



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

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SESSION TWO: 10:45 AM–12:15 PM

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Eye and Mind: Perception and Knowledge	Katzen 115	10
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Teach the Children Well	Katzen 121	11

POSTER PRESENTATIONS

PLAZA HALLWAY | 11:00 AM–2:00 PM

Biomedical	12	Health Studies	16
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SESSION ONE: 9:00–10:30 AM

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

SESSION ONE: 9:00–10:30 AM

“Nothing Less Will Do”: How the New York Political Class Criminalized Addiction on the Eve of the US War on Drugs, 1959-1973

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: 10:45 AM-12:15 PM

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

SESSION TWO: 10:45 AM-12:15 PM

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

SESSION TWO: 10:45 AM-12:15 PM

**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: 1:45–3:15 PM

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

SESSION THREE: 1:45–3:15 PM

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 Udipi 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: 3:30–5:00 PM

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: 11:00 AM–2:00 PM

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

POSTER SESSION: 11:00 AM–2:00 PM

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

POSTER SESSION: 11:00 AM–2:00 PM

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

POSTER SESSION: 11:00 AM–2:00 PM

Exploration of New Class of Antiviral Compounds
Nicole Barnes, Senior, Biochemistry and Psychology

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

Physics

Plaza Hallway

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

Math

Plaza Hallway

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

Behavioral Neuroscience

Plaza Hallway

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

Neuroscience

Plaza Hallway

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

POSTER SESSION: 11:00 AM–2:00 PM

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 Δ^9 -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

POSTER SESSION: 11:00 AM–2:00 PM

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



COLLEGE *of* ARTS & SCIENCES
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