UC Santa Cruz
Graduate Research Symposium 2014

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Tenth Annual Graduate Research Symposium, Program, May 9, 2014

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Welcome to the 10th 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.

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 for the second time in the recently-renovated McHenry Library. Please use the adjacent map to find the oral, media and poster presentations listed in this program.

Please also join us for the Awards Reception immediately following the Symposium on the South Lawn, with refreshments provided by the Global Village Café. 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.

Tyrus Miller
Vice Provost and Dean of Graduate Studies
Acknowledgements

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

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JUDGES

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SPECIAL THANKS

Greg Careaga, Marcus Thayer and Team, McHenry Library, Location Assistance and Publicity
Adam Hoffman, Global Village Café, Catering Services
Robert Kemp, Staff Receiving Services, Poster Easels
Juan Perez and Team, Learning Technologies, Media Support
Evan Hartney and Karen Herrera, Event Coordination
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Oral/Live Presentations

Presentation Room 1
Library 2320

1:30 pm  HOW TO HARD-BOIL A STAR ON YOUR LAPTOP’S GRAPHICS CARD
          Hal Cambier, Physics

1:40 pm  OF LASERS AND LABIA: AN EXAMINATION OF THE MAJOR PLAYERS,
         INVESTMENTS, AND STAKES OF FEMALE GENITAL COSMETIC
         SURGERY IN THE U.S.
         Jessica Y. Neasbitt, History of Consciousness

1:50 pm  CULTURAL INTERSECTIONS: SHEET MUSIC WRITTEN FOR THE
         GOLDEN GATE INTERNATIONAL EXPOSITION OF 1939/40
         Elisse La Barre, Music

2:00 pm  MEANDERING KEEPS BEDROCK RIVER NETWORKS, AND THEREFORE
         LANDSCAPES, FROM ACHIEVING A STEADY STATE
         Kerri Johnson, Earth Sciences

2:10 pm  CHILDREN AND THE TRAUMA OF WAR: THE PLACE OF CHILDREN IN
         MAINLAND CHINA, 1945-1953
         Melissa Brzycki, History

2:20 pm  --BREAK--

2:30 pm  WHAT IS MORE IMPORTANT FOR SEAGRASS CONSERVATION?
         MEASURING ENVIRONMENTAL AND ECOLOGICAL PARAMETERS IN
         SEAGRASS BEDS WITH DIFFERENT FORMS OF PROTECTION
         T E Angela Quiros, Ecology & Evolutionary Biology

2:40 pm  NUFAN: GENDER, CRIMINALITY AND THE PRISON IN 1930s QINGDAO
         Stephanie Montgomery, History

2:50 pm  TRANSGENERATIONAL TRAUMA AND MENTAL HEALTH: CAMBODIAN
         AMERICAN COLLECTIVE MEMORY
         Yvonne Kwan, Sociology

3:00 pm  TRANSNATIONAL SOCIAL JUSTICE AND IMPLICATIONS OF DIASPORIC
         RETURN TO THE REPUBLIC OF ARMENIA
         Veronika Zablotsky, Feminist Studies

3:10 pm  BIGGER IS NOT ALWAYS BETTER: BODY SIZE PREDICTS INDIVIDUAL
         WINTER FORAGING STRATEGIES OF THICK-BILLED MURRES (URIA
         LOMVIA) IN THE BERING SEA
         Rachael Orben, Ocean Sciences
Oral/Live Presentations
Presentation Room 2
Library 2353

1:30 pm  THERE IS NO GENOME
Adam Novak, Biomolecular Engineering & Bioinformatics

1:40 pm  CHARACTERIZATION OF NEURONAL ABNORMALITIES IN FRAGILE X MICE
Adam Aharon, Molecular, Cell, & Developmental Biology

1:50 pm  HISTORICIZING THE LYNCHINGS OF ITALIANS IN 1890s LOUISIANA
Jessica Barbata Jackson, History

2:00 pm  SHIFT - INDIAN COUNTRY'S CHANGING LANDSCAPE
Wayne Marci, Digital Arts & New Media

