

SESSION I: 1:30 – 3:00PM

***Note: Titles and Abstracts in order of presentation.**

INTERNATIONAL RESEARCH IN THE SOCIAL SCIENCES

Session Moderator: Steven Harrell

Session Assistant:

Mary Gates Hall Room 228

A Narrow Spiritualism: Health Care-Seeking on the Margins of Southwest China

Lauren Brown, Senior, Anthropology and Public Health

Mary Gates Scholar

Mentor: Stevan Harrell, Anthropology

Yi Minority Embroidery of Southwest China

Sara Celms, Senior, Anthropology

Mentor: Steve Harrell, Anthropology

China's Rural Education in Transition: A Case Study of Yanyuan County, Sichuan Province

Christina Chan, Senior, Economics

Mentor: Stevan Harrell, Anthropology

Political Economy of Water Privatization: The Story Behind Bolivia's Failed Concession

Carolyn Claridge, Senior, International Studies

Mary Gates Scholar

Mentor: Wolfram Latsch, International Studies

Exploring the Limits of Global Market Integration and Cross-Continental Arbitrage:

The Case of American Depository Receipts Issued by Russian Firms

Ilian Draganov, Senior, Business Administration, UW Bothell

Mentor: Ufuk Ince, Business Program, UW Bothell

Sichuan Peppercorn: The Changing Roles of a Spice in the Culture and Political Economy of Sichuan Province

J. Alexander Kylo, Senior, International Studies and Chinese

Mentor: Stevan Harrell, Anthropology

Venezuela and Human Rights

Yris Lance, Senior, Global Studies, UW Tacoma

Mentor: Peter Bacho, Interdisciplinary Arts & Sciences, UW Tacoma

GEOLOGY AND MARINE BIOLOGY OF THE GALAPAGOS ISLANDS

Session Moderator: E. Virginia Armbrust

Session Assistant:

Mary Gates Hall Room 238

Formation of Roca Redonda Island due to development of an extensional transform zone, northern Galápagos Archipelago

Heidi Berkenbosch, Senior, Oceanography

Mentor: Mark Holmes, Oceanography

Is Juana Ridge, the northwestern submarine rift zone of Fernandina Island, Galápagos Archipelago, volcanically active?

Jennifer Glass, Senior, Oceanography

Wesley Thompson, Senior, Oceanography
Mentor: Mark Holmes, Oceanography
Mentor: Daniel Fornari, Woods Hole Oceanographic Institution

Determining the volume of materials transported by the collapse of Volcan Ecuador on Isabela Island, Galápagos Archipelago, using ArcGIS

Hillary Hall, Senior, Oceanography
Mentor: Mark Holmes, Oceanography

A Characterization of the Equatorial Undercurrent Between 92°00'W and 91°20'W

Kevin Odle, Senior, Oceanography and Earth & Space Sciences
Mentor: Martin Seelye, Ocean & Fishery Sciences

Bacterial abundances in and around the Galapagos Islands

Pamela Maynard, Senior, Oceanography
Mentor: Gabrielle Rocap, Oceanography

Primary Production around the Galapagos Islands and the effects of cloud cover and differing light regimes

Benjamin Gilmore, Senior, Oceanography
Mentor: Gabrielle Rocap, Oceanography

Carbon remineralization rates in marine sediments beneath areas of high and low primary productivity in the Galápagos Archipelago

Jacquelyn Neibauer, Senior, Oceanography
Mentor: Mark Holmes, Research Professor, Oceanography

Phytoplankton distribution, growth and grazing dynamics around the Galapagos Archipelago

Wendy Guo, Senior, Oceanography
Tasha Snow, Junior, Oceanography
Mentor: Gabrielle Rocap, Oceanography

SOCIAL AND PSYCHOLOGICAL FACTORS ACROSS THE LIFESPAN

Session Moderator: Lisa Kopp, Psychology
Session Assistant:
Mary Gates Hall Room 234

Relationship Between Neighborhood Characteristics and Parental Involvement on Violent Behavioral outcomes among Cambodian and Vietnamese Adolescents

Ariana Cantu, Senior, Social Welfare
Mentor: Tracy Harachi, School of Social Work

Parental Perfectionism, Suicidal Ideation, and Emotion Regulation: The Relationship

Blair Kleiber, Senior, Psychology
Mentor: Mary Larimer, Psychiatry & Behavioral Science

Sex Differences in Autonomic Correlates of Conduct Disorder and Oppositional Defiant Disorder in Middle Childhood

James Hong, Senior, Psychology and Sociology
Mary Gates Scholar
Mentor: Theodore P. Beauchaine, Psychology

Homeless Youth: A Comparative Study

Jacqueline Mishawn Echols, Senior, Psychology

Mentor: Ana Mari Cauce, Clinical Psychology
Mentor: Richard Nobles, Clinical Psychology

Premenstrual Symptomatology in Women with Physical and Sexual Abuse History

Linda de Laveaga, Senior, Psychology, Seattle Pacific University
Mentor: Kathy Lustyk, Psychology, Seattle Pacific University

Mountaineers in Perspective: Evidence of signaling in post-industrial societies?

