



**29<sup>th</sup> ANNUAL  
ROBYN RAFFERTY MATHIAS  
STUDENT RESEARCH  
CONFERENCE**

American University  
March 30, 2019

The annual College of Arts and Sciences student research conference, now in its 29<sup>th</sup> 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

<b>American as Apple Pie: Racism in the USA</b>	Katzen 112	1
<b>Spotlight on the Middle East</b>	Katzen 115	2
<b>Byways in the Brain</b>	Katzen 123	3
<b>Media, Misinformation, and Social Justice</b>	Katzen 128	3
<b>We're in the Money</b>	Katzen 151	4
<b>Take Care of Each Other</b>	Katzen 210	5

### SESSION TWO: 10:45 AM–12:15 PM

<b>Black Lives in the DMV</b>	Katzen 112	6
<b>Who Am I? Identities in Popular Culture</b>	Katzen 115	7
<b>Communism and the Cold War</b>	Katzen 123	7
<b>Reflections in Television</b>	Katzen 128	8
<b>PQRS</b>	Katzen 151	8
<b>From Marshes to Molecules</b>	Katzen 210	9

### SESSION THREE: 1:45–3:15 PM

<b>Living Just Enough For the City</b>	Katzen 112	10
<b>Open to Interpretation: Literary Meaning</b>	Katzen 115	10
<b>Not Written in Stone</b>	Katzen 123	11
<b>Womanhood Past and Present</b>	Katzen 128	11
<b>The Arts</b>	Katzen 151	12
<b>Painting Politics</b>	Katzen 210	13

## POSTER PRESENTATIONS

### PLAZA CORRIDOR | 11:00 AM–2:00 PM

<b>Social Sciences</b>	14
<b>Public Health</b>	15
<b>Neuroscience</b>	16
<b>Biology</b>	18
<b>Environmental Science</b>	18
<b>Math and Physics</b>	19

## Session One

### **American as Apple Pie: Racism in the USA**

Katzen 112

**Tackling Racism and Sexism in American Football**

Caroline Kish, Junior, American Studies and Philosophy

**Visions of Violence: Facing the Erasure of Bethesda's Black Burial Ground**

Delande Justinvil, PhD Candidate, Anthropology

**A Critical Race Theory Approach to Early 20th Century Conservation Movement**

Faith Ashmore, Senior, History

**"Nonsense Mouthed by the Liberal Media:" the Boston Busing Crisis and Conservative Activism**

William Helfrich, Senior, Economics and History

**Post-Racial and the Problem of Mixed Race Literature**

Kira Bunkholt, Junior, Literature and Secondary Education

**A Curious Race: The Oppressive Politics of White Curiosity**

Stephen Masson, MA Candidate, Philosophy

## **Spotlight on the Middle East**

Katzen 115

**Historical Intentions of ARAMCO World**

Eleanor Dacier, Senior, Arab World Studies

**Religion in Crisis: The Effects of the Arab Spring on Religious Minorities in Syria**

Noelle Burke, Senior, Arab World Studies

**Analysis of Proposed Anti-BDS Legislation and Its Implications for American Imperial Trends**

Savannah Soter, Senior, International Studies and Arab World Studies

**Arab American Identity Formation via Language Regulation**

Sydney Zamudio, Senior, Arab World Studies and Arabic Studies

## **Byways in the Brain**

Katzen 123

**The "Aha" in the Revelation Effect**

Sara Wong, Junior, Psychology

**Cognitive Processes and Gesturing During Spatial Thinking**

Christine Bresnahan, PhD Candidate, Behavior, Cognition, and Neuroscience

**The Cerebellum Modulates the Acquisition of Social Information in Autism**

Laura Blevins, PhD Candidate, Behavior, Cognition, and Neuroscience

**Eye-Tracking and Biometric Insights into the Processing of TV Commercials**

Adria Mankute, MA Candidate, Psychology

# **Media, Misinformation, and Social Justice**

Katzen 128

**Google It: Conspiracy Theories and the Internet**

Dana Dupuis, Senior, History

**The Writing Center: How Peer Tutors Can Be Agents of Social Justice**

Emma Coleman, Senior, Psychology and Women's, Gender, and Sexuality Studies

**Human Trafficking: Misinformation, Discourse, and Media**

Melissa Patton, Senior, Communication, Legal Institutions, Economics, and Government (CLEG) and Women's, Gender, and Sexuality Studies

