28th ANNUAL ROBYN RAFFERTY MATTHIAS STUDENT RESEARCH CONFERENCE
American University | March 24, 2018
The annual College of Arts and Sciences student research conference, now in its 28th year and funded in part by a generous grant from AU trustee and alumna Robyn Rafferty Mathias, provides a forum for College undergraduate and graduate students to present original scholarly and creative works before colleagues, faculty, and friends.
PAPER PRESENTATIONS

SESSION ONE: 9:00–10:30 AM

Gender Matters? Katzen 123 2
The Forgotten One Katzen 210 2
Here Comes the Wave Katzen 112 3

SESSION TWO: 10:45 AM–12:15 PM

Memorializing and Forgetting Katzen 123 4
Close Readings Katzen 210 4
Data Makes the World Go Round Katzen 112 5
The Stuff We’re Made Of Katzen 115 5

SESSION THREE: 1:45–3:15 PM

Performances Katzen 151 7
Foreign and Religious Encounters Katzen 123 7
Women Represent Katzen 210 8
For the Health of It Katzen 115 8
This is Who We Are Katzen 112 9

SESSION FOUR: 3:30–5:00 PM

Value Explorations Katzen 112 10
Eye and Mind: Perception and Knowledge Katzen 115 10
A Brief History of the World Katzen 123 11
Teach the Children Well Katzen 121 11

POSTER PRESENTATIONS

PLAZA HALLWAY | 11:00 AM–2:00 PM

Biomedical 12 Health Studies 16
ICORPS 14 Psychology 17
Chemistry 14 Sociology 18
Physics 15 Economics 18
Math 15 Education 18
Behavioral Neuroscience 15 Art History 19
Neuroscience 15 Graphic Design 19
Environmental Science 16
SESSION ONE

Gender Matters?
Katzen 123

Consuming Transgression: Reflecting Social Change through Cinematic Food
Jacqueline Bennett, Senior, Film and Media Studies and Literature

The Self-identity of Human Kinds
Stephen Masson, MA Candidate, Philosophy

What Role Does Makeup Play in Society?
Veronica Salas, MFA Candidate, Studio Art

Endometriosis: Gendered Pain
Lee Clyne, Senior, Psychology and Women’s, Gender, and Sexuality Studies

The Forgotten Ones
Katzen 210

The Revolution Began that Day in Hyde Park: Public Demonstrations During "The Great Communist Trial of 1925"
Nathan Moore, PhD Candidate, History

A Radical Defense: Redefinition of Anti-Capitalism within the Civil Rights Movement
Madeleine Chilton, Senior, History

The Secrets We Keep: Women, Political Agency, and Espionage in the American Revolution
Afreen Tharani, Senior, History

Justice in the Age of Caesar
Amanda Coker, Senior, History

Psychopathy as a Form of Moral Agency
Alexandra Zeiger, MA Candidate, Philosophy
Christopher Hacnik, Senior, Music and History

Here Comes the Wave
Katzen 112

Benthic Habitat Mapping Using Backscatter Sonar Data
Carly Laroche, Senior, Environmental Science

Elastic Simulation and Laboratory Characterization of Percussive Instruments
Fangfei Lan, BS December 2017, Mathematics and Computational Science
Robert Green, Senior, Mathematics
Gregory Young, MS December 2017, Statistics

Infinite Tapestries: Fractal Patterns from Simple Recurrences
Richard Laurberg, MA Candidate, Mathematics

A Chemical Portrait of Comet 252P/LINEAR via Infrared Observations with the Keck Observatory
Maria Camarca, Non-Degree Undergraduate
SESSION TWO

Memorializing and Forgetting
Katzen 123

Confronting Atomic Histories at the Manhattan Project National Park
Julie Hawks, PhD Candidate, History

"Nine-One-One": A Study of Two Individual Remembrances of September 11, 2001
Rebecca Brenner, PhD Candidate, History

Between Rome and Jerusalem: Imperialism and Egyptian Jewish Society
Walter Francis Jr, Senior, History and Public Relations & Strategic Communication

The Bomb and the Media: The Evolution of Post-War Reactions to the Atomic Bomb
Connor Carlson, Senior, History

