

16th Annual Undergraduate Conference

*FRIDAY, MAY 3, 2019
LECTURE CENTER*



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THE CENTER FOR
UNDERGRADUATE RESEARCH
AND CREATIVE ENGAGEMENT

UNIVERSITY AT ALBANY State University of New York

CONFERENCE PROGRAM



THE CENTER FOR UNDERGRADUATE RESEARCH AND CREATIVE ENGAGEMENT

UNIVERSITY AT ALBANY State University of New York



EVENT	LOCATION	TIME
Check In	LC Concourse	2:30-5:00 PM
Poster Session	LC Concourse	3:00-5:00 PM
Oral Sessions	LC Classrooms 3A, 3B, 3C, 5, 6, 12, 13, 15, 19, 20, 21, 22	3:15-5:00 PM
Remarks, Keynote, and Awards	LC Concourse	5:00-5:45 PM
Dr. JoAnne Malatesta, Welcome Remarks, Interim Vice Provost and Dean for Undergraduate Education		
Dr. Jeanette Altarriba, Keynote, Interim Dean, College of Arts and Sciences		
Dr. JoAnne Malatesta and Dr. Marilyn Masson, Presentation of President's Award for Undergraduate Research		
Dessert Reception	LC Concourse	Until 6:30 PM

Today, we showcase and celebrate the research, scholarship, and creative projects of nearly 200 University at Albany undergraduate students. Each of the student presenters has followed their own path to joining the conference and I encourage you to speak with the poster presenters and listen to the oral presentations to learn firsthand the many diverse ways in which our students have become involved in research and creative engagements. As research assistants, as course participants, or as interns, these students have capitalized on the many opportunities available to them at the University at Albany.

Just this year, the Office of the Vice Provost and Dean of Undergraduate Education launched the Center for Undergraduate Research and Creative Engagement (CURCE). Since its inception, CURCE (and its predecessor, the unit of Undergraduate Research) have worked across the disciplines to support and encourage undergraduate engagement in research, scholarship, and creative activities. The Center received Strategic Plan First Year Accelerator funding in 2019, which has provided direct financial support to undergraduate students as they travel to present at local, regional, and national conferences, as well as to purchase materials and supplies needed to complete projects. I, along with the entire CURCE team, have seen firsthand how these funds have made an impact on the student recipients by expanding access to and engagement in research activities.

Of course, the projects in which these students participate would not be possible without the outstanding faculty who mentor undergraduates and help them to become the next generation of scholars. Their tireless commitment to including undergraduate students on their projects, in their labs, and on their research teams is critical to the growth and expansion of undergraduate research at UAlbany.

Please join me in congratulating each student presenter and thanking the faculty and staff who have made this conference possible. The Center for Undergraduate Research and Creative Engagement is honored to host our largest undergraduate research conference to date and this is only possible through the good will, hard work, and continued commitment of so many!

Thank you for being a part of the 16th Annual Undergraduate Conference.



JoAnne Malatesta, Ph.D.
Interim Vice Provost and Dean for Undergraduate Education



POSTER SESSION

Lecture Center Concourse

3:00 – 5:00 PM

See page 14 for poster session abstracts

Youth, Trauma, Delinquency, and Effective Practices of Intervention

Shannon Gasparro, *The use of Extracurriculars in Academic Self-Efficacy for Students Impacted by Family Stressors*

Teniola Olafuyi, *Neighborhood collective efficacy, involvement in community activities, and delinquency among adolescents in the United States*

Jessica Phillips, *The Relationship Between Parenting Style and Emergence of Violence in Adolescence*

Taylor Swanson, *Coping Mechanisms Used by Emerging Adults Affected by Parental Chronic Illness*

Caroline Veldhuizen, *A Child Left Behind: How Harsh Disciplinary Tactics Contribute to the School-to-Prison Pipeline*

Criminal Justice: Geolocation Technology, Drugs, Online Piracy, and the Perception of Police

Vincent Alagna, *A Systematic Evaluation of Image Geolocation Inference Models*

Julia Melfi, *Beliefs about Police Error Leading to Wrongful Convictions and Attitudes on Police Legitimacy*

Carolyn Solimine, *Deterring Online Music/Movie Piracy*

Samantha Spampinato, *Opioid Withdrawal Post Incarceration*

Brenna Thibodeau, *Novel Hybrid Sensors for On-Site Drug Detection*

Forensic Science and Experimental Forensic Anthropology

Jada DuBose, *Resiliency in Cranial Bones in Relation to Age and Trauma*

Samantha Giuliano, *Determining Donor's Age through Blood Analysis using ATR FT-IR Spectroscopy*

Ashley Hull, *Raman Spectroscopic Analysis of Organic Gunshot Residue Spanning a Range of Excitation Wavelengths*

Lea Jones, *Common Pollutant Effects on the Decomposition on Cattle Femora*

Niara Nichols, *Identification of bloodstains for forensic purposes using Raman spectroscopy: method validation for donors suffered with Celiac disease*

Serafina Parus, *Impact of Different Water pH Levels on Bones*

Audria Payne, *Determination of Intersex Humans in Human Remains*

Cybersecurity, Privacy, and Artificial Intelligence

Tyler Blanco, and Liam Smith, *Understanding The Privacy Methods, Implications, and Challenges of Educational Data Mining*

Anthony Capece III, *Cyber Innovation Lab – A Cybersecurity Testbed for the Advancement of Intrusion Detection Systems*

Michelle deLaski, *Behind Closed Lock Screens: How Terrorists are Taking Advantage of Encryption*

Daniel Mendoza, *Privacy Concerns Over the Use of Body Worn Cameras in Scientific Research*

Jesse Parent, *Ethics and Bias in AI: Bridging the Gap via Interdisciplinary Collaboration*

Jesse Parent, *Multidisciplinary Research in Brains, Minds, and Machines*

Yasmine Sahawneh, *Cybersecurity Programs*

Emerging Technologies in Homeland Security and Emergency Preparedness

Kinsley Alexandre, *Disaster Capitalism in Puerto Rico: A Fight for Political and Electrical Power*

Darion Carril, *Speaker Recognition with Short Utterances: A Literature Analysis*

Jenna LaTourette, *IDENT: Integrated Discovery of Emerging and Novel Technologies Project*

Samael O'Brien, *Czar 52; A Case Study of Failed Leadership*

Kyle Pergolino, *Operational Code Analysis: Hand-Coding*

Hayley Peterson, *Operational Code Analysis: Assessing Leadership Behavior in International Relations*

Innovations in Atmospheric and Climate Change Research and Reporting

Ian Jaffe, *3D Printed Drone Attachment*

Taylor Lewis, and Gaviann Levy, *How Twitter Impacts the Topic of Climate Change*

Jacob Shultz, *Enhancing Ice Storm Detection from the New York State Mesonet*

Aleks Siemann, *Geospatial Energy Potential and Life Cycle Assessment of Nearshore Oscillating Water Column Systems*

Supporting Local Farmers and the Local Food Movement in the Capital Region

Nicholas Albano, Drew Zaweski, Giuliana Martone, and William Talley, *Regional Food Production Roundtable Discussions*

Dean Berato, Zack Allen, Arturo Lua Castillo, John Murray, Loren Torres, and Peter Torres, *Food Production in The Capital Region*

Matthew Kelly, Dillion Asmus, Yee Mon Aung, Christopher Bonelli, Maggie Burke, Calogero Corina, Lillian Hahn, Andrew Punnoose, Nicholas Sobotka, and Brian Wong, *Consumption in the Capital Region for Future Generations*

Albert Martinez, *Food Processing in the Greater Capital Region*

Altia Robinson, Matthew Creus, and Fu Yee Chua, *Supporting New, Young, and Retiring Farmers*

Nate Siekierski, Atara Siegel, Maurice Maswary, Courtney O'Connell, and Sean Eccles, *Production Distribution: Gaps and Opportunities for Local Food and Regional Aggregation (conducting phone interviews with distributors)*

Advances in Finance

Dan Dreher, Corporate Deleveraging and Financial Flexibility

Journalism Across the Globe: The Freedom of the Press and its Influential, Diverse Coverage

Caroline Borrego, and Edward Carey, Journalism in the United States v. Cuba

Bailey Cummings, Lojeava Coriolan, and Nicholas De Las Cuevas, No Ordem e Progresso in the News: How Global Media Shapes the World's View of Brazil

Brandon Mercier, Thomas Marra, and Sue Min, American vs Foreign Coverage of Major Events

Andie Thompson, Wen Sun, and Jack Summers, Journalist Under Attack

Archaeology: Past Lifeways in the Capital District, Pre-Columbian Mexico, and Prehistoric Newfoundland

Rachel Freeman, Animal Use at the Pre-Columbian Maya Urban Capital of Mayapan, Yucatan, Mexico

Daniel Madigan, Analysis of Ceramics at the Stephen and Harriet Myers Residence, A Hub of Albany's Abolitionist Activities in the Mid-1800's

John Marvin, Assessing Typological Assumptions of Notched Endblades of Newfoundland and Labrador: An Example from Stock Cove, Newfoundland

Lucas Weinman, Schenectady's Underground - Archaeology in the Stockade

Context is Everything: Historical and Anthropological Analyses

Diandra Allen, Daily Lives of Samburu Pastoralist Children: Work, Herding, and Food Consumption

Jesus Gandara Ortega, A Missed Opportunity: Post-revolutionary Mexican Murals and Incomplete Historical Narratives

Mitchell Hura, Favelas do Rio de Janeiro: Carioca Shantytowns and Their Historical, Political, Economic, and Cultural Implications

April Ross, CiTonga Numerals: The Preservation and Patters of the Quinary System

Victoria Tobes, Roger Bacon: The Christian, the Alchemist, the Enigma

Advances in Psychology: Emotion, Memory, and Social Competence

Daniella Gelman, The Relationship Between Social Competence and Executive Functioning in Disadvantaged Preschool Age Children

Matthew Pascazi, The Effects of Emotional Scenarios on Memory

Destiny Valentine, Emotion Processing

Mental Health and Health Care Policies: Body Image, Maternal Care, and Breast Cancer Risk

Devyn Beswick, *Tyrosine hydroxylase expression in chronically stressed postpartum rats*

Michelle Raissa Kobou Wafo, *The Effects of the Affordable Care Act Medicaid Expansion On Breast And Cervical Cancer Screening Rates On Low-income Childless Women*

Peri Sosensky, *Effects of Maternal Depression on Toddler's Sleep*

Taylor Swanson, *The Association between Body Checking and Exercise Behaviors*

Public Health: Drug Use, Diabetes, and their Consequences and Social Contexts

Nana-Hawwa Abdul-Rahman, *Atropine and Scopolamine Containing "Legal Highs": Utilizing Chemometric Processing of Direct Analysis in Real Time-High Resolution Mass Spectral Data to Identify "Legal Highs" From Solanaceae Genus Plants*

Leah Duell, Tyrell Feaster, and Nathan Fenlon, *Opioid Crisis: An Epidemic*

Andrew Wang, *Comparison of Prevalence of Chronic Kidney Disease in Chinese Americans with Pre-Diabetes*

Advances in Biomedicine and Neuroscience

Nurat Affinnih, *Optogenetic Activation of Striatal Neurons*

Shannon Alexander, *Effects of Macrophages with Dying Heart Cells*

Thomas Banco, *A Single-molecule Analysis to Analyze the Influence of DNA Base-Stacking Interactions in DNA Stability*

Lillie Carnell, *Loop-Ligation of DNA Nanoswitch for Sensitivity Increase*

Shergil Zahid, *Realistic 3D Reconstructions of MSNs Through Computational Methodologies*

Identity Politics in the Workplace and in the Courts of the Land and Public Opinion

Hannah Breda, *United States v. Dennett: The Battle for Sex Education in the Early 1900s*

Kassondra Gonzalez, *Stonewall's Parallel Queer Latinidad*

Jiwon Kim, *Identity Signaling and Conversational Taboos*

Dianna Rumpf, *Is Transphobia Associated with How Cisgender People Define the Term Transgender?*

ORAL SESSIONS

Lecture Center Classrooms

3:15-5:00 PM

See page 36 for oral session abstracts.

Women's Voices, Women's Rights: Resistance and Protest Movements and Their Aftermaths

Lecture Center 3A 3:15-4:00 PM

Kyle Thaine, “*A Life Stripped of Humanity*”: *Using the Buffalo Department Store Strike of 1913 as a Case Study of Abused Pre-World War I Female Department Store Workers*

Elise Coombs, *Decentering the Dictator: The Mirabal Sisters' Outspoken Challenge Through 'In the Time of the Butterflies'*

Gina Tan, *The Equal Rights Amendment: Why All U.S. States Have Not Ratified*

Literary Treatments of Sexuality and Madness

Lecture Center 3A 4:15-5:00 PM

Emily Aucompaugh, *To Speak Ghosts and See Echoes: Longing in Lolita*

Melissa Aucompaugh, “*Queen of the Underworld and Mistress of the Labyrinth;*” *An Exploration and Critique of Females in the Bildungsroman*

Chris Lownie, *The Pen As Your Sword: Writing Through The Lens of Depression*

Social Media's Influence on Society

Lecture Center 3B 3:15-4:15 PM

Ambreen Aslam, and Shanelle Webster, *Social Media Journalism*

Yael Dror, *The Association Between Instagram Use and Eating Disorder Pathology*

Dylan Andrews, *Effects of Social Media on Politics & Journalism*

Jessica Sherman, Ayanna Primus, Kevin Rider, and Triumph Windorff, *Social Media War on Journalism*

Forensic Science

Lecture Center 3C 3:15-4:00 PM

Morgan Eldridge, *Determination of Time since Deposition of Fingerprints via Colorimetric Assays*

Jalissa Thomas, *Raman Spectroscopy and Advanced Multivariate Analysis for the Identification and Age Estimation of Body Fluid Traces on Interfering Substrates for Forensic Purposes*

Srinanti Bhattacharya, *Trauma Analysis from Rapid Staircase Descension*

The Climate, the Atmosphere and the Beyond
Lecture Center 3C 4:15-5:00 PM

Luke Lebel, *An Analysis of the Effects of Terrain on the Occurrence of Severe Weather in Upstate New York Utilizing Computer Model Simulations*

Joshua Martin, *The Snowball Chamber: A Supercooled Approach to Dark Matter Detection*

Terence Allard, *Potential Impact of Climate Change on the Distribution of Alpine Tundra in The Adirondack Mountains of New York*

Inequality in the U.S. Today: Seeking Justice, Equality, Treatment, and Redemption
Lecture Center 5 3:15-4:45 PM

Theresa Edwards, *Sexual Assault on College Campuses and the Impact of Race on Reporting*

April Sickler, *Barriers to the Success of Ex-Offenders with Histories of Drug Abuse and Mental Illness*

Roxanne Grieggs, *Explaining Juvenile Delinquency as a Product of Personal Security*

Lisbeth Valdez, *Nativist Policies: Hispanic Identity in Trump America*

Alexandria Cartier, *Exploring the Veterinarian-Client Relationship and the Role of Gender*

Alisa Flowers, *Stigmatization and Decision Making: Their Effects on Mental Health Help/Treatment Seeking in Racial Minority Communities*

Brain Function and Mental Health: New Approaches in Technology, Psychology, and Neuroscience
Lecture Center 6 3:15-4:30 PM

Ethan Webster, *An Unsupervised Channel Selection Method for SSVEP-based Brain Computer Interfaces*

Gabrielle Shames, *Neural extracellular potassium levels in response to retrodialysis insulin administration*

Jeremy Carter, *Investigating the effects of intrahippocampal glucose administration on spatial working memory in rats*

Anne Jordan, *Do You Control Your Emotions or Do Your Emotions Control You: Perceived Emotional Control Over Negative and Positive Emotion Words*

Alicia McDonough, *When healthy eating is unhealthy: Orthorexia Nervosa and health outcomes*

World Politics, World Economies: Crises, Revolutions, Evolving Relationships
Lecture Center 12 3:15-4:45 PM

Trevor Eck, *Arab Spring in North Africa: An Analysis of Foreign Influence and Revolutions in Egypt, Libya, and Tunisia*

Noel Chase, *Barbados' Debt Crisis: The Effects of Colonialism and Neoliberalism*

Shouyue Zhang, *The Transformation for Chinese Americans from Political Apathy to Activism: A Case Study on Manhattan Chinatown Tenants in 1970*

Cassidy Griffin, *What Goes Up Must Come Down: Denunciations in the Great Terror*

Alanna Belanger, “*The glory or the story of the sea-divided Gaels. One in name, and one in fame... ” : How Atlantic Newspapers Impacted the Irish*

Veronica Saethre, and Yuehang Chen, *Looking East, Looking North*

Advances in Business and Management

Lecture Center 13 3:15-4:30 PM

Maksim Papenkov, A “*Quant*” Approach to Predicting Revenue Growth

Cameron Gaechter, *The Role of Liquidity in Technology Sector M&As*

Keondo Park, *ESG Rating and Ownership Structure in U.S. Firms*

Oksana Pawlush, *Innovation: The Determinant of Success in Software*

Jack Westerink, *Team Heterogeneity and Player Performance in the NFL*

Literary Treatments of Tragedy, War, Fear, and Redemption

Lecture Center 15 3:15-4:30 PM

Jordan Dgien, *The Changing Story of My Father's Death*

Zoe Roswell, *A Sign of the Times*

Octavia Findley, “*Suddenly War Became Sweeter*”: A Hybrid Approach to War and Memory in Homer’s *Iliad*

Kathleen Gibson, *Fear of Annihilation in Children’s Media*

Erin He, *Peter Shot a Man*

Making and Breaking the Molds: Female and Family Representation in History, Fiction, and the Modern World

Lecture Center 19 3:15-4:30 PM

Molly Knott, *Gendered Objections to Female Rule*

Elena Lipsiea, *Our Dystopic Reality: Atwood’s The Handmaid’s Tale (Re)Signified in Today’s America*

Carlee Litt, *Nuclear Families for the Nuclear Age: Disney’s Part in Creating Gender Roles in the 1950s*

Cheyenne Pieters, “*Black Women Create: An Exploration of Black Women’s Self-Preservation through the Art of Self-Expression*”

Marissa Barnes, *Decorated Ceramic Serving Wares as Expressions of Social Identity in Nineteenth-Century Albany, New York*

Colliding Social Worlds and Paradigms: Racial, Ethnic, and Economic Encounters in the Modern World

Lecture Center 20 3:15-4:45 PM

Kentaro Yamamoto, *Returning the Favor: Volunteers and "Guests" at a Food Pantry in Albany, NY*

Joshua Levine, *A Good Education for All? Desegregation and Educational Reform in Albany’s Schools*

Kemi Kehinde, *The Masks of African Identity: Understanding Displacement in We Need New Names*

Briana Dominguez, *Dear United States of America: We Are Children: The Treatment of Immigration Children under the Immigration System*

Sharmila Porter, *Being Black Being White: Passing in Harlem, Black in Paris*

Michael Tarasoff, *Unconventional Allies: Illicit Organizations in Disaster Preparedness, Response, and Recovery*

The Press: Freedom, Bias, Ethics I

Lecture Center 21 3:15-4:15 PM

Courtney VanWormer, Victorianna White, and Yiru Wang, *Attack on Global Press Freedom*

Kyle Frank, Laurel Glasser, and Crysta Garcia, *Case Study: Media Coverage of US and Canadian Elections*

Jacquelyn Orchard, Timothy Grey, and Joe Hoffman, *Why Russian Media is Considered "Not Free"*

Noah Smith, Hallie Robin, and Joshua Reedy, *Socialist vs Democratic Political Coverage*

The Press: Freedom, Bias, Ethics II

Lecture Center 22 3:15-4:15 PM

Melissa Pacifico, Kelly Mariah, and Christopher Pouch, *Global Media Attitudes Toward Conspiracy Theories*

Melissa Pacifico, Kaylie Johnson, and Phillip O'Meara, *The Ethics of False Advertising*

Molly O'Shea, Ashley Ng, and Tyler Novak, *The United States and United Kingdom News Coverage on Syrian Refugees*

Kyle Frank, Laurel Glasser, and Timothy Grey, *Ethics Research: Coverage of the Events and Aftermath of 9/11*

REMARKS, KEYNOTE, AND AWARDS

5:00-5:45 PM

Dr. JoAnne Malatesta, Welcome Remarks, Interim Vice Provost and Dean for Undergraduate Education

Dr. Jeanette Altarriba, Keynote, Interim Dean, College of Arts and Sciences

Dr. JoAnne Malatesta and Dr. Marilyn Masson,
Presentation of Presidential Awards for Undergraduate Research

JEANETTE ALTARRIBA, Ph.D.

2019 Keynote Speaker



Dr. Jeanette Altarriba holds a BA degree in Psychology from Florida International University and MA and PHD degrees in Cognitive Psychology from Vanderbilt University. Following a Postdoctoral Research Fellowship at the University of Massachusetts at Amherst, she joined the University at Albany in 1992, as an Assistant Professor of Psychology. She was subsequently jointly appointed to the Department of Latin American, Caribbean, and U.S. Latino Studies and to the programs in Linguistics and Cognitive Science.

Dr. Altarriba was promoted to Full Professor in 2004 and was named Collins Fellow in 2017 for her sustained, extraordinary devotion towards the University at Albany and its ideals. She is an internationally recognized scholar and an outstanding teacher and mentor. Her research has advanced the areas of bilingualism, memory, and emotion, and she has published more than 70 peer-reviewed articles

in her field. Countless students have benefited from her guidance and support in the classroom, in the laboratory, on the job market, and beyond. As she recently remarked, “I can think of no more important, gratifying, or humbling experience than to see students grow, and learn, and develop a sense of self-confidence and achievement.”

Her professional achievements in research and teaching are particularly remarkable given her extensive service profile and contributions to the institution. In addition to serving on numerous University councils and committees, she has served in major leadership roles as Chair of Psychology, Chair of Communication, Associate Dean for the College of Arts and Sciences, and as Vice Provost and Dean for Undergraduate Education. Undergraduate Advisement, Living-Learning Communities, the Writing and Critical Inquiry Program, and the Honors College have all grown and flourished under her stewardship. In July 2018, she founded the University-wide Center for Undergraduate Research and Creative Engagement (CURCE) within her role as Vice Provost and Dean for Undergraduate Education. In January 2019, Dr. Altarriba was named Interim Dean of the College of Arts and Sciences at the University at Albany where she currently oversees 21 academic departments and a host of centers, institutes, and programs.

Her impact is reflected in the many recognitions she has received from student groups and in receiving both campus and SUNY Chancellor’s awards for excellence in teaching and in faculty service. Her efforts have been recognized nationally and internationally by the American Psychological Association through the Dalmas A. Taylor Distinguished Contributions Award and the Early Career Achievement Award in Teaching and Training.

