Capstone Day, May 9, 2019

9:15-11:30   Humanities Courtyard – muffins, scones, fruit, coffee, tea

A Sessions - 9:45-10:45

<table>
<thead>
<tr>
<th>Session</th>
<th>Title</th>
<th>Moderator(s)</th>
<th>Location</th>
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<tbody>
<tr>
<td>A1 Economics</td>
<td></td>
<td>Nayana Bose, Maureen Cowhey, Emily Collins, Madeleine Peterson</td>
<td>Humanities 119</td>
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<tr>
<td>A2 Politics and Legal Studies</td>
<td></td>
<td>Mark Golub, Daniella Henry, Greer Levin, Nicole Greenberg</td>
<td>Humanities 120</td>
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<tr>
<td>A3 Neuroscience</td>
<td></td>
<td>Melissa Coleman, Emily Koenig, Darlene Nguyen, Natalie Lillie, Ekaterina Smith, Layne Wells</td>
<td>Humanities 105</td>
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<tr>
<td>A4 History and American Studies</td>
<td></td>
<td>Corey Tazzara, Kate Cashion, Kevin Kilroy, Megan Gratke, Catalina Biesman-Simons</td>
<td>Humanities 103</td>
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<tr>
<td>A5 Athletics</td>
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<td>Humanities Courtyard</td>
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B Sessions – 11:00-12:00

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<th>Session</th>
<th>Title</th>
<th>Moderator(s)</th>
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<tr>
<td>B1 Economics and EEP</td>
<td></td>
<td>Roberto Pedace, Daniella Henry, Romanshi Gupta, Taylor Milana, Amaani Mehra</td>
<td>Humanities 119</td>
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<tr>
<td>B2 French Studies</td>
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<td>France Lemoine, Madison Wagner, Hannah Lewis, Alexandra Rivera</td>
<td>Humanities 103</td>
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<td>Session</td>
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<td>B3</td>
<td>Biology and Neuroscience</td>
<td>Humanities 105</td>
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<td>Moderator: Jenna Monroy</td>
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<td>Unji Lee</td>
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<td>Elizabeth Chun</td>
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<td>Katherine Tseung</td>
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<td>Megan O'Brien</td>
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<td>B4</td>
<td>Anthropology and Middle East and North Africa Studies (MENA) and Latin American &amp; Caribbean Studies</td>
<td>Humanities 121</td>
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<td>Moderator: Seo Young Park</td>
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<td>Avery Harwood</td>
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<td>Sarah Horder</td>
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<td>Maya Almogy</td>
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<td>Susana Pérez Arias</td>
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<td>B5</td>
<td>Mathematics</td>
<td>Humanities 101</td>
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<td>Moderator: Winston Ou</td>
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<td>Julia Ruiter</td>
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<td>B6</td>
<td>Dance and Theater</td>
<td>Humanities 104</td>
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<td>Moderator: Ronnie Brosterman</td>
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<td>Annabelle Sadoff</td>
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<td>Alisha Sarakki</td>
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<td>Emma Elliot</td>
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<td>Ana Nishioka</td>
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<td>B7</td>
<td>Athletics</td>
<td>Humanities Courtyard</td>
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<th>Time</th>
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<tr>
<td>12:00-1:30</td>
<td>Malott Commons – Lunch includes taco bar, and strawberries and cream, and chocolate bread pudding</td>
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C Sessions – 1:30-2:30

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<thead>
<tr>
<th>Session</th>
<th>Topic</th>
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<tbody>
<tr>
<td>C1</td>
<td>English</td>
<td>Humanities 120</td>
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<tr>
<td>Moderator: Tessie Prakas</td>
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<td>Elena Dypiangco</td>
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<td>Elizabeth Leung</td>
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<td>Emma Cornwell</td>
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<td>C2</td>
<td>Media Studies</td>
<td>Humanities 104</td>
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<td>Moderator: Carlin Wing</td>
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<td>Gabrielle Garcia</td>
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<td>Maya Zhou</td>
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<td>Katherine Mayer</td>
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<td>Jessica Eu</td>
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<td>Alissa Merz</td>
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<td>C3 Biology</td>
<td>Moderator: Sarah Budischak</td>
<td>Jodie Horowitz, Haena Lee, Kristin Moore, Xenia Rangaswami</td>
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<tr>
<td>C4 Philosophy</td>
<td>Moderator: Yuval Avnur</td>
<td>Emma Loftus, Frankie Beach, Rowen Cox-Rubien, Kripa Mehta</td>
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<tr>
<td>C5 Politics and Middle Eastern and North African Studies</td>
<td>Moderator: Sumita Pahwa</td>
<td>Casey Harris, Alexandra Hammond, Rebecca Wainess, Grace Richey</td>
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<tr>
<td>C6 Humanities (HMSC)</td>
<td>Moderator: Andrew Aisenberg</td>
<td>Danielle (Dani) Tishkoff Chidester, Stephanie Nunez, Karla Mejia Rivera, Jahnavi Kothari</td>
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<tr>
<td>D1 Art</td>
<td>Moderator: Ken Gonzales-Day</td>
<td>Molly Antell, Rowen Cox-Rubien, Catherine Glah, Tirza Jo Ochrach-Konradi, Morgan Stewart, Cindy Zhu</td>
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<tr>
<td>D2 Chemistry and Biochemistry</td>
<td>Moderator: Ethan Van Arnam</td>
<td>Krithika Rao, Ifunanya Ozioma Okeke, Emma Stacy, Susanna Barrett</td>
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<td>D3 Psychology</td>
<td>Moderator: Jennifer Ma</td>
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<td>Emily Lavine</td>
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<td>Clara Gorek</td>
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<td>Sana Sra</td>
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<td>Emma Loftus</td>
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<td>Lauren Colella</td>
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| **D4 Classics** |          |          |
| Moderator: Ellen Finkelpearl |          |          |
| Betts Alalou |          |          |
| Claire Pukszta |          |          |

| **D5 English** |          |          |
| Moderator: Leila Mansouri |          |          |
| Amanda Larson |          |          |
| Maureen Cowhey |          |          |
| Samantha Martin |          |          |

| **D6 Philosophy** |          |          |
| Moderator: Rivka Weinberg |          |          |
| Bella Ratner |          |          |
| Desiree Santos |          |          |
| Ran Tao |          |          |

Humanities 105

Humanities 103

Humanities 120

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5:30-6:30 Seniors vs. Faculty / Staff Soccer Game Tiernan Field

**Co-Captains Faculty & Staff:** Roberto Pedace and Kim Drake

**Captain Students:** Madeleine Peterson and Dena Kleemeier

**Announcer:** Casey Harris

**Referees:**

**Student Roster:** Sana Sra, Madeleine Peterson, Emma Elliott, Gretta Richardson, Noura Elazami, Elyse Lindahl, Julia Ruiter, Petal Niles, Dena Kleemeier, Karina Bucciarelli

**Faculty/Staff Roster:** Amy Marcus-Newhall, Jennifer Armstrong, Roberto Pedace, Jenna Monroy, Joya Salas, Copeland Andrews, Carlos Cuevas-Jaramillo, Steve Flores, Jennifer Martinez Wormser, Kimberly Drake, Corey Tazzara, Patrick Van Horn, David Cubek, Jennifer Shipley, Pete Chandrangsu, Martin Vega, Linda DeChaine
MAUREEN COWHEY  
Economics & English

*Measuring the Economic Costs of Workplace Sexual Harassment on Women*

Workplace sexual harassment costs the government and companies millions of dollars a year. Women who experience sexual harassment in the workplace suffer from negative mental and physical health problems, lower career attainment, decreased productivity, and a higher rate of job turnover. Sexual harassment is both costly and unjust, however the exact cost to women who experience sexual harassment is unknown. This thesis will measure the impact of workplace sexual harassment on wages in different industries. Using data on claims filed with the Equal Employment Opportunity Commission, I calculate and analyze the impact of sexual harassment on wages, age, sex, and industry. I find that industries with high rates of women reporting sexual harassment have lower wages.

Sr. Thesis Advisor: Professor Bose  
Co-advisor: Professor Pedace

EMILY COLLINS  
Economics and Psychology

*The Impact of Four-Day School Weeks on Delinquency and Problem Behaviors in Adolescents*

Tightening budgets forced school districts to find ways to save money such as switching from five to four days of school per week. Colorado district-level panel data was used to determine the effect of the four-day school week on suspensions, expulsions, and juvenile arrest rates. Generally, decreases were found in the numbers of suspensions, expulsions, and law enforcement referrals. This paper additionally proposed a second study to investigate fifth-day programs on adolescent well-being.