Close Readings
Katzen 210

A Deeper Dive into the Ongoing Discussion on What "Latinx" Includes
Stacie Sampson, MA Candidate, Spanish: Latin American Studies

Solving "Benito Cereno"
Liam Kelsey, Senior, Literature

"Samson Agonistes" as John Milton's Call for Revolution
Catherine Baker, Senior, Literature

Transgression and the Grotesque in Kundera and Hrabal
Brittany Jones, Senior, Literature

Lust, Lineage, and Love Potions: Sex in the Harry Potter Series
Jamie Driscoll, Senior, Women's, Gender, and Sexuality Studies
Ambrogio Lorenzetti's Allegory of Good Government frescoes and the Influence of Lucretius' De rerum natura
Amanda Chadbourne, MA Candidate, Art History

**Data Makes the World Go Round**
Katzen 112

Biological Networks and Generative Graphs
Eyerusalem Abebe, MS Candidate, Biostatistics

Topological Properties of Bayesian Networks
Metin Toksoz-Exley, MA Candidate, Mathematics

Evolutionary Superlearning: A Biologically Inspired Machine Learning Approach
Michael Krause, MS Candidate, Statistics

The Nexus of Video Games, Social Media, and Harassment
Aspen Russell, Senior, Computer Science

Statistical Change Point Detection in Market Stock Prices
Gemei Li, Senior, Statistics

Impact of Menthol in Cigarettes on Smoking Topography and Short-term Abstinence in White and African American Smokers
Tommy Gunawan, PhD Candidate, Behavior, Cognition, and Neuroscience

**The Stuff We're Made Of**
Katzen 115

Discovery of the First Germline-restricted Gene by Subtractive Transcriptomic Analysis in the Zebra Finch Taeniopygia guttata
Kathryn Asalone, PhD Candidate, Behavior, Cognition, and Neuroscience

Investigating the Repression of Fate Specifying Genes in Stem Cells
Maryam Yamadi, Senior, Biochemistry
Core-shell MOF-polymer Derived Co Nanoparticles integrated with N-doped Carbon as High-efficiency Catalyst for Oxygen Reduction Reaction in Alkaline Solution
Rani Zierath, Junior, Biochemistry

"Committed to Jail": The Carceral State and Re-enslavement in the Upper South, 1657-1865
Casey Culhane, Senior, Biochemistry
SESSION THREE

Performances
Katzen 151

"Of Two Minds"
Sergio Guerra Abril, Junior, Mathematics and Dance

Shakespeare is a White Supremacist: A Framework for Investigating Race
Seth Andrew Watring, Senior, Theatre and Secondary Education

gramFX
Marie Rios, MA Candidate, Audio Technology

Foreign and Religious Encounters
Katzen 123

Preaching to the Choir: The Dialogue Surrounding the Conflicts in Ireland from 1912-1922 by Catholic and Protestant Church Leaders
Amanda Rodriguez, Senior, History

Immersive Theatre as Christian Liminality
Natalie Rine, Senior, Theatre

Rise and Fall of the Qing Frontier System
Wing Long Lam, Senior, History and Asian Studies

The Perceptive Americans: William J. Lederer and Eugene Burdick
Laura Gibson, PhD Candidate, History

Aaron Copland’s Musical, Diplomatic, and Philosophical Relations with Russia
Amanda Hodes, Senior, Music and Literature
Women Represent
Katzen 210

An Honest Truth: Broncia Koller's "Marietta" as "Nuda Veritas" Revisited
Olivia Rettstatt, MA Candidate, Art History

Ava DuVernay and the Rise of the Auteurpreneur
Kristen Dalton, MFA Candidate, Creative Writing

"Bad Sisters" or Black Feminists?: A Comparative Analysis Between Black Feminism and Female Hip Hop Artists
Stephanie Osber, Senior, History and Psychology

Exemplars of Separation: Confinement Room Scenes on Renaissance Birth Trays in Opposition to Madonna Lactans
Laura Ryan, MA Candidate, Art History

The Embodied Camera: Point Break, Gaze Theory and Homoeroticism
Sam Pond, Senior, Literature

For the Health of It
Katzen 115

Healthcare Access in the West Bank
Rachael Fugardi, Senior, Justice and Law

Did You Take Your Park Prescription Today? A Health Promotion Case Study of the Social Media Presence and Socio-ecological Impact of the National ParkRx Movement
Kendra Barat, Senior, Health Promotion