PRESIDENTIAL AWARD FOR UNDERGRADUATE RESEARCH

Presented by JoAnne Malatesta, Ph.D., Interim Vice Provost and Dean for Undergraduate Education, and Marilyn Masson, Ph.D., Associate Dean for Undergraduate Research

Nurat Affinnih - *Optogenetic Activation of Striatal Neurons*

Faculty Advisor: Annalisa Scimemi, College of Arts and Sciences, Department of Biological Sciences

Diandra Allen - *Daily Lives of Samburu Pastoralist Children: Work, Herding, and Food Consumption*

Faculty Advisor: Julia Jennings, College of Arts and Sciences, Department of Anthropology

Emily Aucompaugh - *To Speak Ghosts and See Echoes: Longing in Lolita*

Faculty Advisor: Helen Elam, College of Arts and Sciences, Department of English

Marissa Barnes - *Decorated Ceramic Serving Wares as Expressions of Social Identity in Nineteenth-Century Albany, New York*

Faculty Advisor: Sarah Cohen, College of Arts and Sciences, Department of Art History, and Marilyn Masson, College of Arts and Sciences, Department of Anthropology

Devyn Beswick - *Tyrosine Hydroxylase Expression in Chronically Stressed Postpartum Rats*

Faculty Advisor: Mary McCarthy, School of Social Welfare, and Joanna Workman, College of Arts and Sciences, Department of Psychology

Michelle Delaski - *Behind Closed Lock Screens: How Terrorists are Taking Advantage of Encryption*

Faculty Advisor: Gary Ackerman, College of Emergency Preparedness, Homeland Security and Cybersecurity

Trevor Eck - *Arab Spring in North Africa: An Analysis of Foreign Influence and Revolutions in Egypt, Libya, and Tunisia*

Faculty Advisor: Victor Asal, Nelson A. Rockefeller College of Public Affairs and Policy

Cameron Gaechter - *The Role of Liquidity in Technology Sector M&As*

Faculty Advisor: Rita Biswas, School of Business, Department of Finance

Kassondra Gonzalez - *Stonewall's Parallel Queer Latinidad*

Faculty Advisor: Christine Vassallo-Oby, College of Arts and Sciences, Department of Latin American, Caribbean and U.S. Latino Studies

Roxanne Grieggs - *Explaining Juvenile Delinquency as a Product of Personal Security*

Faculty Advisor: Dana Peterson, School of Criminal Justice

Ian Jaffe - *3D Printed Drone Attachment*

Faculty Advisor: Michael Leczinsky, College of Emergency Preparedness, Homeland Security and Cybersecurity

Oluwakemi Kehinde - *The Masks of African Identity: Understanding Displacement in We Need New Names*

Faculty Advisor: Paul Stasi, College of Arts and Sciences, Department of English

Jiwon Kim - *Identity Signaling and Conversational Taboos*

Faculty Advisor: Hillary Wiener, School of Business, Department of Marketing

Luke LeBel - *An Analysis of the Effects of Terrain on the Occurrence of Severe Weather in Upstate New York Utilizing Computer Model Simulations*

Faculty Advisor: Brian Tang and Ross Lazear, College of Arts and Sciences, Department of Atmospheric and Environmental Sciences

Julia Melfi - *Beliefs about Police Error Leading to Wrongful Convictions and Attitudes on Police Legitimacy*

Faculty Advisor: Cynthia Najdowski, School of Criminal Justice

Teniola Olafuyi - *Neighborhood collective efficacy, involvement in community activities, and delinquency among adolescents in the United States*

Faculty Advisor: Melissa Tracy, School of Public Health

Maksim Papenkov - *A "Quant" Approach to Predicting Revenue Growth*

Faculty Advisor: Lewis Segal, College of Arts and Sciences, Department of Economics

Cheyenne Pieters - *Black Women Create: An Exploration of Black Women's Self-Preservation through the Art of Self-Expression*

Faculty Advisor: Barbara Sutton, College of Arts and Sciences, Department of Women's, Gender, and Sexuality Studies

Alexander Siemann - *Geospatial Energy Potential and Life Cycle Assessment of Nearshore Oscillating Water Column Systems*

Faculty Advisor: Jeffrey Freedman, Richard Perez, and Brian Tang, College of Arts and Sciences, Department of Atmospheric and Environmental Sciences

Jalissa Thomas - *Raman spectroscopy and Advanced Multivariate Analysis for the Identification and Age Estimation of Body Fluid Traces on Interfering Substrates for Forensic Purposes*

Faculty Advisor: Igor Lednev, College of Arts and Sciences, Department of Chemistry

Victoria Tobes - *Roger Bacon: The Christian, the Alchemist, the Enigma*

Faculty Advisor: Patrick Nold, College of Arts and Sciences, Department of History

Caroline Veldhuizen - *A Child Left Behind: How Harsh Disciplinary Tactics Contribute to the School-to-Prison Pipeline*

Faculty Advisor: Matthew Ingram, Nelson A. Rockefeller College of Public Affairs and Policy

Ethan Webster - *An Unsupervised Channel Selection Method for SSVEP-based Brain Computer Interfaces*

Faculty Advisor: Tolga Soyata, College of Engineering and Applied Sciences, Department of Electrical and Computer Engineering

Kentaro Yamamoto - *Returning the Favor: Volunteers and "Guests" at a Food Pantry in Albany, NY*

Faculty Advisor: Elise Andaya, College of Arts and Sciences, Department of Anthropology

Shergil Zahid - *Realistic 3D Reconstructions of MSNs Through Computational Methodologies*

Faculty Advisor: Annalisa Scimemi, College of Arts and Sciences, Department of Biological Sciences

SITUATION PRIZE FOR RESEARCH

Congratulations to the nine University at Albany Undergraduates who received the Situation Prize for Research

Emily Aucompaugh - "To Speak Ghosts and See Echoes: Longing in Lolita"

Faculty Advisor: Helen Elam, College of Arts and Sciences, Department of English

Jeremy Carter - Investigating the Effects of Intrahippocampal Glucose Administration on Spatial Working Memory in Rats

Faculty Advisor: Ewan McNay, College of Arts and Sciences, Department of Biological Sciences

Oluwakemi Kehinde - The Masks of African Identity: Understanding Displacement in We Need New Names

Faculty Advisor: Paul Stasi and Glynne Griffith, College of Arts and Sciences, Department of English

Michelle Raissa Kobou Wafو - Effect of the expansion of the Affordable Care Act Medicaid Expansion on Preventive Women's Health in using 2010 - 2018 BRFSS DATA

Faculty Advisor: Pinka Chatterji, College of Arts and Sciences, Department of Economics

Daniel Madigan - Analysis of Ceramics at the Stephen and Harriet Myers Residence, A Hub of Albany's Abolitionist Activities in the Mid-1800's

Faculty Advisor: Marilyn Masson, College of Arts and Sciences, Department of Anthropology and Department of Psychology

Maksim Papenkov - A "Quant" Approach to Predicting Revenue Growth

Faculty Advisor: Lewis Segal, College of Arts and Sciences, Department of Economics and Department of Mathematics

Ian Rapisarda - Program in Human Biology, KDM5

Faculty Advisor: Prashanth Rangan, College of Arts and Sciences, Department of Anthropology

Aleks Siemann - Geospatial Energy Potential and Life Cycle Assessment of Oscillating Water Columns

Faculty Advisor: Marie-Odile Fortier, College of Arts and Sciences, Department of Environmental Science and Department of Mathematics

Destiny Valentine - Emotion Processing in the Survival Paradigm

Faculty Advisor: Jeanette Altarriba, College of Arts and Sciences, Department of Psychology

SORRELL CHESIN RESEARCH AWARD

Congratulations to the four Juniors and Seniors in Life Sciences Research at University at Albany who received the inaugural Sorrell Chesin Research Award

Thomas Banco - *A Single-molecule Analysis to Analyze the Influence of DNA Base-Stacking Interactions in DNA Stability*

Faculty Advisor: Ken Halvorsen, College of Arts and Sciences, Department of Biological Sciences

Jeremy Carter - *Investigating the Effects of Intrahippocampal Glucose Administration on Spatial Working Memory in Rats*

Faculty Advisor: Ewan McNay, College of Arts and Sciences, Department of Psychology

Morgan Eldridge - *Determination of Time Since Deposition of Fingerprints via Colorimetric Assays*

Faculty Advisor: Jan Halamek, College of Arts and Sciences, Department of Chemistry

Gabrielle Shames - *Interstitial Potassium Levels in the CNS in Response to Exogenous Insulin*

Faculty Advisor: Ewan McNay, College of Arts and Sciences, Department of Psychology

POSTER SESSION ABSTRACTS

Arranged by poster session group and alphabetically by author last name

Youth, Trauma, Delinquency, and Effective Practices of Intervention

Shannon Gasparro, *The use of Extracurriculars in Academic Self-Efficacy for Students Impacted by Family Stressors*

Faculty Advisor: Elana Gordis, College of Arts and Sciences, Department of Psychology

Adolescents who experience family stressors, such as childhood maltreatment, can face psychological, emotional, social and educational deficits. As a result, adolescents tend to perform poorly in school compared to their non-maltreated counterparts. Previous research suggests that social engagement with peers and teachers has been seen act as a moderator for maltreatment and is seen to impact academics. The present study uses a cross-sectional design to see the extent to which social engagement, participating in sports or clubs, impacts college students' academic self-efficacy when having experienced maltreatment before age 18. I hypothesize that the effect of maltreatment history on academic self-efficacy would be moderated by involvement in clubs or sports. A sample of 54 college students was assessed. Regression analyses and correlations of the variables were conducted. The results suggest that there is a negative significant relationship between both mothers appropriate parenting/harsh parenting and extra-curricular activities as well as father's appropriate parenting and extra-curricular activities. A positive correlation was found between the variable's athletic involvement and father's harsh parenting. The variables activity involvement and father's harsh parenting had a positive correlation as well as father's positive parenting and activity involvement. A negative significant correlation was found between activity involvement and academic self-efficacy.

Teniola Olafuyi, *Neighborhood collective efficacy, involvement in community activities, and delinquency among adolescents in the United States*

Faculty Advisor: Melissa Tracy, School of Public Health, Department of Epidemiology and Biostatistics

Neighborhood collective efficacy, whereby residents intervene to reduce negative activities in the community, may influence the risk of poor mental health and negative behaviors in adolescents. However, adolescent participation in community activities may protect against the negative effects of an adverse neighborhood. We used data from the Fragile Families and Child Wellbeing Study, which includes about 5,000 children born in 20 cities across the country from 1998-2000. We analyzed the relationship between the child's self-reported opinions on neighborhood collective efficacy (e.g., residents stopping fights) and on their own social skills (e.g., behavior in groups), delinquent behavior (e.g., fighting), depression, and involvement in community activities (e.g., volunteering) at age 15.

Of 3,440 youth in the Year 15 survey, 9.7% reported high levels of depression, 12.6% reported delinquent behavior, and 13.3% exhibited low social skills. More adolescents living in neighborhoods with low vs. high collective efficacy were depressed (12.0% vs. 8.5%; p=0.001), delinquent (14.3% vs. 11.7%; p=0.030), and had low social skills (18.1% vs. 10.7%; p<0.001). Delinquent behavior was more common among adolescents who were less involved in outside activities and who lived in low collective efficacy neighborhoods (17.1%), compared to those who were more involved and lived in high collective efficacy neighborhoods (9.4%). Adolescents engaged in community activities and living in communities with more concerned neighbors are less likely to engage in delinquent behaviors and have more emotional stability. Further research is needed to examine the combined effects of adolescent involvement and neighborhood characteristics on adolescent development.

Jessica Phillips, *The Relationship Between Parenting Style and Emergence of Violence in Adolescence*

Faculty Advisor: Melissa Tracy, School of Public Health, Epidemiology and Biostatistics

Although there is extensive research into parenting styles and outcomes, few studies focus on the relation between parenting style and violence among adolescents. Levels of warmth and control shown by parents greatly impacts an adolescents' attitudes toward violence. We used data from the Fragile Families and Child Wellbeing Study, an ongoing longitudinal study that surveyed parents and children from birth to age 15. Using reports by parents reflecting two dimensions, warmth (e.g., spending time together) and control (e.g., imposing a curfew), parents were

categorized into four styles: authoritative (high warmth, high control), authoritarian (low warmth, high control), permissive (high warmth, low control), and neglectful (low warmth, low control). Violence at age 15 (e.g. physical fights) was reported by parents.

Of 3,579 parents surveyed when the child was 15, 70.9% were categorized authoritative, 16.1% as authoritarian, 9.2% as permissive, and 3.8% as neglectful. Overall, 21.6% of adolescents had engaged in violent behavior. We observed a strong association between parenting style and violence: of adolescents raised by authoritative parents, 16.2% engaged in violent behaviors, compared to 40.3% among children of authoritarian, 20.6% among children of permissive, and 46.7% among children of neglectful parents (Chi-square $p < 0.0001$). Low warmth parenting styles, authoritarian and neglectful, were associated with high rates of violence among adolescents, (about double the prevalence than those of authoritative and permissive parents). Further analysis should be conducted to examine the relations between warmth and control violence outcomes and how these relations may differ by sex.

Taylor Swanson, Coping Mechanisms Used by Emerging Adults Affected by Parental Chronic Illness

Faculty Advisor: Julia M. Hormes, College of Arts and Sciences, Department of Psychology

Little is known about the impact of parental chronic illness on “emerging adults” between 18-29 year olds who may experience uncertainty about their identity and future (Munsey, 2006). This study examines coping mechanisms used by adult offspring of parents with a chronic illness ($n = 118$; 54.2% female; 98.3% between 18-24 years old; 60.2% white). Participants completed the COPE Inventory, a multidimensional measure of adaptive and maladaptive responses to stress. The most commonly endorsed coping strategies were mostly adaptive, including use of instrumental and emotional social support, active coping, and planning. There were significant multivariate main effects of gender [$F(15, 83) = 3.22$; Wilks' $\lambda = .63$, $p < .001$, $\eta^2 = .37$] and type of parental illness [$F(15, 70) = 1.99$; Wilks' $\lambda = .70$, $p = .03$, $\eta^2 = .30$] on combined COPE subscales in MANOVA, with females scoring higher in venting and use of instrumental and emotional social support and offspring of parents with a non-terminal illness endorsing greater use of instrumental and emotional social support than those of parents with a terminal illness. There was also a significant main effect of GPA on COPE scores [$F(15, 83) = 1.71$; Wilks' $\lambda = .76$, $p = .06$, $\eta^2 = .24$], where those with a GPA below 3.0 endorsed more maladaptive coping such as denial, behavioral disengagement, and substance use. Findings have important clinical implications for the development of interventions for emerging adults affected by parental chronic illness. Future research should consider longitudinal designs and explore coping mechanisms.

Caroline Veldhuizen, A Child Left Behind: How Harsh Disciplinary Tactics Contribute to the School-to-Prison Pipeline

Faculty Advisors: Matthew Ingram, Nelson A. Rockefeller College of Public Affairs and Policy, Political Science; Stephan Stohler, Nelson A. Rockefeller College of Public Affairs and Policy, Political Science

Exclusionary tactics such as expulsions, suspensions, and school transfers are utilized by public schooling staff for a number of reasons. Generally, they are enforced with the intent of removing ‘problem students’ out of their classrooms. This paper utilizes data provided by the School Survey on Crime and Safety (SSOCS) from the National Center on Education Statistics (NCES) in order to reproduce a more recent version of a 2013 study carried out by Na and Gottfredson which tested the association (a) increased levels of School Resources Officers (SROs) at public schools, and (b) the administration of harsh punishments on students, including expulsions, suspensions, and transfers. The replication will seek to demonstrate relationships between an increased use of harsh punishments in public schools between 2007-08 and 2015-16 and a number of common variables cited as contributing to the school-to-prison pipeline (SSP). While the data does not clearly identify each cited SPP risk factor in the existing literature, a strong relationship is found between the administration of harsh punishments and both (1) the location of a school in areas of high crime and (2) schools with either high minority populations or a high rate of students who perform below the fifteenth percentile on standardized tests.

Criminal Justice: Geolocation Technology, Drugs, Online Piracy, and the Perception of Police

Vincent Alagna, A Systematic Evaluation of Image Geolocation Inference Models

Faculty Advisor: Liyue Fan, School of Business, Department of Information Security and Digital Forensics

The ability to determine the location of a photo based on its content has become a major focus amongst researchers today, which can enable location-based services without requiring GPS data and may raise privacy concerns at the

same time. Photo geolocation refers to the exact location coordinates where the photo was taken. Many methods and models have been proposed in an attempt to unveil a flawless photo geolocation inference technique. For example, Im2GPS is a technique that matches a query image against a database of 6.5 million Flickr images using global image descriptors and returns the location of the most closely related image. PlaNet is a convolutional neural network (CNN) that generates a probability distribution over the earth and assigns a likelihood that the queried photo was taken within a given region. This project seeks to present and systematically evaluate the various methods that have been proposed in one comprehensive paper. The proposed techniques are compared in their methodology as well as their results in order to provide thorough insight into the development and success of photo geolocation inferencing. The methodology of the techniques considered most effective would then provide a direction for future research to focus and build upon. I will also identify limitations and open challenges for photo geolocation inferencing.

Julia Melfi, Beliefs about Police Error Leading to Wrongful Convictions and Attitudes on Police Legitimacy

Faculty Advisor: Cynthia Najdowski, School of Criminal Justice; Stacey Zyskowski, School of Criminal Justice

This study investigates the relations between citizens' perceptions of how police misconduct as a factor contributing to wrongful convictions is connected to attitudes towards police legitimacy. I hypothesized that there would be a negative correlation between the two variables such that the more individuals believe police error contributes to wrongful convictions, the less legitimate they perceive the police to be. I also examined how citizens' race affects these perceptions and attitudes hypothesizing that Black citizens are more likely than White citizens to believe police error leads to wrongful conviction and mistrust the police. To test the hypotheses, 105 White and 105 Black residents of the United States completed an online survey via Qualtrics software. The survey included one item that measured participants' views on the frequency with which police misconduct contributes to wrongful convictions as well as a 9-item scale that assessed how legitimate participants perceive the police to be. Results show a negative correlation between perceptions of police misconduct leading to wrongful conviction and attitudes toward police. Moreover, compared to Black participants, White participants had lower estimates of police misconduct and higher attitudes about police legitimacy. When looking at the correlations between perceptions in separate subsamples of White and Black participants, the White participants had a stronger correlation between their perceived police legitimacy and their beliefs of police error leading to wrongful convictions than Black participants. These findings reveal that beliefs of wrongful convictions are related to attitudes towards the police, and this is an issue worthy of greater consideration as the problem of wrongful convictions is increasingly being brought to light.

Carolyn Solimine, Deterring Online Music/Movie Piracy

Faculty Advisor: Cynthia Najdowski, School of Criminal Justice

Online piracy of music and movies is common, despite being a form of theft and copyright infringement. Many individuals do not realize the real-life impacts of online piracy on artists as well as the entertainment industry as a whole. Moreover, few perpetrators are caught or punished for their actions. This allows potential perpetrators to rationalize and neutralize their piracy-related behaviors and, thus, avoid feelings of guilt or shame. This research examines framing tactics that may be used to prime feelings of guilt and shame and, in turn, deter online piracy. Specifically, through an online experimental survey in which the potential victims of piracy are portrayed as either (a) sustaining minor or significant injury and (b) distant or close in proximity to participants. Anticipated feelings of shame and guilt were hypothesized to decrease anticipated likelihood of engaging in future online piracy when the amount of financial injury the victims would incur was greater as well as when victims were more proximal. Moreover, likelihood of engaging in future piracy was compared across the four experimental conditions relative to a control condition in which no victim was mentioned to examine the extent to which perceiving online piracy as a victimless crime enabled would-be perpetrators to rationalize their illegal behavior. Findings showed that no condition was successful in significantly impacting likelihood to engage in piracy. These results provide insights about a variety of framing strategies that may be integrated into policy or programs seeking to effectively deter potential perpetrators and prevent online piracy.

Samantha Spampinato, Opioid Withdrawal Post Incarceration

Faculty Advisor: Billy Zakrzewski, School of Criminal Justice

This literature review attempts to provide a more complete understanding of the increasing opioid concern and its detrimental effects from withdrawal in incarcerated individuals. Opioid-related fatal overdoses will significantly decrease with the implementation of opioid treatment in jails and prisons nationwide. The incarcerated populations

that are typically affected by Opioid Use Disorder (OUD) include about 8.5% of Hispanics and Whites, and about 7.4% of Blacks. One solution involves Medication-Assisted Treatment (MAT) with the use of opioid agonists, such as methadone and buprenorphine-naloxone. These medications offer a slow release of dopamine and can reduce the patient's opioid withdrawal effects. However, fewer than 30 jails and prisons in the US offer Methadone-Maintenance Treatment (MMT). OUD is more prevalent among those who are incarcerated the majority of facilities restrict administering these treatment options. Due to the lack of treatment for opioid withdrawal, individuals intentionally harm themselves, say they are alcoholics, or claim they are mentally unstable in order to receive pain and/or sleep-inducing medication.

Brenna Thibodeau, Novel Hybrid Sensors for On-Site Drug Detection

Faculty Advisor: Jan Halamek, College of Arts and Sciences, Department of Chemistry

The legalization of marijuana has been a recent hot topic of debate. Marijuana – which contains $\Delta 9$ -Tetrahydrocannabinol ($\Delta 9$ -THC) as its active compound – is a drug that is used mainly for its psychoactive properties. Medicinally, it can relieve pain for those with chronic illnesses or disorders. The sudden move toward legalization has forced law enforcement into situations where the use is legal, but there are no limitations for what is acceptable for driving. As a result, there is still a zero-tolerance policy – unlike alcohol which has very clear legal limits.

When it comes to alcohol use, law enforcement have breathalyzers as their means of detecting alcohol use. Currently, there is no such device for use of marijuana. When a person consumes alcohol, the body eliminates ethanol – the main component of alcohol – via sweat and blood. For marijuana, the active compound $\Delta 9$ -THC is converted to several metabolites such as 11-Nor-9-carboxy-THC (THC-COOH) which are also released by the body via blood, sweat or urine.

Throughout this semester, I have conducted research that focuses on the development and optimization of a novel, non-invasive approach to THC-COOH detection using a person's fingerprint. Ultimately enzyme-linked immunosorbent assay (ELISA) will be used to capture the THC-COOH from the sample. Ideally, law enforcement would be able to use this on the roadside as the reaction generates a color-change that is visible to the naked eye. The methodology is straightforward and can easily be modified for additional illicit drugs and their metabolites.

Forensic Science and Experimental Forensic Anthropology

Jada DuBose, Resiliency in Cranial Bones in Relation to Age and Trauma

Faculty Advisor: Jessica Campbell, College of Arts and Sciences, Department of Anthropology

The development of bone, nonetheless the skull, may be a major line of defense in relation to traumas they may face. As individuals get older, their bone density decreases for a number of mechanical and hormonal reasons, weakening the bone and increasing fragility. This decreased bone mass density, along with its increased risk of fragility, often lead to a higher likelihood of fractures and severe traumatic injuries; this combination of factors is a lot greater than in younger individuals. This study will evaluate skulls thickness, cross referenced by age and sex, will determine resiliency in terms of the biological structure itself. The key findings from this research was that the thickest skull in the study was not the youngest skull. However, the oldest skull was the thinnest, therefore, the least resilient to sustain trauma. According to the findings of this research the anterior portion of the skull showed the most weakness. Surprisingly, there were no significant sites on the skull that demonstrated overall thickness based on age alone. Based on the findings within this research, an efficient way to measure cranial thickness based on age and biological structure can be concluded.

Samantha Giuliano, Determining Donor's Age through Blood Analysis using ATR FT-IR Spectroscopy

Faculty Advisor: Igor Lednev, College of Arts and Sciences, Department of Chemistry

Phenotype profiling is useful in the forensics world to help narrow down suspects. It can be used to identify a subject using composition of their biological matrices. Attenuated total reflection Fourier-transform infrared (ATR FT-IR) spectroscopy is the technique used to acquire (bio)chemical information of a sample. The goal of this study is to identify a person's age range using dried blood stains. For the purpose of this experiment, a diverse pool of donors between newborn (>1), adolescent (11-13), and adult (43-68) age ranges were used. It was found that different donors' age groups have different levels of metHb and proteins in whole blood. Spectral differences are minor due to all samples consisting of the same components with only quantitative changes between them.

Therefore, the collected data set was analyzed using chemometrics to enhance discrepancy and assist in statistical analysis. The plan is to create a statistical model that can classify unknown blood samples in the correct category of newborn, adolescent, or adult with statistical confidence. Overall, ATR FT-IR spectroscopy is nondestructive and can be a portable method used in the forensics field. Also, it is an inexpensive way to process data and the development of this statistical model could help increase the amount of identifiable information about an individual from evidence.

Ashley Hull, Raman Spectroscopic Analysis of Organic Gunshot Residue Spanning a Range of Excitation Wavelengths

Faculty Advisor: Dr. Igor Lednev, College of Arts and Sciences, Department of Chemistry

Gunshot residue (GSR) is a type of trace evidence that can often be recovered at crime scenes. Organic gunshot residue (OGSR) is one of the two major components of GSR. This study investigates the analysis of OGSR, and aims to determine the optimum parameters at which to obtain Raman spectroscopic signals for OGSR particles by varying different excitation wavelengths. In this study, a total of 3 different excitation wavelengths were utilized: 785 nm, 457 nm, and 406 nm. The samples were created by hand selecting OGSR particles and placing them upon a tape substrate. Each of the OGSR particles were cordoned off using a grid formation in order to ensure the clear assignment of spectra to the respective particles.

