

ISCAP

INDEPENDENT SCHOLARSHIP
& CREATIVE ACTIVITIES PRESENTATIONS



MAY 6, 2015

ISCAP Day

Wednesday, May 6, 2015

Sweigart Hall

11:00 AM – 3:15 PM

Schedule At-A-Glance:

11:00-12:30	Panel Session	Sweigart 117, 118
12:30-1:30	Poster Session & Lunch	Sweigart Lobby
1:30-3:15	Undergraduate Research Scholar Awards Session	Sweigart 115

Planned by the URSA Committee:

Jason Chiu
Karen Gischlar
Sheena Howard
Robin Lewis
Kenneth Kauffman
Kathy Price
Gabriela Smalley
Bryan Spiegelberg



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May 6, 2015

Dear Students, Scholars, Faculty and Families,

Today the Rider University community will hear about the remarkable scholarship, research, and creative endeavors of our students as they apply their college education in innovative ways. To those students who are presenting their work today, I extend congratulations on your achievements. To all those who supported these students in their academic adventures, I offer appreciation and thanks. These activities exemplify the many valuable opportunities and resources students enjoy at Rider to enrich their learning experience. Frankly, our students could not have done their work without you.

Special congratulations to this year's Undergraduate Research and Scholarship Award winners. These students proposed detailed independent projects to be carried out in the following academic year and will each receive a \$5,000 tuition scholarship. You will hear about the wide variety of projects they will be undertaking in the awards session later this afternoon.

Whether you conducted research or helped to make it happen, your efforts send a strong message about the academic excellence students can achieve at Rider. Congratulations to everyone involved!

Sincerely,

Mordechai Rozanski



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May 6, 2015

Dear Students, Faculty, and Family Members,

Today is a full day dedicated to honoring and showcasing the creative works and research of Rider University students in collaboration with their faculty mentors. Each year, the Undergraduate Research Scholar Awards (URSA) Committee hosts ISCAP (Independent Scholarship & Creative Activities Presentation) Day in an effort to display student originality and contributions to their fields of interest. ISCAP Day is also meant as a forum for members of the Rider community—both faculty and students—to come together in an interdisciplinary dialogue focused on students' creative projects.

Another very important purpose for ISCAP Day is to announce the new URSA scholarship recipients, as well as to hear about the progress made among last year's URSA award winners on their year-long projects. This portion of the day is particularly important as we honor some of the most gifted undergraduates at Rider. We congratulate you on your outstanding accomplishment.

Please join us as we celebrate these student achievements and honor their creative works. Congratulations on a job well done!

Sincerely,

DonnaJean A. Fredeen
Provost and Vice President for Academic Affairs

Panel Session 1

Sweigart 117

11:00 AM – 12:30 PM

Chair: Dr. Robin Lewis (Theatre and Dance)

11:00-11:15	Steve Schwartz , Environmental Sciences <i>Honey Bee Philosophy (The Ethics of Sustaining Bees)</i> Advisors: Dr. Daniel Druckenbrod, Dr. Daniel Garro
11:15-11:30	Gerald DeMattia , History <i>Programming Mega Man: The History of Masculinity in Video Games</i> Advisor: Dr. Erica Ryan
11:30-11:45	Rachel Jensen , History <i>The Monster Within: The Demonization of Lesbian Feminists in the Women's Liberation Movement</i> Advisor: Dr. Erica Ryan
11:45-12:00	Karryne MacLean , History <i>The Colors of Hope and Despair: The Fate of Ellis Island Stowaways from 1893-1924</i> Advisor: Dr. Erica Ryan
12:00-12:15	Kevin Oswald , History <i>From Ottomanism to Arabism: National Identity and the British Mandate of Iraq, 1914-1936</i> Advisor: Dr. Lucien Frary
	Freshman Science Honors students
12:15-12:30	Imani Guest (Dr. Daniel Druckenbrod): <i>Tree-Ring Research on Jefferson's Poplar Forest</i>
	Alexandra Taylor (Dr. Bryan Spiegelberg): <i>Alcohol Dehydrogenase Enzyme Activity</i>
	Warveen Othman (Dr. Laura Hyatt): <i>Organic vs GMO Soybeans: Stress Response</i>
	Samantha Ottavi (Dr. Danielle Jacobs-Duda): <i>Microwave Assisted Synthesis of Pyridinyl Sulfonamides with Potential Antibiotic and Agrochemical Properties</i>
	Alexandra Santora (Dr. Paul Jivoff): <i>Egg Viability in Blue Crabs</i>
	Naomi Jainarine (Dr. Paul Jivoff): <i>Egg Viability in Blue Crabs</i>

Panel Session 2

Sweigart 118

11:00 AM – 12:30 PM

Chair: Dr. Jason Chiu (Finance and Economics)

11:00- 11:15	Tara DeLorenzo , English <i>Love Lessons from Jane Austen</i> Advisor: Dr. Megan Titus
11:15- 11:30	Veronica Villacres , Spanish <i>The Quest for Magical Identity in El país de los árboles locos by Gustavo Arango</i> Advisor: Dr. Daria Cohen
11:30- 11:45	Naytasha Hinson , Psychology, Global Studies <i>A Phenomenological Exploration of the Lived Experiences of Male and Female Victims of Non-Physical Manifestations of Bullying or Harassment in the Workplace</i> Advisor: Dr. Roberta Fiske-Rusciano
11:45- 12:00	Christianna Barnard , Music <i>Resisting Resilience: Gender Performance, Homonationalism, and Authenticity in the Music of Mary Lambert</i> Advisor: Dr. Justin Burton
12:00- 12:15	Lauren Gilmore , Music <i>Acoustical and Perceptual Differences between Legit and Classical Singing</i> Advisor: Dr. Kathy Price
12:15- 12:30	John Maenhout , Music <i>Keep Our Mouths Shut and Ride Along: Female Stereotypes and Portrayals in Contemporary Country Music</i> Advisor: Dr. Anthony Kosar