**"Quiet as a Jew in Germany:" Holocaust Reporting on College Campuses**

Sophie Kaufman, Senior, History

# We're in the Money

Katzen 151

America's Bank: Divisive Economics, Contentious Politics, and the History of the Forgotten Founding of the Federal Reserve, 1907–1913

Matthew Adams, Senior, Political Science and History

U.S. Monetary Policy Shocks and their Effects on the Emerging Markets

Irina Atamanchuk, Senior, Economics

Can Economic Policy Uncertainty Help Predict Chinese Stock Market Returns? Evidence Using an Efficient Dynamic Moving Average (eDMA) Approach

Dingqian Liu, PhD Candidate, Economics

Capturing the Effects of Export Diversification on External Debt

Cassandra Rattan, PhD Candidate, Economics

Information Rigidity and Economic Uncertainty: A New Theory and Stylized Facts

Romina Kazandjian, PhD Candidate, Economics

## **Take Care of Each Other**

**Katzen 210**

**Prevent, Promote, Protect: Creating a Wave of Premedical Students Prepared for the Future of Biosocial Medicine**

**Greta Gatlin, Junior, Public Health**

**Guadalupe Mabry, Junior, Public Health**

**Chaitanya Mishra, Sophomore, Public Health**

**A Cross-Sectional Study Comparing First Aid Training Delivery Methods in a Government High School in Karnataka, India**

**Jon Holcombe, Sophomore, Public Health**

**Success of Substance Abuse Program for Pregnant Women on the Flathead Reservation**

**Kendell Lincoln, Senior, Public Health**

**Removing Artificial Food Coloring from the Diet Affects Brain Wave Activity**

**Anna Kirkland, PhD Candidate, Behavior, Cognition, and Neuroscience**



## Session Two

### Black Lives in the DMV

Katzen 112

**It Was More than a Game: The Desegregation of Montgomery County Public Schools and the River Road Baseball Teams**

*Ebonica Sharp, PhD Candidate, Anthropology*

**The BACC and the Social Movement Combatting Gentrification and Achieving Reparations for the Black River Road Bethesda, MD Community**

*Katalina Khoury, MS Candidate, Public Anthropology*

**Go-Go to Church Music**

*Michael Quiroz, MA Candidate, Public Anthropology*

**Music Analysis in Scotland AME Zion Church**

*Maria Isabel Paraan, MA Candidate, Public Anthropology*

**Childhood and Family Life in Montgomery County's Historic Black Communities: An Analysis of Leisure Activities**

*Paige Magrogan, PhD Candidate, Anthropology*

**Engaging Black + Indigenous Herbal Knowledge**

*Shelby Moring, Senior, Women's, Gender, and Sexuality Studies and Anthropology*

## **Who Am I? Identities in Popular Culture**

Katzen 115

**Hair Loc'ing Across the Diaspora**

Azania Lane-Majestic, Senior, Women's, Gender, and Sexuality Studies

**How Queer is Queer Cinema? a Look into Straightwashing and Hollywood's Strict Binaries of Sexualities**

Gabriella Liles, Senior, Literature (Cinema Studies)

**The Intersection Between Blackness and Heroism**

Raymond Vazquez, Senior, Audio Production

**Superheros and Disability Identity: The Social Construction of Blindness Through an Exploration of Daredevil**

Quincy Stein, Senior, International Studies

## **Communism and the Cold War**

Katzen 123

**Exploring Soviet Dissidence Through the Poetry of Anna Akhmatova**

Alexandra Diouk, Senior, Literary Studies and International Studies

**Communist and Nationalist Party Actions Before the Establishment of the People's Republic of China**

Liyan Tang, Senior, History

**Cults in the Nuclear Age**

Matthew Callander, Senior, History

**Edward Hopper in the Atomic Age**

Michael Quituisaca, MA Candidate, Art History

## Reflections in Television

Katzen 128

The Sexual Revolution and Pre-Marital Sex in Sitcoms  
Laura Gibson, PhD Candidate, U.S. History