Breastfeeding Awareness Among Mothers of Udupi Taluk
Krishnendu Mangal, Junior, Public Health

An Examination of Access to Menstrual Hygiene Products Among Adult Women in Washington, D.C. Homeless Shelters
Maria Esposito, Senior, Public Health
SESSION THREE: 1:45–3:15 PM

**This is Who We Are**

*Katzen 112*

**Pidgin Identity: Visibility in Hawaii through Blu’s Hanging and Rolling the R’s**
*Maile Young, Senior, Public Health and Literature*

**Mass Incarceration of the Black Woman: A New Stage of Chattel Slavery**
*Rebecca Joy O’Shea, Senior, Anthropology*

**George Michael and Queer Performances of Masculinity**
*Sarah Everett, Senior, Political Science and American Studies*

**Female Transportation Service as a Tool for Gender Equality: A Case of San Salvador**
*Anri Hiramatsu, MA Candidate, Public Anthropology*

**Legal Origins Theory: Applications to Inequality in Sub-Saharan Africa**
*Robin Merse, MA Candidate, Economics*

**Economics, Perception, and Identity Politics in Fayette County, Pennsylvania**
*Nathaniel Edenfield, Senior, Economics*
SESSION FOUR

Value Explorations
Katzen 112

Empathy in the Age of Emotional Intelligence: What Businesses Can Learn From Frederick Douglass and Emily Dickinson
Kristen Dalton, MFA Candidate, Creative Writing

"Women and War": Expressions and Critiques of Pacifism
Emily Surman, Senior, History and Secondary Education

The Use and (Potential) Abuse of Hawthorne’s Empathy
Morgan Harris, Senior, Justice and Law

Tea and Tories: The Importance of Social Networks for Female Loyalists
Cristina Tejada, Senior, History

Eye and Mind: Perception and Knowledge
Katzen 115

An American in Greenland: Turn-of-the-Century Arctic Visions by Frank Wilbert Stokes
Hannah Fitch, MA Candidate, Art History

Binocular Disparity: Framing Parisian Tourism through Monet’s and Seurat’s Normandy Landscapes
Paul Blakeslee, MA Candidate, Art History

The Tropics of The Real: Going Live With The Spy In The Wild
Jack Anthony, Non-Degree Graduate, Audio Technology

The Water and The Well: Technology, Subjectivity, and the Alteration of Time in "Twin Peaks"
Patrick Hooks, Senior, Literature
SESSION FOUR: 3:30–5:00 PM

A Brief History of the World
Katzen 123

Political, Practical, or Popular? The Design Choices of Seville Cathedral
Philip Ellis, Senior, International Studies

"Pleasing Allah" while "Obsessed with Frank Ocean": Negotiations of Music and Islam in the West
Joshua Kerobo, Senior, International Studies and Music

Hobbits and Hominins: Science Fiction as an Evolutionary Framework
Kendell Lincoln, Junior, Public Health

The Forgotten Agreement: The Hay-Pauncefote Treaty and the Rise of America as a Great Power
Brian Thomas, Senior, Political Science and History

Teach the Children Well
Katzen 151

The Economic Impact of Psychological Distress on Former Child Soldiers
Jonathan Kaufmann, Senior, Computer Science

The Impact of Institutional Agents: A Survey of a Local College Support Program Through a Community Based and Sociological Lens
Diego Aleman, Senior, Sociology

The Online Friendship Frontier
Maxine Hillman, MA Candidate, Sociology Research and Practice

Multi-Disciplinary World Building and Application
Stephen Jacobson, Senior, Film and Media Arts
POSTER SESSION

Biology
Plaza Hallway

Laboratory-based Assessment of Anacostia River Contaminants
William Jessup, MS Candidate, Biology

Laboratory Based Assessment of Anacostia River Contaminants
Jenna Wiegand, Senior, Environmental Science

Reward Signaling in Rat Frontal Cortex
Linda Amarante, PhD Candidate, Behavior, Cognition, and Neuroscience

Effects of Time to First Feeding and Opportunity to Learn on the Survival and Growth of Zebrafish (Danio rerio) Larvae
Emma Lucore, MS Candidate, Biology