Poster Session

Sweigart Lobby, 12:30 PM – 1:30 PM

1. **Adetokunbo Ajayi** (Dr. Frances Perrin-English): Building a Communication Repertoire for a Child with Autism Through Mand Training
2. **Allysen Breeden** (Dr. Reed Schwimmer): To What Degree do Human Activities Contribute to the Increase in Concentration of Atmospheric Carbon Dioxide?
3. **Kelley DePierri** (Dr. James Riggs): Impact of MDSC Emergence during Ovarian Cancer in Cytokine-Deficient Mice
4. **Oleksandra Dorosheva** (Dr. Bryan Spiegelberg): Regulation of Betaine Homocysteine Methyltransferase by 3',5'-Adenosine Bisphosphate
5. **Pilar Ferdinando** (Dr. Paul Jivoff): The Role of Pheromones in Urine Affecting Reproductive Behavior in Blue Crabs, *Callinectes Sapidus*.
6. **Naomi Goldman and Michelle Orlowski** (Dr. James Riggs): EPOR Expression by Peritoneal Macrophages and B1b Cells
7. **Victoria Interra, Angelica Velez and Gavin Mulholland** (Dr. Michael Carlin): Mood, Stereotype Threat and Insight Problem Solving
8. **Drew Kelly** (Dr. Paul Jivoff): Effects of Limb Loss on the Serpent Sea Star (*Ophioderma brevispinum*)
9. **Derek Lake** (Dr. Kelly Noonan): The Impact of Job Automation on the United States Labor Market: Occupational Forecast for the Year 2022
10. **Laura Moritzen** (Dr. Gabriela Smalley): Habitat Preference and Tidal Variation in Native and Invasive Shrimp Along the Long Island Coast Following the Invasion of *Palaemon macrodactylus*
11. **Jessica Munyan** (Dr. Miriam Freedman, Muhammad Altaf): The Effect of Molecular Structure on the Phase Transitions of Atmospheric Aerosol Particles
12. **Elaine Panuccio and Muhammad Sarwar** (Dr. Hongbing Sun): Hysteresis of Aqueous Geochemistry of Stream Water in Centennial Lake Watershed, NJ
13. **Rachel Pereira and Kristina Frattaroli** (Dr. Kathleen Browne): Centennial Lake Fish Population Assessment
14. **Muhammad Sarwar and Elaine Panuccio** (Dr. Hongbing Sun): Lead Concentrations in Soil Profiles of a Transect Near an Interstate Highway in New Jersey

- 15. Craig Sinkler** (Dr. Daniel Druckenbrod): Creating High-Resolution Maps of Leaf Water Isotopes Using IM-CRDS, IRIS and IRMS Techniques
- 16. Gretel Torres, Kelley DePierri, David Pastuna, Naomi Goldman, and Wilenny Rodriguez** (Dr. James Riggs): Loss of Humoral Immunity in Ovarian Cancer
- 17. Jonathan Tyson** (Dr. Danielle Jacobs-Duda): An Evaluation of the Structure-Activity Relationship of Majorenolide and Majorynolide, Two Naturally Occurring Compounds Possessing a Wide Array of Biological Activities
- 18. Kornelija Valiuskyte** (Dr. James Riggs): Investigation of Mf-mediated Suppression of B Cell Activation
- 19. Kaitlyn Weindorfer** (Dr. Reed Schwimmer): Google Earth or My Maps: Which is better for disseminating geologic information?

Undergraduate Research Scholar Awards Session

Sweigart Auditorium (SWE 115)

1:30 PM – 3:15 PM

Chair: Dr. Gabriela Smalley (Geological, Environmental, and Marine Sciences)

1:30	Welcome by President Mordechai Rozanski
1:40-3:00	<p style="text-align: center;">Presentations by 2014-15 URSA Recipients</p> <p>Kelsey Carroll, Theatre Performance & Business Administration <i>1 in 4: A Socially Aware and Devised Theatrical Exploration of the Healing Power of Listening</i> (Dr. Trent Blanton)</p> <p>Brandon Enalls, Biochemistry <i>A Role for Caspase Activity in the Stress Response of the Archaeon, Haloferax volcanii</i> (Dr. Kelly Bidle)</p> <p>Derek Lake, Finance & Accounting <i>The Impact of Job Automation on the United States Labor Market: Occupational Forecast for the Year 2022</i> (Dr. Kelly Noonan)</p> <p>Nicolette Mateescu, Psychology <i>Adapting Learning Tasks for those with Intellectual Disabilities</i> (Dr. Michael Carlin)</p> <p>Jessica Stanislawczyk, Voice Performance <i>Understanding Westminster's Role in the U.S. Cold War Foreign Policy: The State Department Tour of 1956-57</i> (Dr. Eric Hung)</p>
3:00-3:15	<p style="text-align: center;">Announcement of 2015-16 URSA Recipients</p> <p>Camila Bermúdez, Theatre Performance/English <i>Timberlake Wertenbaker's The Love of the Nightingale: Transformation of the Philomele Myth to Drama and its Relevance to Violence on College Campuses Today</i> (Dr. Vanita Neelakanta)</p> <p>Katherine Caughlin, Music <i>Behind the Veil: An Investigation of the Misconceptions Surrounding Women Making Music in Arabic Cultures</i> (Dr. Samantha Bassler)</p> <p>Andrew Jemas, Biochemistry <i>Enhancing the Antibiotic and Biofilm Removing Properties of the Novel Deep Eutectic Solvent, Choline Geranate, With Respect to Staphylococcus aureus and other Gram-Positive Bacteria</i> (Drs. Danielle Jacobs-Duda & Kelly Bidle)</p> <p>Natalie Tapykoff, Marketing and Advertising <i>Exploring the Current and Future Regulation of Electronic Cigarettes in the United States</i> (Dr. Cynthia Newman)</p> <p>Elizabeth Urban, Biology <i>Expression Patterns of GDNF, ETV 4 and 5 and SPRY 1 in Xenopus laevis</i> (Dr. Julie Drawbridge)</p>

PROJECT ABSTRACTS

PSTR= Poster Session
PNL= Panel Session
URSA=URSA Session

Freshman Science Honors Program

Imani Guest (Dr. Daniel Druckenbrod): *Tree-Ring Research on Jefferson's Poplar Forest*

Alexandra Taylor (Dr. Bryan Spiegelberg): *Alcohol Dehydrogenase Enzyme Activity*

Warveen Othman (Dr. Laura Hyatt): *Organic vs GMO Soybeans: Stress Response*

Samantha Ottavi (Dr. Danielle Jacobs-Duda): *Microwave Assisted Synthesis of Pyridinyl Sulfonamides with Potential Antibiotic and Agrochemical Properties*

Alexandra Santora (Dr. Paul Jivoff): *Egg Viability in Blue Crabs*

Naomi Jainarine (Dr. Paul Jivoff): *Egg Viability in Blue Crabs*

The Freshman Science Honors Program was created to invite qualified incoming freshmen to engage in independent research during the second semester of their first year at Rider. Students are selected based on their high school GPA and SAT math scores. Participants are paired with faculty mentors representing a range of scientific disciplines. This program allows students to gain hands-on science research experience and continue research through their senior year. Following graduation from Rider, the majority of alumni of the Freshman Science Honors Program have continued their education by enrolling in master's and doctoral degree programs.