Lea Jones, Common Pollutant Effects on the Decomposition on Cattle Femora

Faculty Advisor: Jessica Campbell, College of Arts and Sciences, Department of Anthropology

Bone decomposition is an extremely long process in which environmental factors play a role in how quickly the bones begin to decay. For years, forensic anthropologists have been able to estimate a Post Mortem Interval for individuals based on taphonomic changes of both of tissue and bone. Due to the time needed to dedicate research on bone decay, and a change in the worlds environment, this study aims to discover how common pollutant would change bone decomposition. It was hypothesized that the bones covered in the more damaging chemical, petroleum fuel, would show more decomposition than the bones over in pesticides. Using twelve, one and a half inch sections cattle femora, the study used pesticides and petroleum fuel to see what changes would come after twenty days outside to decompose. Two left in the sun, one in the shade, one buried, one submerged in water and a control for each pollutant used. The results showed that even though there had been animal scavenging, there were more drastic color changes and less overall decay among the bones covered in fuel rather than bones covered in pesticides.

Niara Nichols, Identification of bloodstains for forensic purposes using Raman spectroscopy: method validation for donors suffered with Celiac disease

Faculty Advisor: Igor Lednev, College of Arts and Sciences, Department of Chemistry

Two critical issues in forensic science are being able to identifying body fluids traces found at crime scenes, and preserving them for further analysis and as a source of DNA. However, the majority of current analytical techniques used to identify body fluids destructive. Further, current techniques, which are used at a crime scene aren't confirmatory, meaning that they require further analysis conducted in the lab to confirm the body fluid identity. Raman Spectroscopy provides a suitable alternative to the biochemical methods being nondestructive and confirmatory. Our lab has developed a chemometric method that differentiates between the Raman spectra of five different body fluids (peripheral blood, saliva, semen, vaginal fluid, and sweat), thus identifying the sample while still preserving it. The method was developed using samples obtained from healthy donors. It is of most importance for the forensic application to evaluate the method performance in case of donors with various diseases, which might affect the biochemical composition of a body fluid. In this study we examined the ability of our method to identify dry traces of peripheral blood that cam from a donor who has Celiac Disease. To do so, peripheral blood from Celiac Disease donors were deposited on aluminum covered glass slides and dried overnight. The Raman spectra of these samples were recorded, and after preprocessing, the spectra were ran through the classification software. So far, all 20 of the Celiac spectra were positively identified as peripheral blood. This ongoing studies shows promising results that the developed method is a reliable, nondestructive, and confirmatory means of identifying body fluids.

Serafina Parus, Impact of Different Water pH Levels on Bones

Faculty Advisor: Jessica Campbell, College of Arts and Sciences, Department of Anthropology

It is not uncommon for human or animal remains to be discovered underwater. There have been a variety of cases with remains found in lakes, pools, rivers, and even in large receptacles like city water towers. While it is usually an underwater archaeologist's job to collect and decipher human remains there has been little research done on the impact (if any) that the pH levels of water can have on these discovered remains. Placing several segments of cow bone into different water samples- each with a different pH level- may be able to help us uncover the answer.

Audria Payne, Determination of Intersex Humans in Human Remains

Faculty Advisor: Jessica Campbell, College of Arts and Sciences, Department of Anthropology

Currently, there isn't much research on whether forensic anthropologists include the identification of intersex humans in human remains. Forensic anthropologists tend to have varied training that is related to identifying skeletal remains, but there isn't much research about how to identify intersex humans after death or whether they have come across intersex in skeletal remains at all, besides those they have classified as ambiguous. In this paper, I will be researching various skeletal remains to see if the current identification methods of identifying sex are accurate in identifying intersex. I will also research ambiguous and undetermined remains to see if there is a correlation among them that made them fall into that category. I will then observe primary and secondary sexual characteristics that are used in the standard identification methods of humans.

With this research, I hope the results will show that those who are born intersex, need new or better guidelines on how to identify them after death. There should be a discussion with subject matter experts on what criteria surrounds the identification of intersex after death. There is not much to base my research on; however, I do think my research could lead to possible updated established guidelines or a new set of guidelines for those who were intersex. I think as the time continues to pass and society continues to grow, we are now starting to consider other aspects of gender and how that correlates with biological sex. Those who are intersex may have a hard time identifying as either male or female and I think it's important we start to consider those who don't fit into the default binary of male or female.

Cybersecurity, Privacy, and Artificial Intelligence**Tyler Blanco, and Liam Smith, Understanding The Privacy Methods, Implications, and Challenges of Educational Data Mining**

Faculty Advisor: Liyue Fan, School of Business, Information Security and Digital Forensics

Studies on educational data mining have massively advanced the analytical understanding of student learning, outcome predictions, student modeling, and better evaluation. While the information retrieved can improve educational outcomes, such studies must not break the wall of trust or compromise student privacy. To this end, it's imperative to understand the methods of how privacy is ensured in the field of educational data mining and learning analytics, the limitations of these strategies, the complications that may follow, and the possible resolutions. In this project, we take a systematic approach to review studies in the educational data mining field. Initially, we examine common data types collected in these studies. The characteristics of that data are examined, and the potential privacy implications of it. The security/privacy-preserving methods are surveyed in said studies. Then we provide a discussion on the limitations of these privacy approaches, and identify open challenges. Finally, we discuss future avenues for further privacy research in this field. Our research will serve as a roadmap for those that are looking to understand the current data privacy concerns in the educational data mining field. Additionally, it will also help the researchers in the field understand the implications of their data collection and possible privacy protection methods.

Anthony Capece III, Cyber Innovation Lab – A Cybersecurity Testbed for the Advancement of Intrusion Detection Systems

Faculty Advisor: Sanjay Goel, School of Business, Information Security and Digital Forensics

This work presents the development of an air gapped physical network to serve as a testbed to find innovative methods for the detection and mitigation of modern cyber threats, known as the Cyber Innovation Lab. The project involved designing a network to provide a realistic platform to launch attacks against, then installing and configuring various web applications and services on both Windows and Linux platforms. The systems were designed to be easy to reconfigure to their original state, to allow for consistency in attack outcomes. In order to

build the data set to support research, an attack taxonomy was devised from both current practitioner and academic literature. Additionally, a data pre-processing framework was devised. Finally, live attacks were run against the network to allow for data collection via host and network-based sensors. This data will be used to support investigations into machine learning based intrusion detection systems and the analysis of system memory to determine attack types.

Michelle deLaski, *Behind Closed Lock Screens: How Terrorists are Taking Advantage of Encryption*

Faculty Advisor: Gary Ackerman, College of Emergency Preparedness, Homeland Security, and Cybersecurity

The creation of the internet and the many advances that have followed have made the world a more complicated, and in some ways, more dangerous place. Terrorists have taken advantage of the growing technology, and are now using blogs, forums, and other innovations to further their goals. One of these innovations is encrypted messaging. Nowadays people can utilize online applications to send instant messages to each other in a format that is impossible to decipher if intercepted. Through data collection and analysis, this paper examines what applications are being used, what groups are using them, and for what purposes. It looks at the differences in how each active terrorist group uses the encryption applications and, based on findings, suggests new measures for policy makers when requesting decryption tools for law enforcement.

Daniel Mendoza, *Privacy Concerns Over the Use of Body Worn Cameras in Scientific Research*

Faculty Advisor: Liyue Fan, School of Business, Information Security and Digital Forensics

Traditionally, scientific research relies on the basis that those reporting information are being truthful and are recalling an event accurately. The introduction of body worn cameras into this field has added a layer of trust given that photographic evidence can give a literal picture of an event rather than relying on a person's recollection of what actually occurred. However, the amount of, and type of, information recorded by these devices may be deemed "too much" as they are non-discriminatory in what they record, possibly recording personally identifiable information (PII), e.g., faces. Privacy and ethical concerns arise as for how this information should be handled and whether or not existing policies and technical solutions for privacy protection are sufficient. Should researchers limit what they record initially in order to never expose PII to footage? Should recorded PII be used for secondary analyses, although not related to the event? How should PII be secured? A review of literature summarizes current policies and technical solutions as well as a number of open challenges faced with the use of body worn cameras. In addition, we will discuss potential solutions for those challenges, regarding technology, laws and guidelines.

Jesse Parent, *Ethics and Bias in AI: Bridging the Gap via Interdisciplinary Collaboration*

Faculty Advisor: George Berg, College of Emergency Preparedness, Homeland Security and Cybersecurity, Informatics

As decision-making becomes increasingly automated in the modern world, how do we ensure that Artificial Intelligence (AI) is applied ethically? One approach involves answering the calls for greater collaboration, between humanities and STEM, to address the gap between "the two cultures" and endeavor towards a more unified, holistic approach to developing and regulating advanced technology. Here, we look at a specific issue of AI Bias, both in terms of technical inception and managing legal and social impacts. Furthermore, this research investigates a broader question: what can we do to ensure that technological developments are aligned with an inclusive and improvement-oriented future - rather than merely regurgitating the historical injustice, bias, or marginalization? We examine these issues as a transdisciplinary pair of undergraduate researchers in Informatics & Computer Science and Law & Humanities.

Jesse Parent, *Multidisciplinary Research in Brains, Minds, and Machines*

Faculty Advisors: George Berg, College of Emergency Preparedness, Homeland Security and Cybersecurity, Informatics; Annalisa Scimemi, College of Arts and Sciences, Department of Biological Sciences

The main thrust of this research is about acquiring diverse foundational training in order to better understand the workings of biological and artificial systems. This presentation covers a year's worth of research experiences from one Informatics major seeking to apply their skills in two different labs: computer science and neuroscience. Within applied informatics and computer science, the lab work focused on autonomous systems and drone swarm behavior - looking particularly at basic elements of autonomy and systems communication. In the neuroscience lab, the main

project involved monitoring a major biological system feature (circadian rhythm) indirectly via EEG analysis of brain wave activity, including set-up, testing, and operating hardware and software.

Together, these experiences led to gaining insight about systemic functioning in the animal and machine, embodied intelligence, and a greater respect for interdisciplinary research environments

Yasmine Sahawneh, *Cybersecurity Programs*

Faculty Advisor: Unal Tatar, College of Emergency Preparedness, Homeland Security, and Cybersecurity

Cybersecurity is an emerging sociotechnical field. Most of the problems and issues in cybersecurity have not been sufficiently answered and addressed because of lack of an interdisciplinary perspective or framework, which emphasizes human, social, and economic aspects alongside technical ones. Computer science and engineering have studied cybersecurity with perhaps little attention paid to social, ethical and usability issues. However, Information Science education has been traditionally concerned with all aspects of data and information by focusing on information, people, technology, and their interactions. The topic we will investigate is twofold: (i) To what extent do i-Schools in North America cover cybersecurity in their programs, concentrations (a.k.a. specializations or tracks) and courses at both the undergraduate and graduate (MS and PhD) levels? (ii) What is the nature of cybersecurity coverage by i-Schools in North America in terms of the level of education, and depth?

Emerging Technologies in Homeland Security and Emergency Preparedness

Kinsley Alexandre, *Disaster Capitalism in Puerto Rico: A Fight for Political and Electrical Power*

Faculty Advisor: Samantha Penta, College of Emergency Preparedness, Homeland Security, and Cybersecurity

This presentation is dedicated to analyzing the Disaster Capitalist techniques that have been imposed in Puerto Rico that have resulted in further propelling the country into a colonial dependency on the United States. First, we aim to analyze the relationship between the United States and Puerto Rico historically, and define the meaning of disaster capitalism. Next, we see how disaster capitalism is present and active in the context of the electrical infrastructure of Puerto Rico, and who benefits from the privatization of their electrical systems.

Darion Carril, *Speaker Recognition with Short Utterances: A Literature Analysis*

Faculty Advisor: Liyue Fan, School of Business, Information Security and Digital Forensics

Voice-based speaker recognition is currently one of the fastest growing technologies and supports important applications such as smart homes and bio-metric security. To improve efficiency and ease of use, the desire to enable accurate voice recognition methods using short utterances has increased dramatically. Because short utterances provide less data, clustering of speech units obtained from short utterances is often needed to provide high accuracy speaker recognition, which presents additional challenges for data processing. The project will analyze a plethora of related papers on the topic of short utterances in speaker-based voice recognition and conduct a comparative study. More specifically, this project will attempt to aggregate and identify the current state of voice-based speaker recognition using short utterances, how the use of short utterances challenges traditional speaker recognition methods, and future avenues for improvement.

Jenna LaTourette, *IDENT: Integrated Discovery of Emerging and Novel Technologies Project*

Faculty Advisor: Gary Ackerman, College of Emergency Preparedness, Homeland Security and Cybersecurity

Disruptive and emerging technologies have the potential to facilitate the threat of weapons of mass destruction. As a result, the need to build a repeatable, scalable system to identify and assess such technologies has been identified. For this particular portion of the project, the Terrorist Technology Adoption Model (T-TAM) has been ran against different violent, non-state actors including terrorists and other large organized criminal groups. Through open-source research, empirical values for different variables have been found regarding technologies that IDENT has identified and the groups' ability and motivation to adopt them. There are many factors such as group dynamic and the size of their network with other organizations that impact their capabilities to access new technologies. Through data collection, the use of emerging technology is assessed to identify specific threats.

Samael O'Brien, Czar 52; A Case Study of Failed Leadership

Faculty Advisor: Eric Stern, College of Emergency Preparedness, Homeland Security and Cybersecurity

This breakdown of proactive, effective leadership is certainly worth further analysis and investigation. The military operational climate, even though thoroughly enforced, has a myriad of examples where rules are metaphorically bent. In the Fairchild Air Force Base incident, we find a prime example of such mishap and ultimately see a command structure which frequently neglected concerns. The nature of their mission ultimately speaks to how far the operational risk and guidelines can be stretched, evaluations differ from higher headquarters missions, and airshows likewise are subjected to a different operational climate. Decision making can become gray when ego-driven personnel and nepotistic commanders are thrown into the mix. This case is ultimately a forward example of aviators who felt that regulations were different for them.

Kyle Pergolino, Operational Code Analysis: Hand-Coding

Faculty Advisor: Michael Young, College of Emergency Preparedness, Homeland Security, and Cybersecurity

Throughout history many world leaders have caused both great achievements and great atrocities. One of the many struggles of modern world leaders is to identify and prevent these atrocities from occurring due to the wrong people being in power. Operational code analysis is one approach to understanding and predicting the behavior of foreign leaders, including current leaders. Early applications of operational code analysis (OCA), relied on human interpretive capabilities, subject to influence by author bias. In the 1990s the Verbs in Context System (VICS) for coding texts was developed for OCA to reduce author bias and produce more systematic analysis. More recently, computer/automated coding systems have been developed to enable more systematic and reproducible analyses. Automated coding quickly provides non-biased, and reliable data to compare and analyze documents--a distinct advantage over laborious human coding. However, humans remain the masters of definition and meaning. Thus, without bias, a human coder is usually required to check and ensure the accuracy of an automated scheme. The goal is to become an expert hand-coder, or an individual who can accurately use the VICS system to code texts without bias. Utilizing the VICS coding scheme, identifying the correct subject (actor) and object (recipient) of various actions committed in documents, and using the human ability of being the master of definition and meaning to work alongside and ensure the accuracy of the automated coding scheme.

Hayley Peterson, Operational Code Analysis: Assessing Leadership Behavior in International Relations

Faculty Advisor: Michael Young, College of Emergency Preparedness, Homeland Security, and Cybersecurity

In 2013, Donald Trump mused whether Vladimir Putin would become his best friend. Since 2016, this question has gained important implications for US foreign policy. However, how could we have predicted whether the two leaders would become best friends? Operational code analysis is one approach to understanding and predicting the behavior of foreign leaders, including Vladimir Putin. Early applications of operational code analysis (OCA), relied on human interpretive capabilities, subject to influence by author bias. In the 1990s the Verbs in Context System (VICS) for coding texts was developed for OCA to reduce author bias and produce more systematic analysis. More recently, computer/automated coding systems have been developed to enable more systematic and reproducible analyses. Automated coding quickly provides non-biased, and reliable data to compare and analyze documents--a distinct advantage over laborious human coding. For example, analysis of over one million words spoken by Russian President Vladimir Putin (Dyson, 2017) shows Putin's leadership style is more of an opportunist than a strategist, and that he reacts hyper-aggressively towards terrorism. However, work is needed to increase the accuracy of the automated VICS coding scheme compared to 'gold standard', hand-coded phrases. The goal is to raise accuracy from the currently unknown level to the accepted level of above 80%. Thus far, the accuracy of an improved and extended automated VICS coding scheme has been improved from 6% to 59% and an initial analysis of international leaders illustrates the use of OCA.

Innovations in Atmospheric and Climate Change Research and Reporting

Ian Jaffe, 3D Printed Drone Attachment

Faculty Advisor: Michael Leczinsky, College of Emergency Preparedness, Homeland Security and Cybersecurity

This past semester I created an attachment for a Tello drone. Specifically, so elements such as sensors, microcomputers (Arduino), or even a small camera could be mounted to the underside of the device. I was tasked by my professor Michael Leczinsky, to make the attachment for the opening of the UAlbany Drone Lab. Currently, the attachment to the drone is a proof of concept. To create attachment, I measured various dimensions of the drone itself, and then after, I utilized a popular CAD software (Fusion 360) to create it. Next, I initially printed on my 3D printer and in later versions, I used the 3D printers in the UAlbany Makerspace. Thus far, I have executed ten iterations of the attachment. Each iteration included changes such as design and weight changes. My next plans for the attachment are to add an Arduino nano and various sensors to record temperature and humidity data. I plan to gather the data recorded and compare it to recorded local conditions. This information could be shared with local radio and television stations for their weather gathering operations.

Taylor Lewis, and Gaviann Levy, How Twitter Impacts the Topic of Climate Change

Faculty Advisor: Chang Sup Park, College of Arts and Sciences, Department of Communication

The online discourse about climate change has changed the way social media users receive information about such topics. Typically, people would go to scientific studies and online articles for the source of information about issues like climate change. However, with the ever-growing presence of social media applications like Twitter, people can display their voices and opinions. In this research, we look at studies surveying twitter about the topic of climate change, as well as look at the word climate through the use of the Hedonometer. This tool can calculate the response on Twitter to the word ‘climate.’ Also, we collected data from an online survey in which asks questions about the self-awareness of climate change on Twitter. From our research, we have gathered that the word ‘climate’ and the topic of climate change is talked about more frequently and negatively when a natural disaster strikes. The data we collected suggests that more people become aware of climate change when talked about from an online discourse. When there is a discussion on Twitter about change and rallies towards decreasing climate change, people look at the topic with positivity—thus indicating that people are becoming more aware of the problem of climate change in the media rather than denying it on Twitter.

Jacob Shultis, Enhancing Ice Storm Detection from the New York State Mesonet

Faculty Advisor: Junhong Wang, College of Arts and Sciences, Department of Atmospheric and Environmental Science

Intense freezing rain/drizzle events lead to extremely hazardous conditions which can last up to days or weeks, causing large amounts of damage to property and infrastructure over their duration. This work attempts to gather a more high-resolution picture of ice storm spatial coverage, as well as duration of freezing effects, utilizing the data collected from the New York State Mesonet (NYSM). NYSM consists of 126 stations across the state collecting measurements of multiple meteorological variables, as well as images every five minutes. NYSM is the first network operationally making 10-m wind measurements from two independent sensors: propeller wind monitor and sonic anemometer. During ice storm events, large wind speed differences would be reported between propeller and sonic anemometers. With visits from field technicians, it was revealed that the propeller had developed a coating of ice, thus either completely stopping its spinning, or slowing it drastically. Looking at the winter of 2017-8, data was analyzed across all stations that reported similar wind speed differences to create an algorithm to detect freezing events with more rigor. It was found that along with wind speed differences, a temperature threshold can also be drawn to more accurately label an event as freezing rain. Looking at a case from April 14-15 2018, it was seen that using this method to detect freezing rain vastly improved the spatial extent of freezing rain than what was reported. This information is incredibly important for the public, and may be used to make better decisions in the future.

Aleks Siemann, Geospatial Energy Potential and Life Cycle Assessment of Nearshore Oscillating Water Column Systems

Faculty Advisor: Marie-Odile Fortier, University of California Merced, Civil and Environmental Engineering

Oscillating Water Column (OWC) systems are an iteration of terminator ocean energy technology which generate electrical energy from turbine torque induced by the compression of air in a chamber from changing water level

height. OWCs are a well-established technology, however, there have been no studies to date which quantify the life cycle environmental impacts of these systems in a geographic context. The goal of this study is to optimally size an OWC system for selected New England coastline sites and then assess the environmental impacts of the varying system sizes.

An OWC system is optimally sized when the volume of its concrete chamber is scaled proportionally to its generation potential; maximizing electrical energy output while minimizing chamber material consumption. Therefore, geospatial variability in generation potential will affect optimized chamber size, in turn, varying the chamber material consumption. A sample size of 6,775 shoreline sites returned average generation potentials ranging from a maximum of 6.24 kW m⁻¹ of wave crest to a minimum of 0.31 kW m⁻¹ of wave crest for every 100 km of coastal length.

This study revealed high variability in estimated energy generation potential over a short geographical span and, therefore, high variability in chamber material consumption between 115.08 m³ - 2132.33 m³ of concrete. These findings emphasize the necessity of quantifying the life cycle climate change impacts of OWC installations prior to design at a national level, as they vary geographically and are influenced by the optimal chamber size and wave power potential.

Supporting Local Farmers and the Local Food Movement in the Capital Region

Nicholas Albano, Drew Zaweski, Giuliana Martone, and William Talley, Regional Food Production Roundtable Discussions

Faculty Advisor: Mary Ellen Mallia, Office of Sustainability

In winter 2018, Capital Roots hosted four producer roundtable discussions as part of their Greater Capital Region Food System Assessment. Our project will analyze the survey responses from the 62 farmers and food producers who attended the roundtables with the goal of identifying barriers to business growth. The results will be categorized by county and will include quantitative data on markets, labor, regulations, and unutilized farmland.

Dean Berato, Zack Allen, Arturo Lua Castillo, John Murray, Loren Torres, and Peter Torres, Food Production in The Capital Region

Faculty Advisor: Mary Ellen Mallia, Office of Sustainability

In 2012, the market value of food grown in the United States was measured to be approximately \$394 billion. Agriculture is an important sector in the Greater Capital Region of New York State's economy, accounting for \$546,807,000 worth of produce sales. Our project will use census data to create profiles of the top meat and produce products grown in 11 counties across the Capital Region and the amount of employment that is provided by the Food Production sector.

Matthew Kelly, Dillon Asmus, Yee Mon Aung, Christopher Bonelli, Maggie Burke, Calogero Corina, Lillian Hahn, Andrew Punnoose, Nicholas Sobotka, and Brian Wong, Consumption in the Capital Region for Future Generations

Faculty Advisor: Mary Ellen Mallia, Office of Sustainability

Healthy eating habits and access to fresh food play a significant role in the health and well-being of a community. This project will focus on the accessibility of healthier foods for low-income communities in the Capital Region to gain insight on opportunities to improve food security and provide markets for our farmers. Our project team will travel to local stores, collect food data, conduct surveys with people from the community and report on our findings. This research will also support future efforts to create accurate food mapping and gain a better understanding of the barriers area residents face in food accessibility.

Albert Martinez, Food Processing in the Greater Capital Region

Faculty Advisor: Mary Ellen Mallia, Office of Sustainability

Food Processing is turning fresh foods, such as produce, meats, poultry, dairy, and grains, into food products. Food Processing can enhance the economic value of fresh food, extend shelf life of food, and make cooking food

convenient and quick. Processing can occur on the farm in which the food is grown or at a mobile-processing facility.