James E. Coxworth, Senior, Anthropology
Mentor: Eric Alden Smith, Anthropology

Towards Affect Centered Ethics

Kelly Hills, Senior, Comparative History of Ideas
Mentor: Phillip Thurtle, Comparative History of Ideas

AQUATIC ENVIRONMENTS: FROM MICROBES TO MEGAFUNA

Session Moderator: Jennifer Ruesink, Biology
Session Assistant:

Mary Gates Hall Room 288

Isolation and characterization of viruses of the toxic bloom-forming diatom *Pseudo-nitzschia*

Benjamin P. Johnson, Senior, Oceanography
Mentor: Gabrielle Rocap, Oceanography

Characterization of the Methylophilic Bacterial Community in Lake Washington

Sarah Bowerman, Senior, Biology
Advanced Undergraduate Research Fellow
Mentor: Mary Lidstrom, Chemical Engineering and Microbiology
Mentor: Marina Kalyuzhnaya, Chemical Engineering

Stable Isotope Fractionation during Copper Limitation by Denitrifying Bacteria

Greg Horn, Senior, Earth & Space Sciences, Microbiology
Mentor: Roger Buick, Earth & Space Sciences

Spatial Variation in Stable Isotope Signature of Benthos in Puget Sound, Washington

Alex Lowe, Senior, Aquatic and Fisheries Sciences
Mentor: Tim Essington, Aquatic and Fisheries Sciences

Demographic similarities and differences between *Zostera japonica* in its native (Korea) and introduced (Willapa Bay) habitats

Stacey L. DeAmicis, Senior, Botany
Mentor: Jennifer L. Ruesink, Biology

Genetic Species Identification of Juvenile Rockfish

Rose Okamoto, Senior, Aquatic and Fishery Sciences
Mentor: Danielle Mitchell, Aquatic and Fishery Sciences
Mentor: Lorenz Hauser, Aquatic and Fishery Sciences

Abundance Estimates of Sixgill Shark (*Hexanchus griseus*) in Puget Sound

Brian Langseth, Senior, Aquatic & Fishery Sciences, Applied & Computational Mathematical Sciences
Mary Gates Scholar
Mentor: Vincent Gallucci, Aquatic & Fishery Sciences

OF MICE AND MEN (AND FLIES, WORMS, AND BACTERIA): STUDIES OF FUNCTION VIA BIOCHEMISTRY, GENETICS, NEUROBIOLOGY, AND MORE

Session Moderator: Rachel Klevit, Biochemistry

Session Assistant:

Mary Gates Hall Room 271

Structure and function of two vital human stress proteins: B-crystallin and HSP27

Erik Miller, Senior, Microbiology

Mary Gates Scholar

Mentor: Ponni Rajagopal, Biochemistry

Mentor: Rachel Klevit, Biochemistry

Identification of interactions between α B crystallin and growth factor ligands and cell death modulator ligands.

Ananth Shenoy, Senior, Biochemistry

Mentor: John I. Clark, Biological Structure

Insights into the Signal-Sensing Mechanism of Salmonella PhoQ

Anna Schneider, Senior, Biochemistry and Mathematics

Mentor: Rachel Klevit, Biochemistry

Mentor: Sam Miller, Microbiology

Engineering yeast Phenylalanyl-tRNA Synthetase to allow incorporation of a Diverse Set of Non-natural Amino Acids

Wafa Hassouneh, Junior, Bioengineering

Mentor: Rupert Davies, Bioengineering

Mentor: Richard To, Bioengineering

Mentor: Patrick Stayton, Bioengineering

Contractile Ring Assembly in the C. elegans Embryo

Mai Truong, Junior, Environment Health

Mentor: Ed Munro, Biology

Mentor: George von Dassow, Biology

Lack of NPY/AgRP neurons results in altered energy balance during isolation-induced stress

Colin T. Phillips, Senior, Biochemistry and Neurobiology

Mentor: Richard Palmiter, Biochemistry

Mentor: Serge Luquet, Biochemistry

ROBOTICS AND VISION

Session Moderator: Dieter Fox, Computer Science and Engineering

Session Assistant:

Mary Gates Hall Room 389

Infection Imaging using Paramagnetic Nanoparticle-Labeled Leukocytes

Jamie Bishop, Senior, Bioengineering

Mentor: Satoshi Minoshima, Radiology and Bioengineering

Spatially-adaptive Dither

Jayson Bowen, Senior, Electrical Engineering

Mentor: Maya R. Gupta, Electrical Engineering

Computer-Controlled Mixing for a Self-Assembly Robotics Testbed

Sam Burden, Sophomore, Electrical Engineering

Mentor: Eric Klavins, Electrical Engineering

Semi Autonomous Powered Reciprocating Gait Orthosis AKA Robot Suit

Monty Reed, Junior, Pre-Major

Mary Gates Scholar

Mentor: Steve A. Stiens, Rehabilitation Medicine

The Mimic of Insect Flight: Flapping Robotics

Tao Tao, Junior, Mechanical Engineering

Mentor: Minoru Taya, Mechanical Engineering

Mentor: Yuan Chang Liang, Mechanical Engineering

Fostering Human-Robotic Interactions Through Vision-Based Activity Recognition

Jean Yanni Wu, Junior, Computer Science, Bioengineering

Boeing/OMA Scholar

Mentor: Rajesh Rao, Computer Science & Engineering

Mentor: Aaron Shon, Computer Science & Engineering

Feature-Based Classification for Mouse Eye Image Recognition

Jenny Yuen, Senior, Computer Engineering

Mentor: Linda G. Shapiro, Computer Science & Engineering

AFFAIRS OF THE HEART AND GUT: PROBING CLINICAL ANSWERS TO DISEASE

Session Moderator: Lindus Conlan, Biochemistry

Session Assistant:

Mary Gates Hall Room 231

EMD 57033 and its Effects on Force Production and Kinetics of Cardiac Muscle

Kristina Bezold, Senior, Bioengineering

Mentor: Michael Regnier, Bioengineering

The Role of Cardiomyocyte Apoptosis in the Development of Cardiac Fibrosis

Teja Dyamenahalli, Senior, Molecular, Cell and Developmental Biology

Mentor: April Stempien-Otero, School of Medicine, Division of Cardiology

Imaging the Esophagus: Balloon Catheter

Henry Fu, Senior, Bioengineering

Mentor: Xingde Li, Bioengineering

The effect of EMD 57033 on regulatory protein interactions in muscle

Megan Ham, Senior, Bioengineering

Mentor: Michael Regnier, Bioengineering

Protein profiling of neonatal cardiomyocyte grafts and adult rat cardiac tissue after myocardial infarction