Sr. Thesis Advisor: Pedace  
Co-advisor: Groscup

MADELEINE PETERSON  
Economics

*New Technology, Old Ways? The Gender Price Discount In Online Contemporary Art Auctions*
Taking into account recent technological advances in the secondary art market, this study examines the gender price gap in the sale prices of artists’ work in online contemporary art auctions. We find that while there is a price discount of 17% for art work created by female artists, further analysis indicates the difference is rooted in the pre-sale estimates given by the auction houses rather than the prices paid by bidders.

Sr. Thesis Advisor: Professor Patrick Van Horn
Co-advisor: Professor Roberto Pedace

9:45-10:45 Session A2 Politics and Legal Studies Humanities 120
Moderator: Mark Golub

DANIELLA HENRY
Politics

*Reimagining Potential Life: A Socialized Right to Reproductive Freedom*

A more conservative supreme court will likely have the chance to overrule Roe v. Wade. Many states have passed heartbeat laws that will probably be taken all the way to the supreme court, these cases will ask the supreme court to affirm fetal personhood, giving fetuses a constitutionally recognized right to due process and making abortion illegal. In this thesis, I’ll defend an expansion of protections for pregnant peoples through a socialized right to abortion.

Sr. Thesis Advisor: Mark Golub
Co-advisor: Thomas Kim

GREER LEVIN
Legal Studies

*The Cost of Racial Innocence in Kent v. United States and In re Gault: How Liberals Created America’s Juvenile “Superpredator”*

Juvenile justice reforms in America today closely resemble the ones that occurred over a century ago. Why is policy repeating itself? I refer to Naomi Murakawa’s “racial innocence” theory to illuminate that the Supreme Court’s liberal “due process revolution” decisions made in the 1960s paved the way for the conservative carceral agenda of the late twentieth century and subjected minority youth to unprecedented punitive policy. This attempt at reform ultimately brought us back to where juvenile justice began in the 19th century.

Sr. Thesis Advisor: Mark Golub
Co-advisor: Susan Castagnetto
Ending Sexualized Violence: International Jurisprudence

Sexualized violence continues to threaten the autonomy of individuals and violate human rights. The Convention on Elimination and Discrimination Against Women (CEDAW) serves to end discrimination of women. Examining Bosnia and Herzegovina, shows the effectiveness of CEDAW. Findings show that CEDAW and grassroots feminist activism are successful together in advocating for social and political change. Over time, social change is possible from international jurisprudence, helping to end sexualized violence globally, one individual at a time.

Sr. Thesis Advisor: Mark Golub
Co-advisor: Professor Katja Favretto

9:45-10:45 Session A3 Neuroscience Humanities 105
Moderator: Melissa Coleman

EMILY KOENIG
Neuroscience

Neural Correlates of Spelling and Reading Impairments in Children: A Structural MRI Study

This study utilizes MRI and psychometric analysis to investigate structural differences in children with isolated reading or spelling impairments, both reading and spelling impairments, and no reading or spelling impairment to identify neural correlates of successful spelling pathways. While reading and spelling recruit similar cognitive processes, it’s unlikely the same brain regions equally serve both tasks. Identification of regions specific to spelling would provide additional biomarkers necessary for a holistic understanding of literacy development.

Sr. Thesis Advisor: Dr. Nadine Gaab
Co-advisor: Dr. Melissa Coleman

DARLENE NGUYEN
Neuroscience
Ziram, a fungicide associated with Parkinson’s Disease, alters the amplitude of evoked responses and induces spontaneous, large postsynaptic events at the Drosophila melanogaster neuromuscular junction.

Parkinson’s disease affects synaptic transmission through altering neurotransmitter release. We examined the pesticide ziram’s effect on excitability in glutamatergic neurons using electrophysiology, which allows us to stimulate the presynaptic neuron and measure the postsynaptic responses. Ziram increased the amplitude of evoked responses and induced large, spontaneous postsynaptic events of similar size through increasing the release probability and excitability of glutaminergic motor neurons. This study provides a novel framework of understanding how ziram affects synaptic transmission.

Sr. Thesis Advisor: Melissa Coleman

NATALIE LILLIE
Cellular/Molecular Neuroscience

Modulating the Reward Pathway: The Effects of Dopaminergic D2 Receptors on Pair-Bond Formation in Monogamous Zebra Finches

There is a universality in the way that individuals of a community communicate with each other, coordinate their behavior with others’ activities, and even choose mates. Previous studies have shown evidence of dopamine being the primary neurotransmitter within monogamous, pair-bonded relationships between prairie voles, monkeys, and even humans, indicating that pair bonding is a conserved evolutionary mechanism. Socially affiliative behaviors are associated with dopaminergic pathways within the limbic system. Zebra finches are monogamous, and it has been shown that females choose their mate based off their song preference. Using an operant conditioning paradigm, I confirmed that paired female finches prefer their mate’s song. I found that the injection of a D2 dopamine receptor agonist in the unpaired female zebra finch induced a song preference whereas a saline injection did not. The immunohistochemistry analysis revealed that D2 receptors are located in the striatum. Further research will be done to compare the D2 receptor densities of an unpaired finch with a paired finch, as well as distinguish between interlinking reward circuits of all contributing neurotransmitters as well.

Sr. Thesis Advisor: Melissa Coleman

EKATERINA SMITH
Neuroscience

Studies of the selective calpain-2 inhibitor, compound NA115, in a mouse model of acute glaucoma
Here, we find that a calpain-2 inhibitor (C2I)-analogous compound, candidate NA115, combats retinal ganglion cell degeneration and blindness in a mouse model of acute glaucoma. NA115 effectively inhibited calpain-2 activation, preventing neurotoxicity after intraocular pressure elevation. Stability tests indicated that NA115 is also durable against metabolic degradation in mice liver homogenates and blood plasma. The therapeutic benefits of C2I-analogs like NA115 hold a promising future for acute glaucoma treatment.

Sr. Thesis Advisor: Melissa Coleman
Co-advisor: Michel Baudry

LAYNE WELLS
Neuroscience

*Investigating Neurogenesis as a Veritable Epigenetic Endophenotype for Alzheimer's Disease*

The projected increase in Alzheimer’s Disease (AD) prevalence has prompted a vested interest in identifying markers by which to improve diagnostics and direct therapeutic interventions. As the strategies of clinical genetics shift to include a heavier focus on epigenetic contributors, adult neurogenesis presents a strong candidate for an endophenotype of AD pathogenesis. This review highlights shared loci between neurogenesis and AD in the epigenome and considers the promises and limitations of the neurogenic endophenotype.

Sr. Thesis Advisor: Findley Finseth
Co-advisor: Melissa Coleman

9:45-10:45                Session A4 History and American Studies  
Moderator: Corey Tazzara

KATE CASHION
Major: American Studies

*The Icon Formation of Ruby Bridges Within Hegemonic Memory of the Civil Rights Movement*

This thesis traces the formation of Ruby Bridges as a Civil Rights icon and how her icon narratives are influenced by hegemonic memory of the Civil Rights Movement. Icon narratives by Norman Rockwell, Robert Coles, and Bridges herself show that these stories conform to and reinforce the hegemonic narrative. They situate Bridges’ story as a historical account that teaches lessons of combating racism through kindness and prevent understanding and organizing against institutionalized racism.

Senior Thesis Advisor: Julia Liss
KEVIN KILROY
History

Trading Spaces: An Analysis of Gendered Spaces Before, During, and After the French Revolution of 1789 and the Mexican Revolution of 1910

This thesis investigates the affects of the French Revolution of 1789 and the Mexican Revolution of 1910 on gender roles in their respective societies. The understanding that comes from a detailed analysis of the parameters of gendered spaces before, during, and after both revolutions sheds light on the relationships between order and gender that determined the future of women in their respective postrevolutionary worlds.

Sr. Thesis Advisor: Professor Andrew Aisenberg
Co-advisor: Professor James Mestaz

MEGAN GRATKE
History

In Sickness and in Health: Conceptions of Disease and Ability in Presidential Bodies

The perception of what a president’s body should be is quite different than what many bodies in office have been—Taft, Wilson, and FDR are testaments to the body politics at play in American history. Informed by constructs of strength, masculinity, and the idealized embodiment of the nation as the president, these sectors of dialogue in American society come together in an oft-ignored phenomenon: the conception of disease and ability in presidential bodies.

Sr. Thesis Advisor: Andrew Aisenberg
Co-advisor: Julia Liss

CATALINA BIESMAN_SIMONS
History

Space, Power, Policy, and the Creation of the “Illegal” Migrant at the United States Boundary with Mexico

A discussion of the relationship between space (physical and figurative) and sovereign power, with respect to the history of the U.S.’ immigration and boundary policies. It examines spatial organization as a product and producer of associations of illegal activity at the boundary with
Mexico, with particular attention to the policies developed by the U.S. Border Patrol in the 1990s.