Food Processing has made a significant impact to New York's economy. New York had 2,508 food and beverage plants in 2015, which makes New York the second largest food and beverage manufacturing state in the US. The processing of fresh foods has run into many problems such as climate change, work force development issues, infrastructure, and profit margin issues. Over time, there has been a halt to the expansion of the processing market in New York due to shortage of skilled labor for harvesting and processing. The infrastructure to buying, upgrading, and/or expanding a processing facility has been known to expensive. The small margin of profits has made the business of process unattractive.

The focus of this study was to find and interview local food processors in the greater

Altia Robinson, Matthew Creus, and Fu Yee Chua, Supporting New, Young, and Retiring Farmers

Faculty Advisor: Mary Ellen Mallia, Office of Sustainability

Our project will highlight the different programs available that support farmland transition through both online research and interviewing people involved in the industry. Due to the average age of 55 for farmers in the Greater Capital Region, the industry will be experiencing a lot of land turnover. Our research will include illustrating ways for new and young farmers to fund land purchases, and identifying programs that aid retiring farmers in selling or leasing their farmland. The project will contain information from different programs around the United States but focus primarily on the greater Capital Region's land conservation and protections for farmland.

Nate Siekierski, Atara Siegel, Maurice Maswary, Courtney O'Connell, and Sean Eccles, Production Distribution: Gaps and Opportunities for Local Food and Regional Aggregation (conducting phone interviews with distributors)

Faculty Advisor: Mary Ellen Mallia, Office of Sustainability

Our project examines the economic opportunities, barriers, and gaps between local and non-local food distribution networks in order to pinpoint new market distribution opportunities within the Capital Region, with a focus on low-income areas. Area producers will be surveyed in order to pinpoint new market opportunities. Additionally, the study will highlight how food distribution networks help local communities embody the UN Global Goal of Responsible Production and Consumption.

Advances in Finance

Dan Dreher, Corporate Deleveraging and Financial Flexibility

Faculty Advisor: Rita Biswas, School of Business, Finance

Most firms tend to deleverage from the historical peak market-leverage (ML) ratios to near-zero ML while also insisting on growing and maintaining high cash balances. Among 424 publicly traded non United States companies that are based in developed countries that are not financial nor industrial firms with five or more years post peak ML data, the median ML at the peak is 0.369 and 0.021 at the subsequent trough. The median cash / total assets ratio rises from 0.046 to 0.080, respectively during the same period. These findings support theories in which firms deleverage from peak ML to restore ample financial flexibility and rebuild cash balances to assure reliable and cost-efficient access to capital. For the entire sample, the average annual changes of ML in the developed sample is -7% while it's only about 4% in the emerging markets sample. In addition, during the deleveraging period, the change in NDR (net debt ratio) which is a measure of debt, net of cash to total assets, is 28% in developed countries. The other financial metrics came back with no other major differences. These findings show that there is no key difference between developed countries and emerging market countries for firms' proactive deleveraging from their peak ML ratios.

Journalism Across the Globe: The Freedom of the Press and its Influential, Diverse Coverage

Caroline Borrego, and Edward Carey, *Journalism in the United States v. Cuba*

Faculty Advisor: Chang Sup Park, College of Arts and Sciences, Department of Communication

In this paper, we will be discussing how media press freedom and media propaganda in the United States is different from how it is in Cuba. In the United States, freedom of the press is legal and the right to freedom of press is protected by the first amendment of the constitution. Since it is protected by the first amendment, this means that the government can't get involved in what news and opinions go public and they can't be corrupt within the media. As far as media propaganda goes in the United States, propaganda is usually spread by either the government or other people/organizations that are part of the media. It's a little strange that the United States government can promote propaganda to influence people's opinions but they cannot get involved in what news and opinions go public, it's almost a loophole for the government to influence people's opinions. In Cuba, there is no freedom of the press. Since it is very difficult to have anything anti-government out there for the public, there are only a handful of independent outlets for news for the people of Cuba. Although, it is with a high vigilance that they are able to report and if there are any slight crosses over the red lines results in punishment. As far as media propaganda go, propaganda is usually spread by the government in favor of the government.

Bailey Cummings, Lojeava Coriolan, and Nicholas De Las Cuevas, *No Ordem e Progresso in the News: How Global Media Shapes the World's View of Brazil*

Faculty Advisor: Chang Sup Park, College of Arts and Sciences, Department of Communication

Ordem e Progresso, Portuguese for "order and progress", is the country of Brazil's motto. While the country's motto, inspired by French philosopher Auguste Comte's doctrine of positivism, encourages order and progress socially, politically, and economically, most global media outlets stray from that sentiment when covering Brazilian news. Because of the negative reportage on Brazil throughout recent history by American and European news, the world outside of Brazil sees the country and its citizens as violent, poor, and uncivilized. The foreign press has lacked cultural sensitivity when reporting on Brazil. The consistent reportage on Brazilian politics and social issues by westernized countries can lead to things such as American swimmer Ryan Lochte's "real account" of being robbed at gunpoint while at the 2016 Rio Olympics. The stereotype that Brazil is a violent country and that white foreigners are in danger when visiting was a form of fear mongering Lochte concocted to cover up for his wrongdoings. These stereotypes that are stressed in the media are dangerous to the country of Brazil. We will be analyzing and comparing the coverage of one major news event in Brazil by media outlets in the United States, the United Kingdom, and Brazil. Gun laws are an important topic due to the recent mass shootings not only in the U.S., but other countries as well. Our research and analysis thus far shows that media conglomerates Reuters and The New York Times have covered the topic of gun laws in Brazil differently than the English language paper, The Rio Times, has. The New York Times and Reuters have reported on Brazilian president Jair Bolsonaro loosening gun laws with some criticism while The Rio Times has merely stated the facts when covering it. Our paper's goal is to analyze these articles and make people aware of the effects foreign reporting can have on Brazil.

Brandon Mercier, Thomas Marra, and Sue Min, *American vs Foreign Coverage of Major Events*

Faculty Advisor: Chang Sup Park, College of Arts and Sciences, Department of Communication

The main focus of this research paper is to focus on the how different major media events are covered in three different countries, focusing mainly on Venezuela, The United States, and South Korea. The major events to be focused on will include The U.S. Government Shutdown under the Trump Administration, The 2018 Olympic Games, and Venezuela's election of Nicolas Maduro. These events will be compared based on how prevalent the event was covered and the different stance/viewpoints the country focused on regarding the event. Each country will be presented with a brief overview of the country's main media forms and any censorship the country has in their media. The countries will also be evaluated to see if the censorship (if any) plays a role in how these events were covered. We will also be evaluating how the political/economic/social relationships between these countries affects their coverage of an event that occurred in another one of the countries. During our research we discovered that each country has different ways it portrayed these events based on how relevant they were in the country and the country's relationship with the country where the event happened.

Andie Thompson, Wen Sun, and Jack Summers, Journalist Under Attack

Faculty Advisor: Chang Sup Park, College of Arts and Sciences, Department of Communication

The question of whether or not journalists are increasingly under attack is evident based on data collected from a variety of different sources that include international statistics as well as domestic information within the United States. The topic can be broken down by the different subject areas journalists are covering such as political, religious, war, and speech throughout different countries. In addition, the threat to journalists is said to be at an all-time high within the past 10 years. These threats include fines, imprisonment, or capital punishment and are indicators of why these trends seem to be increasing based on the data presented.

When we talk about journalists, we think of a person who writes for newspapers, magazines, or news agencies. We think of journalists as people who post news to the public. There is no doubt that the news we see in the world are all spread through journalists. Journalists are the ones who dig to uncover the truth behind an event. Today's journalists are being attacked and threatened in various forms. Not only do they face the threat of personal safety, but also allegations and attacks from many aspects.

Journalists face all sorts of dangers when they work on a story regardless of the subject. Investigative journalists are at risk of being mixed up in drug deals gone bad, jail time, and even death threats directed towards their families. War correspondents are no different with the possibility of jail time along with accidental death and injuries.

Archaeology: Past Lifeways in the Capital District, Pre-Columbian Mexico, and Prehistoric Newfoundland**Rachel Freeman, Animal Use at the Pre-Columbian Maya Urban Capital of Mayapan, Yucatan, Mexico**

Faculty Advisor: Marilyn Masson, College of Arts and Sciences, Department of Anthropology

Animal use was important in everyday life as well as in public and ritual ceremonies for ancient societies, including the Maya civilization of southern Mesoamerica. Analyzing the animal bones from archaeological sites permits comparisons of spatial variation in use of different taxa in public or domestic settings. This research uses a sample from the last regional capital city of the Maya area, Mayapan, of the Postclassic Period (A.D. 1150-1450), colonnaded hall Q-99 (an administrative and ritual building), that I helped analyze in 2018. Hall Q-99's faunal remains are compared to those of two other buildings at the city's monumental center, Hall Q-54, and the principal pyramid Q-162 (the Temple of Kukulcan). Halls were constructed and used by political lords who represented many regional states of the Mayapan confederacy. Preferences for animal foods or animal sacrifices might suggest these regional tastes. The Temple of Kukulcan was a unitary emblem of the Mayapan state (dedicated to the city's mythical founder), but activities there may have been controlled by the most powerful members of the council government. What differences, if any, are observed in the faunal bone assemblages at these two halls and the principal temple? How might such differences be interpreted?

Daniel Madigan, Analysis of Ceramics at the Stephen and Harriet Myers Residence, A Hub of Albany's Abolitionist Activities in the Mid-1800's

Faculty Advisor: Marilyn Masson, College of Arts and Sciences, Department of Anthropology

The Stephen and Harriet Myers residence is a National Register of Historic Places site in downtown Albany, and home to the Underground Railroad History Project of the Capital Region; it was a nucleus of abolitionist activities in the 1850's. Ceramics from a buried and infilled cistern, unearthed by UAlbany's archaeological investigations in 2017, reflect consumer tastes of African American residents of this property in the mid-nineteenth century. I compare ceramic diversity from the lower (earliest) to upper (latest) levels of the cistern feature. This study builds on prior research into African American social identity in Albany (by Corey McQuinn) that revealed a concern with status signaling as a tool in political resistance to racial inequality. My analysis reveals three important patterns. First, the cistern was infilled in a relatively short time period, reflected by the presence of a similar range of ceramics in the earliest through latest levels. Second, residents continued to use heirloom pieces from the early 1800's, including creamware and pearlware plates. Third, the residents were relatively affluent by middle class standards of the day, as reflected by the presence of diverse serving china types as well as imported porcelain. I consider these findings in the context of previous analyses of material expressions of status of the residents, including the John Johnson family (present by 1847) and the Myers family (1855-1858).

John Marvin, Assessing Typological Assumptions of Notched Endblades of Newfoundland and Labrador: An Example from Stock Cove, Newfoundland

Faculty Advisor: Christopher Wolff, College of Arts and Sciences, Department of Anthropology

The Stock Cove site at Newfoundland holds evidence for every culture that has lived on the island dating back to roughly five thousand years ago. Much of this data comes in the form of stone tools, produced by the cultures which once inhabited this region. This study focuses on just two of the cultures which once made Stock Cove their home, the Groswater and the Maritime Archaic peoples. Of all the stone tools that both cultures made use of, this study focuses on endblades. After gathering data on the morphology of the endblades present at the site, the data is then compared to past research conducted in Newfoundland and Labrador. Through intensive analysis and comparison, this study seeks to determine whether the endblades at Stock Cove can be shown to belong to either the Groswater or the Maritime Archaic.

Lucas Weinman, Schenectady's Underground - Archaeology in the Stockade

Faculty Advisor: Marilyn Masson, College of Arts and Sciences, Department of Anthropology

In this poster, I present an on-going archaeological and historical analysis of the habitation within Schenectady Stockade Historic District from pre-contact to the 20th century. I have contributed to a collaborative research effort with SUNY Schenectady County Community College's Community Archaeology Program (CAP), as part of a research internship for independent study credit in Anthropology at UAlbany, under the supervision of CAP's Louise Basa. This research is focused on 2017 excavations and continuing analysis of a multi-component site in the historic district. This research also includes an analysis of 4 other CAP excavated sites currently presented in an exhibit I created at SUNY Schenectady's Begley Library.

Context is Everything: Historical and Anthropological Analyses

Diandra Allen, Daily Lives of Samburu Pastoralist Children: Work, Herding, and Food Consumption

Faculty Advisors: Julia Jennings, College of Arts and Sciences, Department of Anthropology; Charles E. Hilton, University of North Carolina at Chapel Hill, Department of Anthropology; Bilinda Straight, Western Michigan University, Department of Anthropology

In pastoralist societies of northern Kenya, children, aged 3-14 years, are tasked with economic responsibilities associated with livestock herding, domestic obligations, and allocare of younger siblings. Mixed age groups of children lead livestock some distance away from the settlement, often away from direct supervision of adults and from the benefit of ready-food access during the day. Our study analyzes Samburu children's physical activities in conjunction with daily food consumption in a community where traditional diet has been replaced with low quality processed food such as maize meal. A focal follow approach was applied, sampling 5 boys and 4 girls each for over a 36-hour period. Physical activity levels (PALSS) were examined through the use of non-invasive accelerometers and time allocation observations. Food consumption was monitored through direct observation and measurements by volume for each food type with additional 24-hour food recalls. Physical activity pattern differed between boys and girls, apparently driven by an early household application of the sexual division of labor. Time allocation indicated that girls are tasked more frequently with household economic work compared to boys. Additionally, food consumption patterns also differed by gender. Girls were more likely to be involved in food processing and preparation thereby allowing for greater access to predominately processed food throughout the day. However, boys engaged in small-scale hunting of birds and other animals, thus, supplementing their diets with protein and fat. The implications of our study are discussed within the context of energy balance during childhood in an energy-poor environment.

Jesus Gandara Ortega, A Missed Opportunity: Post-revolutionary Mexican Murals and Incomplete Historical Narratives

Faculty Advisor: Christine Vassallo-Oby, College of Arts and Sciences, Department of Latin American, Caribbean, and U.S. Latino Studies

This research seeks to investigate the sociopolitical factors that contributed to the lack of representation of Afro-Mexicans in the post-revolutionary government commissioned murals, and how this has affected the Afro-descendant community today. Africans arrived to Mexico as slaves and as freeman during the colonial period. They became Mexican citizens and greatly contributed in the fight for independence, the Revolution, and the construction

of Mexican culture. The commissioned murals were made to unite all races and educate Mexicans in the new Mestizo world, to consolidate the Mexican identity and its history, but also, to act as political propaganda to legitimize the new authoritarian government (Coffey 2012). The post-revolutionary struggles for power, and the necessity to unite the country, affected the representation of Afro-descendants in the murals, in historical records and as citizens. This is visible in the Constitution of 1917, where indigenous communities gained benefits and protection from the Federal and State government that Afro-descendants did not receive. Today, murals have become a historical representation of the past and the Mexican identity. The murals were a golden opportunity to exalt not only the indigenous roots, but the African roots as well. This lost opportunity has contributed to Afro-descendants becoming invisible citizens today. Many face discrimination and some have to carry their passports to avoid being detained or deported by the authorities. The lack of Afro-descendants imagery on the historical murals has made an impact on Mexico today, an impact that leads Mexicans to discriminate against their own sisters and brothers.

Mitchell Hura, *Favelas do Rio de Janeiro: Carioca Shantytowns and Their Historical, Political, Economic, and Cultural Implications*

Faculty Advisor: Ray Bromley, College of Arts and Sciences, Department of Geography and Planning

A culmination of research collected from AGLO403Z during the Fall 2018 semester, this research assesses the historical transformation of Rio de Janeiro from a small port city to an important international center of trade and commerce, while also addressing the downfalls faced by its favela communities. Analyzing in further depth the various favelas, this research looks at a) the different political and economic structures of favela communities that its inhabitants have constructed, b) different public policy initiatives to diminish the effects of poverty and violence suffered by community members, and c) the actual underlying factors to the escalation of violence in favelas.

April Ross, *CiTonga Numerals: The Preservation and Patterns of the Quinary System*

Faculty Advisor: Lee Bickmore, College of Arts and Sciences, Department of Anthropology

Roughly 200,000 CiTonga speakers from Malawi currently are unintentionally preserving an endangered counting system. This research project is based first-hand research of CiTonga I conducted over the last six months with a native speaker. The language has received minimal attention in linguistic literature to this day. While collecting this data, an interesting syntax pattern was exposed due to the language's base-5 foundation of the numeral system. This framework uses conjunctions, nominal and numeral class prefixes to signal grouping of numeral roots by multiplication, addition, or both.

CiTonga speakers produce outputs less than ten similar to the structure of the following example:

(1) nyòlì zí-nkhóondè ndí zí-vìì

C10-chicken C10-five and C10-two

"seven chickens"

(1) illustrates the numeral must "agree" with the class of noun it is modifying. In this case the noun falls into Class 10, which is marked numeral prefix /zi-/.

Phrases with larger numbers have more complex structures, agreement and vowel lengthening patterns as shown by example (2):

(2) Nyòlì mà-chùmí ngá-tààtù ndí zí-vìì

C10-chicken C6-ten C6- three and C10-two

"thirty-two chickens"

The example above expresses '32' as 'three tens plus 2'. This shows that in addition to being base 5, there are some base 10 properties in the language. Unlike the numerals from 1-5, the root for 10 doesn't show class agreement with the noun.

Beyond the interesting patterns agreement; a fascinating syntactic structure using subject raising was crucial to produce agreement between the nouns and modifiers. This evidence ultimately supports Carstens (2008) publishing on Bantu determiner phrases.

Victoria Tobes, Roger Bacon: The Christian, the Alchemist, the Enigma

Faculty Advisors: Patrick Nold, College of Arts and Sciences, Department of History; Mitchitake Aso, College of Arts and Sciences, Department of History

This paper explores the life and work of 13th century English Franciscan friar, Roger Bacon in light of the spiritual-religious practice of alchemy. Bacon's works in pertinence to alchemy reflect his belonging to a school of intellectual thought known as Hermeticism; which encompasses the practice of alchemy. Bacon can be placed among other philosophic practitioners of alchemy throughout history; allowing for expanded insight into the life of this medieval scholar. Throughout history, Bacon's most well-known work, the Opus Majus, has been interpreted in a variety of ways. However, when considering what the practice of alchemy is at its Arabic roots, the sometimes vague and perplexing character of Roger Bacon becomes less elusive. Bacon has been called both a magician and a scientist as a result of the obscurity in his work; this paper explores the underlying motives Bacon had in constructing the Opus Majus. Roger Bacon expressed that sapientia or "divine wisdom" could be systematically obtained by following the revised scholastic curriculum he outlined in the Opus Majus. What is this sapientia? Where did Bacon get this idea? And why did Bacon work tirelessly to prove its efficacy to Pope Clement IV? This paper sets out to provide a deeper look into the place that alchemy held in Bacon's life and the reasons he wished to integrate it into the Christian learning curriculum at the universities of Paris and Oxford.

Advances in Psychology: Emotion, Memory, and Social Competence**Daniella Gelman, The Relationship Between Social Competence and Executive Functioning in Disadvantaged Preschool Age Children**

Faculty Advisors: Leslie Halpern, College of Arts and Sciences, Department of Psychology; Julia Hormes, College of Arts and Sciences, Department of Psychology

Executive functioning (EF) describes a variety of cognitive skills necessary for an individual's everyday life to achieve goal-directed behavior (O' Toole, Monks, & Tsermentelli, 2017; Poon, 2018). EF has been associated with early social development, there are gaps in understanding which components of EF are most important (Nilsen & Valcke, 2018; Gomes & Livesey, 2008). This study seeks to explore the relative importance of hot and cold EF to peer relations. 33 children were recruited to the study. Tasks included a measure of response inhibition, Head Toes Knees and Shoulders (HTKS), and of cognitive flexibility, Dimensional Change Card Sort (DCCS). The Teacher Report of Social Competence (TSCPB) assessed social functioning. Bivariate correlations were used to assess Global executive functioning skills, as reported via questionnaire, were found to be significantly associated with social competence.

Matthew Pascazi, The Effects of Emotional Scenarios on Memory

Faculty Advisors: Jeanette Altarriba, College of Arts and Sciences, Department of Psychology; Allison Wilck, College of Arts and Sciences, Department of Psychology

The emotion processing literature has shown that angry and happy emotions tend to increase individuals' memory recall, while sad emotions typically decrease memory recall. In Kazanas (2016), an emotional advantage was found for face-name pairs when they were studied in an angry and happy context, but not in a sad context, when compared to neutral contexts. However, there was a potential confound such that the scenarios that showed an emotional advantage (happy, angry) were self-focused (e.g., you won an award) while those that did not (sad) were other-person-focused (e.g., your friend won an award). The purpose of this study was to see if changing the focus of an emotional scenario would affect the strength of participants' memory recall. In the current experiment, participants studied face-name pairs of people they would hypothetically encounter in scenarios with a self- or other person-focus across happy, angry, sad, or neutral emotional contexts. We expect to find greatest memory recall for the face-name pairings when studied in a happy or angry emotional context, as compared to the sad and neutral contexts. This outcome will be amplified in a self-focused condition, as compared to the other- person-focused conditions.

Destiny Valentine, Emotion Processing

Faculty Advisors: Jeanette Altarriba, College of Arts and Sciences, Department of Psychology; Allison Wilck, College of Arts and Sciences, Department of Psychology

The literature shows that words processed according to their survival relevance typically produce a memory advantage. Similarly, words containing an emotional connotation tend to lead to better memory. The current study

examined whether combining both the survival processing effect and emotion processing advantage would cause an interaction that amplified the effects on memory. Using a modified version of the traditional survival processing paradigm, participants rated emotion words (positive, negative, or neutral) on their relevance to a survival context or home-moving control context. They were later given a surprise recall task for the rated words. The results did not show a survival processing effect regardless of emotional valence. However, there was a significant effect in the amount of intrusions (i.e., false memory) for the conditions that contained negative emotion words. More research is needed to see if emotion words are a boundary condition to the robust survival processing effect.

Mental Health and Health Care Policies: Body Image, Maternal Care, and Breast Cancer Risk

Devyn Beswick, Tyrosine hydroxylase expression in chronically stressed postpartum rats

Faculty Advisor: Joanna L. Workman, College of Arts and Sciences, Department of Psychology

Postpartum depression (PPD) is a common mental health disorder associated with maternal suffering and negative consequences for offspring, affecting 1 in 7 women. PPD shares similar symptoms as major depressive disorder. However, the causes of postpartum depression (PPD) are incompletely understood but include social influences and biological mechanisms. The postpartum period is characterized by dramatic hormone fluctuations and represents a time of increased risk for developing depression. Stress and the early cessation of breastfeeding (or lack thereof) are major risk factors for PPD. Hormonal aspects of breastfeeding may buffer against the development of PPD. Prolactin, a hormone elevated during lactation, attenuates stress responses in postpartum rats. The dopaminergic system is particularly important in understanding PPD. Anhedonia, loss of pleasure in previously rewarding stimuli, is a core symptom of depression and may be related to disturbances in the dopamine (DA) system. Tyrosine hydroxylase (TH) is the enzyme that makes DA and TH can be used to identify DA neurons. In this study we tested whether chronic stress would reduce TH-expressing neurons in the ventral tegmental area (VTA) and whether prolactin would reverse this. Rats were randomly assigned to be chronically stressed or non-stressed and treated daily with prolactin or saline. Using immunohistochemistry, we have labeled for TH and are currently conducting microscopy. Utilizing an interdisciplinary biopsychosocial approach that includes perspectives in neuroscience and social work will enhance treatment of PPD and improve the overall quality of life for women who are afflicted.

Michelle Raissa Kobou Wafó, The Effects of the Affordable Care Act Medicaid Expansion On Breast And Cervical Cancer Screening Rates On Low-income Childless Women

Faculty Advisor: Pinka Chatterji, College of Arts and Sciences, Department of Economics

On March 23rd, 2010, the Obama administration passed the Patient Protection and Affordable Care Act (ACA) commonly known as Obamacare. One of the main tenets of the ACA aimed at expanding the already existing Medicaid program to cover all adults under the age of 65 with income below 138% of the federal poverty level. Prior to ACA, Federal Health agencies had strict categorical eligibility requirements which excluded childless and non-pregnant women regardless of their income (Adams and Johnston, 2016).