Examining the Relationship Between Type II Diabetes, Alzheimer’s Disease and Notch Protein Expression in Transgenic Zebrafish
Juliana Delgado, Senior, Biology
Elizabeth Schott, Senior, Biology

Differential Response to UV-C Exposure in Cave and Surface Populations of Gammarus minus
Moriah Mitchell, Senior, Interdisciplinary Studies: Mathematical Epidemiology

Fishtail Banding: A Novel Method of Individual Zebrafish Identification
Mikayla Crowley-Perry, Non-Degree Graduate, Premedical Certificate

Using the Blood-Retina Barrier (BRB) to Predict Neurochemical and Cognitive Changes in the Blood-Brain Barrier (BBB) in Hyperglycemic Zebrafish.
Cassie Gould, PhD Candidate, Behavior, Cognition, and Neuroscience
Photoreception and the Role of Serotonin on Photobehavior of Gammarus minus  
Melissa Doot, MS Candidate, Biology

Effects of Behavioral Strategies on Performance in a Two-Armed Bandit Task  
Kyra Swanson, PhD Candidate, Behavior, Cognition, and Neuroscience

Physiological and Behavioral Effects of Riluzole Exposure in SOD1G93R Zebrafish  
Karli Wensel, MS Candidate, Biology

Exploring the Social Histories of D.C. OCME Decomposition Cases in 2016  
Ajayi Pickering-Haynes, Junior, Biology

The Role of MET in Tpl2-related Skin Cancer  
Nicole Bonan, MS Candidate, Biology

DNA Methylation Establishes a Differentiation-vs-renewal Fate Balance in Human Adipose-derived Stem Cells  
Emily Paffhausen, Senior, Public Health

The Role of Alternative RNA Splicing in Plant Growth and Development  
Taylor Hendrickson, Senior, Biology
ICORPS
Plaza Hallway

Texcite
Yangqiansu Cao, Senior, International Studies
Sarah Givens, Junior, International Studies
Lindsay Reesing, MA Candidate, Ethics, Peace & Global Affairs

Sand Scan - NSF iCorps Program
Matthew Mullin, Senior, Environmental Studies

Medical Tube Securing Bite Block
Irena Volkov, Senior, Neuroscience

Customer Discovery for the Commercialization of HRTF Technology
Samantha Hepworth, Senior, Business Administration

Chemistry
Plaza Hallway

Structural Characterization of Amino Acid Synthesized Gold Nanoparticles
Maryam Yamadi, Senior, Biochemistry

Docking-Based Virtual Screening: Probing Its Applicability to GPCR Models
Austin Cohen, Senior, Biology

Preparation of Cellulose Nanocrystalline/acrylonitrile-butadiene-styrene Nanocomposites
Noy Kaufman, Senior, Biochemistry

Surface Modification of CNC for polylactic acid
Dominique Brager, Senior, Chemistry

Carbon Nanomaterials for Enhanced Neurotransmitter Detection
Alexander Mendoza, Senior, Neuroscience

Synthesis of Lecithin: Cholesterol Acyltransferase Small Molecule Modulators
MacKenzie Kelley, Senior, Biochemistry
Exploration of New Class of Antiviral Compounds
Nicole Barnes, Senior, Biochemistry and Psychology

Carbon-Fiber Microelectrodes for Neurotransmission Detection
Pauline Wommenberg, Senior, Biochemistry
Sanuja Mohanaraj, MS Candidate, Chemistry

Visualization Tool for Particle Acceleration in Simulated Eruptive Solar Flares
Shams El-Adawy, Senior, Physics and French Studies

Oncogenic Pathways and Iron Phenotypes in Breast Cancer
Viktor Belay, Senior, Mathematics and Physics
Sergio Guerra Abril, Junior, Mathematics and Dance
Linoy Kotler, Junior, Mathematics and Physics
Jacqueline Adams, Senior, Mathematics

Individual Variability in Response to Cerebellar tDCS
Madison Prieto, Senior, Neuroscience

How Artificial Sweeteners Promote Intake: It's What You Think
Emily Krusche-Bruck, Senior, Musical Theatre and Psychology

Outcomes of Early Cerebellar Injury in Preterm Infants
Rachel Weger, Senior, Neuroscience
Environmental Science