Trans Visibility in Media  
Dorothy Hastings, Senior, Journalism

Jersey Shore: Masculinity, Gender, Sexuality, and the  
Racialized Guido  
Megan Mowery, Senior, American Studies

The Dynamics and Affects of Queer Latinidad in Vida  
Silvana Scott, Senior, Literature and History

## PQRS

Katzen 151

How Many Sprinkles Does it Take to Make a Donut?  
Robert Green, MA Candidate, Mathematics

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

Deep Reinforcement Learning for High Fidelity Qudit Gates  
Anthony Santana, Senior, Physics

Atomic Simulations of Thin Films  
Sarah Hoback, Sophomore, Physics and Mathematics

## **From Marshes to Molecules**

Katzen 210

**Multiple-Mark Multiple-Recapture Population Size Estimates of a Stygobiont from a Hypotelminorheic Habitat**

William Farmer, MS Candidate, Biology

**Annotation of the Mysterious Germline-Restricted Chromosome in Zebra Finch (*Taeniopygia guttata*)**

Kathryn Asalone, PhD Candidate, Behavior, Cognition, and Neuroscience

**HISTONE DEACETYLASE 19 and the Flowering Time Gene FD Maintain Reproductive Meristem Identity in an Age-Dependent Manner**

Maryam Yamadi, MS Candidate, Biology

**Design and Synthesis of Novel LCAT and LPL Modulators**

Jason Corsbie, PhD Candidate, Behavior, Cognition, and Neuroscience

**An Efficient Synthesis of Heterocycles Using Mechanochemistry: Focus on Beta-Lactams**

Alex Lutz, MS Candidate, Chemistry

## Session Three

### Living Just Enough For the City

Katzen 112

Evictions in DC: Compounding Race, Neighborhood, and Class Risk

Blaine Smith, Senior, Sociology and Political Science

Yes Means Yes: An Analysis of Perceptions of Consent from the 2018 DC Area Survey

Courtney Bell, MA Candidate, Sociology

Drought Severity in California: A Statewide Scandal

Alexis De Silva, Senior, Political Science and Statistics

Where to Turn? Fear of Policing Pushing Individuals Online

Camden Hillman, MA Candidate, Sociology

Gaps in the Achievement Map

Alaa Hammoudeh, Junior, Justice and Law

### Open to Interpretation: Literary Meaning

Katzen 115

Centering the Displaced Through Octavia Butler's Science Fiction

Aijah Raghnaal, Senior, Literature

Modern Implications of Young Adult Dystopian Fiction

Emma Rawley, Senior, Literature

The “mervielle” of Transformative Reading: Metamorphosis and Memory in the Lais of Marie De France

Jayme Schlenker, Senior, Literature

Othello as a Religious Other: Considering an Interpretation

Ryan Jefferson, MA Candidate, Literature

Tick Tock: To What Extent Does Time Influence Characters' Choices?

Rana Attia, Senior, Literature (Cinema Studies)

## **Not Written in Stone**

Katzen 123

**Titanic Profits: The Commodification of the Titanic Disaster as Seen Through Spectacle and Immersive Display**

Amanda Laughead, Senior, History

**Illiberal Civil Society in Russia, 1992–2012**

Ivan Grek, PhD Candidate, History

**Legal Tender v. Faith: Currency, Patriotism, and Jurisprudence in Revolutionary New York City and State, 1775–1777**

Jonah Estess, PhD Candidate, History

## **Womanhood Past and Present**

Katzen 128

**Representations of of Black Womanhood and Sexuality in Films by Black Directors**

Amina Niass, Senior, African and African Diaspora Studies

**St. Wilgefortis: Considering Modern and Medieval Hirsute Audiences**

Katherine Ruckle, MA Candidate, Art History

**Entering the Mikveh Waters Again: Reclaiming What Jewish Women Have Always Done**

Stephanie Black, Junior, Women's, Gender, and Sexuality Studies

**A Guiding Voice for the Voiceless: Women's Struggle for Power in 19th-Century Cuba**

Susana Gude, Senior, History and Jewish Studies

## **The Arts**

Katzen 151

**Negotiating Nostalgia: Fragmentation, Temporality, and Materiality in the Sound Art of Christian Marclay and Susan Philipsz**