This research focuses on women preventive services rate (Pap smear and mammogram) in states that have expanded Medicaid versus those that did not. Using the self-reported data from 2011-2016 Behavioral Risk Factor Surveillance System Survey, we used a difference-in-difference method to identify the change before and after Medicaid Expansion. We set two hypotheses for this study. The first one is that there will be a gap in screening rates between the expansion states and non-expansion states. The second one is that black women with the lowest level of education are the most affected as preventive care can be costly for uninsured women with low income.

Peri Sosensky, Effects of Maternal Depression on Toddler's Sleep

Faculty Advisor: Monica Ordway, Yale School of Nursing

This study, Toddler Sleep Study (TSS) examines the associations between sleep, stress, and health among toddlers living in socioeconomically disadvantaged homes near New Haven, CT. The overall goal of the research is to understand the characteristics of sleep associated with toddler's physiologic stress response and socioemotional health. In addition to toddler's sleep and stress measures, we collected data on maternal depressive symptoms using the CES-D to examine the association between maternal depressive symptoms and toddler's sleep patterns. A strength of our study is the use of subjective and objective sleep data using parent-report, sleep diaries, and actigraphy. Actigraphy provides data on sleep duration, naps, bedtime, and sleep efficiency. This project will discuss

associations between maternal depression and toddler's sleep. TSS is ongoing and no results are final yet, however, 25% of 88 participants reported scores with possible depression symptoms.

Taylor Swanson, *The Association between Body Checking and Exercise Behaviors*

Faculty Advisors: Drew A. Anderson, College of Arts and Sciences, Department of Psychology; Christina Scharmer, College of Arts and Sciences, Department of Psychology; Courtney Breiner, College of Arts and Sciences, Department of Psychology

Body checking is characterized by an obsession with appearance; including checking appearance in mirrors, comparing body with others, compulsive weighing, and pinching of body parts (Campana et al., 2013). Body checking behaviors function to reduce anxiety from body image disturbance short-term, but can also increase these anxieties long-term, encompassing the risk of developing an eating disorder (Haase et al., 2011). At present, little is known about the relationship between body checking and exercise behaviors. This study aimed to examine the association between body checking and exercise behaviors in a sample of nonclinical college students. Participants ($N = 624$; 62.5% female; 44.9% Caucasian) completed the Body Checking Questionnaire (BCQ), the Godin-Leisure Time Exercise Questionnaire (GLTE), and the Compulsive Exercise Test (CET). Scores on the Weight Control (WC) subscale of the CET, and the Visual Checking (VC) and the Behavioral Checking (BC) subscales of the BCQ were examined. A bivariate correlation matrix was performed to test whether body checking was associated with exercise behavior quantity and compulsive exercise. GLTE was negatively associated with VC ($r = -.144$, $p < .01$) and was not associated with BC ($r = -.077$, $p = .06$). WC was positively associated with BC ($r = .50$, $p < .01$) and VC ($r = .50$, $p < .01$). Findings displayed that body checking isn't associated with exercise behavior quantity, but is associated with compulsive exercise. Specifically, compulsive exercise is associated with both visual and behavioral body checking. Future research should consider longitudinal and experimental studies to establish any causality between these variables.

Public Health: Drug Use, Diabetes, and their Consequences and Social Contexts

Nana-Hawwa Abdul-Rahman, *Atropine and Scopolamine Containing "Legal Highs": Utilizing Chemometric Processing of Direct Analysis in Real Time-High Resolution Mass Spectral Data to Identify "Legal Highs" From Solanaceae Genus Plants*

Faculty Advisor: Rabi Musah, College of Arts and Sciences, Department of Chemistry

An alarming trend in the ongoing challenge of drug abuse is the ingestion by drug users of current unscheduled mind-altering substances (also known as "legal highs"), in order to circumvent prosecution for possession and use of illicit drugs. One such class of substances are plant entheogens that have a long history of use in traditional medicine and in religious rituals in indigenous societies. The increasing recreational use of these substances, supported in part by their ready availability via internet commerce, imposes significant dangers including overdoses and fatalities. In the context of medical emergencies from overdoses or the commission of crimes while under the influence of these products, it is very difficult for crime scene investigators or emergency medical technicians to identify these substances because of the absence of methods for their routine analysis and identification. In many cases, the abused plant drugs contain compounds that are in current clinical use and are scheduled, even though the plants from which they are derived are not. Examples include atropine and scopolamine, which in low doses are used clinically for the treatment of several gastrointestinal diseases and Parkinson's disease respectively. However, they are psychoactive at higher concentrations, and plants primarily from the Solanaceae family that contain these compounds are abused directly as legal-highs. Thus, there is an urgent need for the development of protocols that can be used to identify such materials so that appropriate treatments can be applied in the event of an overdose, or laws to legislate the abuse of these materials be instituted. Reported here is the development of a new protocol for the facile and rapid analysis and identification of a broad range of psychoactive atropine and scopolamine-containing seeds representing Solanaceae genus plants, based on the unique chemical fingerprints of each species. Analysis by direct analysis in real-time high-resolution mass spectrometry of the seeds of 24 species (i.e. *Atropa belladonna*, *A. komarovii*, *Brugmansia arborea*, *B. aurea*, *B. sanguinea*, *B. suaveolens*, *B. versicolor*, *Daturaceratocaula*, *D. discolor*, *D. ferox*, *D. metel*, *D. leichhardtii*, *D. quercifolia*, *D. stramonium*, *D. wrightii*, *Hyoscyamus albus*, *H. aureus*, *H. niger*, *H. pusillus*, *H. muticus*, *Mandragora autumnalis*, and *M. officinarum*) was used to furnish spectra that represented the metabolomic fingerprints of each species.

Leah Duell, Tyrell Feaster, and Nathan Fenlon, *Opioid Crisis: An Epidemic*

Faculty Advisor: Chang Sup Park, College of Arts and Sciences, Department of Communication

News of the opioid epidemic has circled globally. Cases by the thousands of overdose related deaths due to opioids has caused problems within not only America, but the world. The news coverage contains cases of families being torn apart, children being left without parents and how it leads to problems such as sex trafficking and killing.

Opioid usage in the United States has become a more and more serious issue throughout the 21st century. As of 2019 there are more than 130 opioid related deaths in the United States. Many of these addictions can stem from prescription painkiller addiction post-surgery. Roughly 25% of patients who receive prescription painkillers misuse them, and roughly 10% develop an addiction. This addiction can lead to heroin usage, one of the deadliest opioids. 80% of people who use heroin transitioned from prescription opioids. Fentanyl, a synthetic opioid, has become more frequently used in the past decade, leading to more deaths because of its high fatality rate. Oxycodone, one of the most commonly prescribed opioid painkillers, saw a 500% increase of usage from 1999-2011. The CDC (Center for Disease Control) has added opioid overdose prevention to its list of the top five public health challenges as of 2014.

One thing fueling the addiction that feeds the Cartels pockets is the multitude of ways for them to smuggle it into the country. Previously cartels were well known for using small aircrafts to fly drugs into the United States. More recently however authorities have discovered several new innovative ways that traffickers have been using to smuggle drugs across the border. Back in 1990 authorities discovered the first of what has become many underground tunnels used by smugglers. Many of these tunnels were still unfinished but the ones that had been completed featured full lighting systems, air flow systems, rail systems, and pulley or level systems to retrieve the drugs from the tunnel. Authorities have also recovered drones, catapults and even modified cannons near the border all for the purposes of shooting or flying drugs from Mexico into the United States. Authorities more importantly fear that cartels are moving closer to creating fully submersible vessels as they have already captured partial submarines used for smuggling purposes.

Andrew Wang, *Comparison of Prevalence of Chronic Kidney Disease in Chinese Americans with Pre-Diabetes*

Faculty Advisor: Cijiang He, Icahn School of Medicine at Mount Sinai

Prevalence of chronic kidney disease (CKD) in pre-diabetes in the US is well studied and known to be high, but little is known about the prevalence of CKD in Chinese Americans with pre-diabetes. Data from an adult primary care clinic in New York City was analyzed to determine the prevalence of CKD in Chinese Americans with pre-diabetes. A total of 963 pre-diabetic Chinese patients from 11/2016 to 07/2017 were included (N=963). Pre-diabetes was defined as per ADA criteria: HbA1c between 5.7%-6.4% or fasting blood glucose between 100-125 mg/dl. CKD was defined as estimated glomerular filtration rate (eGFR) < 60 ml/min per 1.73 m². The Chi Square tests were used for comparison.

2.7 % Chinese Americans with pre-diabetes had CKD while 4.6% general Americans with prediabetes had CKD in NHANES from 2011-2014 (N=1701). In this population of Chinese Americans, the prevalence of CKD is lower than general Americans with pre-diabetes ($P < 0.05$). Futher studies are needed to find out the underlying causes, which may have important clinical and public health implications.

Advances in Biomedicine and Neuroscience**Nurat Affinnih, *Optogenetic Activation of Striatal Neurons***

Faculty Advisor: Annalisa Scimemi, College of Arts and Sciences, Department of Biological Sciences

Medium spiny neurons (MSNs) make up more than 95% of the cells in the striatum and because of this they are the main structures for specific information processing operations in the striatum. MSNs can be separated into two subpopulations based on their dopamine receptor expression and projections. Some express D1 dopamine receptors and send information to the substantia nigra and are called D1-MSNs. D1-MSNs trigger movement execution when they are activated. Others express D2 receptors and send information to the globus pallidus and are called D2-MSNs. D2-MSNs trigger movement termination when activated. Previously, our lab has shown that mice that lack the neuronal glutamate transporter EAAC1, a mutation that is also seen in patients with obsessive compulsive disorder (OCD), repeatedly performed stereotyped activities controlled by D1-MSNs. This hyperactivity of D1-MSNs could be caused by decreased GABAergic inhibition onto these cells. We have also seen in electrophysiology recordings that D1-MSNs receive weaker GABAergic inputs in the absence of EAAC1. We know that D1-MSNs and D2-MSNs receive GABAergic inputs from other MSNs and other local GABAergic interneurons, but we do not

know which types of GABAergic inputs are responsible for the D1-MSNs receiving weaker inputs. Here we optimize an experimental strategy to stimulate these inputs separately using light activation of channelrhodopsin 2 (ChR2), a light-gated ion channel that can be used in neuroscience for light-induced activation of specific cells. Currently, our data show that we can successfully transfect our cells and stimulate D1- and D2-MSNs using ChR2 activation. We have also seen that as we increase the light intensity on ChR2, the responses exhibited by the MSNs increase as well. Ultimately, our findings will provide more insight on striatal hyperactivity in OCD.

Shannon Alexander, Effects of Macrophages with Dying Heart Cells

Faculty Advisor: Pauline Carrico, College of Arts and Sciences, Department of Biological Sciences

Cardiovascular disease involves degraded or dying cells, caused from myocardial infarction, commonly known as a heart attack. When cardiomyocytes, or heart muscle cells, do not receive a high supply of nutrients and oxygenated blood, proper heart functioning is affected, resulting in MI. One cause of this is atherosclerosis. This is a disease when the arterial lumen becomes narrowed due to plaque build-up. Plaque forms when fat, cholesterol, protein, calcium, and white blood cell deposits gradually build up in the inner artery walls, which progressively impedes the arterial blood flow supply, eventually causing organ cell death. The lipids, and most especially the immune factors in this disease contribute to our immune system. This system is responsible for protecting the body from pathogens by the mechanisms of physical or chemical barriers, innate immunity, and adaptive immunity. During these immune responses, immune cells cause for the death of other cells that have been infected or may be abnormal. Cell death is also influenced by our complement system, which “complements” or “enhances” or innate immune system. Complement system proteins, ranging from C1 to C9, become activated when they encounter a pathogen, and mark them for destruction by phagocytes. Macrophages are phagocytic cells that help the body eliminate invading foreign substances that may be harmful to our bodies. There are three distinct complement pathways that lead to the activation of the complement protein, C3. C3 is responsible for many functions of the complement system. There were two aims of this research study. The first aim was to study the reaction of macrophages when encountering a dying heart cell. The heart cells were injured, mimicking a heart attack situation, then the macrophages were added to see how they react. The second aim was to study if C3 played a role in the cell death of heart muscle cells in hypoxic conditions. In this study, the human cardiomyocyte cell line, AC16, was used to study the developmental regulation of cardiomyocytes. A chemical inducer of hypoxia, cobalt (II) chloride hexahydrate, was used to manipulate the cardiomyocytes to mimic the phenomenon of a myocardial infarction. The cardiomyocytes were also put under the treatment of C3 knockout, meaning lack of C3, and wild type serums and then combined with the macrophages to observe the effects on the heart cells.

Thomas Banco, A Single-molecule Analysis to Analyze the Influence of DNA Base-Stacking Interactions in DNA Stability

Faculty Advisor: Ken Halvorsen, RNA Institute

DNA base stacking is thought to play a critical role in the stability of nucleic acid structures. In this project, we will investigate DNA base stacking at the single-molecule level using the Centrifuge Force Microscope (CFM). Our CFM design allows for research grade video microscopy, and a wireless transmission capability to simultaneously monitor hundreds of individually tethered microspheres as they are subjected to centrifugal force inside a conventional benchtop centrifuge. Previously, we designed DNA probes that can be anchored to microspheres and a glass surface which can hybridize to each other (through a 7-nucleotide overhang) creating a DNA tether between glass surface and microsphere. The DNA probe's design allows for the incorporation of various degrees of spacing between the interfacial base-stacks of each strand. Our previous results from a pilot study show that strand dissociation occurred quicker as interfacial base-stacks in the DNA probe were removed. Future experimentation will focus on exposing the DNA tethers to different levels of centrifugal force to determine the half-life of the DNA tethers and the associated Koff. We will determine the base-stacking energy for the interfacing base-stacks by comparing the activation energy obtained from the off-rate of various combination of DNA probes with varying interfacial base-stacks. This information will contribute to increased understanding of the influence of DNA base stacking interactions on the overall stability of the DNA double helical structure.

Lillie Carnell, Loop-Ligation of DNA Nanoswitch for Sensitivity Increase

Faculty Advisor: Ken Halvorsen, RNA Institute

DNA nanoswitches are tools to detect nucleic acids such as microRNAs and viral RNAs. The DNA nanoswitch is a linear duplex structure created from single-stranded circular viral M13 DNA using a DNA origami approach. Each nanoswitch can be designed to have explicit detector strands that bind to a specific DNA sequence. In the presence of a particular target sequence, the DNA nanoswitch will undergo a conformational change in which it switches from a linear “off” state to a looped “on” state. The shape of the DNA nanoswitch can then be detected using standard gel electrophoresis, a cheap and simple test. In this project, we aim to improve the sensitivity of the DNA nanoswitches in detecting target strands using DNA loop-ligation. This strategy will allow the target strand to be “recycled” in solution after a more permanent looped nanoswitch is formed and continue to convert more linear nanoswitches into looped nanoswitches through target recycling. We were able to confirm permanently looped nanoswitches after ligation using T4 DNA Ligase enzyme. We will optimize the reaction conditions to show stability and signal amplification of the nanoswitch. Ultimately, we hope to amplify detection signal at least 10-100 fold using this approach, bringing our sensitivity to the aM (10^{-18} M) range.

Shergil Zahid, Realistic 3D Reconstructions of MSNs Through Computational Methodologies

Faculty Advisor: Annalisa Scimemi, College of Arts and Sciences, Department of Biological Sciences

Structural and functional changes in neurons are of paramount importance in neurological, neuropsychiatric, and neurodegenerative diseases. Computer models aid in determining how these changes shape the firing output of neurons. Here we use computational tools to derive information on the 3D morphology of neurons. We focus on striatal neurons, which control movement execution and reward. We show that the morphology of striatal neurons expressing D1 dopamine receptors is altered in mice that carry a genetic mutation also found in humans affected by OCD. These 3D reconstructions are obtained using software that takes into account the volumetric and spatial properties of single medium spiny neurons (MSNs). Reconstruction data was used to look at the measured structural changes involved in the loss of the glutamate transporter, EAAC1. We used Simple Neurite Tracer (SNT), a plugin available from Fiji by ImageJ, to create a visual representation of these changes by processing a stack of 2D confocal microscopy images into volumetric reconstructions. By using Tubular Geodesics, an SNT add on, we took tubularity measurements of neuronal branches. NEURON, a simulation software, then analyzed the trace files to give the MSNs physiological properties. Through neuronal models, we can relate the influence of EAAC1 to the changes that take place in synaptic transmission through individual MSNs. Simulating reconstruction data can provide valuable information on any neuronal abnormalities that may be present in a given cell. We hope that the data collected can help unveil the underlying physiological questions on EAAC1’s role in hyperactivity and OCD.

Identity Politics in the Workplace and in the Courts of the Land and Public Opinion**Hannah Breda, United States v. Dennett: The Battle for Sex Education in the Early 1900s**

Faculty Advisors: Kendra Smith-Howard, College of Arts and Sciences, Department of History; Michitake Aso, College of Arts and Sciences, Department of History

The 1873 Comstock Act outlawed the production and distribution of any materials that were deemed to be obscene or capable of arousing adolescents. Mary Ware Dennett, a women's rights activist and pioneer in birth control and sex education, was one of the many who fell victim to this law. Dennett was arrested in 1929 for distributing her sex education pamphlet, *The Sex Side of Life*, written for her teenage sons after finding the sex education materials produced by the government to be insufficient. This paper argues that Dennett's pamphlet was scrutinized in *United States v. Dennett* because it emphasized not only the procreative and health aspects of sex, but also the emotional and physical pleasures of sex, which were topics that were avoided within the government's work. This paper compares *The Sex Side of Life* to the government's sex education materials from the early 1900s to provide insight into the inadequacies she found within them and to show the specific ways in which the content of her pamphlet differed from the work produced by the government.

Kassondra Gonzalez, *Stonewall's Parallel Queer Latinidad*

Faculty Advisor: Christine Vassallo-Oby, College of Arts and Sciences, Department of Latin American, Caribbean, and U.S. Latino Studies

This research project investigates how identity intersections were regarded during the U.S. gay rights movement, specifically during the period following the 1969 Stonewall Riots in New York City, through the lens of being queer and Latino/a/x. It explores the lack of attention to the intersection of queer Latinidad during the Stonewall Era and seeks to understand how it wrongly simplifies a collection of individual queer experiences to a sole version, or The Queer Experience. In other words, it is argued that the disregarded racial and ethnic overlap of queer people led to the oppression of queer black and brown individuals, Latinx in this context, being inaccurately equated with that of queer white individuals, using queerness common umbrella. The argument is based on the idea that the specific experiences of those belonging to one minority group should not be leveled to a single narrative due to the complexities of oppression that deepen when several factors are taken into account such as race, gender and class.

Jiwon Kim, *Identity Signaling and Conversational Taboos*

Faculty Advisor: Hillary Wiener, School of Business, Marketing

People talk about many things, but there are things they are uncomfortable talking about/are not socially acceptable to talk about. For example, wealth, religion, politics, are all socially unacceptable to talk about, but are still things that people want to communicate or want to learn about others. The purpose is to determine whether people will use products as signals to communicate these taboo topics to other people. We do this by examining whether people are more likely to wear products that communicate these taboo topics when they know that they will be unable to talk with others about them.

We test this in a scenario study. In both of the scenarios, it is postulated that participants are newcomers of a college fraternity. In the first scenario, participants were asked how they are going to act in a fraternity party for newcomers where they must talk. In the second scenario, participants were asked how they are going to act in a fraternity party for newcomers where they must not talk at all. Any member who breaches the rules would be penalized severely. After reading each scenario, every participant was asked to answer a questionnaire assessing how likely they would be to wear products that communicated their views on a variety of taboo topics.

Dianna Rumpf, *Is Transphobia Associated with How Cisgender People Define the Term Transgender?*

Faculty Advisor: Anna Newheiser, College of Arts and Sciences, Department of Psychology

Transgender people are individuals whose gender identity does not align with the sex they were assigned at birth. Many cisgender (i.e., non-transgender) people have transphobic attitudes. In the present study, we examined factors that may explain why cisgender people hold positive or negative attitudes toward transgender individuals. We predicted that more positive attitudes would be reported, specifically when considering typically gender-segregated settings (e.g., locker rooms), when participants were first provided with a comprehensive, accurate definition of the word transgender. In the control conditions, participants did not receive this definition, but were asked to provide their own definition either at the beginning or end of the study. Contrary to our hypothesis, attitudes in the intervention condition did not differ from attitudes in either control condition. However, we did find a significant difference between the two control conditions. Those who wrote their own definition before reporting their attitudes toward transgender people had more positive attitudes than those who wrote their own definition after reporting their attitudes. Additionally, we content-coded participants' own definitions of the term transgender and found that participants who included the term gender identity in their definition reported more positive attitudes and more support for transgender rights policies than participants who did not include the term. There is a small amount of literature on interventions that may help reduce transphobia, and we hope the present study about whether understanding the term transgender relates to cisgender people's attitudes will encourage new ideas for interventions.

ORAL PRESENTATION ABSTRACTS

Arranged by session and order of presentation

Women's Voices, Women's Rights: Resistance and Protest Movements and Their Aftermaths

Lecture Center 3A 3:15-4:00 PM

Kyle Thaine, "*A Life Stripped of Humanity*": Using the Buffalo Department Store Strike of 1913 as a Case Study of Abused Pre-World War I Female Department Store Workers

Faculty Advisor: Laura Wittern-Keller, College of Arts and Sciences, Department of History

When one considers the movement of women into the labor force, images of Rosie the Riveter, the Triangle Shirtwaist Company, or New England textile mills are often conjured. But many women entered the workforce through retail employment, seemingly a much better work environment. Considering awful workplace conditions, these retail women workers are often overlooked. This paper argues that pre-World War I era female department store workers were an abused class that suffered as much as many of their female contemporaries. The paper begins with a general discussion of women's labor history up until 1913, with a focus on women in the retail industry. Next, the paper dives into the foremost primary sources about these workers, a 1913 report from a New York State commission investigating a city-wide strike of, mostly female, department store clerks in Buffalo and multiple newspapers' coverage of the events of the strike, from both the workers' and owners' perspectives. Within this source are stories of sexual abuse, financially-crippling uniform policies, terribly unsanitary working conditions, and physical detriments directly resulting from work. These instances are supported by other primary accounts of department stores that are contemporaneous to the chief source. Despite the variance of location and people, similar stories of abuse resound. Ultimately, this paper reminds us that women rarely faced an inviting and refined workplace in the early twentieth century. Even in industries like retail and department stores – which are highly feminized in the American consciousness – they clawed and suffered to earn decent places in the workforce.

Elise Coombs, Decentering the Dictator: The Mirabal Sisters' Outspoken Challenge Through 'In the Time of the Butterflies'

Faculty Advisors: Paul Stasi, College of Arts and Sciences, Department of English; Elaine Salisbury, College of Arts and Sciences, Department of Communication

I'm analyzing the role of speech in Julia Alvarez's portrayal of the Mirabal sisters from *In the Time of the Butterflies* to argue that centering the novel around their speech and humanity decenters the dictator, who was often central to Latin American novels. My first chapter will provide background on the dictator's characteristics to demonstrate how the Mirabal sisters' speech cut through them. The four times the sisters encounter the dictator Rafael Trujillo in the novel, their speech decenters him because Alvarez emphasizes their experience. In the second chapter, I examine the gaps between each encounter, focusing on Minerva's speech development towards resistant speech. I then examine the role of her family's speech, particularly in terms of its protective role, which blurs the lines between the public and private spheres. In the final chapter, I analyze the implications of the Mirabal sisters' speech in the Dominican Republic—which resulted in their death—and the implications of their portrayal in Alvarez's novel. By emphasizing their speech and experience, Alvarez demonstrates the significance of women's speech in political participation instead of simply reiterating the violence they faced. This ultimately is more productive as it encourages other women's speech by demonstrating that any woman can exercise her speech politically.