A group of this year's Freshman Science Honors Program participants will present an overview of their research in a short, 2 minute "data blitz" format. **PNL**

Adetokunbo Ajayi

Building a Communication Repertoire for a Child with Autism Through Mand Training

One of the most identifiable symptoms of Autism is communication deficits. Due to the prevalence of diagnosis in the United States, currently 1 in 45 children have difficulties maintaining or developing speech. Applied behavior analysts address communication by teaching children to first mand (request) highly preferred items. In this study, satiation and deprivation are manipulated to examine the effect of pre-access play on manding for targeted items. It is hypothesized that deprivation will produce higher rates of mand responses. (Dr. Frances Perrin-English) **PSTR**

Christianna Barnard

Resisting Resilience: Gender Performance, Homonationalism, and Authenticity in the Music of Mary Lambert

Pop singer Mary Lambert emerged from near obscurity in 2012 after appearing on Macklemore and Ryan Lewis's pro-marriage equality hit, "Same Love". This song achieved astounding commercial success and helped bring Lambert's voice into the mainstream. Lambert's solo work occupies a precarious space within popular music, regularly drawing attention for its vulnerable content as she openly discusses body image, her sexuality, and self-injury amongst other topics. In my paper, I explore how Lambert performs queered forms of musical expression that fail to align with philosopher Robin James's concept of "resilience" in pop music. James uses this term to refer to a neoliberal form of gender performance in which a female performer overcomes her patriarchal damage in a spectacular way, so that past damage is not a waste, rather, it is recycled into a consumable product, thereby financially benefiting society. To do so, I engage with three of Lambert's songs: "Secrets," her cover of "Jessie's Girl", and her spoken word piece "Body Love". Each of these songs presents a fundamentally different approach to subverting resilience. By

contrasting Lambert's approaches in these songs, I will demonstrate the ways in which she succeeds at and fails to queer scripts within popular music. (Dr. Justin Burton) **PNL**

Camila Bermúdez

Timberlake Wertenbaker's The Love of the Nightingale: Transformation of the Philomele Myth to Drama and its Relevance to Violence on College Campuses Today

The project focuses on the potential of drama to create public awareness of violence and effect change. Timberlake Wertenbaker's *The Love of the Nightingale* reflects this didactic potential through the transformation of the classical myth of Philomele. I will explore Wertenbaker's poetics of drama as a potential tool for social change in connection to violence against women on college campuses. I propose to write an article and stage a performance of the play. Informed by the research, the staging will illustrate through visual design, acting, and technology the potential of drama to address silenced acts of violence and effect change. (Dr. Vanita Neelakanta) **URSA**

Allysen Breeden

To What Degree do Human Activities Contribute to the Increase in Concentration of Atmospheric Carbon Dioxide?

In this paper, the increase in the concentration of atmospheric carbon dioxide over the past century will be examined. The objective of the study is to estimate the degree to which human activities have increased the atmospheric carbon dioxide. The methods used in this study looks at data collected by different credible sources. The data gathered discusses sources and sinks of carbon dioxide and the values that each contributes to our atmosphere. The major carbon dioxide sinks examined in this study are oceans, photosynthesis, and soil. While there is other minor sinks in nature, for this study they have been excluded. The major sources of anthropogenic carbon dioxide sources examined are fossil fuels and deforestation. A model designed on Stella, based off the IPCC 2013 model comparing the differences between natural emissions, and a combination of natural and anthropogenic sources. The results supports the hypothesis, because the amount of dramatic changes in emissions based on the data collected. (Dr. Reed Schwimmer) **PSTR**

Kelsey Carroll

1 in 4: A Socially Aware and Devised Theatrical Exploration of the Healing Power of Listening

Through this project I have devised and performed a new one-woman show that speaks to the healing power of listening centered around the topic of the mistreatment of women. Mistreatment comes in many forms, physical, mental, emotional- all of which are represented in this piece. Through studying the form of documentary style theatre, I took my studies, went out into the community and conducted interviews with women of all walks of life. I set up a tape recorder, asked questions about moments of change and growth and I listened, mainly listened to the raw, uncut stories of their lives. I then transcribed these interviews and wove together the tapestry of voices that is, *1 in 4*. This plays hopes to reach those in times of need, shed light on the great injustices women face in our society and more than anything, highlight the great healing power of listening in an honest and safe environment. This study of transformation, creating new work and enacting social change through the arts culminated with a final performance, script and article detailing my creative process, personal growth and change. (Dr. Trent Blanton) **URSA**

Katherine Caughlin

Behind the Veil: An Investigation of the Misconceptions Surrounding Women Making Music in Arabic Cultures

This research project explores the role of women in Arabic music culture. The project begins with a critical study of perceptions and misconceptions of women in Arabic culture. The next section examines the role of women in private and public music making, highlighting particular women throughout Egyptian music's history and present, in light of cultural tropes of women and their function in Arabic society. The methodology of this project will blend social and ethnographic research with musical analysis, and posits that women played a much more active role in musical life behind the veil than many are led to believe. (Dr. Samantha Bassler) **URSA**

Tara DeLorenzo

Love Lessons from Jane Austen

Marriage of the eighteenth century was a more traditional, business-like transaction, rather than a union based on partnerships. Through her novels, especially *Emma*, *Sense and Sensibility*, *Pride and Prejudice*, and *Persuasion*, Jane Austen creates a guide to what makes marriages work or not work and offers insight into qualities that make a match successful. I argue that Austen's novels have constructed a view of marriage that contradicts the ideals of eighteenth century marriage and that aligns closely with the ideals of modern society. In this presentation, I will focus on the pairings of *Emma's* Emma and Knightley, *Pride and Prejudice's* Elizabeth and Darcy, and Jane and Bingley, and *Persuasion's* Anne and Wentworth as representative of successful marriages, and *Emma's* Harriet Smith and Elton, *Pride and Prejudice's* Lydia and Wickham, and Mr. and Mrs. Bennett, and *Sense and Sensibility's* Marianne and Colonel Brandon as the unsuccessful unions, to present a picture of Austen's views on marriage. I argue that my findings show that with the couples listed as unsuccessful, their relationships are based upon vanity, on situation, and on an imbalance of sense and practicality. Further, I argue that in her novels, Austen advocates for justice for women, freedom of choice, and for there to be a grander outlook on life that is not based on societal expectations or advancement. (Dr. Megan Titus) **PNL**