Elizabeth A. Miller, Senior, Bioengineering

Alicia Moreno-Gonzalez, Bioengineering

Mentor: Michael Regnier, Bioengineering

A High Throughput Anti-Death Assay for Cell-Based Cardiac Repair

Mark K. Saiget, Senior, Bioengineering

Mentor: Thomas E. Robey, Bioengineering

Mentor: Charles E. Murry, Pathology

Cell Transplantation for Myocardial Infarction: Passive stiffness measurements

Mark Schrader, Senior, Bioengineering and Biochemistry
Mentor: Michael Regnier, Bioengineering

ONE MOMENT OUT OF TIME: ARTISTS MAKING THE ORDINARY EXTRAORDINARY

Session Moderator: Brian Reed, English

Session Assistant: s

Mary Gates Hall Room 287

“The Martyr Shrine”

Elizabeth Cardarelli, Post-Baccalaureate, Studio Art, Western Washington University

Mentor: Julia Sapin, Art History, Western Washington University

Cause=Time: T.S. Eliot and the Importance of Tradition in Poetry

Emily Cohen, Senior, English

Mentor: Lana Dalley, English

The Horrors of Nature: The Dark Side of Victorian Fairy Painting

Erin Corrales-Diaz, Senior, Art History

Mentor: Susan Casteras, Art History

Elegant Forms in the Everyday

Derrick Jefferies, Senior, Photography

Ellen Garvens, Photography

Entries

Eunsong (Angela) Kim, Senior, English, Comparative History of Ideas

Mary Gates Scholar

Mentor: Brian Reed, English

Mentor: Ellen Garvins, Photography

68°S, 144°E at 47°N, 122°W

Adam Satushek, Senior, Photography

Mary Gates Scholar

Mentor: Ellen Garvens, Photography

Doppler

Christine Shannon, Senior, Humanities and English

Mentor: Ellen Garvens, Photography

CELL AND MOLECULAR MECHANISMS OF GROWTH AND DEVELOPMENT

Session Moderator: Billie Swalla, Biology

Session Assistant:

Mary Gates Hall Room 295

Exploring a pH gradient in the central vacuole of *Acetabularia acetabulum* and its role(s) in development

Nikki Dejbod, Senior, Neurobiology

Mentor: Dina F. Mandoli, Biology

Identification of Novel Peroxins in *Saccharomyces cerevisiae*

Rula Green Gladden, Senior, Biochemistry

Mentor: John Aitchison, Biochemistry

Putative RuBisCO Activase CfxQ in the Toxic Alga *Heterosigma akashiwo*

Kun-Lin Lee, Senior, Biochemistry

Amanda Hoyt, Recent Graduate, Biochemistry

Mentor: Rose Ann Cattolico, Biology

Arsenicals cause a misplacement of reproductive structures in *A. acetabulum*

Vidhi Tyagi, Senior, Biology

Mentor: Dina Mandoli, Biology

Ferlin Expression and Evolution in Ascidians

Lauren May, Senior, Cell, Molecular, & Developmental Biology, Biochemistry

Mary Gates Scholar

Hee Sun Kim, Junior, Cell, Molecular, & Developmental Biology

Mary Gates Scholar

Mentor: Billie J. Swalla, Biology

The Function of RPAs in *Drosophila* Cell Cycle Control

Ryan Smolinsky, Senior, Biochemistry

Mentor: Gerold Schubiger, Biology

Facilitating genetics in *Acetabularia acetabulum*: efficient cryopreservation and induction of gamete release

Kevin Wherry, Senior, Biochemistry

Mentor: Dina F. Mandoli, Biology

MOVING BEYOND MICE AND FLIES: SKY-DIVING STICK INSECTS AND OTHER WILD TALES FROM THE ANIMAL KINGDOM

Session Moderator: Elizabeth Marin, Biology

Session Assistant:

Mary Gates Hall Room 284

Crawling Behavior Influenced by a Proposed Multifunctional Motor Network in *Tritonia diomedea*

Anne Darby, Junior, Biology and Physiology

Mentor: Shaun D. Cain, Friday Harbor Labs

Molecular and Limb Bud Development of the Pycnogonid *Anoplodactylus viridintestialis*

Lisa Kvalheim, Senior, General Biology

Mary Gates Scholar, Friday Harbor Research Apprenticeship

Mentor: Lynn Riddiford, Biology

Control of the Ventral Lateral Preoptic Area by the Suprachiasmatic Nucleus Circadian Clock

Rebecca Reh, Junior, Neurobiology

Mentor: Horacio de la Iglesia, Biology

Age and Task-related Neural Plasticity of the Eusocial Wasp *Polybia occidentalis*

Andrea Repetto, Senior, Zoology, Biology, and Earth & Space Sciences

Mentor: Sean O'Donnell, Psychology

Directed Aerial Descent in Tropical Stick Insect (Phasmidae: *Extatosoma*)

Yu Zeng, Visiting Junior, Biology

Mentor: Thomas Daniel, Biology

BIOENGINEERING: MATERIALS AND MOVEMENT

Session Moderator: Gerald Pollack Bioengineering

Session Assistant:

Mary Gates Hall Room 242

Design and Testing of an Antibiotic Releasing Hydrogel for use with Intraocular Lenses

Erin Anderson, Senior, Bioengineering

Mentor: Buddy Ratner, Bioengineering and Chemical Engineering

Mentor: Tueng Shen, Ophthalmology

Ex-vivo Generation of Corneal Epithelial Cell Layers on Temperature Responsive Polymer Surfaces for Use in an Artificial Cornea

Sariah Khormae, Senior, Neurobiology and Biochemistry

Mentor: Tueng T. Shen, Ophthalmology

Mentor: Buddy Ratner, Chemical Engineering, Bioengineering

Improving the microstructure and mechanical properties of chitosan-alginate composite scaffolds