Sr. Thesis Advisor: Cindy Forster
Co-advisor: Julia Liss

9:45 am-10:45 am Session A5 Athletics Humanities Courtyard

B Sessions

11 am – 12 pm Session B1 Economics and EEP Humanities 119
Moderator: Roberto Pedace

DANIELLA HENRY
Mathematical Economics

Pension Effect on Out-Of-State Teacher Turnover in North Carolina

This paper examines the impact on pension generosity on teacher turnover in North Carolina Public School teachers. It specifically focuses on the impacts of vesting, employer contribution, and pension generosity for out-of-state teachers in their first five years. High rates of teacher turnovers have been shown to negatively impact North Carolina students. This paper found that there was a slight negative correlation between teacher turnover and the generosity of pension programs.

Sr. Thesis Advisor: Robert Pedace
Co-advisor: David Menefee Libey

ROMANSHI GUPTA
Economics, Politics

Sanitation, Ek Prem Katha: The Impact of Sanitation on Education in Indian Government Schools

This thesis measures the impact of sanitation on education in Indian government schools. Data is sourced from the Indian Human Development Survey (2005), sorted for the nineteen major states and aggregated at district levels. I employ a robust linear and probit regression models, controlling for various socio-economic factors. The results indicate that sanitation positively impacts education based on the age, sex and caste of the sample population. This presents implications for future policymaking in education.
TAYLOR MILANA
Economics and Media Studies

*Gender Inequality in Hollywood: The Magnitude, Determinants, and Influence of the Gender Wage Gap in the Film Industry*

The significance of the gender wage gap in Hollywood sets a harmful standard for the rest of the nation, but due to the confidential nature of actors’ salaries, there is little research on this subject. Using a couple hundred observations, I examined the magnitude of the gender wage gap in the film industry and compared the impact of gender on actors’ salaries to that of more pertinent variables, such as critical success and available finances.

AMAANI MEHRA
Environment, Economics, and Politics (EEP)

*Is India's push for renewables a shove to its impoverished communities?*

India has set ambitious targets to expand its renewable energy capacity by 2022. While the development of such infrastructure can have many benefits, the costs are often disproportionately borne by rural communities due to land acquisition. This thesis explores the impact of solar, wind, and hydropower development on rural communities. It also considers the effectiveness of policies that are in place to protect the rights of individuals affected by land acquisition and displacement.

11 a.m. - 12:00 p.m.                  Session B2 French Studies                  Humanities 103
Moderator: France Lemoine

MADISON WAGNER
French (Africana Studies minor)
La modernité tunisienne dévoilée : une étude autour de la femme tunisienne célibataire
(Tunisian Modernity Laid Bare: A Closer Look at the Single Tunisian Woman)

This thesis explains recent accounts of discrimination and cutbacks in reproductive health spaces in Tunisia, which I interpret as a manifestation of a deeply rooted stigma against sexually active single women. I trace this stigma’s inception to the contradictory way that Bourguiba conceptualized modernity after independence and the responsibility he assigned to Tunisian women to embody that modernity. This responsibility remains salient today, and is putting Tunisian women in an increasingly untenable and vulnerable position.

Sr. Thesis Advisor: Fazia Aitel
Co-advisor: Nathalie Rachlin

HANNAH LEWIS
French Studies and Biology

The Global Propagation of the Pasteur Institute: How the Pasteur Institute and Western Medicine Reinforced French Colonialism in the 19th Century

The Pasteur Institute spearheaded the bacteriological revolution in 19th century France. This revolution paralleled another movement considered equally as groundbreaking: the colonial expansion of imperial France. Western ideologies were dispersed throughout France’s colonies through the civilization mission and the Pasteur Institute reinforced this process. The role of Pasteur in colonial Algeria, Morocco, and Vietnam will be analyzed as we question how one reconciles the participation of a prestigious institution in a violent history.

Sr. Thesis : Fazia Aitel
Co-advisor: Jennifer Armstrong

ALEXANDRA RIVERA
French Studies

Conjurer la Révolution : Sorciers, Païens et Justice Sociale dans la France contemporaine

Witches and pagans have long faced historical persecution from the Catholic church and other patriarchal systems of power. In the eyes of mainstream society, they have been reduced to fragments of ancient history and entertaining media stereotypes. Real practitioners of witchcraft and paganism have remained fairly marginalized and trapped in the shadows, but this is starting to change. Witches and pagans have begun to involve themselves in large-scale political movements, combining spiritual power with direct action. While this phenomenon has a longer track record in the United States, in France it is extremely new. France is a country that has an even deeper history of pagan origins and Inquisition witch trials, with a currently
conflicted religious dynamic of being both secular and Catholic. Therefore, the reclamation and practice of witchcraft within an activist setting has even more revolutionary significance. Because the basic tenets of most witch and pagan spiritualities emphasizes fighting oppression, witchcraft has attracted marginalized groups, especially the LGBT community. The occult offers valuable new ways of examining activism and social justice using spirituality and magic.

Sr. Thesis Advisor: Nathalie Rachlin
Co-advisor: Emilie Garrigou-Kempton

HANNAH SKUTT
French Studies and Environmental Analysis

_MAPPING DEVELOPMENT IN CAMEROON: CHALLENGING DOMINANT NARRATIVES_

This thesis considers a digital, online map I made of two rural villages in the Grassfields region of Cameroon. Batoufam and Bangoua are agricultural villages that contend with the competing needs of immediate development for improving quality of life, while also feeling the impacts of climate change. This map looks at existing projects and infrastructure across these two villages, particularly community centered development initiatives. This thesis shows mapping as a tool for bridging the gap between existing development models, and the need for alternative models of sustainable development.

Sr. Thesis Advisor: Susan Phillips
Co-advisor: Marie-Denise Shelton

11 am – 12 pm Session B3 Biology and Neuroscience Humanities 105
Moderator: Jenna Monroy

UNJI LEE
Biology

_FUNCTION OF HISTONE H3 CLIPPING AND EVIDENCE OF HUMAN H3 CLIP SITE USAGE IN TETRAHYMENA THERMOPHILA_

Histone proteins, composed of a "head" and an amino terminal "tail", promote chromatin compaction. Tails may be irreversibly modified via clipping. The function of clipping is unknown. Here, *Tetrahymena thermophila* histone H3 tails were mutated at their clip site to perhaps prevent clipping, helping to explore the function of clipping. Furthermore, it was investigated whether macronuclear *Tetrahymena thermophila* histone H3 were additionally clipped at the human H3 clip site at the ninth hour of conjugation.

Sr. Thesis Advisor: Emily Wiley
ELIZABETH CHUN  
Biology  

*Developing a recombinant plant virus nanoparticle vaccine for Rift Valley Fever virus*

Rift Valley Fever (RVF) is an emerging infectious disease affecting livestock and humans and can have devastating economic, social, and health effects on subsistence farmers and livestock industries. However, RVF vaccines are only commercially available within endemic areas, are not suitable for humans, and are limited in their safety and efficacy. This project assesses the potential of using a plant viral nanoparticles to create an affordable vaccine that better meets the needs of impacted communities.

Sr. Thesis Advisor: Larry Grill  
Co-advisor: Emily Wiley

KATHERINE TSEUNG  
Neuroscience  

*Epigenetic Effects of Brain Derived Neurotrophic Factor on the Trimethylation of Histone 3 at Lysine 9 (H3K9me3) in Hippocampal Neurons*

Trimethylation of histone H3 at lysine 9 (H3K9me3), a repressive epigenetic mark, increases in hippocampi of aged animals. We studied interactions between H3K9me3 and brain-derived neurotrophic factor (BDNF), a crucial molecule in memory formation and healthy brain cell survival. Our results show increased H3K9me3 levels with blocked BDNF signaling, reversible by inhibiting the main enzyme that produces H3K9me3. This suggests the influence of BDNF on H3K9me3, to possibly revive memory function in the aging brain.

Sr. Thesis Advisor: Liqi Tong, PhD. (UC Irvine)  
Co-advisor: Emily Wiley, PhD.