Plaza Hallway

Analysis of Microplastic Counts in a Sediment Core of the Washington Channel
Xena Itzkowitz, Senior, International Studies and Environmental Studies

Investigating Radium Isotope Activities and Activity Ratios in Marcellus Shale Streams
Abigail Dias, Senior, Environmental Science

Assessing the Effectiveness of Urban Gardens as Green Infrastructure in the Washington, D.C. Area
Harrison Hyde, Senior, Environmental Science
Gwynn Pollard, Senior, Environmental Studies

Health Studies

Plaza Hallway

Antibody Detection of Autoantigens (MOG & AQP4) Using an Electrochemiluminescence Assay for Neuromyelitis Optica Spectrum Disorder (NMOSD)
Melanie Delgado, Senior, Public Health

Health Information and Sexual Minority Women
Lorraine Twohey-Jacobs, Senior, Public Health and Statistics

Prevalence of Celiac Disease in South Asia
Gurpreet Kaur, MS Candidate, Health Promotion Management

Sudanese Health Professionals Perceptions of Health, Illness, and Quality Care
Bayadir Mohamed-Osman, Senior, Public Health

Response of D.C. Food Policy Council on the Burden of Unequal Access to Nutritious Food as a Risk Factor for Cardiovascular Disease Among Low-income Households in Washington, D.C.
Lyna Merzoug, MS Candidate, Health Promotion Management
POSTER SESSION: 11:00 AM–2:00 PM

Psychology
Plaza Hallway

The Effects of Lifelong Western Diet Exposure on the Affective Properties of Cocaine in Male Sprague-Dawley Rats
Thery Sanon, Senior, Psychology

Pregnenolone Inhibition and the Affective Properties of δ9-Tetrahydrocannabinol
Madeline Crissman, Senior, Psychology

The Impact of Cigarette Availability and Stimuli on Smoking Choice and Motivation
Naomi Stahl, PhD Candidate, Clinical Psychology

Stress Mindsets
Liliana Zigo, Senior, Psychology

The Effects of Cerebellar tDCS on Motor Learning and Brain Activation Patterns
Stephanie Martin, Senior, Neuroscience

The Effects of Daily Caffeinated Energy Drink Use and Caffeine Abstinence on Sleep Among Young Adults
Kristina Murani, PhD Candidate, Clinical Psychology

Effect of Active Electrode Position on Brain Activation After Cerebellar tDCS
Laura Blevins, PhD Candidate, Behavior, Cognition, and Neuroscience

The Effect of Self-Efficacy on the Relationship between Smoking Behaviors and Looming Vulnerability Induction Among Daily Adult Smokers
Lisa Torres, Senior, Psychology

Effects of Cerebellar tDCS on Social Prediction: A tDCS-fMRI Study
Alyssa Lillian, Senior, Neuroscience
Stereoselective Effects of the Second Generation "Bath Salt" α-pyrrolidinopentiophenone (α-PVP): Assessments of Taste Avoidance, Thermoregulation, Motor Activity and Stereotypies
Peter To, Senior, Biology
Hayley Manke, Junior, Psychology and Justice and Law

**Sociology**
Plaza Hallway

Storytelling for a Change: The Power of the Narrative in Campus Inclusivity
Swati Guin, Senior, Sociology

One Pulse? Impacts at the Intersections of Difference for Survivors of a Mass Shooting
Rachel McLeod, MA Candidate, Sociology Research and Practice

Death Row Narrative - Mental Health Coping on Death Row Using Inmate Blogs
Jacqueline Lantsman, Junior, Public Health

**Economics**
Plaza Hallway

Can Data Analysis Bring Back Gender Justice?: Critical Approaches to Headship Data
Stephan Lefebvre, PhD Candidate, Economics

**Education**
Plaza Hallway

The Impact of SEL on Student Outcomes in D.C. Public Schools
Sean Miller, MEd Candidate, Education Policy and Leadership
POSTER SESSION: 11:00 AM–2:00 PM

Art History
Plaza Hallway

The Father of Chinese Modern Painting
Xiaoyu Fang, MA Candidate, Art History

Graphic Design
Plaza Hallway

Modern Coal Country
Carolyn Thaw, Senior, Graphic Design