James Kuo, Junior, Bioengineering and Political Science

Gates Millennium Scholar, NASA Space Grant Scholar, Mary Gates Scholar

Mentor: Narayan Bhattarai, Materials Science & Engineering

Mentor: Zhensheng Li, Materials Science & Engineering

Mentor: Miqin Zhang, Materials Science & Engineering

Effects of oscillatory flow on FimH binding

Kaoru Kusuma, Senior, Bioengineering

Mentor: Wendy Thomas, Bioengineering

“Smart” polymer micelles for targeted drug delivery

Christopher Pirie, Senior, Bioengineering

Mentor: Scott Henry, Bioengineering

Mentor: Allan Hoffman, Bioengineering

Mentor: Patrick Stayton, Bioengineering

Characterization of Osteoprotegerin-loaded hyaluronic acid hydrogels for bone regeneration

Ruth Siew, Senior, Biochemistry

Mentor: Patrick Stayton, Bioengineering

Protein Incorporation into Poly(Vinyl Alcohol) / Amino Acid (PVA/AA) Hydrogels

Zuotian Tatum, Junior, Bioengineering

Mentor: Buddy D. Ratner, Bioengineering

ADAPTATION AND ECOLOGY: GLOBAL PERSPECTIVES

Session Moderator: John Banks, Biology, Interdisciplinary Arts & Sciences, UW Tacoma

Session Assistant:

Mary Gates Hall Room 251

Molt-Migration in Western Kingbird

Jessie H. Barry, Junior, Ecology and Evolutionary Biology

Mentor: Sievert Rohwer, Biology

Enhancement of Abiotic Stress Tolerance in Poplar Trees through the Functional Analysis of a Stress-Responsive Chaperone Protein

Gregory Osborn, Senior, Cellular, Molecular and Developmental Biology

Mentor: Sharon Doty, College of Forest Resources

Does Pore Density Differ Among Magellanic Penguin (*Spheniscus magellanicus*) Eggs?

Sharmila Pal, Junior, Chemistry, Chemical Oceanography

Mentor: P. Dee Boersma, Biology

Plant Exploration and Collection in Sichuan, China

Rizantino H. Reyes, Senior, Environmental Horticulture & Urban Forestry

Mentor: Sarah Reichard, University of Washington Botanic Garden

Ecology and the Evolution of Molt Scheduling in Neotropical Migrants

Vanya Rohwer, Junior, Ecology and Evolutionary Biology

Mentor: Toby Bradshaw, Biology

Mentor: Sievert Rohwer, Biology

Magellanic Penguin Survival

Diana Thayer, Senior, Biology

Mentor: Dee Boersma, Biology

POLITICS, RELIGION, LAW, AND CULTURAL IDENTITY

Session Moderator: David Domke, Communication

Session Assistant:

Mary Gates Hall Room 278

Guilty Innocent: Covert Intervention in American Foreign Policy Over the Last Half Century

Laura Rivera Muranaka, Sophomore, Business Administration – Finance / Spanish; Jessica Ni, Junior, Biology; Vanessa R. Palmer, Sophomore, Chemistry / Biochemistry

Mentor: Dr. Roger Morris, Honors Program visiting faculty

US Foreign Policy Toward South Asia

Spencer Allen, Senior, International Studies

Tsering Dhongthog, Senior, International Studies and Political Science

Galen Erickson, Senior, International Studies

Jon Frost, Junior, International Studies and Economics

Richard Hooban, Senior, International Studies

Aurora Jones, Senior, International Studies and Spanish

Richard Knoeber Jensen, Senior, International Studies

Sonia Luthra, Senior, International Studies

Tom Stocks, Senior, International Studies

Jed Tsai, Senior, International Studies

Kayanna Warren, Senior, International Studies and Biology

Andrew Watkins, Senior, International Studies

Mentor: Anand Yang, Jackson School of International Studies

Use of Presidential Proclamations as political fodder for religious constituency groups

Mary Higdon, Senior, Communication

Mentor: David Domke, Communication

Children as American Citizens: The Fundamental Rights of Students in U.S. Law and Pedagogical Tradition

Robin Brown, Senior, Political Science, Seattle University

Mentor: Erik Olsen, Political Science, Seattle University

Japanese Textbook Controversy

Casey Parks, Junior, International Studies (Asia), Japan option

Daniel Foe, Senior, International Studies (General Track)

Grace Carroll, Senior, International Studies (Asia), Japan option; Political Science

Howard Chan, Junior, International Studies (General Track)

Niki Iglesias, Senior, International Studies (General Track)

Miho Kashimura, Senior, International Studies (General Track)
Masami Kobayashi, Senior, International Studies (Asia), Japan option
Sujin Lyu, International Studies (Asia), Japan option
Lucien Speidel, Senior, International Studies (General Track)
Mentor: Robert Pekkanen, International Studies (Asia)

NARRATIVES ABOUT POWER AND CULTURE

Session Moderator: Gerald Baldasty, Communication

Session Assistant:

Mary Gates Hall Room 248

Jewish-Arab Coexistence Narratives in Haifa, Israel

Jacob Brown, Senior, International Studies

Mentor: Joel S. Migdal, The Henry M. Jackson School of International Studies

The Dilemma of Collective Action in the Spanish Basque Region

Stacey Fernandez, Senior, Jackson School of International Studies; Community and Environmental Planning

Mentor: Gad Barzilai, Jackson School of International Studies

Racing Jewels: A Feminist Commodity Chain Analysis of Diamonds

Brendan Stewart, Senior, Women Studies

Mentor: Priti Ramamurthy, Women Studies

Framing the Middle East: An Examination and Analysis of the Photographic Portrayal of Twenty-three Countries in the Middle East appearing in Time, Newsweek and U.S. News and World Report, 2002 to 2004

Charles Whitmer, Recent Graduate, Interdisciplinary Arts & Sciences, Global Studies, UW Bothell

Mentor: Ron Krabill, Interdisciplinary Arts & Sciences, UW Bothell

The Hispanization of Wapato, WA (1907-Present)

Gonzalo Guzman, Senior, History and American Ethnic Studies

Mary Gates Scholar, Zesbaugh Scholar, McNair Scholar, NASA Space Grant Scholar, Gates Millennium Scholar

Mentor: Erasmo Gamboa, American Ethnic Studies and History

Neoliberal Globalization: United States Hegemony or Imperialism?