MEGAN O’BRIEN  
Neuroscience  

*Hologic Team Master’s Project A Better Standard of Care for Endometriosis: Understanding the Current Diagnostic Landscape*

Hologic is an innovative healthcare company with market-leading products for early detection and intervention, with a strong position in gynecological health. The goal of this project was to evaluate new applications and disease-state segments for growth within the company, with a
focus on endometriosis. Endometriosis is a painful disorder in which endometrial tissue grows outside the uterus, and the only current diagnostic method is via laparoscopic surgery. Through literature review and intellectual property analysis, a landscape of the current diagnostics available was developed in order to better understand potential to leverage Hologic-owned technologies to improve the standard of care for endometriosis.

Sr. Thesis Advisor: Travis Schlappi (KGI)
Co-advisor: John Milton

11 am – 12 pm    Session B4    Anthropology, Middle East and Humanities 121
                  North Africa Studies, Latin American & Caribbean Studies
Moderator: Seo Young Park

AVERY HARWOOD
Anthropology

*Labor Experiences of Public High School Counselors: Neoliberalism, Productivity, and Care*

This thesis explores day-to-day realities for public high school counselors. Using ethnographic research, I analyze the bureaucratic and care labor practices of counselors and the ways their labor exploitation reflects years of neoliberal discourse influencing public education. These influences intensify demands for counselors’ bureaucratic labor, while simultaneously making counselors perceive their frequent care labor as "unproductive." Schools exploit counselors’ labor by depending on both forms of labor, no matter how hard counselors have to push themselves.

Sr. Thesis Advisor: Seo Young Park
Co-advisor: Gabriela Morales

SARAH HORDER
Anthropology

*“I Feel More Connected. That’s Why We Work For Less, We Like The People And The Books.” : Bookselling And Community In The Greater Seattle Area*

Independent bookstores work to foster a sense of community through local involvement and shared values. In this way, a sense of community is created not only in the space of bookstores but also by the space. As both retail spaces and social/community spaces, independent bookstores in the greater Seattle area illustrate the multidimensional character of community and the inevitable exclusion which is inherently a part of it. This is the paradox of community.
MAYA ALMOGY  
Middle Eastern and North African Studies  

*State Power and the Formation of Subjects as Re/Production of the Nation: Jewish Israeli Women and the Israeli Military Identity*

Why and how are Jewish Israeli women soldiers important in the Israeli state’s militarized processes of nation-building and its continued attainment of state power? As the feminine marked subjects of the IDF, these women legitimize Israel's masculinist authority as they both soften the state’s aggressive actions and simultaneously further its narratives of ostensible modernity. As the subjugated "other" within the Jewish Israeli national imagination, Jewish Israeli women soldiers operate for re/production of the nation-state.

SUSANA PÉREZ ARIAS  
History and Latin American and Caribbean Studies  

*Stitching Art, Life and Revolution: Chilean and Palestinian Women’s Political Struggles Through Needlework.*

My thesis studies Chilean and Palestinian women's labor process’ capacity to manifest art in the form of embroidery (*tatreez*) and patchwork (*arpilleras*) narratives to independently articulate their political battles. Embroidery and patchwork were daily acts of resistance for working-class and peasant women, whether they sewed alone or in groups, their labor ultimately helped them nurture strength to fight impossible circumstances.
Practical Chaos: Using Dynamical Systems to Encrypt Audio and Visual Data

Although dynamical systems have a multitude of classical uses in physics and applied mathematics, new research in theoretical computer science shows that dynamical systems can also be used as a highly secure method of encrypting data. Properties of Lorenz and similar systems of equations yield chaotic outputs that are good at masking the underlying data both physically and mathematically. This presentation will describe how Lorenz systems may be used to encrypt text and image data, and how coupled chaotic systems can be used to transmit encrypted audio data.

Sr. Thesis Advisor: Chris Towse
Co-advisor: Adam Landsberg

11 am – 12 pm                         Session B6 Dance and Theater                     Humanities 104
Moderator: Ronnie Brosterman

ANNABELLE SADOFF
Dance and French Double major

Understanding the Body-Mind Unification to Promote Foreign Language Learning as a Somatic Experience

This paper stems from my positive kinesthetic learning experience and aims to delve deeper into the process of learning a foreign language through understanding the body-mind connection and its benefits. Divided into five chapters, this paper targets foreign language teachers and is meant to change the ways of thinking of traditional educators. It invites both educators and learners to exploit the body-mind unification, hoping to turn foreign language learning into a somatic, first-person experience rather than the more common rote method of learning from a third-person perspective.

Sr. Thesis Advisor: Gail Abrams
Co-advisor: Annelle Curulla

ALISHA SARAKKI
Dance/Biology Dual major

Characterizing Balance in Collegiate Dancers: A Holistic Review of Static and Dynamic Balance in Ballet, Bharatanatyam, and Non-Dancers Using BESS and Beam Walking Tasks

Abstract
Dynamic balance is often difficult to quantify and is sparsely studied in dancer populations as compared to static balance. In this study, we developed and utilized a Beam walking test as a
cost-effective, efficient method of quantifying dynamic balance. By using the Balance Error Scoring System (BESS) in conjunction with Beam walking, we measured both static and dynamic balance for a more comprehensive understanding of balance in collegiate dancers (n=22). Results showed that Ballet dancers (n=5) performed the best overall in both BESS and Beam tests, while Indian Classical (Bharatanatyam) dancers' (n=6) results were primarily in between those of Ballet dancers and non-dancers (n=11). These differences in balance performance between populations may be attributed to dance experience and differences in movement mechanisms between Ballet, Bharatanatyam, and non-dancers. Data from this study can be utilized as a standard of reference for dynamic balance in study subject populations, as well as a post-injury balance aptitude test in athletes, dancers, and patients recovering from neurologic injury and disease.

Primary Advisor: Dr. Kelli Sharp, UC Irvine
Co-advisors: Dr. Jenna Monroy and Kevin Williamson

EMMA ELLIOTT
Theatre and Media Studies

*Where Do We Go From Here? A Semi-Autobiographical Performance Exploration into the Therapeutic Benefits of Theatre*

I created and performed my own therapeutic theatrical process and engaged the audience with emotional vulnerability regarding the combination of the nobody and performative self. I utilized my vocal and acting training to work through emotional trauma that I have experienced and to demonstrate my journey of therapy and emotional reconciliation within myself and my family. My research focused on using autobiographical performances to validate the identity of the performer to an audience.

Sr. Thesis Advisor: Giovanni Ortega
Co-advisor: Ronnie Brosterman

ANA NISHIOKA
Biology and Dance/Movement Studies (Dual)

*Integrating Alexander Technique into Treatment of Adolescent Idiopathic Scoliosis*

The following thesis posits training in the Alexander Technique as a possible solution to address the comorbidities of poor body image and reduced feelings of efficacy in patients treated for adolescent idiopathic scoliosis (AIS). Both literature and personal accounts of AIS highlight that current conservative methods of treating AIS offered by the Western medical sphere, including observation, bracing, and physical therapy, do not adequately address, and may actually exacerbate, negative mental health symptoms. Patients are often represented as their external
orthopedic diagnosis and receive limited emotional guidance in exploring their internal feelings about their body and its capabilities. Alexander Technique offers an approach to body work in which the mind and body are undeniably interrelated; therefore, it could combat the negative mental health symptoms brought on by the physical diagnosis and treatment of AIS. To test this hypothesis, an experiment is proposed to compare the holistic health outcomes of observation, bracing, and Alexander Technique in patients with AIS.

Sr. Thesis Advisor: Gail Abrams  
Co-Advisor: Jenna Monroy

11 am – 12 pm  
Session B7 Athletics  
Humanities Courtyard

12:00-1:30  
Malott Commons – Lunch including taco bar, strawberries and cream, and chocolate bread pudding

C Sessions

1:30 pm – 2:30 pm  
Session C1 English  
Humanities 120

Moderator: Tessie Prakas

ELENA DYPIANGCO  
English

The Body Intimate: Poetic and Critical Formulations of Violence Across Space and Time

This thesis is a hybrid work that explores how poets throughout the world operate within varying political and aesthetic frameworks to depict an intimate violence in the “postcolonial” moment. I offer my poems and critical interchapters (on Shailja Patel, Aimé Césaire, Chika Sagawa, Abdellatif Laâbi, Lyn Hejinian, and Gabeba Baderoon) as starting points for meditating on what it means for bodies to contain discrete identities and grapple with difficult historical lineages.

Sr. Thesis Advisor: Michelle Decker  
Co-advisor: Warren Liu

ELIZABETH LEUNG  
English
“OUR FAILURES WILL EVER BE EPIC”: THE GENRE OF THE FRONTIER NOVEL AND ACCESSIBILITY TO THE AMERICAN DREAM

My thesis looks at writing representing the three types of frontiers identified by Lucy Lockwood Hazard to demonstrate how this boundary between the “civilized” and “savage” reveals the mythic nature of American ideology. Francis Parkman’s The Oregon Trail, William Faulkner’s As I Lay Dying, and Jade Chang’s The Wangs vs. the World manifest instabilities that illustrate how the American Dream has historically been an escapist impossibility damaging to lower classes and people of color.

