cell, & Developmental Biology
CHARACTERIZATION OF LncRNA-Aim2 IN MOUSE MACROPHAGES

Cameron Soulette, Molecular, Cell, & Developmental Biology
PAN-CANCER ANALYSIS OF WHOLE GENOME SEQUENCING REVEALS RECURRENT INTRONIC MUTATIONS

Leila Jewell, Physics
PROGRESS TOWARDS THE SOLAR PANELS OF TOMORROW: LOCAL STRUCTURE STUDIES OF DEGRADATION IN THE PROMISING LEAD IODIDE PEROVSKITE

Caitlin Johnson, Physics
SEARCHING FOR SIGNATURES OF NEW PHYSICS: DEEP GAMMA-RAY OBSERVATIONS OF 3C 66A

Brandon Balzer Carr, Psychology
QUEER SLUGS: A QUALITATIVE ANALYSIS OF LGBTQ+ STUDENTS’ CHALLENGES AND COMMUNITY BUILDING AT UCSC

Natalie Jacewicz, Science Communication
POLITICS IN A PETRI DISH: COVERING NATIONAL ELECTIONS THROUGH SCIENCE COMMUNICATION

Nadja Roche, Sociology
IMPACTS OF SEXUAL ASSAULT TRAUMA AND MENTAL HEALTH ON GRADUATE STUDENT ACADEMIC SUCCESS

Daniel Helkey, Statistics & Applied Mathematics
BAYESIAN DECISION - THEORETIC SAMPLE SIZE COMPUTATION

Daniel Kirsner, Statistics & Applied Mathematics
THE JAYNES INFORMATION CRITERION (JIC) AND THE ROLE OF PARSIMONY IN BAYES FACTORS

Alexander Terenin, Statistics & Applied Mathematics
ASYNCHRONOUS GIBBS SAMPLING

Alex Moore, Visual Studies
READING NATURE, OBSERVING SCIENCE: EXAMINING MATERIAL PRACTICES IN THE KENNETH S. NORRIS AND LICK OBSERVATORY PAPERS
Co-presenters: Christine Turk and Danielle Crawford
Graduate alumni and current graduate students are invited to the Graduate Student Commons from 5 - 7 pm for the Graduate Alumni Social. Come meet new friends, reconnect with old friends, and learn more about the GSC while enjoying a refreshing cocktail. Drinks and appetizers will be provided.