2:10 pm  ROCKS GO BOINK: HOW MUCH DOES RIVER BEDLOAD SHAKE THE BED?
Danica Roth, Earth Sciences

2:20 pm  --BREAK--

2:30 pm  HUMILITY AS A VIRTUE
Kyle Robertson, Philosophy

2:40 pm  MAGNETAR POWERED SUPERNOVAE
Astronomy & Astrophysics*

2:50 pm  HERDING PACKETS: HOW TO GET PACKETS IN A NETWORK TO GO WHERE YOU EXPECT
Judith Samson, Computer Engineering

3:00 pm  FINDING NEMO USING SOCIAL MEDIA
James O'Donnell, Ecology & Evolutionary Biology

3:10 pm  AN ETHNOGRAPHIC LOOK AT US “STATE-BUILDING” IN AFGHANISTAN
Jim Misencik, Sociology

3:20 pm  LATIN AMERICAN INTEGRATION AND THE PAN AMERICAN HIGHWAY:
ANTHROPOLOGY ON THE ROAD
Rosa Ficek, Anthropology

* Presenter’s name withheld by request
Oral/Live Presentations

Presentation Room 3
Library 2359

1:30 pm  d0ntb33vil: THE BUS STOP DISPLACEMENT PROJECT
Harris David Harris, Digital Arts & New Media

1:40 pm  TOWARD PARTICIPATORY WATER GOVERNANCE IN THE CENTRAL
COAST: DISCOURSE, DESALINATION, DROUGHT
Stephen Sepaniak, Sociology

1:50 pm  WHY THE WEATHERMAN IS ALWAYS WRONG: A BROKEN LINK IN
CLOUD MODELS
Mikael Witte, Earth Sciences

2:00 pm  BANK AVALANCHE MODEL OF SYSTEMIC RISK
Eric Fischer, Economics
Co-presenter: Judith Samson

2:10 pm  THE HUMAN SPLICEOSOME: AN ESSENTIAL MOLECULAR MACHINE
Andrew MacRae, Molecular, Cell, & Developmental Biology

2:20 pm  --BREAK--

2:30 pm  THE SECRET HISTORY OF AMERICAN SHANTYBOATERS
Wes Modes, Digital Arts & New Media

2:40 pm  ICE-BOUND: AN INTERACTIVE BOOK ENABLED BY RESEARCH IN
TECHNOLOGY AND ARTS
Aaron Reed, Computer Science

2:50 pm  STRING HOMOLOGY OF SPHERES: THE SEARCH FOR HOLES IN THE
LOOP SPACE OF SPHERES
Felicia Tabing, Mathematics

3:00 pm  SECULARISM’S INSCRUTABLE SUBJECTS: THE “FEMINIST AND
FAITHFUL” MORMONS
Jessica Whatcott, Politics

3:10 pm  RESISTANCE AND TRANSCENDENCE THROUGH THE SON JAROCHO
MOVIMIENTO: BAY AREA WOMEN, MUSIC AND DANCE
Robin Sacolick, Music
Media Presentations

WALKABOUT: A GAME FOR EXERCISING WHILE LEARNING ABOUT EXTANT FLORA AND FAUNA
Dustin Adams, Computer Science

EXQUISITE CORPSE IN 2.5D
Danielle Williamson, Digital Arts & New Media
Co-presenter: Lisa Banks

WALKING KIDS OF CHOCO
Rolando Vargas, Film & Digital Media

FLATLANDS
Film & Digital Media*

SPEECH ADVENTURE: USING AUTOMATIC SPEECH RECOGNITION AND MOBILE GAMES FOR SPEECH THERAPY
Zachary Rubin, Games and Playable Media

THRESHOLDS AND FRAGILE STATES: THE MUSIC OF CHAOS
David Kant, Music

Poster Presentations

LEARNING FROM VETERANS: A CLOSER LOOK AT ELITE CONTROLLERS OF HIV FOR HIV VACCINE DEVELOPMENT
Rachel Doran, Biomolecular Engineering & Bioinformatics