Gerald DeMattia

Programming Mega Man: The History of Masculinity in Video Games

Dorky glasses, Super Mario on his shirt and Cheetos powder on his fingertips; this is the stereotypical image of a gamer. However, in 2014 the Electronic Software Association reported that 48% of people who play games are women. Yet, we keep coming back to that image of young adult males. Why is this? By placing video games in context with the historical study of masculinity in America we can begin to understand how the world's largest entertainment medium has come to be seen as an activity exclusively for boys. Studying video games within this framework is important; as currently the gaming industry continues to grow through the development of hyper-violent games, and the objectification of women. (Dr. Erica Ryan) **PNL**

Kelley DePierri

Impact of MDSC Emergence during Ovarian Cancer in Cytokine-Deficient Mice

We have been studying the emergence of myeloid-derived suppressor cells (MDSCs) following i.p. transfer of ID8 cells (mouse ovarian surface epithelial cell carcinoma) into intact, syngeneic, C57BL/6J (wild type, WT) mice. Our current work studies the impact of the cytokine (CK) environment on ID8 expansion and MDSC emergence in the peritoneal cavity (PerC). We wanted to determine if particular pro- (IFN γ) or anti- (IL4, IL10) inflammatory CKs were drivers of disease in this model. We

found that, relative to WT mice, the development of hemorrhagic ascites was accelerated in IL10^{-/-}, IL4^{-/-}, and IFN γ R^{-/-} mice. The greatest percentage and number of MDSCs was observed in IL10^{-/-} mice, which also had the greatest expansion of ID8 cells. ID8 triggered a marked increase in PerC Mfs, particularly in the IL10^{-/-} mice, and lymphocytes, particularly in the IFN γ R^{-/-} and IL4^{-/-} mice. However, for all mice, the percent representation of B cells in the total PerC cell pool declined markedly, particularly in the IL10^{-/-} mice (> 70%). Interestingly, beyond the peritoneal locus of disease, both B and T lymphocyte percentages dropped in the spleens of all mice. This was seen without a concomitant increase in the number of MDSCs or appearance of ID8 in the spleen. These observations reinforce that inflammation drives MDSC emergence and suggest that changes in lymphocyte populations could serve as biomarkers for assessing ovarian cancer. (Dr. James Riggs)

PSTR

Oleksandra Dorosheva

Regulation of Betaine Homocysteine Methyltransferase by 3',5'-Adenosine Bisphosphate

Homocysteine (Hcy) has gained considerable interest in the clinic as a potential risk factor for inflammation and heart disease. One route of homocysteine metabolism involves the enzyme betaine-homocysteine methyltransferase (BHMT). BHMT is reportedly inhibited by S-adenosyl methionine (SAM), but other in situ regulators of BHMT activity are not well characterized. We discovered that native mouse liver BHMT interacts with an intermediate in sulfur assimilation, 3',5'-adenosine bisphosphate (PAP), suggesting the possibility that PAP is an allosteric regulator of this multimeric enzyme. The use of recombinant BHMT confirms a direct interaction between the enzyme and the nucleotide. The role of PAP as a regulator of the enzyme activity is being tested *in vitro* via quantitative ¹HNMR examination of BHMT metabolites in the presence of PAP and via quantification of BHMT metabolites in cells treated with lithium, a specific inhibitor of PAP catabolism. (Dr. Bryan Spiegelberg) **PSTR**

Brandon Enalls

A Role for Caspase Activity in the Stress Response of the Archaeon, Haloferax volcanii

Cysteine-aspartate specific proteases, or caspases, are highly-specific enzymes that function to catalyze programmed cell death (PCD) in higher organisms. Genetic homologs for these enzymes have yet to be isolated in organisms from the Archaeal domain of life. However, caspase-like proteolytic activity has recently been detected in the obligately halophilic archaeon, *Haloferax volcanii*, as well as a number of other diverse members of the Archaea. This research aims to further investigate the extent of caspase-like activity in *H. volcanii*, particularly in response to common organismal stressors, such as changing salinity and temperature, as well as increasing concentrations of hydrochloric acid and hydrogen peroxide. We have also examined changes in caspase activity at different stages of growth. Incubating cell extracts generated from these culture conditions with human caspase 4 tetrapeptide substrate LEVD, conjugated to fluorogenic molecule AMC, has allowed us to measure the activity of caspase-like proteins in *H. volcanii* via fluorometry. The results from this study will help to better elucidate the roles these proteins play in haloarchaeal stress responses as well as how these proteases have evolved from serving in the stress response in the Archaea to initiating PCD in higher eukaryotes. (Dr. Kelly Bidle) **URSA**

Pilar Ferdinando

The Role of Pheromones in Urine Affecting Reproductive Behavior in Blue Crabs, Callinectes Sapidus

Chemical cues play an important role in courtship of blue crabs, however little research has observed their role in agonistic behavior. Male blue crabs are known to release pheromones to attract a

potential mate. However, pheromones may also be used to warn a competing male. The reaction behaviors will differ dependent on the gender of the pheromone-receiving crab. Receiving males are expected to react defensively, such as producing threat displays and backing away from the signaling male crab. Sexually receptive females are expected to react in an attractive manner, such as withdrawing her claws, moving toward the male crab, and preparing for pre-copulatory mate guarding. Samples of male urine were collected either by extraction or inducing active release from male blue crabs and presented to female and male crabs. The females tended to move toward the male pheromone, withdraw their claws, and show rapid movement of the antennae and mouthparts. The males tended to move away from the male pheromone and give threat displays. Although the chemical composition of the urine was not tested, the difference in behaviors of the females and males in response to male urine suggest the possible presence of a pheromone in male urine that could be used as a cue for courtship and agonistic interactions. (Dr. Paul Jivoff) **PSTR**