Joan Lee, Senior, International Studies, Seattle University

Mentor: Connie Anthony, Political Science, Seattle University

Battle Lines Drawn: The Culture War in Moscow, Idaho

Shay Colson, Senior, Comparative History of Ideas

Mentor: James Wellman, Jackson School of International Studies

SESSION II: 3:30 – 5:00

***Note: Titles and Abstracts in order of presentation.**

THEORY AND PRAXIS IN CULTURAL INNOVATION AND PRODUCTION

Session Moderator: Clarke Speed, Honors Program

Session Assistant:

Mary Gates Hall Room 284

Seahomes: Manufacturing Pre-existence

Sean Day, Recent Graduate, Comparative History of Ideas
Mary Gates Scholar
Mentor: Phillip Thurtle, History

Networking through Networking: The Intimate Connections of Mail, Artists, and the Web

Marya Dominik, Senior, Interdisciplinary Arts and Sciences, UW Bothell
Mentor: Gray Kochhar-Lindgren, Interdisciplinary Arts and Sciences, UW Bothell

Eros, Logos and Wikipedia: Postmodern Knowledge & Lyotard's Paralogy

Erik Echols, Senior, Interdisciplinary Arts & Sciences, UW Bothell
Mentor: Gray Kochhar-Lindgren, Interdisciplinary Arts & Sciences, UW Bothell

ArcheoVis: Archaeology visualization in 3D

Darien Hager, Senior, Informatics
Mentor: David Hendry, Information School
Mentor: Ben Fitzhugh, Anthropology

Paradox and Progress: Exploring Urban Culture in Amsterdam through Interdisciplinary e-Research

Belinda Luk, Senior, Cellular, Molecular, and Developmental Biology
Demi Antzoulatos, Freshman, International Studies
Christopher Blair, Junior, International Studies
Lacy Cooper, Senior, Sociology, Comparative History of Ideas
Shilpa Coorg, Sophomore, Biology
Lisa Mahlum, Junior, History
Mentor: Clifford Tatum, Honors Program

NEUROBIOLOGY: CELLULAR, STRUCTURAL, AND BEHAVIORAL STUDIES

Session Moderator: Wendy Raskind, Medicine
Session Assistant:
Mary Gates Hall Room 271

Stem Cell Regeneration in Normal Adult Human Cortex and Chemotherapy-Treated Tumor

Megan Hoane, Senior, Biology (Physiology)
Mentor: Philip Horner, Neurosurgery

Adult Neurogenesis: Tbr2 is Expressed in Neuronal Fate Determined Progenitors of the Hippocampus

Tom Kowalczyk, Senior, Neurobiology
Mentor: Robert Hevner, Pathology

Investigation of the interaction between NPC1 and human APP

Lauren Surface, Senior, Neurobiology
Mary Gates Scholar
Mentor: Leo Pallanck, Genome Sciences

Sexual Dimorphism in Brain Structure; Possible Relationships to Autism

James Wang, Senior, Bioengineering
Mentor: Stephen R. Dager, Radiology
Mentor: Veronica Smith, Radiology

Surface-based morphometric analysis of ethnic differences in three-year-old brains

John Lee, Senior, Biochemistry and Biology (Molecular, Cellular & Developmental)
Mentor: Stephen Dager, Radiology
Mentor: Veronica Smith, Radiology

A Transmission Disequilibrium Test of DCDC2 Markers in Dyslexia

Lani Chun, Senior, Biology

Mentor: Wendy Raskind, Medical Genetics

Ocular Motor Memory: The Speed of Sequence Learning

Tess Lang, Senior, Neurobiology

McNair Scholar, Howard Hughes Scholar, OMA-Boeing Scholar

Mentor: Thomas Eggert, Neurobiology

Mentor: Ric Robinson, Biological Structure

MOLECULAR MANIPULATIONS: TRANSITIONS FROM RESEARCH TO APPLICATION

Session Moderator: Ethan Allen, Nanotechnology

Session Assistant:

Mary Gates Hall Room 242

The Syntheses of Tethered Aminoalkenes as Substrates for Intramolecular Hydroamination

Thomas Weisay Chung, Junior, Chemistry (ACS Certified)

Mary Gates Scholar

Mentor: Brian M. Cochran, Chemistry

Mentor: Forrest E. Michael, Chemistry

Inter-laminar Resistance Heating: A Search for an Alternative Heating Technique for Carbon Fiber Fabrication in Industry Applications

Ben Creelman, Junior, Mechanical Engineering, Seattle Pacific University

Mentor: Lane Seeley, Physics, Seattle Pacific University

Thermal Stability of Carbon Nano-Tube Reinforced Ceramic Foams

John Morris, Senior, Materials Science & Engineering

Mentor: Rajendra Bordia, Materials Science & Engineering

Mentor: Michael Scheffler, Bavarian Center for Applied Energy Research, ZAE Bayern, Erlangen, Germany

Robust bioassay for genotoxic agents

Vanessa R. Palmer, Sophomore, Chemistry and Biochemistry

Mentor: Norman J. Dovichi, Chemistry

Mentor: Emily H. Turner, Chemistry

Crosslinked Lipid Bilayers for Cell Surface Studies

Galen Sather, Senior, Biochemistry

Mentor: Roger Michel, Bioengineering

Mentor: Esmaeel Naeemi, Bioengineering

Mentor: Michael Halter, Chemistry

Porous Titanium Fabricated Via the Protein Forming Method

Ka C Wong, Senior, Materials Science & Engineering and Economics

Mentor: Raj Bordia, Materials Science and Engineering

Mentor: Almuth Berthold, Institut für Nichtmetallische Werkstoffe, Technical University of Berlin