Sr. Thesis Advisor: Professor Thomas Koenigs

EMMA CORNWELL
English

“Margaret the First”: Rebellng Against Gendered Modes of Utopian Writing

Margaret Cavendish subverts the gendered binary of utopian writing and utopian characters. Although she is a female author and her works are, in one manner, continuous with the feminine mode of utopian writing because they suggest that her utopias are better than the world in which we live and that we ought to emulate them, Cavendish is not completely in line with this mode. She also utilizes components of the masculine mode of utopian writing.

Sr. Thesis Advisor: Tessie Prakas
Co-advisor: Thomas Koenigs

1:30 pm – 2:30 pm Session C2 Media Studies Humanities 104
Moderator: Carlin Wing

GABRIELLE GARCIA
Media Studies (Digital/Electronic Media Track)

I feel like I can get home from here: an archive of butch lesbian life and persistence

This project is an archive of the resilience, diversity, and survival of butch lesbians who straddle the margins of our communities, and of hypervisibility and erasure. As a print book and digital archive, the project compiles textual and visual content to explore themes of identity, community, memory, and history. At its core, the archive is a celebration, living history, and deep embodiment of community and love that speaks to a butch past, present, and future.

Sr. Thesis Advisor: T. Kim-Trang Tran
Decades of horror film research and theorizations have shown us that there is a reason why this particular genre has been an important part of film history from the beginning: namely, the idea that horror both reflects and shapes our historically and culturally specific anxieties. By examining the Final Girl trope in Halloween (the 1978 original versus 2018 version), this paper traces the evolution of female protagonists and whether a more modern film accurately reflects the increasing role of feminism in society, or sticks to traditional conventions of misogyny and male-dominated visual pleasure. Placing the newer film in the context of the #MeToo era, this paper also addresses more contemporary anxieties over trauma, sexual assault and female anger.

Sr. Thesis Advisor: Jennifer Friedlander
Co-Advisor: Nancy Macko

KATHERINE MAYER
Media Studies

Fulfillment & Amazon Invazion: Explorations of the Company Amazon Through Play

This project is composed of two video games that look at multiple facets of the company Amazon through a critical lens. Fulfillment explores the working conditions of Amazon Fulfillment Centers through play. Amazon Invazion provides a critical look at the company from a consumer perspective, showcasing some of the many acquisitions made by Amazon from 1994-2018. Both games prompt the player to consider their own participation in the company’s growth.

Sr. Thesis Advisor: Carlin Wing

JESSICA EU
Media Studies

Thinking Outside The Letterbox: The Aesthetics Of Vertical Video On IgTV

In the summer of 2018, Instagram TV became the first social media app to prioritize vertical video sharing by utilizing the tall 9:16 aspect ratio of the smartphone. Over the past year, I have
developed and produced two web series for Instagram that recognizes the ways social media affects storytelling, using both the narrow frame of the video and the publishing platform itself to explore a culture of one-ness and the self.

Sr. Thesis Advisor: T. Kim-Trang Tran
Co-advisor: Elizabeth Affuso

ALISSA MERZ
Media Studies

@Bigpharmaslut: Using Social Media To Encourage Vulnerability & Positive Behavioral Health Changes In Society

Our technology has become a tool that has the ability to bring us together while simultaneously isolating users. I believe that social media is an effective way to incite the promotion of mental health and behavioral changes within society. I will demonstrate the power that Instagram has to bring people together for a common cause. Sharing artwork about mental health creates an important dialogue and social media platforms make the dialogue more accessible.

Sr. Thesis Advisor: Professor T. Kim-Trang Tran
Co-advisor: Professor Gina Lamb

1:30 pm – 2:30 pm
Session C3 Biology
Humanities 119
Moderator: Sarah Budischak

JODIE HOROWITZ
Human Biology: Cross Cultural Health and Healing

Negotiating the Credibility Of Chronic Lyme Disease: Patient Participation In Biomedical Knowledge-Creation

Treatment protocols and the mere existence of Chronic Lyme Disease (CLD) have been the subject of much controversy in the biomedical field, leading to negative mental and physical health outcomes for patients with CLD. In response, patients have formed support networks based on their illness experiences, biosocialities. CLD biosocialities create opportunities for patients to participate in biomedical activism and the scientific research process, resulting in increased credibility of CLD and improved patient health outcomes.

Sr. Thesis: Sarah Budischak
Co-advisor: Gabriela Morales
HAENA LEE
Biology

*The pathogenic bacterium Wolbachia induces host genome elimination through a mechanism similar to a selfish B chromosome*

Wolbachia is an obligate intracellular bacterium that infects more than 65% of insect species. It can manipulate its host sex ratio manipulation to its advantage. The most common manipulation called Cytoplasmic Incompatibility (CI) involves elimination of paternal genome to change diploid females into haploid males in haplodiploidy organism. In this study, I investigated chromatin-based mechanism of paternal genome elimination to better understand this process and help its application in disease vector control.

Sr. Thesis Advisor: Patrick Ferree

KRISTIN MOORE
Biology

*Epigenetic changes in immune cells and viral target tissues by infectious bronchitis virus infected chickens (Gallus gallus domesticus)*

Avian infectious bronchitis is an acute, highly contagious respiratory disease of chickens caused by a coronavirus. Viruses can affect epigenetic regulatory programs of host innate immune responses, however currently the association between epigenetic modifications and the molecular mechanisms of coronavirus pathogenesis remains poorly understood. Our study examines this relationship by building an RNA library from mRNA isolated from macrophages, T-cells, and tissue samples; distinguishing sequence enrichments; and examining DNA methylation patterns/protein-binding sites via ATAC-sequencing.

Sr. Thesis Advisor: Yvonne Drechsler
Co-advisor: Larry Grill

XENIA RANGASWAMI
Organismal Biology

*D-lactate Production in the Acorn Barnacle Balanus glandula Under Emersion Stress*

Warming temperatures may impact the metabolism of intertidal ectotherms. We investigated the effect of low tide air temperature (10-38°C) on anaerobic metabolism in the barnacle *Balanus glandula*, by measuring D-lactate. Additional Washington barnacles were re-immersed in sea water after low tide for 1, 2, or 6 hours. Our results suggest that *B. glandula* utilizes
anaerobic metabolism when exposed to stressful high air temperatures, and relies less on
anaerobic metabolism when high tide resumes.

Sr. Thesis Advisor: Sarah Gilman

1:30 pm – 2:30 pm                              Session C4 Philosophy                              Humanities 105
Moderator: Yuval Avnur

EMMA LOFTUS
Philosophy

_The Good, the Bad, and the Necessity of Empathy in Ethics_

The Good, the Bad, and the Necessity of Empathy in Ethics
It has been argued that empathy is biasing, myopic, and perhaps more trouble than it is worth
from an ethical perspective. In this paper, I first address whether empathy is a necessary
baseline trait for having some degree of ethical motivation. I then delineate the negative and
positive effects empathy has on the ethical outcome of actions. Ultimately, I conclude that
empathy cannot be a standalone ethical trait, but when filtered through reason, it can be
invaluably useful.

Sr. Thesis Advisor: Rivka Weinberg
Co-advisor: Yuval Avnur

FRANKIE BEACH
Philosophy

_Higher Order Thought and Borderline Cases of Consciousness: An Objection to HOT_

David Rosenthal, in his Higher-Order Thought (HOT) theory of consciousness, argues that it is a
higher-order thought to the effect that the subject is in a conscious state that makes one
conscious of his or her own mental states. In this paper I argue that since phenomenal
consciousness can have borderline cases and Rosenthal’s HOT cannot, HOT is not a necessary
condition of phenomenal consciousness. I use primarily Ned Blocks’ refrigerator hum case and
Sartre’s example of non-positional awareness to argue that the threshold which determines the
degree of first-person awareness necessary for a mental state to be conscious is vague itself,
therefore consciousness is vague. HOT cannot accommodate for these kinds of cases.

Sr. Thesis Advisor: Dion Scott-Kakures
Co-advisor: Yuval Avnur
ROWEN COX-RUBIEN
Philosophy

Pursuing Unity: Consciousness Included

An ontological exploration of consciousness and how it is related to the body and other aspects of physical reality. Framed by David Chalmers' conception of "The Hard Problem", we begin from a physicalist perspective to discuss the problem of mental causation, which is the inquiry of how the mind communicates and interacts with the body. From here we examine the employment of identity reduction to functionalize and therefore physically explain mentality. We find that reductionist methods, the backbone of scientific investigation, do not work to explain conscious experience, because conscious experience is not quantifiable—it is qualitative. Thus we are left with looking for alternatives to our physicalist world-view in order to explain consciousness' place in reality. Perhaps a major conceptual revolution of how we see and understand the world is on the horizon that will allow us to finally explain consciousness.