RESULTS OF THE ALIGNATHON: A COLLABORATIVE COMPETITION TO ASSESS THE STATE OF THE ART IN WHOLE GENOME ALIGNMENT
Dent Earl, Biomolecular Engineering & Bioinformatics

SEQUENTIAL ANALYSIS OF INDIVIDUAL MULTI-DOMAIN PROTEINS USING ClpX COUPLED TO A NANOPORE
Logan Mulroney, Biomolecular Engineering & Bioinformatics

FUNCTIONALIZED NANOPORE ARRAYS TOWARD BIO-MARKER DETECTION
Biomolecular Engineering & Bioinformatics*

DYNAMICS OF TRANSLOCATION AND SUBSTRATE BINDING FOR DNA POLYMERASE MUTANTS
Joseph Dahl, Chemistry & Biochemistry

STEPS TOWARDS SEQUENCING REAL RNA - DETECTION OF INDIVIDUAL tRNA MOLECULES USING A NANOPORE
Andrew M. Smith, Chemistry & Biochemistry

DESIGN AND EVOLUTION OF A MODULAR TENSEGRITY ROBOT PLATFORM
Jonathan Bruce, Computer Engineering

* Presenter’s name withheld by request
COMPUTING OPTIMAL PUSH BACK TIME
WINDOWS THAT ENSURE CONFLICT FREE RAMP
AREA AIRCRAFT TRAJECTORIES
Jeremy Coupe, Computer Engineering

AUTOMATING CAMERA CONTROL IN GAMES
USING GAZE
Cameron Alston, Computer Science

ECONOMIC MODELING OF LONG-TERM
PRESERVATION
Preeti Gupta, Computer Science

ADAPTIVE NARRATIVE DISCOURSE GENERATION
FROM STRUCTURED MODELS OF TIME, ACTION
AND AGENCY
Stephanie Lukin, Computer Science

PERFORMATOLOGY: A COMPUTATIONAL
FRAMEWORK FOR MODELING ARTISTIC
GESTURE
Christopher Maraffi, Computer Science

IDENTIFYING SIMPLE NARRATIVE STRUCTURE IN
PERSONAL NARRATIVES
Elahe Rahimtoroghi, Computer Science

EVOLVING THE INTERNET BY REDESIGNING THE
NETWORK STACK
Spencer Sevilla, Computer Science

COFFEE: A MISUNDERSTANDING
Deirdra “Squinky” Kiai, Digital Arts & New Media

A SINGLE CRYSTAL X-RAY INVESTIGATION OF
TRONA AT HIGH AND LOW TEMPERATURE: A
POLLUTANT-SEQUESTERING MATERIAL
Earl O’Bannon, Earth Sciences

HABITAT FROM TOPOGRAPHY: USING GRAIN
SIZE TO PREDICT SALMONID SPAWNING
DISTRIBUTION
Allison Pfeiffer, Earth Sciences

IDENTIFYING ENVIRONMENTAL AND
ANTHROPOGENIC FACTORS ASSOCIATED WITH
SEA STAR WASTING DISEASE THROUGH LARGE-
SCALE GEOSPATIAL ANALYSIS
Monica Moritsch, Ecology & Evolutionary Biology

ECOLOGY AND MANAGEMENT OF AN INVASIVE
VELDT GRASS, EHRHARTA ERECTA
Courtenay Ray, Ecology & Evolutionary Biology

SYNGNATHUS SPECIES WITH VIRTUALLY
NO INTERSPECIFIC GENETIC VARIATION:
SUGGESTIONS FOR SYNONYMIZING FOUR
EASTERN PACIFIC PIPEFISHES
Ecology & Evolutionary Biology*

A PEDAGOGY OF COMMUNITY BUILDING:
RE-IMAGINING PARENT INVOLVEMENT AND
COMMUNITY ORGANIZING IN POPULAR
EDUCATION EFFORTS
Ana Paulina Moreno, Education
Co-presenter: Linnea Beckett

SUN 2 FIBERS
Juan Jose Diaz Leon, Electrical Engineering

PHOTO-EMISSION BLUE SHIFT OF INDIUM
PHOSPHIDE NANOWIRE NETWORKS WITH
ALUMINUM OXIDE COATING
David Fryauf, Electrical Engineering