Mentor: Hulmet Schubert, Institut für Nichtmetallische Werkstoffe, Technical University of Berlin

Development of Cu incorporated V₂O₅ thin films and the measurement of electrical conductivities and Seebeck coefficients

Xiaohao Zheng, Junior, Materials Science & Engineering

Mentor: Fumio Ohuchi, Materials Science & Engineering

BODIES AND MEDIA: THE REMIX

Session Moderator: Philip Thurtle, Comparative History of Ideas

Session Assistant:

Mary Gates Hall Room 251

Why Birds Sing: The Science and Poetry of Birdsong

Steven Araujo, Senior, Comparative History of Ideas

Mentor: Phillip Thurtle, Comparative History of Ideas

Film History Remixed: DJ Spooky's Rebirth of a Nation

Maggie Bardacke, Recent Graduate, English

Mentor: Brian Reed, English

Documentary Film *Fellini Ungrateful Celebration*

Eric Burrirt, Senior, Cinema Studies

Mary Gates Scholar and Undergraduate Travel Award Recipient

Mentor: Professor Willis Konick, Cinema Studies

"Tall Trees": A Short Story Exploring Issues of Hope in the Capricious Modern World

Holly Johnson, Junior, Comparative History of Ideas

Mentor: Phillip Thurtle, Comparative History of Ideas

In Search of a Historical Anthropology: Cuban Filmmaking, 1990 to present.

Maiensy Sanchez, Senior, Anthropology

Ronald E. McNair Scholar; EIP Presidential Scholar

Mentor: Rachel R. Chapman, Anthropology

Singing the Body Imaginative: The Elemental Flesh in Alan Moore's *Promethea*

Jennifer Kate Stuller, Graduate, Comparative History of Ideas

Mentor: Phillip Thurtle, Comparative History of Ideas

Male Ballet Dancers in America: Exploring the Stigma of Effeminacy

Laura Umetsu, Junior Pre-Business

Mentor: Elizabeth Cooper, Dance

HORMONAL AND ENVIRONMENTAL MODULATION OF THE NERVOUS SYSTEM

Session Moderator: Martha Bosma, Biology

Session Assistant:

Mary Gates Hall Room 238

Glutamate's Role in Antinociceptive Processing within the Ventrolateral Periaqueductal Gray Matter of the Mesencephalon of the Rat

Timothy Harris, Freshman, Neurobiology and Psychology

Mentor: Michael Morgan, Psychology, Washington State University, Vancouver

VIP Signaling From the SCN May Activate Kisspeptin Neurons

Sonya Jakawich, Senior, Biology (Physiology)

Mentor: Robert Steiner, Physiology and Biophysics

Synchronous, Spontaneous Calcium Transients in Embryonic Chick Hindbrain: Characteristics and Function

Sean Hughes, Senior, Neurobiology, Danish, and Biochemistry

Mary Gates Scholar
Mentor: Martha Bosma, Biology

Identification and characterization of the anterior cardiac plexus – anterior commissural neuron 1/2 neuroendocrine system in *Cancer productus*

Erin E. Savage, Senior, Biology
Mentor: Andrew Christie, Biology

Thermoregulatory Behaviors in *Drosophila* Larvae as Hybridization Barriers

Grace Kim, Senior, Biology (Physiology) and Psychology
Mary Gates Scholar, Howard Hughes Scholar
Mentor: Raymond Huey, Biology

The Influence of Extracorporeal Shock Wave Therapy on the Rat Nervous System: a Histological and Immunohistochemical Study

Kevin Seals, Sophomore, Bioengineering
Morgan Wise, Sophomore, Biology (Physiology)
Mentor: Michael Chang, Rehabilitation Medicine

SOCIAL CONSTRUCTION OF THE URBAN

Session Moderator: Dennis Ryan, Urban Design & Planning
Session Assistant:

Mary Gates Hall Room 234

Fixing the City by Hosting a Party: North American International Mega-Events in the Post-World War II Era

Kevin Kirkpatrick, Senior, History
Mentor: John Findlay, History

Lessons from *The Jungle*

Andrew Overton, Senior, Political Science
Mentor: Roger Morris, Honors Program Visiting Faculty

Household Registration System in Viet Nam: A comparative study with China

Aimee Nguyen, Senior, International Studies
Mentor: Kam Wing Chan, Geography

Graffiti and Public Space in Seattle

Emily Fischer, Senior, Communications and Philosophy
Sarah Rosenfeld, Junior, Communications
Mentor: David Silver, Communications

Refugee Landlord Relations in the Puget Sound Region

Kimberly Logan, Senior, Political Science, Geography
Mentor: Suzanne Withers, Geography

Integrating Regional Identity and Tourism Amenities

Michael McMasters, Senior, Landscape Architecture
Mentor: Marc L. Miller, School of Marine Affairs

EPIDEMIOLOGY AND IMMUNITY

Session Moderator: Tuofu Zhu
Session Assistant:

Mary Gates Hall Room 389

Assessing the Impact of Male Circumcision as an HIV Intervention Strategy

Jeff Eaton, Senior, Sociology and Mathematics

Mary Gates Scholar

Mentor: Samuel J. Clark, Sociology

Immunological Evidence of HIV-1 CTL Escapes in Monocytes and T Cells

Leah Michelle Hampson, Senior, Microbiology

Mentor: Tuofu Zhu, Laboratory Medicine

Investigation of Dual and Low HIV-1 Infection

Blythe McLoughlin, Senior, Microbiology

Mentor: Tuofu Zhu, Laboratory Medicine

Protein phosphorylation and aggressiveness in prostate cancer

Alison Oakes, Senior, Biology

Mentor: Beatrice Knudsen, Pathology

Hepatitis C: An Epidemiological Profile

Bethany Samuelson, Senior, Biology, Seattle Pacific University

Mentor: Derek Wood, Biology, Seattle Pacific University

Simple and Accurate Thyroglobulin Measurements for All Patients: Overcoming the Limitations of Thyroglobulin Autoantibodies