Sr. Thesis Advisor: Dion Scott-Kakures
Co-Advisor: Yuval Avnur

KRIPA MEHTA
Dual Biology and Bioethics

Do we have a moral obligation to provide a baseline of healthcare to undocumented immigrants?

I examine cosmopolitanism and the political conception, address the criminal aspect of undocumented immigration, and suggest a switch from a focus on criminality to the forces that incentivize undocumented immigration. Additionally, I analyze respiratory tract infection, HIV/AIDS, and tuberculosis to illustrate health disparities among undocumented populations. Based on their participation in shared social cooperation and the unspoken shadow contract of companies incentivizing undocumented immigration, they do have a right to healthcare in the US.

Sr. Thesis Advisor: Dr. Rivka Weinberg
Co-advisor: Dr. Sarah Budischak

1:30 pm – 2:30 pm Session CS Politics and MENA Humanities 121
Moderator: Sumita Pahwa

CASEY HARRIS
Politics

Legal and Political Barriers to Implementation of California Drought Management Policy

During the 2011-2017 drought, California faced significant challenges in its attempts to implement statewide drought management policy. The California water rights system, local resistance to mandatory conservation orders, and under regulated groundwater have all made drought conscious water management difficult to execute. Going forward, policies created mid-drought that were not meant to be permanent solutions need to be replaced with a comprehensive package of legislation that addresses a myriad of competing interests and environmental realities.

Sr. Thesis Advisor: Dilara Usküp
Co-advisor: Heather Williams

ALEXANDRA HAMMOND
Politics

Disparities In Access To Contraception In The United States: An Intersectional Analysis

An original analysis of data from the Guttmacher Center determines that Hispanic women are the most likely to lack access to birth control, followed by younger women and impoverished women. These findings, in conversation with the current implications of the racist past of contraception, imply the need for anti-racist contraception programs that prioritize informed consent and patient autonomy. Such programs could improve women’s and child health, decrease government spending, and contribute to increasing economic and racial equality.

Sr. Thesis Advisor: Dilara Üsküp
Co-advisor: Shanna Rose

REBECCA WAINESS
Politics and Middle Eastern and North African Studies

Strategic Framing and Interest Representation in Transnational Politics

This thesis examines the impact of the Palestinian led Boycott, Divest, Sanction (BDS) movement on the lobbying tactics of the Israel lobby. By comparing the historical and contemporary actions of the lobby I argue that the BDS movement threatens the lobby because of its ability to challenge the political discourse the lobby has cultivated. I look specifically at the lobby’s new legislative strategies, interest on college campuses, and framing within the broader political discussion.
GRACE RICHEY
Middle Eastern & North African Studies

Southern California’s Other English Learners: Public Schools’ Adaptations to Serving Students with Refugee Backgrounds

Southern California is home to several of the country’s largest resettled refugee communities. However, given the immensity and diversity of the existing immigrant population, the needs of children with refugee backgrounds have the potential to be overlooked within the public school system. Their needs extend beyond those of other English learners given possible experiences of trauma, limited or interrupted schooling, and poverty. This project examines how select school districts have adapted their practices to serve these students.

DANIELLE TISHKOFF CHIDESTER
Humanities: Interdisciplinary Studies in Culture


This thesis situates the Inside-Out Prison Exchange Program within the larger realm of post-secondary prison education to analyze its pedagogical approach. I utilize critical theory and a variety of disciplines (psychology, sociology, history), to address several key themes in the Inside-Out Pedagogy including 1) humanization 2) dialogue 3) mutuality and equality, and the way these frames and tools are used to approach questions of identity, criminality, and power dynamics within the classroom.
Re-evaluating Bilingual Education Within the U.S. Public Education System

This thesis explores the potential of bilingual education for the future of American (U.S.) democratic society. It places an assessment of bilingualism in the larger history of the relationship between education and a vision of American democracy. The research focuses on the importance of being multilingual for a democratic society, and argues why bilingual education should be made available to students during the elementary years of their education. This study analyzes the state of California’s educational policies and concludes that viewing bilingual education through assimilationist lenses hinders students’ character and professional opportunity. It promotes acculturation and accommodation without assimilation as a strategy for approaching the incorporation of bilingual educational programs into public schools across the United States.

Sr. Thesis Advisor: Martha Gonzalez
Co-advisor: Andrew Aisenberg

KARLA MEJIA RIVERA
Humanities: Interdisciplinary Studies in Culture

Hidden Conversations: Silences in the Lives of Mixed-Status Families

A beginning to understanding silences in and around mixed-status families in the United States through interviews conducted in past interviews and studies in various fields concerning silence.

Sr. Thesis Advisor: Professor Marina Pérez de Mendiola
Co-advisor: Professor Andrew Aisenberg

JAHNAVI KOTHARI
Humanities: Interdisciplinary Studies in Culture & Religious Studies

Finding Parallels Between Jain Philosophy and Sartrean Existentialism: Recognising the Richness of Ancient South Asian Religious Philosophy Against Developments in Continental Philosophy

As a Religious Studies and Humanities: Interdisciplinary Studies in Culture major, I have noticed several striking similarities between South Asian religious philosophies and Continental philosophy. However, this also brought my attention to the severe lack of representation of South Asian philosophies. I began to see the resonances with Jainism and Jean-Paul Sartre’s Existentialism is a Humanism. Therefore, my thesis explores the similarities between atheism, subjectivity and responsibility as common concepts between Sartrean Existentialism and Jainism.
D Sessions

2:45 pm – 3:45 pm

Session D1 Art
Ruth Chandler Williamson Gallery

Moderator: Ken Gonzales-Day

MOLLY ANTELL
Art & Media Studies

The Sisterhood Grimm

This project consists of a series of illustrated posters examining six women of the Brothers Grimm fairy tales, not as characters, but as the very storytellers from whom the Grimms recorded some of the most iconic tales in Western literature. Each is presented surrounded by the iconography of their stories, offering a glimpse of who they might have been, with the ability to enchant us, just as their stories have enchanted generations.

Sr. Thesis Advisor: Tran

ROWEN COX-RUBIEN
Art

Pursuing Unity: Collaborating With Spinach

I will be presenting a series of anthotype prints. The Anthotype process is an alternative photography method that uses vegetable juice, containing the light-sensitive chemical chlorophyll, to produce a contact-printed image. The series deals with concepts of ecofeminism and the historical visual representations of the relationship between women and nature. My work presents a specific perspective of women and nature, seeking to offer a positive, healthy, environmental, and contemporary take on the historical association of the two.

Sr. Thesis Advisor: Tran

CATHERINE GLAH
Fine Arts

Coping

This project is a reflection of the mental state of the artist. During the first semester of working on her thesis, the artist began dealing with depression and suicidal thoughts. In the moments
when she fought against suicidal impulses, she made abstract pieces as a coping mechanism, creating over 100 black and white, digital. These pieces were then merged with a written narrative of her depression, and compiled into a rigid animation.

Sr. Thesis Advisor: Melanie Nakune
Co-Advisor: Nancy Macko

TIRZA OCHRACH-KONRADI
Art

*Polyethyliferation; Classically Formal, Biotic Subjectivity: Moderating Plastic's Relation to the Viewer*

This project approaches post-consumer packaging plastic from a material perspective, to confront its prevailing contextual narratives, namely disposability and toxicity. In the piece, the scavenged materials are recreated as biotic forms, resembling massive cell colonies or reptilian skin. Through the interaction between the materials’ original form and the remanufactured biotic effect, the plastic is encoded with new narratives of esteem and care, as placed upon the animate, while maintaining evidence of its otherwise dubious nature.

Sr. Thesis Advisor: Adam Davis
Co-advisor: Ken Gonzales-Day

MORGAN STEWART
Art and Biology

*She Is Here*

This is the first two chapters of a longer story. The narrative centers on family, what we owe to each other, and the nature of violence, all bound up in a fun story about a werewolf and her cousin. It also deals with themes of queerness, femininity, and monstrosity. Ultimately, though, I am creating a story that I want to read. If other people like and relate to it too, that is an unexpected bonus.