Gina Tan, The Equal Rights Amendment: Why All U.S. States Have Not Ratified

Faculty Advisor: Zsofia Barta, Nelson A. Rockefeller College of Public Affairs and Policy, Political Science

Currently, enacted legislation for the equality of men and women in the United States does not exist. Despite many advancements, as of 2018, the equality of men and women is not explicitly stated in the U.S. constitution. There is a long history of discrimination against women in the U.S., and for some time now, there have been pushes toward constitutionalizing equality based on Sex. One such push came in 1923, shortly after women were granted the right to vote and The Equal Rights Amendment (ERA) was introduced. This amendment mandates that the "Equality of rights under the law shall not be denied or abridged by the United States or by any State on account of sex."

Unfortunately, this amendment would never take effect due to the lack of votes for ratification by the states. This paper analyzes why after over 30 years since the deadline has passed, 38 states have not already ratified the amendment, and details potential reasons that Illinois and Nevada have ratified the ERA after so many years. The five factors that we analyzed are political partisanship, lack of public support, political theater, the composition of state legislatures by gender, and the effects of social movements and counter protests. This paper specifically evaluates the effects that these factors had on the sudden ratification of the ERA in Nevada and Illinois and describes our findings that it is not just one factor, but a combination of several that explains the questions surrounding the ratification of the ERA.

Literary Treatments of Sexuality and Madness

Lecture Center 3A 4:15-5:00 PM

Emily Aucompaugh, *To Speak Ghosts and See Echoes: Longing in Lolita*

Faculty Advisor: Helen Elam, College of Arts and Sciences, Department of English

Underneath the plot of Vladimir Nabokov's *Lolita*, which focuses on the musings of a pedophile and murderer who attempts to "confess" actions and impulses of which he feels no guilt, a secondary motif emerges of a man motivated, guided, and consumed by longing, which he cannot assuage due his fixation of desire on a subject that does not exist. Longing embodies Humbert's greatest joy and deepest pain, a feeling of anxiety and anticipation which eclipses the necessity of completion. *Lolita* invokes longing, the desire towards absent things, in two ways. Firstly, Nabokov alludes to a cornucopia of other poetic, literary, and artistic works within his text which underscore Humbert's longing for an unachievable past. Secondly, the invocation of longing perpetuates from the discordance of language and the subject it signifies. Humbert invokes a name, but the person he calls for never arrives, and thus the laceration of *Lolita*'s elusive character turns her into a literary ghost. I examine the rhetorical space in which longing thrives, where what is summoned cannot be conjured.

Melissa Aucompaugh, "Queen of the Underworld and Mistress of the Labyrinth;" An Exploration and Critique of Females in the Bildungsroman

Faculty Advisors: Mary Valentis, College of Arts and Sciences, Department of English; Rae Muhlstock, Program in Writing and Critical Inquiry

I explore the female bildungsroman expressed as a Counter Bildungsroman, the coming of age through a singular sexual event, coupled with a "a fall" and the Contra Bildungsroman, a more complex entrance into womanhood that reconfigures the female coming of age as rebirth instead of a fall. The first chapter, The Counter Bildungsroman, exposes how the Counter Bildungsroman's coming of age scenario portrays the problematic expression of sexuality (or lack thereof) and entrance into womanhood in the film *Labyrinth* and the poem "Goblin Market." Symbols emerge as supplements for the denied sexuality: the consumption of fruit and the labyrinth.

The second chapter, the Contra Bildungsroman, focuses on the second, and often more modern, form of female bildungsroman, including the 2017 novel *The Burning Girl* by Claire Messud and the 2018 memoir *Educated* by Tara Westover, through its protagonists Julia and Tara, as they come of age through sisterhood and knowledge, allowing for alternate and more complex entrances into womanhood. Through the mythological figures of Persephone, Eve and Ariadne, the heroines of the female bildungsroman can be analyzed, and the perceptions of femininity as a whole examined.

Chris Lownie, *The Pen As Your Sword: Writing Through The Lens of Depression*

Faculty Advisors: Jeffrey Berman, College of Arts and Sciences, Department of English; Michael Hill, College of Arts and Sciences, Department of English

Throughout the history of art, humans have come to personify and illustrate the concept of our inspirations: "muses," as we've come to call them. We've described them in a number of ways—mystical, beautiful, sometimes cruel, and most often of all, fleeting. This personification can become complicated and problematic when it expands into the preconceptions and associations that many have with mental illness, especially those suffering from it. The interaction at play between tragedy and the writer has been acknowledged since the dawn of theatre, and over hundreds of years it has shifted into the vast two-headed beast that is the perceived intertwinement between one's afflictions and his or her muse—specifically, the poisonous idea that if one takes the steps to treat and cure mental

illness and affliction, it will interfere with or even permanently stifle his or her ability to create. Hence, the idea of the “mad muse” continues well into the modern era.

Does madness help the muse; does it nurture? Or does illness take it away? Madness and muse, this thesis will argue, are not a part of an unhealthy, inseparable romance, nor are they opposing forces that will inevitably knock one another down. Madness can be a blockage. However, fighting through it can give way to some of the most amazing works we currently have in our canon. This introspective delve is meant to illuminate the properties of depression and what the significance is of mentally ill writings. This is a journey through memoirs, literary analysis, and a more scientific diagnosis of what it means to be a “mad artist.”

Social Media's Influence on Society
Lecture Center 3B 3:15-4:15 PM

Ambreen Aslam, and Shanelle Webster, Social Media Journalism

Faculty Advisor: Chang Sup Park, College of Arts and Sciences, Department of Communication

Over the course of the past decade, journalism has become a career for the common man. This study observes how through the rise of social media platforms like Facebook, YouTube, and Instagram, influencers have become trustworthy news sources. Today, social media is the rising foremost way to produce and distribute news, if handled properly. We explore our thesis through comparison of social media being the go to platform for acquiring news when it was first introduced to society and how it has increased or decreased over time. A 2018 survey by the PEW research center found that more than 62% of Americans use social media to access their news. Our research displays explicitly how Facebook, YouTube, and Instagram have become more or less the precedent way of receiving news information. Social media influencers like Tomi Lahren, PewDiePie, and Shane Dawson have followings in the millions (among thousands of smaller yet still prominent individuals), which allows them to dominate portrayal of information. We discuss how social media influencers may play a role in how an audience receives news and also how they will interpret that information. We refute the belief that journalism is a dying career, it is just being reincarnated through social media and for many has become a steady and lucrative source of income.

Yael Dror, The Association Between Instagram Use and Eating Disorder Pathology

Faculty Advisors: Drew A. Anderson, College of Arts and Sciences, Department of Psychology; Christina Scharmer, College of Arts and Sciences, Department of Psychology; Courtney Breiner, College of Arts and Sciences, Department of Psychology

Recent research indicates a positive correlation between the amount of exposure to mass media and disordered eating (Levine & Murnen, 2009). Social media brings together two impacting factors for eating disorder risk: peers and media. Higher frequency use of social media has been shown to be associated with a higher risk for disordered eating (Mabe, Forney & Keel, 2014). In this study, we examined the association between Instagram use and eating disorder pathology. We hypothesized that individuals with greater Instagram use would report higher levels of eating disorder pathology. As part of a larger study seeking to better understand eating pathology, undergraduate participants (N=624, 70% female) completed surveys about eating pathology and media use. Participant's ages ranged from 17 to 35 with an average of 18.7 years. Participants completed a demographic questionnaire, the Eating Disorder Examination – Questionnaire, and a single item assessing percent of day spent on Instagram. For analyses, participants were divided into two groups based on the proportion of time they spent using Instagram. Primary users reported spending at least 60% of their time on Instagram and other users reported spending less than 50% of their social media time on Instagram. An independent samples t-test compared total mean scores on the EDE-Q between primary and other users. Results indicated no significant differences between these two groups ($t(622) = .534$, $p = .59$). There was no difference in eating disorder pathology between high Instagram and low Instagram users. This shows that social media may not be a direct link to eating pathology, or that our measure did not appropriately capture Instagram usage or type of engagement (i.e. "fitsigrams" or weight-loss Instagram accounts). Social media is growing rapidly in our society and thus remains an important research target. Future research should specifically consider examining differences in the impacts of social media use and attitudes on eating disorder pathology and other negative consequences. Future studies can potentially discover whether it is the media component or social component of social media that has the most prominent negative effect on individuals who are more exposed to it.

Dylan Andrews, Effects of Social Media on Politics & Journalism

Faculty Advisor: Chang Sup Park, College of Arts and Sciences, Department of Communication

In my presentation, I will be talking about the effect of new-age Social Media on politics and journalism. I will be discussing how Twitter is now pivotal to the permeation of news and how it being unfiltered effects political results, journalistic behavior, and society itself.

Jessica Sherman, Ayanna Primus, Kevin Rider, and Triumph Windorff, Social Media War on Journalism

Faculty Advisor: Chang Sup Park, College of Arts and Sciences, Department of Communication

This presentation will focus on Journalism in the 21st century. With the ever changing times in our digital age, social media has become the main medium in which we transmit and receive our news. With this newer medium also comes a set of uncharted ethical and legal issues that are constantly changing as we are able to have easier, quicker access to information worldwide. Through our research we have discovered several ethical dilemmas when it comes to the utilization of social media and journalists.

Many times Journalists utilize their own social media accounts to spread their work. Able to constantly keep up with the changing news, social media platforms have become key. There is not always a concise agreement between a journalist and the media publication over whether the social media account is company owned or not. This leads to unclear decisions on what should be posted and what happens to the account once the journalist leaves the publication. We will explore cases where Journalists were sued for their alleged misuse of social media accounts.

Eight out of ten journalists use social media in the course of their work. The presence of reporters on social media is an essential one, yet many journalists have been fired from their respective companies due to posts regarding their opinions on social media. A journalist being removed for expressing their opinion on a social media platform may be legally justified, but is it ethically right? After all, other citizens have the right to express their personal opinions without impediment. We will look at cases where journalists have been fired for their uses of social media and discuss the ethical (and legal) issues, and what these events may lead to in the future.

Another issue at large is the right of journalists to utilize posts on social media for their own stories. Several issues of privacy invasion have been brought against major media publications because either permission was not asked or permission was denied to be able to use social media posts such as pictures and video. The question comes to mind whether these type of posts are for the private use of the social media user or are they public domain once published online.

Forensic Science

Lecture Center 3C 3:15-4:00 PM

Morgan Eldridge, Determination of Time since Deposition of Fingerprints via Colorimetric Assays

Faculty Advisor: Jan Halamek, College of Arts and Sciences, Department of Chemistry

Past investigations involving fingerprints revolve heavily around the latent image of the fingerprint – including the minutiae, scarring, and other distinguishing features – in order to visually find a match to its originator. Recently, it has been proven that the biochemical composition of fingerprints can be used to determine originator attributes, such as biological sex, via chemical and enzymatic cascades. While this concept provides pertinent information about the fingerprint originator's identity, it is not the only piece of information that it can provide. Using ultraviolet-visible (UV-Vis) spectrophotometry, aged fingerprints were evaluated via three previously studied assays used for fingerprint analysis – the ninhydrin assay, the Bradford assay, and the Sakaguchi assay-. As the fingerprints get older, a lower absorbance value is measured. This lowered absorbance is attributed to the fact that fingerprints are composed of biochemical components which decay over time as they are subjected to the conditions of the environment. As a fingerprint ages, the amino acids, proteins, and other biochemical compounds contained in the sweat and sebum decay, affording the ability to estimate the time since deposition (TSD), or age, of the fingerprint itself.

Jalissa Thomas, Raman Spectroscopy and Advanced Multivariate Analysis for the Identification and Age Estimation of Body Fluid Traces on Interfering Substrates for Forensic Purposes

Faculty Advisor: Dr. Igor Lednev, College of Arts and Sciences, Department of Chemistry

In forensics, identifying body fluid evidence is a large priority. Body fluids, such as blood, semen, and sweat, can provide DNA for profiling and insight onto the nature of the crime committed. Our laboratory has developed a methodology that can universally detect and identify body fluid stains using Raman spectroscopy and statistics. This methodology was created under laboratory conditions, which are a rarity out in the field. Body fluid evidence can be found on any number of substrates which yield large Raman signals that impede detection and identification. This project proposes a new program called HAMAND (Hypothetical Addition Multivariate Analysis with Numerical Differentiation) as a solution to this complication. The software uses a reference spectrum of the expected body fluid to search for any reference components in the sample spectrum and then uses these to create a new spectrum belonging to just the analyte. This proof of concept experiment focused on testing blood on denim, which is a common substrate in crime scenes and produces a large Raman signal. In combination with HAMAND, we were able to produce high quality spectra that were highly resembling of average blood spectra collected on lab-grade substrates. When run through identification models, these spectra were all classified correctly as blood, whereas their original spectra were not. This shows that HAMAND has great potential in rectifying the current obstacles in body fluid identification for forensic purposes.

Srinanti Bhattacharya, Trauma Analysis from Rapid Staircase Descension

Faculty Advisors: Jessica L. Campbell, College of Arts and Sciences, Department of Anthropology; Mercedes Fabian, College of Arts and Sciences, Department of Anthropology

This experiment was designed after the release of the Netflix show called the “The Staircase.” A true documentary, a woman’s fall down the staircase results in her death, but the investigators question whether it was an accident or murder. The woman’s husband was initially accused of murder, but after a lengthy trial and the review of additional evidence, it was ruled an accident.

In the autopsy results, there was evidence of blunt force trauma (Figure 1) inconsistent with an accidental fall. Therefore this research asks what is the difference in trauma from an accidental fall versus a intentional, assisted descent?

The Climate, the Atmosphere and the Beyond

Lecture Center 3C 4:15-5:00 PM

Luke Lebel, An Analysis of the Effects of Terrain on the Occurrence of Severe Weather in Upstate New York Utilizing Computer Model Simulations

Faculty Advisors: Brian Tang, College of Arts and Sciences, Department of Atmospheric and Environmental Sciences; Ross Lazear, College of Arts and Sciences, Department of Atmospheric and Environmental Sciences

Predicting the development and occurrence of severe thunderstorms in upstate New York is a challenge due to the complex terrain that is present in the region. Previous research on severe weather cases in the region has suggested that the Mohawk and Hudson Valleys can influence the occurrence of severe weather. Specifically, flow channeling can increase low-level wind shear and enhance instability in valley locations, and therefore it can produce a localized environment that is favorable for severe weather. This previous research was limited by the relatively sparse observational network present in upstate New York prior to the installation of the New York State Mesonet. This study complements this previous research by analyzing the impact of flow channeling on severe weather utilizing high-resolution computer model simulations.

Three severe weather cases have been analyzed to examine the impact of flow channeling on severe weather. This presentation will focus on one high-impact case that occurred on 31 May 1998. On this day, a damaging F3 tornado occurred in the Hudson Valley, impacting Mechanicville, New York. A high-resolution Weather Research and Forecasting (WRF) model simulation of this event suggests that flow channeling in this case resulted in the development of a distinct moisture gradient and wind shift at the intersection of the Mohawk and Hudson valleys. The environment to the east of the boundary was characterized by extreme low-level wind shear and enhanced instability, favoring the intensification of a simulated supercell thunderstorm and enhancing the likelihood of tornadogenesis as the supercell approached Mechanicville.

Joshua Martin, *The Snowball Chamber: A Supercooled Approach to Dark Matter Detection*

Faculty Advisor: Matthew Szydagis, College of Arts and Sciences, Department of Physics

The cloud and bubble chambers have historically been used for particle detection, capitalizing on supersaturation and superheating respectively. We present now on the snowball chamber, which utilizes a supercooled liquid. In our prototypes, an incoming particle triggers crystallization of purified water. We demonstrate that water is supercooled for a significantly shorter time with respect to control data in the presence of AmBe and 252Cf neutron sources. A greater number of multiple nucleation sites are observed as well in neutron calibration data, as in a PICO-style bubble chamber. Similarly, gamma calibration data indicate a high degree of insensitivity to electron recoils inducing the phase transition, making this detector potentially ideal for dark matter searches seeking nuclear recoil alone. We will explore the possibility of using this new technology for that, updating everyone on new results that will be a prelude of our newest generation tests.

Terence Allard, *Potential Impact of Climate Change on the Distribution of Alpine Tundra in The Adirondack Mountains of New York*

Faculty Advisor: Justin Minder, College of Arts and Sciences, Department of Atmospheric and Environmental Sciences

Given the potential for significant changes in climate over the next century, understanding how biomes may shift in response to these changes may be useful in informing conservation efforts. In this work the potential effect of climate change on the distribution of alpine tundra in the Adirondack Mountains of New York is examined. The niche modelling software Maxent was used to analyze the distribution of alpine tundra relative to 30 year 800m PRISM climate normal data and terrain aspect over the Adirondacks. Random points from surveyed areas of alpine tundra in the Adirondacks were used as presence data in model training. The initial analysis was aimed at creating a model that was able to predict current alpine tundra distributions with a high level of skill. For the final analysis climate variables that contributed significantly to the skill of the model were downscaled to 10m resolution using an average lapse rate derived from the PRISM data. This analysis found that the presence of alpine tundra is well predicted by annual mean temperature. Different warming thresholds were applied to the climate grids and the model was rerun. The projected reduction in area of alpine tundra in the analysis area is calculated along with uncertainties in timing of area decline associated with different emission scenarios and GCM uncertainty.

Inequality in the U.S. Today: Seeking Justice, Equality, Treatment, and Redemption

Lecture Center 5 3:15-4:45 PM

Theresa Edwards, *Sexual Assault on College Campuses and the Impact of Race on Reporting*

Faculty Advisors: Hayward Derrick Horton, College of Arts and Sciences, Department of Sociology; Angie Chung, College of Arts and Sciences, Department of Sociology

The focus of this study is to analyze the disparity that exists between black and white female college students as it pertains to reporting incidents of sexual assault. Potential causes and explanations for this disparity include access to – or lack of – resources like confidential reporting, advocacy, and medical assistance, knowledge of available resources, and cultural influences. Cultural and racial variables are often not included in sexual violence research, response curriculum and prevention curriculum. Existing research on this topic most frequently fails to address college populations by race and fails to consider sociological and psychological factors that influence reporting. The following analysis will explore the effects of the three major elements that influence a victim's willingness to disclose and incident of sexual assault: the historical context of black women and sexual assault, feelings of institutional distrust, and lack of cultural competence in sexual assault prevention and response curriculum.

April Sickler, *Barriers to the Success of Ex-Offenders with Histories of Drug Abuse and Mental Illness*

Faculty Advisors: Steven Messner, College of Arts and Sciences, Department of Sociology; Angie Chung, College of Arts and Sciences, Department of Sociology

The purpose of my research is to review the scholarly literature on the difficulties that offenders who are released from prison confront when trying to find employment. This is a particularly important topic in the contemporary U.S. given the recent history of mass incarceration and mistreatment of ex-offenders with histories of drug use/abuse and mental illness. A combination of these attributes can serve as a particularly large barrier to success in finding

post-release employment. My analysis of the literature focuses on the following questions. What are the major obstacles that make it difficult for released offenders to secure employment? Are the obstacles to gaining employment particularly severe for released offenders with drug use/abuse or mental illness? What services are currently in place to assist released offenders in seeking employment, and how well are these services realizing their objectives? I conclude by considering the implications of the research literature for the most promising strategies for alleviating the problems of post-release employment.

Roxanne Grieggs, *Explaining Juvenile Delinquency as a Product of Personal Security*

Faculty Advisor: Dana Peterson, School of Criminal Justice; Alan Lizotte, School of Criminal Justice

This study seeks to understand the role that youths' sense of personal security plays in their external engagement in deviant behavior. While there is some literature on the relationship between youth's fear of crime or previous home environments and their involvement in gangs and to some extent violence, it is scant, and studies of youths' feelings of safety within residential facilities and their in-residence behaviors is virtually non-existent. Therefore, in this study of youth in two residential treatment facilities, surveys administered to said youth and their caregivers are used to illustrate the potential for a link between youth's perceived sense of personal security, how it evolves over time, and if it is consistent with deviant or antisocial behavior. It is hypothesized that youth's perceived security increases with time in the institution and that security will be inversely correlated with negative behavioral incidents. Using statistical analyses, researchers identify the strength and consistency of these relationships and whether there is evidence to support changing the focus of residential programs to improve youth's present mental and behavioral situations to increase likelihood of positive within and post treatment outcomes.

Lisbeth Valdez, *Nativist Policies: Hispanic Identity in Trump America*

Faculty Advisor: Angie Y. Chung, College of Arts and Sciences, Department of Sociology

In recent years, the political climate has shown that there has been a sharp increase in policies and politics that align with the political science theory of white nativism. This political effect on identity is one that has been overlooked by scholars of identity and ethnicity in the realm of sociology, but can heavily affect the rapidly increasing Latino population in the United States. As this rise of white nativism is relatively recent, little is known as to how this political climate may affect the racial and ethnic identification of Latinos who immigrated as children or who are the children or grandchildren of recent immigrants. Based on individual in-depth interviews with 1.5, 2nd, and 3rd generation Latino students at the University at Albany in New York, this study examines how politics and policies affect the identity of American-raised Latinos, as well as examining how other factors such as family and community may factor into this decision on how to identify. Building on approaches to identity that follow the acculturation theory, recent studies on white nativism in political science, and policies that have been implemented in the past few years, this article demonstrates how policies that favor white nativists can cause discrepancies that alter the way Latinos in the United States see their identity. This article also demonstrates how politics and policies can lead to a feeling of not belonging.

Alexandria Cartier, *Exploring the Veterinarian-Client Relationship and the Role of Gender*

Faculty Advisor: Angie Chung, College of Arts and Sciences, Department of Sociology

Veterinary medicine is one of the least understood professions from the perspective of the general public. While much exploration has been recorded in human medicine, the veterinarian-client relationship has been studied significantly less. Veterinary medicine lies at the intersection of the medical and service industries since the cost of veterinary care is not mediated by a third-party insurance system. While the veterinarian's true job is to treat the animal, it is the human client who pays the bill. Pets are property of their human owners by law making the choice of treatment ultimately the owner's decision, regardless of the veterinarian's professional advice. This triadic relationship reduces veterinary medical care to a negotiation between client and veterinarian, often based on several mitigating factors including the cost of treatment and prognosis. How does this negotiation differ if the veterinarian is a woman or a man? Since the 1980s veterinary medicine has rapidly feminized despite retaining its masculine mien. While there are now more women in veterinary medicine than ever, sexism continues to bleed into salary negotiations and client expectations. As not only a medical industry, but also a service-based industry, do negotiations in exam rooms differ because of the veterinarian's gender?

Alisa Flowers, Stigmatization and Decision Making: Their Effects on Mental Health Help/Treatment Seeking in Racial Minority Communities

Faculty Advisor: Angie Chung, College of Arts and Sciences, Department of Sociology

Stigma exists, this we know for sure. Research shows that members of racial minority groups have significantly higher negative attitudes towards mental health treatment as well as much lower rates of actually seeking mental health treatment than members of a racial majority group. Stigma plays a huge part in these results. What we need to dive deeper into is, how large the impact of and in what ways does, stigma affect the development of negative or positive attitudes towards mental health treatment seeking and how these attitudes affect mental health treatment inquiry, specifically, in racial minority communities. This study will identify the average onset and early development of attitudes towards mental health treatment in members of minority communities as compared to the members of the majority, as well as track the severity of these attitudes towards mental health treatment overtime in order to predict the likelihood or unlikelihood of members of different racial communities to seek mental health treatment. To do so, I will be conducting a secondary source analysis in order to track common themes and trends of attitudes towards mental health as it relates to mental health treatment seeking overtime. Then, in order to track current attitudes and treatment seeking rates, I will be conducting surveys and interviews from mental health care providers. The overall purpose of this study is to give a reference point for the age in which stigma begins to affect decision making and how early the formation of negative or positive attitudes towards mental health begins as a result of stigma. With this information I hope to produce ways to hopefully prevent the early onset of negative attitudes towards mental health treatment or reverse already established negative attitudes towards mental health treatment in racial minority communities.