Amanda Hodes, Senior, Music and Literature

**"Transforming Spaces/Continuous Bodies:" Embodiment and Actualization of Topological Spaces Through Dance Choreography**

Sergio Guerra Abril, Senior, Mathematics and Dance

**The Confluence of Dance and Game-Play**

Lauren Brown, Senior, Dance

**Willis Conover and Public Diplomacy: Jazz and Phonetic Sound Communities in the International System**

Oliver Hunter, Senior, SIS and Music History

**Why Record in a Soundproofed Room?**

Ibrahim Onafeko, MA Candidate, Audio Technology

## **Painting Politics**

Katzen 210

**Elizabeth Vernon: a Portrait of Marital Intimacy**  
Alaina Hendrickson, MA Candidate, Art History

**Manet's Pétroleuse**  
Caitlyn Carr, MA Candidate, Art History

**Refashioning Authorship: A Critical Look at the  
Collaboration of Emilie Flöge and Gustav Klimt**  
Hannah Southern, MA Candidate, Art History

**A Crisis of Empire: Threatened Masculinity in J.W.  
Waterhouse's Hylas and the Nymphs (1896)**  
Hoyon Mephokee, MA Candidate, Art History

**Princely Packages**  
Taylor Curry, MA Candidate, Art History

**Tamara De Lempicka's La Polonaise (1933): The Politics of  
Religious Ecstasy**  
Elizabeth Von Buhr, MA Candidate, Art History



## POSTER SESSION

### Social Sciences

Plaza Corridor

The "TOMS" Paradox: Why Consumers Fall for Good Intentioned Products, But Unproven Results

Roger Ahlstrom, Senior, Economics

Still Here, Still Queer: How the CW's Supergirl Handles Its LGBT Storylines in a Post "bury Your Gays" Media Landscape

Bobbie Armstrong, Sophomore, Journalism and Anthropology (Minor)

Internalized Oppression in Queer POC at PWI's

Maria Gramajo, Junior, American Studies and Women's, Gender, and Sexuality Studies

Interventions for Peace Education in Myanmar

Mark Forsberg, Graduated 12/2018, International Training and Education Program

Collective Action and Identity in Historic Scotland: How a Grassroots Movement Saved and Shaped Community

Helen Bush, MS Candidate, Anthropology

Foragers and Farmers: How Displacement Affects Our Diet and Identity

John Power, MA Candidate, Public Anthropology

## **Public Health**

Plaza Corridor

**An Analysis of the Oral Hygiene Habits Among Undergraduate College Students During Senior Year of High School and in College**

Sedona Kolchinsky, Senior, Public Health

Yale Friedman, Senior, Public Health

Rachel Bernardo, Junior, Public Health and Biology (Minor)