RESISTIVE SWITCHING BEHAVIOR OF Sio2
COSPUTTERED WITH PLATINUM
Kate Norris, Electrical Engineering

SILICON NANOWIRE NETWORKS FOR
THERMOELECTRIC APPLICATIONS
Junce Zhang, Electrical Engineering

MICROCLIMATE MATTERS: AIRBORNE FUNGAL
SPORES IN A COASTAL FOREST AND GRASSLAND
Sharifa Crandall, Environmental Studies

* Presenter’s name withheld by request
Poster Presentations

OPPONENT STATE MODELING IN RTS GAMES WITH LIMITED INFORMATION USING MARKOV RANDOM FIELDS
Michael Leece, Games and Playable Media

BEYOND TRANSGRESSIVE PEDAGOGY: A GENDERED ANALYSIS OF THE BLACK PANTHER PARTY’S OAKLAND COMMUNITY SCHOOL
Kiran Garcha, History

RED GUARDS DO NOT FEAR THE DIFFICULTY OF A LONG MARCH: AUTONOMOUS POLITICAL ACTION AND THE STATE DURING THE CULTURAL REVOLUTION CHUANLIAN MOVEMENT
Evan Grupsmith, History

THE NATCHEZ DIASPORA: A HISTORY OF INDIGENOUS DISPLACEMENT IN EARLY AMERICA
Noel E. Smyth, History

THE SYNTAX OF COORDINATION BELOW THE WORD
Linguistics*

FIGURES OF VOICE IN EARLY MODERN EUROPE
Ariane Helou, Literature

Joanna Meadvin, Literature

RE-IMAGINING THE SPACES OF BERLIN: CONSTRUCTING A NEW FUTURE
Erica Smeltzer, Literature

SALINITY-DEPENDENT REGULATION OF VIBRIO CHOLERAE BIOFILMS
Jenna Conner, Microbiology & Environmental Toxicology

LysR-TYPE TRANSCRIPTIONAL REGULATORS (LTTR) PLAY A ROLE IN VIBRIO CHOLERAE BIOFILM FORMATION
Jennifer Teschler, Microbiology & Environmental Toxicology

THE ROLE OF VANGL2 IN THE MAMMARY GLAND
Prestina Smith, Molecular, Cell, & Developmental Biology

RNAseq: ROADMAP TO THE ARSENIC RESPIRATION PATHWAY IN SHEWANELLA sp. ANA-3
Ruth Watson, Molecular, Cell, & Developmental Biology

EVIDENCE FOR Cu_2SnS_3 FORMATION: AN IMPORTANT STEP TOWARDS CZTS FOR SOLAR ENERGY APPLICATIONS
Leila Jewell, Physics

MODELING UNUSUAL VIBRATION MODES IN SKUTTERUDITES CONTAINING “RATTLER” ATOMS
Trevor Keiber, Physics

MOTIVATION MATTERS: DEVELOPMENT OF A SHORT FORM MEASURE OF SOLITUDE FOR ADOLESCENTS AND EMERGING ADULTS
Virginia Thomas, Psychology

DO CAPITAL JURORS REPRESENT THE “CONSCIENCE OF THE COMMUNITY”?: THE BIASING EFFECTS OF DEATH QUALIFICATION
Joanna Weill, Psychology

BAYESIAN FLEXIBLE SPECTRAL MODELING AND COMPUTATION FOR THE ANALYSIS OF COMPLEX BRAIN SIGNALS
Annalisa Cadonna, Statistics & Applied Mathematics

FLEXIBLE INTEGRO-DIFFERENTIAL EQUATIONS FOR SPATIO-TEMPORAL MODELING
Robert Richardson, Statistics & Applied Mathematics

NONPARAMETRIC BAYESIAN MODELING AND INFERENCE FOR RENEWAL PROCESSES
Sai Xiao, Statistics & Applied Mathematics

PUBLIC USES: RECONFIGURING RACE, SPACE, AND VISUALITY IN LOS ANGELES
Mary Thomas, Visual Studies

* Presenter’s name withheld by request