Brain Function and Mental Health: New Approaches in Technology, Psychology, and Neuroscience

Lecture Center 6 3:15-4:30 PM

Ethan Webster, An Unsupervised Channel Selection Method for SSVEP-based Brain Computer Interfaces

Faculty Advisor: Tolga Soyata, College of Engineering and Applied Sciences, Electrical and Computer Engineering

Brain-computer interfaces (BCIs) provide an alternative communication channel for people with motor deficits that prevent normal communication. The underlying premise of a BCI is that a neuroimaging process such as electroencephalography (EEG) can be used to measure the user's brain activity as signals. The obtained signals are analyzed to determine the user's intended actions and a computer system can be used to replace voluntary muscle activity as a means of communication. The information transfer rate (ITR) of an algorithm used for determining the user's intentions greatly affects the perceived practicality of the BCI system. Such algorithms are divided into two main categories, supervised and unsupervised. While the former achieves higher ITR, the latter is most useful when the user is unable to be involved in the calibration process of the BCI system.

In our paper, we introduce an unsupervised algorithm for steady-state visual evoked potential (SSVEP)-based BCIs. Our algorithm works in three steps: (i) it selects multiple sets of electroencephalogram channels, then (ii) applies a feature extraction method to each one of these channel sets. As its final step, (iii) it combines the extracted features from these channel sets by performing a majority vote, yielding a classification. We evaluate the ITR attained using our proposed method on a dataset of 35 subjects using three different feature extraction methods. We then compare these results to existing methods in the literature that use a single channel set without a majority vote. The proposed method indicates an improvement for at least 7 subjects.

Gabrielle Shames, Neural extracellular potassium levels in response to retrodialysis insulin administration

Faculty Advisor: Ewan McNay, College of Arts and Sciences, Department of Psychology

Insulin is widely used to treat both type 1 and type 2 diabetes, with a primary physiological role of blood glucose regulation: it is the first-choice treatment for a range of hyperglycemic conditions. One side-effect of insulin therapy is potential electrolyte imbalances in the blood, and specifically hypokalemia. Insulin acts to remove potassium from the bloodstream along with glucose. Work in our lab and others has shown that in addition to peripheral effects, insulin is a key regulator of central cognitive and metabolic processes, best-established within the hippocampus. Tight regulation of extracellular ion levels, including potassium concentration, is essential for optimal neuronal function; however, to date there have been no studies on potential ionic effects of insulin within the brain's extracellular space. In our research, we examined whether the hypokalemia that occurs in the periphery in response to exogenous insulin is also occurring in the central nervous system. We used hippocampal microdialysis in a rat model to address this question, which allowed us to administer exogenous insulin directly to the hippocampus at a

controlled dosage and simultaneously take samples of the extracellular fluid to check potassium levels. Because insulin and glucose are important regulators of cognitive activity, likely to cause elevated neuronal firing and potentially affect potassium regulation, we examined the impact of insulin delivery both at baseline and during spontaneous alternation behavioral testing, a hippocampally dependent working memory task.

Jeremy Carter, *Investigating the effects of intrahippocampal glucose administration on spatial working memory in rats*

Faculty Advisor: Ewan McNay, College of Arts and Sciences, Department of Psychology

Insulin is a peptide hormone released by pancreatic cells that is known to regulate absorption of glucose into peripheral tissue. Insulin is also known to regulate glucose metabolism through the activation of the phosphoinositide 3-kinase (PI3K) signaling cascade and translocation of glucose transporter 4 (GLUT4) to the cell surface. This canonical insulin signaling pathway is similar in both the periphery and the central nervous system (CNS). In vivo microdialysis studies have shown depletion of hippocampal extracellular fluid (ECF) glucose concentration during a cognitively-demanding task, indicating that the hippocampus depends on glucose metabolism for proper function. In order to maintain proper function, insulin-responsive hippocampal neurons and glia require glucose metabolism; an energy-yielding process that provides glucose. We hypothesized that insulin blockage attenuates glucose-induced hippocampal enhancement via disruption of the insulin signaling pathway. The present study aimed to investigate insulin's role as a mediator of the enhancement of spatial working memory by exogenous glucose *in vivo*. Unexpectedly, unilateral intrahippocampal administration of supraphysiological glucose in a novel, larger microinjection volume significantly impaired spatial working memory. Our data suggest the insulin signaling pathway may work through alternative substrates, such as insulin-like growth factors I or II. Standard administration of supraphysiological glucose resulted in no significant effect on hippocampal function, suggesting that unilateral administration may be insufficient in affecting hippocampal function. Our results also suggest glucose-induced improvement of hippocampal function may work in a dose-dependent manner in the hippocampus. These unexpected findings contribute to the knowledge of glucose-induced hippocampal enhancement and its relation to proper insulin signaling.

Anne Jordan, *Do You Control Your Emotions or Do Your Emotions Control You: Perceived Emotional Control Over Negative and Positive Emotion Words*

Faculty Advisors: Jeanette Altarriba, College of Arts and Sciences, Department of Psychology; Halszka Bak, Adam Mickiewicz University; Allison Wilck, College of Arts and Sciences, Department of Psychology

The goal of this study is to better understand the connection between negative and positive emotions and our perceived control over them. Participants were asked to evaluate different words that were pulled from the dictionary because according to their definitions they held some sort of emotional tie. Words were rated on three scales to indicate how positive or negative the word is perceived, how intensely the emotion is felt, and how in control of that emotion the participant feels when experiencing it. Through statistical analysis we found that negative words are rated as being less controllable than their positive counterparts. We contribute this pattern to the condition of learned helplessness. Findings from this study will be used in part to create a cross cultural database of emotion words.

Alicia McDonough, *When healthy eating is unhealthy: Orthorexia Nervosa and health outcomes*

Faculty Advisor: Jessica Martin, School of Education, Division of Counseling Psychology

The purpose of the research is to gain a more clear understanding of the new and emerging disorder known as orthorexia nervosa. Orthorexia nervosa has proven to be a controversial topic within the health field. Researchers are still grappling with whether or not the disease is an eating disorder in itself or a disordered eating behavior that is obsessive-compulsive in nature. Orthorexia nervosa (ON) is characterized as having an intense obsession with foods that an individual deems to be pure and free of harm. Individuals with (ON) may exclude foods from their diet that contain pesticides, additives and artificial substances, genetically modified organisms, etc. In an attempt to remain optimally healthy, behaviors and preferences such as these are masked as being positive. However, such strict adherence often lends its way to a negatively impacted quality of life. I believe that an increase in transparency within the food industry, as well as a rise in our society's desire to be fit and healthy may provoke the likelihood for an individual to develop (ON). As of now, my goal is to review the existing literature and determine its prevalence and possible implications for diagnosis in populations around the world.

World Politics, World Economies: Crises, Revolutions, Evolving Relationships

Lecture Center 12 3:15-4:45 PM

Trevor Eck, Arab Spring in North Africa: An Analysis of Foreign Influence and Revolutions in Egypt, Libya, and Tunisia

Faculty Advisor: Victor Asal, Nelson A. Rockefeller College of Public Affairs and Policy, Political Science

This paper examines the role foreign influence had on the outcomes of the 2011 Arab Spring Revolutions in Egypt, Libya, and Tunisia. Foreign influence primarily came from the US, European states such as the UK and France, and Gulf States such as Saudi Arabia, Qatar, and UAE. Influence includes but is not limited to financial assistance, diplomatic pressure, and in Libya's extreme case military intervention. Outcome of the revolution is determined by examining the state of each government before and after the 2011 revolutions. This paper studies why each of these three states had different levels of foreign influence throughout their transitions from longstanding dictatorships to the current governments that run each state today. It also studies why Tunisia, which had very little foreign influence, developed into a free and democratic state while Egypt and Libya ended up with another autocratic regime after many states played a role in their revolutions. It explains that the pressure the West faced to overthrow autocrats Qaddafi and Mubarak along with the lack of desire to engage in a third national building enterprise led to an overthrow of the original governments without a foundation to develop a new government. This along with the Gulf States' interest in increasing their regional power led to the failure of both revolutions as Egypt returned to an autocracy and Libya turned into a failed state with multiple governments at war. While Tunisia, who had little foreign intervention successfully transitioned from an autocracy into a free and democratic state.

Noel Chase, Barbados' Debt Crisis: The Effects of Colonialism and Neoliberalism

Faculty Advisor: Christine Vassallo-Oby, College of Arts and Sciences, Department of Latin American, Caribbean and U.S. Latino Studies

This research project explains the correlation between the tourism sector and the cycle of debt in Barbados. Barbados has continuously incurred debt since its independence from Great Britain in 1966 to present day. As of 2017, the estimated national debt of Barbados was \$7.92 billion (USD). Sir Hillary Beckles, Michael Howard, and other economic experts and professors at the University of the West Indies, believe that the country has gone into debt for a variety of different reasons. Barbados incurred such a staggering debt due in part to its violent history of chattel slavery, the decline of the island's sugar industry, and the migration of citizens, who were looking for a better opportunity overseas. I argue that while no one factor has singularly contributed to create the nation's debt, however, the shift to tourism as the island's leading industry has caused the debt to increase significantly. The government clearly favors continued tourism development and has reduced corporate taxation by twenty percent in 2018. As a result, China State Construction Engineering Corporation (CSCEC), Sandals Resort International, and other international corporations have benefited greatly from these tax breaks and contracts which have allowed them to establish their businesses on the island. The government's frivolous actions of giving away money to many non-Bajan private and corporate investors for the purposes of international tourism has ultimately hurt the economy and the citizens of Barbados.

Shouyue Zhang, The Transformation for Chinese Americans from Political Apathy to Activism: A Case Study on Manhattan Chinatown Tenants in 1970

This presentation will introduce the political participation of Chinese tenants in Manhattan Chinatown in the era of post-Civil Rights Movement. To strive for the self-determination of their communities, the "Model Minority" unprecedently participated in social movements named as "Asian American Movement" across the United States in the 1970s. This case study will describe the background, mobilization, and process of a demonstration against the telephone company's requisition of land located in Manhattan Chinatown from 1969 to 1970. Consequently, the telephone company was no longer mighty as real estate developers in the early stage of urban renewal, even making a concession to tenants and finding an alternative site. In this demonstration, the tenants organized a committee to fight for their rights, getting the support from political figures and pressuring the landlords through media reports. These mature struggles are different from immature rent strikes from 1963 to 1964, manifesting the awakening of apathetic Chinese Americans in the political field. My preliminary conclusion is urban renewal may be the force that gave real impetus to the creation of a Chinese Americans social movement.

Cassidy Griffin, What Goes Up Must Come Down: Denunciations in the Great Terror

Faculty Advisor: Michitake Aso, College of Arts and Sciences, Department of History; Nadieszda Kizenko, College of Arts and Sciences, Department of History

The Soviet Union of the 1930s was marked by fearmongering, denunciations, and a series of show trials that rocked the Communist Party. The Great Terror started officially in late 1934 and continued until 1938, entangling millions within its web of imprisonment, forced labor, and executions. The general consensus has been that the Terror was a result of government influence and citizens' actions. A lot of the research done on this era has focused on why the average citizen would willingly participate in the government's reign of terror. By examining a series of memoirs written during and about this time and official speeches and publications from high-ranking Party members, this paper will show that the promised utopia was not enough to prevent discontent and the Soviet government turned to terror to consolidate its power further. In an attempt to fight the alleged class enemies within the Soviet society or to prevent themselves from being implicated, citizens wrote denunciations against family members, neighbors, bosses, etc. Doing so spread the purge into factories and small towns. By looking into the topic of denunciations and terror, this paper sheds light on the origins and motives behind other campaigns of fear including the Salem Witch Trials and 1950s McCarthyism.

Alanna Belanger, "The glory or the story of the sea-divided Gaels. One in name, and one in fame..." : How Atlantic Newspapers Impacted the Irish

Faculty Advisors: Michitake Aso, College of Arts and Sciences, Department of History; Maeve Kane, College of Arts and Sciences, Department of History

The Great Famine was a turning point in history that led to lasting repercussions for not only the country of Ireland, but for its citizens. Destruction ran throughout Ireland and as many of the Irish immigrated to other countries they became sick with typhus along the way. With these sick immigrants coming into ports people in host countries began to panic. For example, in 1847, England and Canada experienced typhus epidemics that were immediately linked to the Irish. My paper asks how mass immigration and fears of epidemics affected the perception of Irish in mid-nineteen century Atlantic World cities? It addresses this question by analyzing how newspapers covered immigration and disease. Looking through English-language newspapers reveals the bias transmitted by the print media with regards to the Irish. Terms such as "Irish fever" and the "Celtic Plague" began to spread in the coverage of typhus. My paper argues that the mass immigration of the Irish to Canada, England, and the United States led many to fear a typhus epidemic. The reactions from the newspapers held real life consequences in regard to the Irish and immigration. The consequences ranged from religious discrimination to medical discrimination contributing to the marginalization of the Irish in these communities.

Veronica Saethre, and Yuehang Chen, Looking East, Looking North

Faculty Advisor: Camelia Lenart, College of Arts and Sciences, Department of History

Diplomatic relationships between countries are key to upholding peace and security, especially in the recent political climate. This paper reviews the diplomatic relationships between the East-Asian country, China, and the Northern European country, Norway in relation to the two superpowers, USSR and the United States in the period between 1960 and 1980, as well as the relationship the two countries have towards each other. The paper will discuss significant events which shaped Chinese and Norwegian international relations in regard to the Cold War, and we will identify tensions of the aftermath of the Cold War and how breaches in diplomatic trust can create catastrophic results. Lastly, we will briefly review the Chinese and Norwegian political interactions during the Cold War, as China is a full communist country and Norway as a co-founding country of NATO. By conducting this research, we are assessing the importance of international relations, and by looking into two countries which rarely are reviewed together we hope to discover interesting aspects of the Cold War which has been overlooked in both historical and political academia.

Advances in Business and Management

Lecture Center 13 3:15-4:30 PM

Maksim Papenkov, A "Quant" Approach to Predicting Revenue Growth

Faculty Advisor: Lewis Segal, College of Arts and Sciences, Department of Economics

The primary task for an active equity investor is to identify stocks with positive expected future returns. In general, this is a very difficult task, as stock returns are a function of many inputs, including size, value, and profitability. To predict company profitability, it is necessary to develop models for company revenue and company costs - as they are independent functions. This study attempts to model the former, by developing a two-stage algorithm to estimate the probability that a company will report quarterly revenue growth. This is done using a combination of Time Series and Bayesian statistical techniques. In the first stage, a Logistic Auto-Regressive Moving Average (LARMA) model is used to estimate a prior probability that a company will report revenue growth, based on historical quarterly data from the Compustat database. A limitation of this prior estimate is that it cannot incorporate data that is more recent than the last quarterly report (three months ago), during which the probability of revenue growth may have changed. There is an attempt to remedy this problem in the second stage of the algorithm, which utilizes Bayesian conditioning to update our prior estimate based on the proportion of similar companies which reported revenue growth in the past month. This study aims to identify whether this Bayesian conditioning significantly improves the accuracy of our prediction. This project is currently a work-in-progress, though sufficient results are expected by the time of the conference.

Cameron Gaechter, The Role of Liquidity in Technology Sector M&As

Faculty Advisor: Rita Biswas, School of Business, Finance

The purpose of this study is to examine abnormal wealth effects observed by acquirer and target shareholders in technology-sector M&A deals, as well as the effect that liquidity positioning has on merger premiums or discounts. Abnormal wealth effects experienced by the acquirer and target both pre- and post-merger announcement were tested in a two-sided event study consisting of a large sample of companies representing the two sides of the transaction. The event study demonstrates that different characteristics of M&A deals, i.e. payment consideration and domesticity, have asymmetric effects on abnormal wealth effects for shareholders of both parties, with the most dramatic effects manifesting in high abnormal returns prior-to, and after acquisition announcement dates for targets. It is concluded that the liquidity ratios such as current assets to current liabilities and cash as a percentage of total assets has no significant effect on merger premiums while the solvency measure of total assets to total liabilities has a significantly negative effect on merger premiums for both bidders and targets.

Keondo Park, ESG Rating and Ownership Structure in U.S. Firms

Faculty Advisor: Rita Biswas, School of Business, Finance

Given the rising interest in the relationship between Environmental, Social and Governance rating (ESG) and its components, this paper investigates the relationship between insider/institutional ownership structure, ESG ratings and financial performance of the firm, using 398 companies in U.S. 2017 obtained from Bloomberg. This paper entails cross-sectional analysis of ESG rating and its components in 10 sectors (Communication, Consumer Discretionary, Consumer Staples, Energy, Financial, Health Care, Industrials, Materials, Technology, and Utilities) and Return on Asset as a matrix for financial performance. The results suggest that ESG rating and performance of the firm is positively and significantly associated, except environmental score. Ownership structure differently affects to ESG rating and its component by the sectors, even when controlling for the firm's size. The study contributes to research on both the impact of ESG rating and its components to the performance of the firm and the relationship between ownership structure and ESG performance.

Oksana Pawlush, Innovation: The Determinant of Success in Software

Faculty Advisor: Rita Biswas, School of Business, Finance

This study examines the determinants of performance in the U.S. software sector. The emergence of the software industry has been a world changing phenomenon and created a highly competitive market and a profitable investment field. Using panel regression analysis on a sample of 730 U.S. based software firms spanning the period from 1995 to 2017, this study finds that intangible assets and staff expenses have a statistically significant positive impact on the performance of software companies, as measured by their return on assets and return on equity, respectively.

Jack Westerink, Team Heterogeneity and Player Performance in the NFL

Faculty Advisor: Lewis Segal, College of Arts and Sciences, Department of Economics

Success in the National Football League revolves around teams putting their players into the best matchups possible. This concept of a matchup can be explored by looking at offensive positions vs. a team's defense. Every defense has its strength and weakness so that some offensive players will play better against certain defenses than others. I propose that characteristics like a player's speed, strength, endurance, and ball handling identify offensive players that will perform well. However, the importance of these characteristics varies with the type of defense. Some characteristics are more relevant against specific types of defenses.

I use a linear regression model to examine the connection between characteristics of an offensive player and their effectiveness measured by NFL Fantasy Points. The basic idea is similar to the analysis of earnings as a function of education and human capital, or the estimation of hedonic pricing equations in industrial organization

I use a team fixed-effect model to demonstrate that not all defenses are alike when it comes to points allowed after controlling for the offensive players. I believe defenses will allow a different amount of Fantasy Points to players with different characteristics and therefore, I will break the study down by position; wide receiver, quarterback, running back, and tight end. Every position requires a different skill, so it is necessary to split them up; the regression models will assess this hypothesis.

Once the positional differences are identified, I will look for trends based on a set of characteristics that would return the highest number of fantasy points. A possible trend could be that running backs who are small and fast play better against some defenses. If that running back, who is small and fast, acquires more points against a defense than a running back who is larger, this would imply that playing a running back who is smaller would earn more points in subsequent games.

Literary Treatments of Tragedy, War, Fear, and Redemption

Lecture Center 15 3:15-4:30 PM

Jordan Dgien, The Changing Story of My Father's Death

Faculty Advisor: Jeffrey Berman, College of Arts and Sciences, Department of English

Jordan's thesis centers around the familial conflicts that arise after the death of a father. Jordan's father died twelve years ago, but that does not mean she successfully grieved him during that time. Told in the form of a first-person memoir, her thesis deals with her mother's grieving process, and how it affected her own. She argues that her mother's lack of open grief, emotional communication, and general discussion of their lost father negatively affected her grieving process, as well as her relationship with her mother. Jordan looks back and comments on the writings she did a year ago during a period of heavy grief. Connecting the past present and future, Jordan dissects the implications grief has had on her life, relationships, and mindset, all while dealing with the implications her writings have on the present. That is to say, she discusses the real-life consequences of writing about her life when her mother and sister are still alive. This results in Jordan's questioning of her text: Who has the right to a memory that was shared?

Zoe Roswell, *A Sign of the Times*

Faculty Advisor: Joshua Keller, College of Arts and Sciences, Department of English

I drafted this short story for an assignment in my Creative Writing 102z course based on techniques we learned in class including estrangement but also it was inspired, in part, by Tennessee Williams' "The Glass Menagerie". Williams' play touches on certain familial mental health struggles in each character that were deep rooted and I wanted to communicate the same effect. My story revolves around the present life and childhood of Charles, an underground boxer, who was orphaned at a young age due to both of his parents' struggles with mental illness. Charles experienced his mother's mental deterioration before and following his father's exit from their lives. He also lived through abuse imparted by his father as a result of his father's untreated anger issues. What breaks the cycle, temporarily, in my piece is the intervention of a mentor in the form of George, the owner of a boxing gym, who tries to help Charles deal with his problems in alternative ways rather than how his parents handled them. Throughout the story, there are pieces of monologue from present-day Charles that cut through the 3rd person limited narration of his childhood in order to provide closer retrospection on his part.

Octavia Findley, "Suddenly War Became Sweeter": A Hybrid Approach to War and Memory in Homer's *Iliad*

Faculty Advisors: Helene Scheck, College of Arts and Sciences, Department of English; Ineke Murakami, College of Arts and Sciences, Department of English

A two-part hybrid, the thesis begins with a critical examination of Homer's *Iliad* in relationship to memory, poetry, and remembrance of war and concludes with a creative continuation set in the last decade. The critical essay focuses on book four and five of the epic poem, highlighting the social and cultural analysis of wartime's effects. I argue that the centrality of Athena's machinations suggest that war at its best is a matter of protocol and codes of honor, while the ubiquity of Ares' presence despite his apparent displacement underscores the reality of war's difficulty: it is brutal for all involved. The creative spoken-word piece serves as both a response to and a continuation of the *Iliad*, where the Poet recounts the aftermath of Ilion in concert with the sibling deities. They comment on several pivotal points in global history, from the collapse of the Roman Empire, World War I and II, to the War on Terror, all of which unfolds from the perspective of embattled immortals weary of their obligations and all the problems that come with it.

Kathleen Gibson, *Fear of Annihilation in Children's Media*

Faculty Advisor: Eric Keenaghan, College of Arts and Sciences, Department of English

Physical death can be painful but annihilation is far more terrifying. According to Donald Winnicott, annihilation is the death of the 'self' or ;ego; or ;identity. It's the nagging fear of that we will die and everything we are and everything we have done will mean nothing. Or that we will wake up, as if with amnesia, having no idea who we are. Annihilation is a crisis of identity. This fear manifests in children as well. Annihilation rears its head as the fear of being turned into a toad, lost in the jungle, caged by a wicked witch, or abandoned by one's parents in the woods. Fear of annihilation is the fear of no longer being one's self. This is especially difficult for children to overcome as they do not have a fully formed identity to lean upon and must rely on caregivers for support and direction. Bibliotherapy, the use of literature as a tool to teach empathy and coping mechanism, and cinematherapy, the use of film for the same purpose, can aid children in overcoming fear of annihilation. The Grimm tales, *Bambi*, and *Over the Garden Wall* can be read in ways that promote identity formation, acceptance of vulnerability, and courageous exploration of fear.

Erin He, *Peter Shot a Man*

Faculty Advisors: Aashish Kaul, College of Arts and Sciences, Department of English; Edward Schwarzschild, College of Arts and Sciences, Department of English

Peter Shot a Man is a fictionalized story about Peter Liang, a Chinese American police officer who shot and killed Akai Gurley, a black man, in 2014. The purpose of the story is to analyze the act of violence through socialization. In doing so, the story investigates the process of racial minorities claiming a place for oneself in America in relation to other racial minority groups and the seemingly inevitable violence involved. To do so, the story is broken into three parts: the first begins when Liang has just arrived from Hong Kong to New York City in 1997, where he begins elementary school. The second part begins in the mid-2000s, when Liang is in high school and applying to college. The final part begins with his graduation from the police academy, which then leads and ends with his shooting of Akai Gurley. Each part investigates facets of the Chinese immigrant experience in relation to black folk in the context of the changing fabric of neighborhoods.