Lauren Gilmore

Acoustical and Perceptual Differences between Legit and Classical Singing

Through the examination of acoustic and perceptual differences among sopranos within the *zona di passaggio*, this study seeks to clarify whether the distinction between “Legit”- Musical Theatre singing and Classical singing is a result of nuanced style or essential production differences. This study examined undergraduate sopranos ($N=16$) between the ages of 18-22. Half of the participants, $n=8$, studied predominantly Musical Theatre (MT) voice, while the other half $n=8$ were trained primarily in the Classical Singing (CS) voice style. Participants were asked to sing a sample excerpt in both styles. Perceptive data, obtained through questionnaires, and acoustical data were collected and evaluated. Results indicated changes in spectral envelopes, vibrato rate and extent, perceived production choices, and perceived production expectations. The acoustical, perceptual, and pedagogical distinctions discovered in the course of this study, suggested that there are production differences between CS and Legit singing. Further research might focus on the effects of incorporating “mix” into singing samples and extent to which it is applied in various styles, pursue the physiological differences in production between the two styles of singing, and analyze the formant properties inherent to both styles. (Dr. Kathy Price) **PNL**

Naomi Goldman and Michelle Orlowski

EPOR Expression by Peritoneal Macrophages and B1b Cells

Erythropoietin (EPO) is used in the treatment of chemotherapy-related anemia. A higher mortality rate among cancer patients treated with EPO has been documented. Research in this area has focused upon EPOR expression by cancer cells, either cell lines or *ex vivo* tumor tissue. We find that addition of exogenous EPO suppresses the activation of peritoneal cavity (PerC) T cells. Via FACS analysis of cultured C57BL/6J (wildtype, WT) PerC cells, we detected the EPO receptor (EPOR) on $F4/80^+$, $CD11b^+$ macrophages (Mfs). The specificity of the anti-EPOR pAb was validated by inhibition of staining with soluble EPOR. The percentage of Mfs expressing the EPOR increased with culture duration. Interestingly, EPOR expression also appeared on cultured B1b (IgM^{hi} , $CD11b^{lo}$) cells. Although less evident in WT mice assessed *ex vivo*, $EPOR^+$ PerC Mfs were found in IL10KO mice. Considerably more $EPOR^+$ B1b cells were observed in the inflammatory ascites of mice with the ovarian cancer that develops following injection of the ID8 mouse epithelial carcinoma cell line. We are currently investigating how EPO contributes to T cell suppression *in vitro* and impacts Mf and B1b cell function and phenotype. Our data support a link between inflammation and EPOR expression by PerC Mfs and B1b cells. (Dr. James Riggs) **PSTR**

Naytasha Hinson

A Phenomenological Exploration of the Lived Experiences of Male and Female Victims of Non-Physical Manifestations of Bullying or Harassment in the Workplace

The purpose of this phenomenological study is to explore the lived experience of male and female victims of non-physical manifestations of harassment and bullying by other staff in the workplace. In-depth interviews plan to be used with the research participants being identified by means of the snowball sampling technique. I also plan to utilize the Collazi's method of data analysis. The findings of this study will provide insight into the nature of harassment. Guidelines for the modification of existing harassment policy for the prevention of workplace harassment also plan to be given. (Dr. Roberta Fiske-Rusciano) **PNL**

Victoria Interra, Angelica Velez and Gavin Mulholland

Mood, Stereotype Threat and Insight Problem Solving

The purpose was to examine the effects of stereotype threat and mood on insight problem solving in college students. In the first phase of the experiment mood was manipulated by presenting the participants with a video designed to induce a sad or happy mood state. Half of the participants in each mood condition were presented with instructions that contained a negative stereotype about low socioeconomic status students. Participants then received 30 remote-associates problems varying in difficulty. Remote-associates problems involve presenting three words (e.g., cottage-swiss-cake) with a common associate (e.g., cheese). In the present study, participants were given 15 seconds to report the common theme for each problem. We predicted that both sad mood and stereotype threat would have a negative effect on problem solving. Results showed that the mood-induction manipulation was effective. Those in the happy condition reported more positive affect than those in the sad condition. Further, for the problem-solving data, mood and threat interacted with sad mood leading to decreased performance in the no-threat condition but not in the threat condition. (Dr. Michael Carlin) **PSTR**

Andrew Jemas

Enhancing the Antibiotic and Biofilm Removing Properties of the Novel Deep Eutectic Solvent, Choline Geranate, With Respect to Staphylococcus aureus and other Gram-Positive Bacteria

The novel deep eutectic solvent (DES), choline geranate, has previously been found to be an effective antimicrobial and biofilm removing agent for gram-negative bacteria. However, my preliminary research has shown that this DES is not as effective at killing the gram-positive bacterium *Staphylococcus aureus*. I propose that by replacing the cation, choline, in the DES with derivatives that are known to be antimicrobial towards *Staphylococcus aureus* and other gram-positive bacteria, I can enhance the compound's antimicrobial and biofilm removing properties across a wider range of pathogenic bacterial species. (Drs. Danielle Jacobs & Kelly Bidle) **URSA**

Rachel Jensen

The Monster Within: The Demonization of Lesbian Feminists in the Women's Liberation Movement

To both the media and the liberal, mainstream feminists, lesbians were extremists who threatened the fabric of American society. They were cast as the villain continuously, with the rhetoric of insult being their very name. Due in part to rampant homophobia and a desire to separate mainstream feminism from what was perceived as extremism, lesbians were pushed from the movement. This not only hurt lesbians by perpetuating their demonization, but also the Women's Liberation Movement as they cast away much need supporters and lost crucial momentum, thus restricting

their abilities and political power. Though scholarship on the intersection of lesbians and feminism is prevalent, it fails to specifically address the effects each side had on the other: how did lesbian feminist collectives influence the liberal mainstream feminist and vice versa? By focusing on the turbulent relationship of lesbian and straight feminists and how it translates to their very words—their manifestos, articles, and records of personal experiences—a larger picture is illuminated. They are not two distinct groups working completely independent of one another; rather, their movements, as detailed within this paper, reflect those of the other party, an intertwining of actions and reactions that ultimately create a narrative rich in nuance and unforeseen consequences. (Dr. Erica Ryan) **PNL**

Drew Kelly

Effects of Limb Loss on the Serpent Sea Star (Ophioderma brevispinum)