Sr. Thesis Advisor: Tia Blassingame
Co-advisor: Lars Schmitz

CINDY ZHU
Art

*Mirage*
The set of three digital paintings is inspired by a current redevelopment project being undertaken by the government in Wenling, China, the artist’s hometown. Since 2016, the project has required that old residential buildings be torn down and that villagers leave their neighborhoods. The installation explores changing landscapes using a non-linear, uncertain timeframe and portrays the topic of urbanization in a fictional setting. The pieces build on moments of contrast, such as the traditional architecture compared to the bulldozer and the wilderness compared to the generic urban landscape. These tensions are depicted with drastically different lighting to conjure a sense of multiple realities that echo the artist’s fragmented memories of her home.

Sr. Thesis Advisor: Ken Gonzales-Day

2:45 pm –3:45 pm Session D2 Chemistry & Biochemistry Humanities 104
Moderator: Ethan Van Arnam

KRITHIKA RAO
Biochemistry

Identification of antibiotic GE37468A from Pseudonocardia symbionts of Trachymyrmex septentrionalis ants

In response to the growing rates of antibiotic resistance in human bacterial pathogens, this study explores the natural products involved in the defensive symbiosis between actinobacteria and fungus-growing ants to uncover new potential antibiotics. This study also seeks to understand the function of natural antibiotics in their ecological contexts, especially those involved in defensive symbioses. Defensive symbiosis can be a beneficial platform for discovering useful antibiotics, because antibiotics in these relationships must be able to selectively inhibit enemies without harming hosts, and are therefore likely more specific and less toxic. Pseudonocardia sp. associated with Trachymyrmex septentrionalis ants demonstrated antibiotic activity against several gram-positive bacteria. Therefore, the natural products from this strain were extracted and purified through activity-guided fractionation. Using mass spectrometry, the structure of the active compound was elucidated as GE37468A, an antibiotic that has been previously identified from Streptomyces sp. ATCC 55365 from Italy. This compound had never before been characterized in a defensive symbiosis, which demonstrates the use of the molecule in a new context. Antibiotic GE37468A is a thiopeptide, which is a group of antibiotics that has previously demonstrated strong activity against many gram-positive bacteria, including bacterial human pathogens. Due to its potency against dangerous bacteria and its likely low toxicity, this antibiotic could therefore hold potential pharmacological uses.

Sr. Thesis Advisor: Ethan Van Arnam
IFUNANYA OZIOMA OKEKE
Biochemistry

High-Field NMR Spectroscopy and Mass Spectrometry for the Quality Control of Epimedium grandiflorum Dietary Supplements

The prevalence of poor-quality dietary supplements worldwide makes determining bio-active ingredients in marketed dietary supplements a shared interest between marketers, consumers, and researchers alike. Effective techniques are necessary for this type of quality control. Herein, high-field NMR spectroscopy and positive mode electrospray ionization mass spectrometry (ESI+ MS) are used to identify biologically active molecules in two commercially-available Epimedium grandiflorum dietary supplements. However, further investigation is necessary to refine their usage as quantitative analytical methods.

Sr. Thesis Advisor: Dr. Myriam Malet-Martino
Co-advisor: Dr. Mary Hatcher-Skeers

EMMA STACY
Chemistry

Designing filter media to remove atrazine from stormwater

Atrazine is a commonly used endocrine disrupting herbicide that is a common contaminant of ground, surface, and drinking water in the US. Sustainable, inexpensive methods to better filter atrazine from stormwater are needed to reduce this harmful contamination. This study tests designed and natural filter media for use in storm-vaults, measuring each filter media's percent atrazine removal using a column study.

Sr. Thesis Advisor: Aaron Leconte
Co-advisor: Tracy Fanara

SUSANNA BARRETT
Biochemistry

Purification of the protein construct 5.3-CP25 and investigation of its cellular internalization and inhibition of mRNA decapping

mRNA degradation is essential for the regulation of gene expression and the RNA transcriptome. In the human 5’ to 3’ mRNA degradation pathway, a decapping enzyme, Dcp2,
binds to Dcp1A and Edc4 to create a decapping complex which hydrolyzes the m7G cap at the 5’ end of a target mRNA. This leaves the strand vulnerable to 5’ to 3’ degradation by the exonuclease Xrn1. It is still unclear which transcripts in the human transcriptome are targeted for decapping by Dcp2. To address this problem, a cyclized protein inhibitor of Dcp2, called CP25, has been developed to gain better insight into the enzyme’s sequence specificity. However, CP25 has very poor cell permeability which limits its effectiveness in vivo. Previous studies have shown that the miniature protein 5.3 can increase other proteins’ ability to enter cells. Here we describe the purification, activation, and use of a 5.3-CP25 construct and show that with the addition of 5.3, CP25 retains its ability to inhibit mRNA decapping in vitro. This opens up new opportunities for studying the construct’s cell permeability and ultimately allows for the discovery of new Dcp2 target transcripts.

Sr. Thesis Advisor: Dr. Aaron Leconte, PhD
Co-advisor: Dr. Sarah Slavoff, PhD

2:45 pm –3:45 pm                         Session D3 Psychology                  Humanities 119
Moderator: Jennifer Ma

EMILY LAVINE
Psychology and Sociology

Psychotherapy Dropout and Socioeconomic Status: A Qualitative Analysis of College Students

This qualitative research study explores the correlation between socioeconomic status and factors of psychotherapy dropout among college students who have prematurely terminated therapy while attending college. Twelve female-identifying students at the Claremont Colleges were interviewed in a semi-structured design, in which they were asked about financial and logistical barriers to access, mental health stigma, and practitioner socioeconomic status competency.

Sr. Thesis Advisor: Phil Zuckerman
Co-advisor: Sheila Walker and Jennifer Ma

CLARA GOREK
Psychology and Organizational Studies

Mind over Matter or Matter on the Mind: The Impact of Affirmations Received via Instagram on Females’ Intellectual Pursuits and Financial Decisions

The current study explored the impact of intellectual versus physical affirmations received over Instagram, either directly or indirectly, on females’ physical acceptance, intellectual pursuits
during leisure and financial decision making. A total of 256 female students of the Claremont Colleges were recruited through advertisement of the study on the colleges’ designated Facebook page, and flyers posted around the campuses. The longitudinal, quasi-experimental study used a 2 (Type of Affirmation: Physical or Intellectual) x 2 (Mode of Exposure: Feed or Direct Message) x 3 (Phase: 1, 2, 3) fully crossed factorial design. Participants who voluntarily agreed to participate were randomly assigned to one of the four conditions. Participants exposed to physical affirmations, via Instagram’s direct messaging feature, reported significantly lower levels of physical acceptance, were less likely to engage in intellectual activities during leisure, and made financial decisions that reflected a greater desire to attend to their appearance than to their intellect, compared to participants exposed to physical affirmations, via feed. The opposite pattern of interaction was found for participants exposed to intellectual affirmations. The results support previous psychological literature on social role theory, stereotype threat, self-objectification theory, social comparison theory, and affirmation theory. The implications of this study concern female leadership development, specifically how exposure to intellectual affirmations over social media has the potential to attenuate the negative effects living in a patriarchal society has on females.

Sr. Thesis Advisor: Jennifer Groscup
Co-advisor: Jeff Lewis

SANA SRA
Psychology

Circadian Variations and Risky Decision Making

Over the past decades, decision making under risk has garnered a great amount of attention both in the field of economics and psychology. Although state-dependent variabilities of risk taking are well-documented, little is known about the effects of a person’s preferred time of day, or chronotype, in risky decision making. Under circumstances of circadian mismatch (e.g., when an “early bird” makes decisions in the evening), research suggests that decision making may reflect a greater reliance on heuristics, such as using stereotypes in social judgments. However, the effects of circadian mismatch on heuristics in risky decision making are relatively unexplored. This paper looks into the effects of circadian mismatch on the reflection effect: a behavioral bias in financial decision making, wherein individuals are risk averse when facing potential gains, and risk seeking when facing potential losses. Participants will be randomly assigned to their circadian matched or circadian mismatched conditions and will play a series of financial gambling tasks with real monetary incentives. This study predicts that the reflection effect will be exacerbated in circadian mismatched individuals as compared to matched participants. Exploring such an effect could have real-world implications on decision making under risk by providing critical knowledge about the effects of time of day on our susceptibility to behavioral biases. It could therefore point to the existence of a more optimal time of day to engage in such critical decision making.
EMMA LOFTUS
Psychology

*The Ethical and Emotional Benefits of Reducing Self-Focus Through Mindfulness*

Past research has indicated that mindfulness training can increase both prosociality and well-being, and that higher ethicality relates to higher well-being. Reduced self-focus has been found to mediate these relationships. This proposed longitudinal study makes use of a daily mindfulness app to explore its effects on participants’ ethicality and well-being, and examines whether reduced self-focus explains these relationships. Ultimately, the intention of this study is to find support for the benefits of cultivating a more loving, interconnected world, as well as the means by which to do so.