Making and Breaking the Molds: Female and Family Representation in History, Fiction, and the Modern World

Lecture Center 19 3:15-4:30 PM

Molly Knott, *Gendered Objections to Female Rule*

Faculty Advisors: Michitake Aso, College of Arts and Sciences, Department of History; Patrick Nold, College of Arts and Sciences, Department of History

The sixteenth and seventeenth centuries witnessed a striking event in European monarchies: four queens ruled England and Scotland. These four queens, Lady Jane Grey, Mary Tudor, Mary Queen of Scots, and Elizabeth Tudor, challenged prevailing assumptions about the relationship between power and gender. They faced many objections to their legitimacy merely because they were women. My paper explores the opposition these queens faced and the ways that they sought to overcome them. It argues that hostility to female rule were based on both understandings of nature and of society at the time. As evidence, I examine writings such as John Knox's *The First Blast of the Trumpet: Against the Monstrous Regiment of Women*, which appeared in 1558. Knox, a Scottish minister, argued that letting a woman rule a country went against the natural order and was an insult to God. Yet, these queens did rule and Elizabeth I held power for nearly half a century. In order to understand how they overcame hardships, I look at how they crafted their public image through paintings held in the National Portrait Gallery. Through these portraits, these queens made a case for their legitimacy using their clothing, posture, and other physical features to argue for their right to rule. My paper shows the different characteristics of male and a female rule during the sixteenth and seventeenth centuries, how female rules adapted to and changed existing norms, and the lasting legacy of their challenge to gendered structures of power.

Elena Lipsiea, *Our Dystopic Reality: Atwood's *The Handmaid's Tale* (Re)Signified in Today's America*

Faculty Advisor: Mary Valentis, College of Arts and Sciences, Department of English

This project explores a text's evolution beyond itself, specifically its movement into and through the digital sphere and embodied resistance. It does so by tracing historical American oppressions to their modern iteration: a dystopia. While Margaret Atwood's seminal 1985 novel, *The Handmaid's Tale*, has long been studied as exemplifying dystopian and feminist literature, its recent resurgence in Trump's America has not been critically studied. Since its publication, various (re)imaginings have been created including Hulu's 2017 scripted series. Most provocatively, however, are the recent uptakes of the handmaid's costume by political protesters. I examine this use of costume to explore the function of literature as a resistance tool. By turning to Atwood's satirical use of Puritanism and 1980s Christian conservatism, I unpack specific histories of sexism and racism grounding America today. As such, I argue that *Handmaid's* no longer forewarns dystopia, but rather reflects our dystopic reality. Furthermore, I argue that protesters' power does not exist within the costumes signaling *Handmaid's*, but rather within the act of putting on the costume. Paradoxically, the costume is both provocative in its invocation of Atwood's fiction and simultaneously meaningless as it is subsumed by a dystopic reality it attempts to call out.

Carlee Litt, *Nuclear Families for the Nuclear Age: Disney's Part in Creating Gender Roles in the 1950s*

Faculty Advisors: Mitchitake Aso, College of Arts and Sciences, Department of History; Kori Graves, College of Arts and Sciences, Department of History

The 1950s was a revolutionary period for American youth culture. The Disney Company played an important role in forming and conveying a new image and set of ideals associated with childhood. My paper examines the Disney Company's messages about growing up, in particular, the gendered expectations surrounding love, that revolutionized the way Americans viewed family life. For both ideological and business reasons, Disney promoted an idealized concept of the nuclear family to children. My paper pays close attention to the conversation occurring between Disney and the American public by analyzing both 1950s Disney storylines, disseminated in multiple mediums such as movies, toys, books, and the public's reactions to them. My paper presents its findings in three main sections: parenting and growing up, love and dating, and marketing strategies and public reaction. Previous scholarship about Disney has tended to focus only on Disney movies. By comparing multiple media for their message, my paper allows for a greater understanding of the reciprocal impact of Disney and the American public. And, as anyone with children, or who was one in the twenty-first century knows, the conversation between Disney and the American public is still going strong.

Cheyenne Pieters, “*Black Women Create: An Exploration of Black Women’s Self-Preservation through the Art of Self-Expression*”

Faculty Advisor: Janell Hobson, College of Arts and Sciences, Department of Women's, Gender and Sexuality Studies

The colonization of women’s bodies and lives on a global scale has been a major factor of the perpetuation of continued racism, sexism, policing and exploitation of Black women. The histories of women of color are deeply embedded in our bones, stories, families, art and everything we touch. The unique or unconventional ways women of color have celebrated their identities and life during times of relentless work of activism, social justice and realities of oppressions can be seen through different forms of art and expressions. We have seen our mothers carry the world on her back, but how often do we see her living for herself? Most may say they barely see their strong mothers, activists and healers doing for themselves and living their passions and life through love, but with changing the lens, it is seen that Black women have also showed their resilience and strength in multifaceted ways. I have examined what some of these different methods of self-preservation through art are, and how this feminist work challenges the racism, sexism, exploitation and stereotypes perpetuated throughout society, through in-depth interviews. My project, inspired by Alice Walker's "In Search of Our Mothers' Garden", closely explores the artistry of Black womanhood, the generational connections of these passions, how it shifts a life of surviving to living and how it is expressed as both a form of self-resilience and social justice. Results of this analysis of Black artistry is presented through photography and self-narratives and of each participant.

Marissa Barnes, *Decorated Ceramic Serving Wares as Expressions of Social Identity in Nineteenth-Century Albany, New York*

Faculty Advisor: Marilyn A. Masson, College of Arts and Sciences, Department of Anthropology

To what degree do consumer choices for decorated serving wares reflect social identity and wealth in the early and mid-nineteenth century in historical Albany, New York? Ceramic assemblages analyzed from two archaeological sites, representing contrasting sociocultural contexts, address this question. The sites include the Ten Broeck Mansion, from which materials represent the possessions of Abraham Ten Broeck and his wife, Elizabeth Van Rensselaer, wealthy persons of their era, and in contrast, the Stephen and Harriett Myers Residence, for which the sample represents the tastes and means of a middle-class African American family in an increasingly urban environment. The Myers family were influential leaders in Albany's Underground Railroad and abolitionist activities. Two principal variables analyzed include: 1) motif choices reflecting social ideals or professional occupation, and 2) the degree of matched or mismatched pottery styles in the assemblage. Scenes of ships, riverine landscapes, and those reflecting Romanticist ideals are associated with the Myers house, in keeping with riverine professions and abolitionist ideals held by residents. In contrast, the Ten Broeck assemblage reveals greater emphasis on porcelain or imitations, important to expressions of high status in early Albany. More matching pieces at the Ten Broeck Mansion meet expectations for a wealthier context, whereas middle-class residents of the Myers residence had greater ceramic style diversity.

Colliding Social Worlds and Paradigms: Racial, Ethnic, and Economic Encounters in the Modern World **Lecture Center 20 3:15-4:45 PM**

Kentaro Yamamoto, *Returning the Favor: Volunteers and "Guests" at a Food Pantry in Albany, NY*

Faculty Advisor: Elise Andaya, College of Arts and Sciences, Department of Anthropology

As the state increasingly retreats from welfare and safety net programs, food pantries have become increasingly important in managing the needs of food-insecure people in their neighborhoods. Based on 6 months of participant observation and interviews at a local food pantry in Albany, New York, I examine interactions between volunteers and “guests” as they navigate race, ethnicity, class, and national belonging. As with most charitable organizations, volunteers are required to contribute physical and emotional labor without expectation of reciprocity. However, as Mauss famously argued, mutual reciprocation solidifies the relationship of social equals, while the inability to reciprocate maintains the recipient in a lower status. This paper argues that despite well-intended volunteers’ efforts to treat guests with dignity and respect, the volunteer-“guest” relationship still reflects the current unequal social structure.

Joshua Levine, A Good Education for All? Desegregation and Educational Reform in Albany's Schools

Faculty Advisors: Mitchitake Aso, College of Arts and Sciences, Department of History; Richard Hamm, College of Arts and Sciences, Department of History

Public and private schools throughout American history have been segregated due to policies crafted and implemented by local school boards. The Supreme Court decision in the Brown v. Board of Education case said segregated public schools were inherently flawed and that the idea of separate-but-equal had no place in public education. But how were schools to integrate the schools? Cities such as Albany had neighborhoods that had a majority black proportion, meaning that the schools within these neighborhoods were going to be segregated. Policies pursued by the Albany School Board of Education did not provide a solution and The Brothers sought to mobilize the members of the South End and Arbor Hill communities to take action for the state of education in the schools. Using documents from the Albany School Board, The Brothers, and looking at local public and private schools, this paper argues that the policies and programs pursued not only by the public but private schools as well, inhibited the educational growth of the children and continued the segregation persisting within these schools. Dealing with the racial imbalance, admissions policies, and practices within the schools, the city of Albany had to find ways to deal with the growing problem of segregation. The history of Albany's schools shows the challenges when dealing with segregation in the educational system, and if left alone, these problems would continue into future generations.

Kemi Kehinde, The Masks of African Identity: Understanding Displacement in We Need New Names

Faculty Advisors: Paul Stasi, College of Arts and Sciences, Department of English; Glynne Griffith, College of Arts and Sciences, Department of English

Two discourses have sculpted conceptualizations of the African continent and its people, most predominantly after colonization: Afro-pessimism and Afro-optimism. Afro-pessimism asserts that Africa is incapable of succeeding in the global climate due to African's futility and inability to self-govern and repair damages due to colonization. Hence, the African continent is a lost cause to these theorists, and subsequently its people are subject to demise. This discourse has two sides primarily, one coming from the Western point of view and the other coming from the African themselves. In reaction and contention to this ideology, different forms of Afro-optimism have developed, the most contemporary form being Afropolitanism. Afropolitanism strives to highlight Africans scattered around the Western world with ease and mobility that allows them to obtain cosmopolitan status. They are distinguished as intelligent entrepreneurial African immigrants that debunk the tropes of "war [and] hunger" portrayed by the media and instead embody success in all their economic endeavors. In essence, they are the prominent symbol of African prosperity in the Western world. But each of these discourse, by itself, is inadequate. In these extremist views and discourses about the African continent and in extension African people, there seems to be missing elements from both sides that ultimately undermines the experiences and recognition of those that lie in between. These discourses become Single Stories for Africans which is problematic not because they are untrue, but because they are incomplete. This project will dive into the missing stories discarded because of these polar extremes and therefore shed light on the identity crisis that exists for those subject to these ineffectual categorizations. Through close reading NoViolet Bulawayo's novel, *We Need New Names*, this project will show how both Afropolitan and Afropessimist discourses limits the reality of the African being to either that of glamour and affluence or that of destitution and impotence. The result of this duality is a feeling of displacement and inefficacy for the African immigrant in the Western world with no ability to claim any place or category as their own. Looking at Darling, the protagonist, life through the lenses that shadowed her experiences, we can see that there truly is a necessity for a new way of thinking of the African being in and out of the global context; one that doesn't shroud their identity into meaningless displacement.

Briana Dominguez, Dear United States of America: We Are Children: The Treatment of Immigration Children under the Immigration System

Faculty Advisors: Christine Vassallo-Oby, College of Arts and Sciences, Department of Latin American, Caribbean and U.S. Latino Studies; Joanna Dreby, College of Arts and Sciences, Department of Sociology

Dear United States of America: We Are Children is about the way undocumented unaccompanied children are treated by the immigration system in the U.S. I focus on the two different presidential administrations, the Obama and Trump administration. I will start from the Obama administration, fiscal year 2014 and end on the Trump administration, fiscal year of 2018-19. This is important because undocumented children are treated unfairly, they are being thrown from one department to another, denied asylum, deported to their countries that they do not desire to go back, put in cells, and put into the immigration system by themselves. I want to know why the first responder,

when the children enter the U.S., is not from the HHS? Since these children were entering the United States of America in large numbers from 2014 and continue to enter in large numbers, how has the past and present presidential administrations (i.e. Obama vs. Trump administration) have treated undocumented immigrant children? Comparing two presidents that are considered to be completely opposites, one is all about human rights while the other is not, is good to see if either were treating these children differently too.

Sharmila Porter, *Being Black Being White: Passing in Harlem, Black in Paris*

Faculty Advisor: Camelia Lenart, College of Arts and Sciences, Department of History

This research paper examines the racial injustices of African American women during the 1920s and early 1930s, a time of segregation and isolation for blacks. By examining the social inequalities that black women faced, I also highlight the ways in which they coped with racism. African American women faced many other significant social factors that made them vulnerable. Due to their gender, black women were labeled as “second-class” citizens, and unfortunately because of their race society also denied them opportunities and benefits. In order to analyze how racism affected black women and the decisions they made, I focused on Josephine Baker a black entertainer who started her stardom abroad in Paris, France, and Clara Kendry a character in Nella Larson semi-autobiographical novel *Passing*. This paper serves to compare and contrast both women and the journey they embarked on in an attempt to escape the consequences of racism. Data collected from videos, documentaries, and novels highlights the way in which Josephine Baker embraced her African roots and how the people of Paris embraced her talents despite the color of her skin. Meanwhile, the story of Clara Kendry shows how an African American woman rejected her black ethnicity to “pass” as a white woman to achieve social acceptance. However, this paper challenges the idea that fame abroad and passing were successful methods for coping with racism. Despite the fame and independence Josephine Baker had, once she returned home to America her race came before her career, and she too was a victim of racism. As for Clare Kendry, her story shows how one cannot successfully live a double life without being constantly reminded of your true identity.

Michael Tarasoff, *Unconventional Allies: Illicit Organizations in Disaster Preparedness, Response, and Recovery*

Faculty Advisor: Samantha Penta, College of Emergency Preparedness, Homeland Security and Cybersecurity

The Whole Community approach to emergency management stresses the importance of involving the full community when planning for disasters. This approach strengthens the community from the inside out, reducing the overall demands on emergency managers, while providing a more comprehensive means of addressing diverse community needs. The Federal Emergency Management Agency (FEMA) encourages community stakeholders to participate in all phases of the disaster cycle, including the planning process. Typically, these partners are envisaged as local leaders in nongovernmental organizations, religious groups, members of the private sector, and civic organizations among others. However, stakeholder engagement may be complicated in communities with a strong presence of criminal organizations, like gangs. The illicit nature of these organizations present clear problems for these communities, yet they are often directly connected to the most vulnerable and difficult to reach populations. This study explores the potential benefits (if any) to involving gangs/illicit organizations in community engagement for emergency management, and identifies who might benefit from that engagement. Through analysis of research on criminal organizations in communities, policy analysis, and efforts to engage with current and former criminal actors in other contexts, this study explores benefits of engaging gangs/illicit organizations in disaster preparedness, response, and recovery, while also examining the ethical and moral complications to doing so.

The Press: Freedom, Bias, Ethics I

Lecture Center 21 3:15-4:15 PM

Courtney VanWormer, Victorianna White, and Yiru Wang, *Attack on Global Press Freedom*

Faculty Advisor: Chang Sup Park, College of Arts and Sciences, Department of Communication

Journalism is a profession where one provides an unbiased and objective view on events happening nationally and globally to provide the public with essential information for their lives. However, global press freedom is being threatened across the world. This research documents the ongoing trend of government officials murdering journalists who negatively criticize them.

Recent events have sparked discussion about whether or not global press freedom is truly in danger. Some countries are intolerant to those who speak out about a repressive government. Many journalists died, while resisting against

their governments: for example, Jamal Khashoggi who criticized the workings of the Saudi Arabian government, Henry Liu who was known for criticizing the Kuomintang, and Leobardo Vázquez Atzin who frequently reported on corruption in Gutiérrez Zamora and Tecolutla. These cases show how a repressive government can use its power to shut down negative criticism from a journalist. In what way is it normal for people to die for their job? According to CPJ, in 2018, 1 journalist in the Middle East and 2 journalists from Central America were murdered by government officials. Over the past two decades, over 103 journalists have been murdered by government officials (CPJ, 2019).

When a journalist speaks out about a corrupt government, they receive an influx of backlash, usually death threats. As a result, we are seeing more journalists being killed for speaking out against corrupt governments; governments that wish to limit the speech of those who speak negatively about it.

Kyle Frank, Laurel Glasser, and Crysta Garcia, Case Study: Media Coverage of US and Canadian Elections

Faculty Advisor: Chang Sup Park, College of Arts and Sciences, Department of Communication

When Americans think of our neighbor to the north they usually think of a near Utopian version of the United States that exists comfortably with free health services and almost no issues compared to that of the States. Canadians themselves like to think they are a better version of America as well but what happens when we dig a little deeper into say how each countries media covers its own elections? In theory Canada should not be nearly as rough and patronizing as those silly American elections one might think, but this simply isn't the case. Although not as extreme as the onslaught of media coverage that surrounded the 2016 general election in the States, Canada's general elections are not anywhere near what Americans think of it. Canadian Media can go just as hard at the candidates as US media does. A Solid example being what is happening right now as the Prime Minister is under stress from controversy. The CBC, The Toronto Sun, and other prominent Canadian news outlets are dive bombing at every step with the first word being given to the main opposition to Trudeau in this years Canadian federal election election being Andrew Scheer, leader of the Conservative Party of Canada. Comparing the first few months of 2016 in America and the first few months of 2019 in Canada breaks the stereotype of the Utopian northern neighbor altogether and gives a glimpse into how similar but different countries media acts.

Jacquelyn Orchard, Timothy Grey, and Joe Hoffman, Why Russian Media is Considered "Not Free"

Faculty Advisor: Chang Sup Park, College of Arts and Sciences, Department of Communication

In the 21st century, the relationship between the Russian government and its media has grown increasingly contentious and has become a focus of international scrutiny. The Freedom House “Freedom in The World” report of 2019 lists Russia as a “not free” country, with a rating of 20 out of 100, putting them in the same company as Iran, with a rating of 18 out of 100 and Egypt at 22 out of 100. Academic studies examining the Russian media from the post-communist period onward generally conclude that Russian media has become increasingly more oppressive. Careful examination of books on post-communism media in Eastern Europe and books on various media systems beyond the Western world reveals that though new technologies have arisen, press repression has worsened. Websites tracking press freedom such as Freedom House, the Cato Institute, and the Committee to Protect Journalists all present conclusive data that Russia is among the least free countries and to be a reporter in Russia is perilous. This trend of declining press freedom in Russia is closely aligned with the political rise of President Vladimir Putin. This relationship can be examined through a history of post-communist Russia and three categories: Media censorship, silencing journalists, and unfair political elections. An examination of these three areas demonstrates a high level of direct interference by Putin, his administration, and his government policies, resulting in an increasingly restricted and unfree press.

Noah Smith, Hallie Robin, and Joshua Reedy, Socialist vs Democratic Political Coverage

Faculty Advisor: Chang Sup Park, College of Arts and Sciences, Department of Communication

Words like democratic and socialist are thrown around in today’s society, yet these words meanings are anything but universal. Specifically, in different countries the governing systems set up in these nations, despite having the same name ,vary to sometimes extreme degrees. Furthermore, when comparing these two systems along with a couple countries representing/practicing each, their drastic differences come to light in a more tangible way. This is particularly true in regards to what our project is primarily concerned with and that is the coverage of politics in both socialist and democratic countries/governing systems. In order to make it easier to understand we compare the nations and systems regarded in this project to the United States of America as a reference point. In order to research this, we first chose which nations to do an in-depth analysis of and in order to be fair, chose an equal number from those contemplated from both of the governing systems in question (Cuba/China= Socialist vs United

States/Greece= Democratic). We then scoured the Internet looking for informational articles, news media and social media relating to these topics. Afterwards we compared and categorized our findings which lead us to surprising conclusions/interpretations of our discovered data. Essentially, we inferred from what we discovered that socialist and democratic systems vary heavily from country to country and despite what one might think, both systems are not static but rather evolving with time in regards to how they cover politics and only becoming more opposite in nature.

The Press: Freedom, Bias, Ethics II
Lecture Center 22 3:15-4:15 PM

Melissa Pacifico, Kelly Mariah, and Christopher Pouch, *Global Media Attitudes Toward Conspiracy Theories*

Faculty Advisor: Chang Sup Park, College of Arts and Sciences, Department of Communication

Media coverage, political leaders, and social platforms shape public attitude toward conspiracy theories via underlying biases and psychological tendencies, allowing these conspiracies, in some cases, to gain mainstream attention in various regions of the world. The United States, Israel, and Russia provide examples of this effect. Despite having very different media environments, these countries have generated conspiracy theories whose origins share certain characteristics. These theories take off, in many cases, after public acknowledgement by well-known individuals or organizations. While they tend to originate amongst innominate social media groups, the following of these theories only gains critical mass after being legitimized by someone with an audience. Journalists and media outlets, though not always intentionally, provide platforms, and subsequently legitimacy, to conspiracy theorists. Such coverage, and subsequent coverage from other media outlets, has a great deal to do with how easily conspiracy theories spread.

Melissa Pacifico, Kaylie Johnson, and Phillip O'Meara, *The Ethics of False Advertising*

Faculty Advisor: Chang Sup Park, College of Arts and Sciences, Department of Communication

False advertisement, the use of misleading and untrue information to push a consumer product, is an unethical marketing ploy that has tricked consumers since the beginning of the consumer business industry. With the modern emergence of social media, consumers are now vulnerable than ever to falling victim to these unethical deceptive representations. The 'Fyre Festival' documentaries that recently premiered on both Netflix and Hulu are a perfect example of modern day false advertising mixed with the use of unethical social media influencer advertising. In this research project we aim to uncover the significance of unethical advertising and research the results of both ethical and unethical advertising through the examination of four major companies who have been accused of using this tactic. The four companies we will be analyzing are Fyre, Groupon, Hydroxycut, and Redbull, since they are some of the well-known false advertising cases in the United States over the past few years. The goal of our research is to discover whether or not society falls for false advertising and how influencers and companies utilize unethical marketing to lure in consumers or followers. We will focus on four instances of false advertising and will understand how consumers were tricked into spending their money on a certain product, or going on a trip. We will analyze the marketing methods and tactics from each company and examine the trends that we find. We will be looking in depth at each lawsuit and analyze the results of both ethical and unethical advertising.

Molly O'Shea, Ashley Ng, and Tyler Novak, *The United States and United Kingdom News Coverage on Syrian Refugees*

Faculty Advisor: Chang Sup Park, College of Arts and Sciences, Department of Communication

This paper will be researching on how the United States and United Kingdom cover the Syrian refugee issue. With our extensive research we will aim to uncover each country's biases and how different media companies cover this issue. Depicting how each news outlet displays fair, balanced coverage will be crucial to the contrasting views of both countries. Figuring out what is considered, "good coverage," will be decided by thoroughly comparing and contrasting the way both countries report the news. Tracking how much coverage each country has on this topic will help us gain an understanding of the contrasting or similar views both countries have on the issue. To find out which news outlet includes more perspectives, we will be using newspapers and websites such as BBC, Daily Mail, Telegraph, and The Independent for the United Kingdom and CNN, NPR, Wall Street Journal, The New York Times, and The Washington Post. Opinions by both the United State's President, Donald Trump, and United Kingdom's Prime Minister, Theresa May, elected in 2016, will be scrutinized throughout our research to see the

effect they've had on the mindset of the country. Commentary of political views from civilians of both countries, as well, will be another area of coverage focused on. We will research not only the shear volume of the coverage from the two nations, but also the different tones and narratives of the coverage. While examining how the media's coverage of this issue has helped shape policies in both countries. Our research will not only identify the accurate information but also point out the inaccurate; differentiating the fake news from the real. The way news is reported is an influential factor to the way people view news coverage in both the United States and United Kingdom.

Kyle Frank, Laurel Glasser, and Timothy Grey, Ethics Research: Coverage of the Events and Aftermath of 9/11
Faculty Advisor: Chang Sup Park, College of Arts and Sciences, Department of Communication

Mass media has many special responsibilities, most importantly to tell the truth but to also interpret breaking news situations to better inform the public of what's happening and how to respond. There is no better example of this responsibility being failed at more than the coverage of the events and aftermath of the September 11th Terrorist Attacks. The initial shock and belief that this was just an accident by the press and not a deliberate attack until the Pentagon and second tower was hit could be justified as most were still clinging to the 90's mentality of "America the Invincible". But as "America the Vulnerable" emerged from that day the media were more than willing to throw proper interpretation out the window to be replaced by their own nationalistic feelings and bias. The major news networks in the immediate aftermath were more than happy to help the Bush Administration convince a traumatized nation that the long term War on Terror was the only and best response to these attacks. Fox News at the time still owned by Roger Ailes, who has since passed away, who worked on the HW Bush 88 campaign along with CNN, ABC and the rest were more than willing to irresponsibly carry water for our Government as they sought to begin the never ending wars we are still involved with today.v

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