Lianna Wood, Senior, Chemistry and History

Mentor: Andy Hoofnagle, Laboratory Medicine

Mentor: Mark Wener, Laboratory Medicine

Breakthrough HIV-1 in Late Seroconverters

Amanda Woodward, Junior, Cellular, Molecular and Developmental Biology

Mentor: Tuofu Zhu, Laboratory Medicine

COMPUTING FOR THE BENEFIT OF HUMANKIND

Session Moderator: Richard Ladner, Computer Science and Engineering

Session Assistant:

Mary Gates Hall Room 287

TEASE (Tree EASE) Algorithm Implementation in TIGR MeV 3.1

Annie Liu, Junior, Computer Engineering

Mary Gates Scholar

Mentor: Roger Bumgarner, Microbiology

A Model for Assessing the Quality of Online Medical and Health Information

Grace Preyapongpisan, Senior, Informatics

Amelia Lacenski, Senior, Informatics

Mentor: Wanda Pratt, Biomedical and Health Informatics and The Information School

Real Time Conversation Detection in Dynamic Social Networks

Veneta Tashev, Senior, Computer Science

Mentor: Henry Kautz, Computer Science & Engineering

Predicting Information Flow through Blogspace

Jack Hebert, Junior, Computer Science and Engineering

Mentor: Dan Weld, Computer Science and Engineering

A Structure Editor for Diagnostic Educational Assessment

Cy Khormae, Senior, Computer Science

Mentor: Steven Tanimoto, Computer Science & Engineering

**THE SCIENCE OF LOVE AND THE POLITICS OF NATIONALISM:
EXPLORATIONS IN MODERNISM, BUDDHISM, MEDIEVALISM, FEMINISM,
AND NATIONALISM**

Session Moderator: Shawn Wong, English

Session Assistant:

Mary Gates Hall Room 295

Joyce's Ulysses: Newton, Nationalism, and the New Science of Love

Jean Bessette, Senior, English, Seattle University

Mentor: Edwin Weihe, English, Seattle University

Reproducing and Resisting Racial and Gendered Nationalism in *Comfort Woman*

Anne Kim, Senior, English and International Studies

Mentor: Alys Weinbaum, English

Calypso: Chronicling Afro-Caribbean Culture from Engagement to Emergence

Koreen McLeod, Senior, Social Welfare

Mary Gates Scholar

Mentor: Brian Reed, English Department

Buddhist Abhidharma and the Soteriological Implications of *Jñāna*

Robert Mullen, Senior, International Studies and Asian Languages & Literature

Mentor: Collett Cox, Asian Languages & Literature

War Horses in Medieval Rajput Poetry

Elizabeth Thelen, Senior, Asian Languages & Literature and Comparative History of Ideas

Mary Gates Scholar

Mentor: Michael Shapiro, Asian Languages & Literature

The Language of Fiction: Meaning without Essence

David Tracy, Senior, English

Mentor: Brian Reed, English

The Government “*Die wie ein Alp auf meine Seele lag*”: Imperial Politics and Feminist Discourse in German Southwest Africa in Ada Cramer’s *Weiß oder Schwarz*

Julia Voss, Senior, English, History, Seattle University

Mentor: Hazel Hahn, History, Seattle University

NEXT GENERATION OF BIOMEDICAL DEVICES AND THERAPIES

Session Moderator: Rajendra Bordia, Materials Science and Engineering

Session Assistant:

Mary Gates Hall Room 231

***Listeria monocytogenes* Mediated Polyplex Delivery**

Jingyang Chen, Senior, Bioengineering

Mentor: Suzie Pun, Bioengineering

Mentor: James Bryers, Bioengineering

Synthesis and Characterization of Chitosan-Methotrexate/Folic Acid Nanoparticles for Targeted Drug Delivery

Benjamin S. Davis, Junior, Biology (Physiology)
Mentor: Miqin Zhang, Material Science and Engineering

Increasing the Efficiency of Chemotherapy for Brain Tumors

Nathan Chin, Senior, Biochemistry
Rachel Sparks, Senior, Bioengineering
Pierre Mourad, Neurosurgery

High Intensity Focused Ultrasound Mediate Blood Brain Barrier Opening

Sparks, Rachel, Senior, Bioengineering
Mentor: Pierre Mourad, Neurosurgery and Applied Physics Lab

An Annular Phased-Array High Intensity Focused Ultrasound Device for the Treatment of Uterine Fibroids

Kenneth Foerster, Senior, Bioengineering
Mentor: Shahram Vaezy, Bioengineering

Close Approach Noise Analysis for MRFM Design and Targeting

Christian K. Kikuchi, Senior, Bioengineering
Mentor: John Sidles, Orthopaedics and Sports Medicine

PEOPLE, WATER, AND HEALTH

Session Moderator: Michael Kucher, Interdisciplinary Arts and Sciences, UW Tacoma
Session Assistant:

Mary Gates Hall Room 228

Marine Debris Distribution on the Washington Coast

Truda Peters, Senior, Biology and Aquatic and Fishery Sciences
Mentor: Julia Parrish, School of Aquatic and Fishery Sciences

Shipbreaking at Alang, India

Julie McElroy-Brown, Senior, Interdisciplinary Arts & Sciences, UW Tacoma
Mentor: Michael Kucher, Environmental Studies, Interdisciplinary Arts & Sciences, UW Tacoma

Improving Harmful Algae Monitoring to Reduce Health Risks and Economic Impacts in Puget Sound, Washington.