Brittle stars have the remarkable capacity for limb regeneration after a full arm or arm segment is removed, and it is predicted that 50% of individuals in any population undergo regeneration at any given time. Brittle stars can sacrificially autotomize their limbs in response to stressful physical conditions or as a predation defense mechanism. As a consequence of a full arm loss, brittle stars lose 20% of their capacity to store energy and reproductive gonads, being brittle stars have 5 arms. Furthermore, the loss of limbs reduces the righting ability of brittle stars and the loss of multiple arms or arm segments may inhibit regenerative ability. This semester-long study examines the effect of multiple limb loss on the righting and regenerative abilities of the Serpent Sea Star (*Ophioderma brevispinum*). Initially, 30 serpent stars were tested between 5 arm conditions (1 limb removed, 1.5 limbs removed, 2, 2.5 and 3). Results from righting data show no significant effect of limb loss on righting data. Only 14 brittle stars survived long enough to be tested for limb regeneration; the results of which do not show an effect of increased limb loss on regenerative ability. (Dr. Paul Jivoff)

PSTR

Derek Lake

The Impact of Job Automation on the United States Labor Market: Occupational Level Forecast for the Year 2022

We expect that by accounting for automation potential over the next decade, occupational, industrial, and total employment will be reduced. The Bureau of Labor Statistics of the United States published their 2012-2022 occupational employment projections in 2013 which forecast moderate growth over the next decade and indicate a healthy future labor market for the US, however, the results of my research forecast a creative destruction of jobs in America leading to a more stagnant future labor market. This paper does not investigate the potential for new occupations that will be created over the next decade nor does it explain the potential for adaptations of current occupations to adapt and work with technology. A total level, industrial level and occupational level employment level is produced for the year 2022. A final estimate of the percentage of working age population employed will be computed and a discussion offered for the proportion of the population either not-in-labor force or unemployed is given. (Dr. Kelly Noonan) **URSA, PSTR**

Karryne MacLean

The Colors of Hope and Despair: The Fate of Ellis Island Stowaways from 1893-1924

America has always been a country of immigrants, especially during the late 1800s and early 1900s. Due to the influx of people coming to America, many were denied entry. Those desperate enough stowed away on ships, hoping that once they were at America's borders they would not be turned away. Stowaways became a problem for immigration officials, as something had to be done with them. Many were sent back to their country of origin, but others were allowed entry. The reasoning

for admitting some but barring others relates to the individual characteristics of the stowaway, i.e. gender, race, class. This paper focuses on the stowaways that reached United States soil through Ellis Island between 1893 and 1924, and the circumstances in which they were allowed or barred entry. Stowaways, in essence, were the first occurrences of illegal immigrants in American history. The problem of dealing with these people, therefore, is still a huge concern today in America. Modern illegal immigrants come to America on planes and trucks, but they are stowaways nonetheless. (Dr. Erica Ryan) **PNL**

John Maenhout

Keep Our Mouths Shut and Ride Along: Female Stereotypes and Portrayals in Contemporary Country Music

The songs in the country music repertory contain some of the most oppressive and exclusive songs to ever exist. Common themes in country music are often racist, sexist, classist, and heteronormative; this can be observed by examining both lyrics and music videos. Country music is typically regarded as a genre geared towards white, middle class, heterosexual men. The oppression of women has become an increasingly prominent issue across all genres of popular music since the creation of MTV in the 1990s. Directors inside and outside of country music have used all sorts of visual cues (both subtle and quite obvious) to exploit women based on their sex appeal. This paper examines contemporary country artists, particularly from the “bro-country” era beginning in c. 2012, whose music and music videos a) oppress women by enforcing traditional gender roles as “mandatory” or “the norm,” b) utilize female sexuality as an industrial commodity, or c) challenge the concerns of A and B from a feminist perspective. (Dr. Anthony Kosar) **PNL**

Nicolette Mateescu

Adapting Learning Tasks for those with Intellectual Disabilities

The Wisconsin Card Sorting Test (WCST) and two novel card sets were used to assess effects of familiarity and valence on sorting in children with intellectual disabilities (ID). Accuracy and speed of sorting each card set by color, form, and numerosity were assessed, as was the standard test administration assessing executive skills. The task was then changed to one novel card set and the WCST. The task was adapted so that participants sorted after learning the procedure. Results advance the understanding of the effects of environmental supports on performances of individuals with ID, and have implications for valid assessment of executive skills in this population (Dr. Michael Carlin) **URSA**

Laura Moritzen

*Habitat Preference and Tidal Variation in Native and Invasive Shrimp along the Long Island Coast Following the Invasion of *Palaemon macrodactylus**

The recent invasion of the Asian grass shrimp *Palaemon macrodactylus* to Long Island could potentially impact native shrimp populations through increased competition for resources. Our study compares the abundances and habitat distributions of three species of native palaemonid grass shrimp, a native sand shrimp, *Crangon septemspinosa*, and *P. macrodactylus* in man-made and natural habitats. A dip net was used to sample shrimp at three different habitat types: floating docks, seawalls/bulkheads, and natural habitats, at high and low tides. Several possible predictor variables were also explored to help explain abundance differences across habitat types and tides, including vegetation cover, protection, wave energy, salinity, and temperature. The results showed that native palaemonids were most abundant along seawalls/bulkheads, *C. septemspinosa* was only found in natural habitats, and *P. macrodactylus* was most abundant along floating docks. Abundances were higher for all species at low tide along seawalls/bulkheads and in the natural

habitat. The distributions of native palaemonids and *P. macrodactylus* were also influenced by the level of protection and vegetation cover in each habitat. Altogether, our observed differences in habitat preference could be due to different habitat requirements for native versus invasive shrimp or due to competition among the shrimp for habitat space. (Dr. Gabriela Smalley) **PSTR**

Jessica Munyan

The Effect of Molecular Structure on the Phase Transitions of Atmospheric Aerosol Particles

Organic aerosol particles are currently of great interest in atmospheric chemistry due to the important role they play in heterogeneous chemistry and cloud condensation nucleus formation. In the atmosphere, aerosol particles can undergo phase transitions (i.e. efflorescence, deliquescence and liquid-liquid phase separation), which are controlled by variables such as temperature, relative humidity, and water solubility of a particular compound. We focused on studying two different series of compounds that were expected to undergo phase separation with similar molecular formulas (and organic:carbon ratios), but different molecular structures. We varied the relative humidity around the particles by using an environmental chamber, and an optical microscope equipped with a digital camera to image the laboratory generated aerosol particles. We observed that compounds with lower solubility values (≤ 7.24 g/100mL) underwent LLPS except for dimethyl succinate (7.06 g/100mL). We also observed that the presence of branching methyl groups in the main chain could lead to the absence of LLPS (e.g. 2,2-dimethylsuccinic acid). From this study, it is evident that for compounds with the same molecular formula, molecular structure may play an important role in how water interacts with the compound and leads to the presence or absence of LLPS. (Dr. Miriam Freedman, Muhammad Altaf) **PSTR**