Meena Nutbeam, MA Candidate, Public Health

**Defining "Adolescent and Young Adult" for Cancer Care and Research**

Asia Cutforth, Senior, Public Health

**Behavioral Mechanisms of Reward Signaling in the Medial and Orbital Prefrontal Cortices**

Linda Amarante, PhD Candidate, Behavior, Cognition, and Neuroscience

**Minority Stress is Associated with a Stress-is-Debilitating Mindset**

Julia Harris, MA Candidate, Psychology

**Community Health Programming Barriers Faced by Parents**

Janelle Pace, MS Candidate, Health Promotion Management

**Daily Minority Stress and Mental Health among Sexual and Gender Minority Youth**

Shannon Touhey, Junior, Public Health and Sociology

**Lung Cancer in Masters Swimmers**

Julia Snegg, Senior, Public Health

**Food Deserts and Resilience in Historic Black Montgomery County Communities**

Gennesis Sanchez, MA Candidate, Public Anthropology

# Neuroscience

Plaza Corridor

**D-Serine is Required to Maintain Connexin 36-Mediated Coupling Between A2 Amacrine Neurons in the Mouse Retina**

Irena Volkov, Senior, Neuroscience

**The Use of Gold Nanoparticle Coated Carbon Fiber Microelectrodes to Aid in Dopamine Detection**

Brianna Cohen, Junior, Biochemistry

He Zhao, Senior, Biochemistry

**Outcomes of Early Cerebellar Injury in Preterm Infants**

Rachel Weger, Senior, Neuroscience

**Modified Carbon-Fiber Microelectrodes for Enhanced Neurochemical Detection**

Pauline Wonnenberg, MS Candidate, Clinical Biochemistry

Sanuja Mohanaraj, MS Candidate, Chemistry

**Neurotransmitter Detection by Coated Carbon Fiber Micro Electrodes**

Dilpreet Raju, Junior, Biochemistry

**Neurotransmitter Detection via Improved CFMEs and Multi-Channel Electrode Array**

Alexander Mendoza, Senior, Neuroscience

**Assessment of Sex Differences in  $\alpha$ -Pyrrolidinopentiophenone ( $\alpha$ -PVP)-Induced Taste Avoidance, Place Preference, Thermoregulation, Motor Activity and Stereotypies in Sprague-Dawley Rats**

Hayley Manke, Senior, Psychology

Aikerim Imanalieva, Senior, Neuroscience

**Social Rewards Promote Faster Behavior Acquisition and Increased Memory Recall in Zebrafish (danio rerio) Compared to Food Based Rewards**

Mikayla Crowley-Perry, Non Degree Graduate, Postbaccalaureate Premedicine

**Social Rewards Promote Faster Behavior Acquisition and Increased Memory Recall in Zebrafish (danio rerio) Compared to Food Based Rewards**  
Allison Murk, Senior, Biology

**OpenBehavior: Accelerating Behavioral Neuroscience Through the Promotion of Collaboration and Open Science**  
Samantha White, PhD Candidate, Behavior, Cognition, and Neuroscience

**An Open-Source Syringe Pump for Behavioral Neuroscience Research**  
Meagan Mitchell, Junior, Neuroscience

**Shared and Unique Neural Correlates of Reading and Attention**  
Marissa Marko, PhD Candidate, Behavior, Cognition, and Neuroscience

**Strategic Factors in the Two-Armed Bandit Task: Computational Model, Validation in Rodents, and Role of mPFC**  
Kyra Swanson, PhD Candidate, Behavior, Cognition, and Neuroscience

**Differences in Cerebellar Activation Found in Autism Spectrum Disorder and Neurotypical Adults During a Social Ball Playing Task**  
Mariam Melkumyan, Senior, Neuroscience

**Effects of a Low Glutamate Diet on Symptom Severity in Gulf War Veterans**  
Mackenzie Langan, Senior, Neuroscience

## **Biology**

Plaza Corridor

**Cutaneous Squamous Cell Carcinoma (cSCC)**

Taylor Geddes, Junior, Biology

**Photoreceptor and Behavior in Different Amphipod Populations**

Angelo Barberio, Junior, Biology

**The Role of Obesity in Multiple Myeloma Drug Resistance**

Maria Ochiai, Senior, Biology

**Stress Free Watering System**

Jacob Krumpholz, MA Candidate, Biotechnology

## **Environmental Science**

Plaza Corridor

**Examining Challenges of Effective Accountability Measures in Regional Fishery Management**

Zizhan Luo, Senior, Environmental Science and International Studies

**Groundwater a Key Pathway of Coastal Nutrient Pollution in Saipan, CNMI**

Jiana Blaha, Junior, Environmental Science

**Laboratory-Based Assessment of Anacostia River Contaminants**

Jenna Wiegand, MS Candidate, Environmental Science

**Polymer Nano-Composite Beads for Wastewater Treatment**

Rachel Gill, MS Candidate, Chemistry

Raquel Lara, Senior, Chemistry

Jasmine Nazaire, Junior, Chemistry

Jerin Brooks, Senior, Chemistry

**Radon Emissions from Trees**

Edward Cascella, Junior, Environmental Science

# Math and Physics

Plaza Corridor

## Slices of $\pi$

Mario Ego-Aguirre, Senior, Mathematics and Studio Art

## Software and Hardware Interrupt Modifications for ThinSat Particle Detector

Jacob Vancampen, Senior, Physics and Applied Mathematics

## Statistical Study of Magnetic Islands Formed During Solar Storms

Colleen Baldwin, Junior, Physics and Computational Science

## Generative Art via Neural Networks

Evan Russenberger-Rosica, Senior, Mathematics





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