Joseph Nelson, Junior, Environmental Health
Mentor: Elaine Faustman, Environmental and Occupational Health Sciences

Consumer Perspectives on the Web of Causality within the Marine Aquarium Fish Trade

Breck A. McCollum, Junior, Aquatic and Fishery Science
Mentor: Patrick Christie, Ocean and Fishery Science

Fate of EE2 in drinking water disinfection

Zhang Yaofu, Junior, Environmental Engineering
Junhe Lu, Recent Graduate, Civil and Environmental Engineering
Mentor: Gregory V. Korshin, Civil and Environmental Engineering

FERTILITY, FLIES, FLUORESCENCE, AND MORE!

Session Moderator: Erica Smith, Biochemistry
Session Assistant:

Mary Gates Hall Room 288

Star-Net: Student-Scientist-Researcher Network Investigating the Effects of Genes and the Environment on Smoking Behavior

Ce'Nendra Martin, Junior, Microbiology
Mentor: Maureen Munn, Genome Sciences

Speciation and Human Infertility: Filling the Gap in the Fertilization Cascade

Margo Haney, Junior, Molecular, Cellular, and Developmental Biology

Mary Gates Scholar, NASA Space Grant Scholar

Mentor: Willie Swanson, Genome Sciences

Integrin in Tubulogenesis

Janice Chen, Senior, Biochemistry and Biology (Cellular and Molecular)

Mentor: Celeste A. Berg, Genome Sciences

Cell Scaffolding: Effects of SPARC on Cell-Matrix Interactions in Lens and Retina

Julia Mattson, Senior, Neurobiology

Mary Gates Scholar

Mentor: John I. Clark, Biological Structure

Protein Fingerprint for Breast Cancer Cells Using SDS PAGE and Capillary Electrophoresis

Joan Bleecker, Junior, Chemistry and Biochemistry

Mentor: Norman Dovichi, Chemistry

Folding Specificity of Homologous Nucleotide Binding Domains

Jessica Marie Smith, Sophomore, Chemistry and Biochemistry

Mentor: Beth Traxler, Microbiology

A Fluorescent, Non-Radioactive Approach to Visualization of ds-DNA and Protein Interactions

Jun Amora, Junior, Neurobiology and Biochemistry

Mentor: James Bassuk, Department of Biological Structure and School of Medicine - Urology

**APPLICATIONS AND ALGORITHMS FOR MODERN METHODS OF
MATHEMATICS**

Session Moderator: J. Nathan Kutz, Applied Mathematics

Session Assistant:

Mary Gates Hall Room 278

Slow scale parameter evolution of soliton solutions to the perturbed Nonlinear Schrödinger Equation

Norris Hawk Berry, Senior, Applied & Computational Mathematical Sciences and Physics

Mentor: J. Nathan Kutz, Applied Mathematics

Averaged models for passive mode-locking using nonlinear mode-coupling

Joshua Proctor, Senior, Aeronautics & Astronautics and English

Mentor: J. Nathan Kutz, Applied Mathematics

Nonlinear Mode Coupling in Dual Core Fibers and Waveguide Arrays: Theory and Applications

Kimberlee Shish, Senior, Aeronautics & Astronautics

Mentor: J. Nathan Kutz, Applied Mathematics

SpectrUW : a laboratory for the numerical exploration of spectra of linear operators.

Firat Kiyak, Junior, Computer Engineering

Mentor: Bernard Deconinck, Applied Mathematics

Geometry optimization with a modified downhill simplex method

Robert Snoeberger, Senior, Chemistry, Mathematics

Mentor: Xiaosong Li, Department of Chemistry

Connections and Critical Edges

Kyotaro Hemmi, Junior, Mathematics

Mentor: Hong Qian, Applied Mathematics

Exploring Homological Algebra: Applications of Quillen's Structure Theorem

Eliana Hecter, Senior, Mathematics

Mentor: John Palmieri, Mathematics

FROM EARTH TO UNIVERSE: MODELING, MATTER, AND INTERACTIONS

Session Moderator: Gerald Seidler, Physics

Session Assistant:

Mary Gates Hall Room 248

Sedimentary Structures in the Upper Kingston Peak Formation: Implications for Snowball Earth Environments

Jesse Einhorn, Senior, Earth & Space Sciences

Mentor: Darrel Cowan, Earth & Space Sciences

Modeling Martian Lee Wave Clouds

Christopher Glein, Senior, Chemistry

NASA Space Grant Scholar

Mentor: Stephen Wood, Atmospheric Sciences

Mentor: David Catling, Atmospheric Sciences

Mentor: David Montgomery, Earth and Space Sciences

Torsion Pendulum Axion Search: Addressing the Strong CP Problem

Daniel Schultheis, Junior, Physics, Mathematics

Mentor: Eric Adelberger, Physics

Mentor: Seth Hoedl, Physics

Extended Calibration of Photometric Metallicities in SDSS

Adam Kobelski, Senior, Astronomy, Physics

Caleb Matthiesen, Senior, Astronomy, Physics

Michael Schmieding, Senior, Astronomy, Physics

Mentor: Chris Laws, Astronomy

Mentor: Suzanne Hawley, Astronomy

Indium Abundances in Solar Neighborhood Stars

Suzanne Hayward, Junior, Physics and Astronomy

Mentor: Chris Laws, Astronomy

Mentor: Suzanne Hawley, Astronomy

Modeling KH 15D: A Pre-Main-Sequence Binary

Devin Silvia, Junior, Astronomy and Physics

NASA Space Grant Scholar

Mentor: Eric Agol, Astronomy

LISA Small Forces Investigation

Michael Nickerson, Senior, Physics

Mary Gates Scholar

Mentor: Jens Gundlach, Physics