Kevin Oswald

From Ottomanism to Arabism: National Identity and the British Mandate of Iraq, 1914-1936

This essay explores the emergence of Iraqi national consciousness during the first decades of the 20th century. It argues that the roots of Iraqi identity can be found in the late Ottoman period, when state-instituted reforms first introduced key elements of modernity to the region. Iraqi nationalism crystallized during the post-World War One era, when the British Mandate of Mesopotamia continued the process of secular reform. Drawing upon innovative theories of nationalism, as well as a wide range of primary sources, this project demonstrates that Iraqi-born, Western-educated intellectuals and influenced by European institutions developed a new synthetic identity, which constituted a blend of regional culture and religion, thus comprising a unique Iraqi synthesis. This process was facilitated through the institutions of public education, the professional army, and the state bureaucracy. By exploring the nature of identity formulation in Iraq, this essay provides critical insight into one of the world's most volatile regions of the world today. (Dr. Lucien Frary) **PNL**

Elaine Panuccio and Muhammad Sarwar

Hysteresis of Aqueous Geochemistry of Stream Water in Centennial Lake Watershed, NJ

Application of the hysteresis method to the study of water geochemistry is achieved by comparing the geochemical change of a water body in response to rising and recession of stream discharges in the Centennial Lake Watershed (CLW) in this study. The graphical hysteresis method can help partition the sources of common elements and ions into baseflow, runoff and groundwater dominances for a precipitation event depending on the shape of the loop. Between September and December of 2014, storm event-related and regular weekly water samples were collected at two gage stations with one upstream and one downstream at Little Shabakunk Creek that (runs through Rider University's campus) in the CLW. A greater number of samples were collected on days of precipitation to capture the potential hysteresis loop of a storm event. For parameters like

temperature and pH, the hysteresis loops produced are counterclockwise, meaning that the higher value on the falling limb can indicate that these are groundwater factor dominated or soil baseflow dominated. Also, elemental load may be influenced by factors that are not discharge-related, such as the redox conditions in the surrounding geology. (Dr. Hongbing Sun) **PSTR**

Rachel Pereira and Kristina Frattaroli

Centennial Lake Fish Population Assessment

In our Discovery Science class (SCI 100), we studied fisheries and used Rider University's Centennial Lake in order to determine the overall health of the lake and fish population. Our methods included electro fishing and net seining in order to get a good sample population with the help of NJ Fish and Wildlife organization. Our results showed us that the diversity of the fish population was significantly less diverse that we expected and the numbers of individual species was very low. Our results showed us that the populations of fish weren't directly related to the lake water quality. They also helped us implement a solution of adding more fish, such as bass and bluegill, into the lake in order to improve the fish population and ecosystem. (Dr. Kathleen Browne) **PSTR**

Muhammad Sarwar and Elaine Panuccio

Lead Concentrations in Soil Profiles of a Transect Near an Interstate Highway in New Jersey

Concentrations of Pb from four soil profiles along an approximately 130-meter transect perpendicular to the interstate highway 95 at Lawrenceville, New Jersey were studied by lithium metaborate fusion digestion and 10% of H₃PO₄ and 75% HNO₃ digestions. The loamy soil samples were collected from A and B horizons at a depth between zero and 100 cm. The concentrations of lead (Pb) in soil samples calculated from the incomplete acid digestion range from 42 mg/g to 3 mg/g for fusion digestion and from 15mg/g to 10.44 mg/g for 10% H₃PO₄ digestion depending on the distance from the highway and depth within the soil profiles. Pb concentration decreases down the profile and away from the highway. In addition, modal abundance of the minerals in soil samples was measured by quantitative X-ray powder diffraction. The main minerals in the soil samples are quartz (>45% on the surface), feldspar (>10%), and smectite and kaolinite clay minerals with small amounts of hematite and goethite. Lack of lead minerals in the soil samples and the high concentrations of Pb near the soil surface indicate that the main source of the lead is likely the dust remnants from leaded gasoline used in the past. High concentration of Pb near the soil surface adjacent to the highway indicates that Pb dust can still be a health issue for motorists in a dry period. (Dr. Hongbing Sun) **PSTR**

Steve Schwartz

Honey Bee Philosophy (The Ethics of Sustaining Bees)

Beekeeping at Rider in New Jersey puts in perspective what it means to be a seasonal beekeeper. The manual that was put together goes into the ins and outs of beekeeping year round, and what it means to have a successful bee colony. Beekeeping is a practice that has not changed in centuries. The bee manual shows these practices, and how the basic understanding of the hive, and the bees in the hive are imperative for survival. (Dr. Daniel Druckenbrod and Dr. Daniel Garro) **PNL**

Craig Sinkler

Creating High-Resolution Maps of Leaf Water Isotopes Using IM-CRDS, IRIS and IRMS Techniques

Since the development of isotope ratio infrared spectroscopy (IRIS), the applications of water isotope analysis have been increasing. Here, we present a new protocol to create high-resolution maps of leaf water isotopes ¹⁸O and ²H. We use the Picarro induction module (IM-CRDS) combined with an

isotope analyzer (L2130-i) to sample up to 25 locations in one half of each leaf. Each sampling location corresponds to four samples (6 mm outside diameter punched-holes) punched next to each other. In the induction module, an induction coil heats a metal holder containing the leaf sample. The sample will release water vapor that is then sent to the isotope analyzer. The use of the IM-CRDS allows us to significantly reduce the sample size and therefore increase the sample density, compared to the traditional cryogenic extraction method. Using spatial analysis tools, we create high-resolution spatial maps of each isotope as well as d-excess maps. The water in the second half of the leaf is extracted by cryogenic extraction and analyzed using both IRIS and isotope ratio mass spectroscopy. The isotopic composition of the extracted water is compared to the average composition calculated from the maps and used for calibration. (Dr. Daniel Druckenbrod) **PSTR**

Jessica Stanislawczyk

Understanding Westminster's Role in the U.S. Cold War Policy: The State Department Tour of 1956-1957