Sr. Thesis Advisor: Jennifer Ma
Co-advisor: Sheila Walker

LAUREN COLELLA
Psychology

*On the Edge of the Border: Prejudice Reduction Through Parasocial and Face-to-Face Intergroup Contact*

Research on intergroup contact (Pettigrew & Tropp, 2006) has shown it to be an effective measure of reducing prejudice, and further studies have shown parasocial intergroup contact to be effective as well (Ortiz & Harwood, 2007). This research is incredibly important when studying people with high Social Dominance Orientation (SDO), who tend to favor social hierarchies and disparities between groups. The present study will focus on the interaction of SDO and type of intergroup contact on prejudice. Over the course of a month-long longitudinal study, participants will either be assigned to a face-to-face contact condition, interviewing an immigrant confederate in-person, or to a parasocial contact condition, watching an interview of this confederate on a computer screen. Given past research, both types of contact are predicted to increase favorable attitudes toward immigrants and decrease racism, although face-to-face contact is likely to be most impactful. Low SDO individuals are predicted to maintain low levels of prejudice, while high SDO individuals are predicted to experience a larger difference in racism and attitudes toward immigrants. It is expected that those high in SDO and placed in the face-to-face condition will experience the largest difference in racism and attitudes toward immigrants, compared to the other groups, demonstrating an interaction effect. Implications for intergroup contact and the media will be discussed. Keywords: Immigrants, Social Dominance, Prejudice, Intergroup Contact, Parasocial Contact
2:45 pm – 3:45 pm  
Session D4 Classics

Moderator: Ellen Finkelpearl

BETTS ALALOU  
Classics

*Credit Instruments in the Late Roman Republic: Nomina in Cicero's Letters to Atticus*

This thesis explores the sophistication of the ancient Roman economy through an analysis of credit instruments in elite finances. The study of the ancient economy is a contentious but important field of study, within which exists a lively scholarly debate. This project seeks to contribute to that debate through the investigation of late republican finances, using Cicero's Letters to Atticus. By studying Cicero's financial maneuvers and commentary, this thesis argues that elite usage of nomina during this time period provides evidence for the existence of a sophisticated elite credit system. Such a system allowed for the development of nomina as flexible credit instruments for Roman elites competing in a fraught socio-political context.

Sr. Thesis Advisor: Christopher Chinn  
Co-advisor: Ellen Finkelpearl

CLAIRE PUKSZTA  
Theater

*Myrrha Now: Reimagining Classic Myth and Mary Zimmerman’s Metamorphoses in the #metoo Era*

Through research and performance in Mary Zimmerman’s play Metamorphoses, this thesis grapples with themes of sexual assault and female power. I examine both the play and source in Roman poet Ovid’s text. I discuss what it means to portray a complicated story of female desire in the modern world.

Sr. Thesis Advisor: Jessie Mills  
Co-advisor: Ellen Finkelpearl
Moderator: Leila Mansouri

AMANDA LARSON
English

*Gut*

"Gut" is a hybrid piece of writing that mediates on how female agency is maintained in the wake of trauma and desire. It places into conversation the words of theorists who write about this interplay with my own lived experience. In it, I question and establish what strength looks like without necessary independence. One of the ways "Gut" does this is through abandoning a traditional narrative of recovery, and adopting one that embraces conflicting desires.

Sr. Thesis Advisor: Warren Liu
Co-advisor: Michelle Decker

MAUREEN COWHEY
Economics & English

*Sweet beginning but unsavoury end*: The Change in Popularity of Shakespeare’s Poetry

William Shakespeare is arguably the most famous and influential author in modern history. His plays make up a literary canon that has been translated into every language, is constantly being reproduced on the stage and in film and has persisted in popularity for centuries. Yet, Shakespeare’s first and most popular text is not a play, but the narrative poem, Venus and Adonis. The text that launched Shakespeare into popularity and gave rise to this cultural icon was a poem, rather than a play. But despite its initial success, Venus and Adonis is not a central feature of the modern literary canon and Shakespeare’s original role as a poet has been overshadowed by his achievements in theatre. This paper sets out to explore what happened to Shakespeare’s legacy in poetry by examining the commercial history and aesthetic form of two of Shakespeare’s poems: Venus and Adonis and the sonnets. I will address how the dramatic literary canon was created and why it revolves around Shakespeare as solely a playwright.

Sr. Thesis Advisor: Professor Prakas
Co-advisor: Professor Koenigs

SAMANTHA MARTIN
English

*Sleight of Hand: Gender, Performance, and (In)sincerity in E. D. E. N. Southworth’s The Hidden Hand*
The implicit ideological thrust of E. D. E. N. Southworth’s The Hidden Hand points to the unstable, performative nature of gender as a construct. The characters Capitola Le Noir and Traverse Rocke destabilize identity categories to reveal the arbitrary nature of gender and the deleterious constraints of gender roles. Both are held up as ideal figures of femininity and masculinity, respectively, because their synthesis of masculine and feminine traits produces an androgyny valorized by Southworth.

Sr. Thesis Advisor: Tom Koenigs
Co-advisor: Leila Mansouri

BELLA RATNER
Philosophy

*Is It Ethical to Genetically Enhance Your Future Child?*

As the science related to genetic engineering becomes more advanced, more and more ethical questions relating to technologies such as CRISPR and preimplantation genetic diagnosis (PGD) arise. If we have the opportunity to choose the genes of our future children in order have children with our desired characteristics, should we do so? Is it okay to mess with some genes of your future child and not others? In this paper, I discuss arguments and objections associated with these questions. The aim of this paper is to show that it is ethical to alter the DNA of your future child or select a specific child only when you are attempting to improve the health of that child.

Sr. Thesis Advisor: Rivka Weinberg
Co-Advisor: Andrew Schroeder

DESIREE SANTOS
Philosophy

*Giving Credibility Where Credibility is Due: An Analysis of Conspiracy Theories Through Gossip-Based Knowledge*

Conspiracy theories have been present within American culture for hundreds of years. In the hyper-visibility provided by online spaces within the past few years, however, it now feels as if conspiracy theories are everywhere – should we believe in them? In my thesis, I apply epistemic concerns related to gossip to our understanding of conspiracy theories. This entails
exploring irrelevant influences and the composite hypothesis, exploring the effects they have on the credibility of conspiracy theories.

Sr. Thesis Advisor: Brian Keeley  
Co-advisor: Yuval Avnur

RAN TAO  
Philosophy

THE RIGHT TO PRIVACY

Contemporary debates about the right to privacy were inaugurated by Samuel Warren and Louis Brandeis’ article on the topic. While Warren and Brandeis understand the right to privacy as a stand-alone right, J. J. Thomson interprets it as a cluster of rights that itself intersects with other rights. Despite such disagreement, both accounts point to a deep connection between property rights and one’s right to herself. A close examination of the Lockean and Kantian concepts of property confirms this. In particular, Arthur Ripstein’s Kantian account of innate right and property rights suggests that property rights are derived from the innate right one has in herself. Building on this account, I suggest that one’s innate right and property rights grant one the exclusive control to herself and to her property. Such exclusive control can be conceptualized as the basis for one’s privileged space, any unauthorized access to which and any unauthorized use of what lies within which constitute violation of one’s right to privacy.

Sr. Thesis Advisor: Paul Hurley  
Co-advisor: Rivka Weinberg

5:30 p.m. – 6:30 p.m.  
Seniors vs. Faculty / Staff Soccer Game  
Tiernan Field House

Co-Captains Faculty & Staff: Roberto Pedace and Kim Drake  
Captain Students: Madeleine Peterson and Dena Kleemeier  
Announcer: Casey Harris  
Referees:  
Student Roster: Sana Sra, Madeleine Peterson, Emma Elliott, Gretta Richardson, Noura Elazami, Elyse Lindahl, Julia Ruiter, Petal Niles, Dena Kleemeier, Karina Bucciarelli

Faculty/Staff Roster: Amy Marcus-Newhall, Jennifer Armstrong, Roberto Pedace, Jenna Monroy, Joya Salas, Copeland Andrews, Carlos Cuevas-Jaramillo, Steve Flores, Jennifer Martinez Wormser, Kimberly Drake, Corey Tazzara, Patrick Van Horn, David Cubek, Jennifer Shipley, Pete Chandrangsu, Martin Vega, Linda DeChaine, Erik Soto, Junelyn Peeples, Raina Ramirez Coutin