During the Cold War, the United States Department sponsored tours for musicians, often jazz musicians, to travel overseas to many countries. The goals of these tours were to establish the United States as a cultural leader, as well as show America's democratic policies, support of the arts, and freedom of musical expression. Some choral groups were also selected for these tours, Westminster Choir being one of them. Westminster Choir under the direction of Dr. John Finley Williamson, chosen as a cultural ambassador to further the US's Cold War propaganda, departed on their tour in October 1956. Touring 24 countries in 5 months, they represented America through their concerts and social interactions they had with citizens of these countries. Two sides of the tour are explored: how Westminster aids U.S. Foreign Policy through how they were received in each country (including why countries were selected and concert programs), and how the tour impacted choir members and administration on the trip (including what they took from it personally and educationally). The research includes information from outside literature as well as specific Westminster sources such as Rhea Williamson's diary and recent conversations with living choir members. (Dr. Eric Hung) **URSA**

Natalie Tapykoff

Exploring the Current and Future Regulation of Electronic Cigarettes in the United States

The purpose of my research is to explore the current rules regulating electronic cigarettes. With the increased popularity of electronic cigarettes and subsequent health concerns, the United States needs to implement new laws in order to properly regulate their usage, sales and advertising. Should electronic cigarettes have the same regulations as regular cigarettes? Are they considered medical devices in the market? As a result of the growing demand among teenagers, what advertising ethics should the distributors of electronic cigarettes adhere to? All of these questions and more will be addressed in my research. (Dr. Cynthia Newman) **URSA**

Gretel Torres, Kelley DePierri, David Pastuna, Naomi Goldman and Wilenny Rodriguez

Loss of Humoral Immunity in Ovarian Cancer

Our laboratory studies the immune response to ovarian cancer. Although a relatively low incidence disease ovarian carcinoma has a high mortality rate. To study ovarian cancer immunity we transplant the ID8 cell line (mouse epithelial carcinoma) into the peritoneal cavity (PerC) of mice. We find that the cancer depletes B cells, specifically a carbohydrate antigen-responsive subset designated as B-1 B cells. We wanted to determine how this would impact immunity in these mice. Although B cells were

depleted from the PerC of these mice, their response could still be present elsewhere in the body. To study this, we immunized the mice with an antigen that only B1 B cells should respond to. Our data show that this response was lost in the mice with ovarian cancer. We are repeating these experiments with the same, and other, antigens that the surviving B cells should respond to. The results from our studies may inform strategies to detect ovarian cancer at an earlier, more treatable state. (Dr. James Riggs) **PSTR**

Jonathan Tyson

An Evaluation of the Structure-Activity Relationship of Majorenolide and Majorynolide, Two Naturally Occurring Compounds Possessing a Wide Array of Biological Activities

Majorenolide and majorynolide are two naturally occurring compounds originally extracted from the barks of the *Persea major* tree native to Brazil. These two compounds have been found to exhibit a wide array of biological activities; however, apart from their initial bio-assaying, no work has previously been done towards further understanding these. This current study investigates the extent by which the main structural elements of these compounds, namely the γ -butyrolactone core, γ -hydroxymethyl group, external olefin and long hydrophobic chain contribute to their inherent biological activities. An understanding of this structure-activity relationship could further facilitate the development of novel biologically active compounds. To evaluate the functional dependency structure, various derivatives of the compounds, wherein defining elements of the structure are either eliminated or changed, will be synthesized and assayed, using *E. coli* as a model. (Dr. Danielle Jacobs-Duda) **PSTR**

Elizabeth Urban

Expression Patterns of GDNF, ETV 4 and 5 and SPRY 1 in Xenopus laevis

Pronephric duct development in amphibians is regulated through a specific signal transduction pathway. In mammals, GDNF is known to play a role in kidney development due to its position in the signal transduction pathway. It binds with a Ret co-receptor, and activates other signals including ETV 4/5, and SPRY 1, which contribute to duct cell migration. This project aims to determine when and where GDNF, ETV 4/5, and SPRY 1 are expressed in *Xenopus laevis* embryos. This will help to determine if there is an evolutionary relationship between mammals and amphibians in the development of the kidney system. (Dr. Julie Drawbridge) **URSA**

Kornelija Valiuskyte

Investigation of Mf-mediated Suppression of B Cell Activation

We have previously shown that C57BL/6J (B/6) peritoneal cavity (PerC) macrophages (Mfs), via IFN γ -triggered iNOS expression, reduce T cell activation promoted by mitogens (ConA) or by TCR ligation (anti-CD3e, SEB, etc). We wanted to assess whether PerC B cells were also susceptible to this form of myeloid suppression. B/6 PerC B cell responses triggered by BCR {F(ab')₂ anti-IgM} and TLR4 (LPS/TLR4L) were both suppressed and could be liberated by blocking prostaglandin production with indomethacin; neutralization of IL10 also increased the LPS response. Suppression of the BALB/c (B/c) PerC B cell response to BCR ligation was similar but the TLR4 response was not suppressed. Where the addition of exogenous IL4 or IL13 suppressed the B/6 response to BCR ligation, IL4 increased this response in B/c mice. Most interestingly, the PerC B cell response to CD40 ligation was not suppressed in either strain and addition of IL10 increased this response; addition of IL4 or IL13 suppressed the B/6 response but had no impact upon B/c B cells. Concurrent CD40 and TCR ligation revealed that iNOS-mediated suppression overrides the B cell response. Considering that the high myeloid: lymphoid cell ratio found in PerC cell cultures mimics that seen in tumor

microenvironments, these results serve to inform strategies designed to promote anti-cancer immunity. Supported by NIH AREA R15CA173688. (Dr. James Riggs) **PSTR**

Veronica Villacres

The Quest for Magical Identity in El país de los árboles locos by Gustavo Arango

Gustavo Arango is the author of the contemporary novel *El país de los árboles locos* (*The Country of the Crazy Trees*, 2004). In this book we encounter a nameless narrator who goes through a journey of self-discovery. Throughout his expedition he encounters unique individuals who help him in his quest to find his true identity. He travels to many lands motivated by a need to define his roots and himself. The main character started his search leaving behind his roots, his country, his loved one, and after some life lessons he comes to the realization that he knows where he needs to be. Arango's book entails a journey that marks a new type of magic realism showing that the classic literary genre has evolved into a postmodern fictional phenomenon. (Dr. Daria Cohen) **PNL**

Kaitlyn Weindorfer

Google Earth or My Maps: Which is Better for Disseminating Geologic Information?

In Mercer County, NJ, there is no centralized data source available to teachers or to the general public listing geologic sites of interest. Such a dataset would provide information such as the location and specific geologic features for each site. Furthermore, the database could be internet-based allowing additional data to be added. Google Earth and My Maps are two interactive mapping programs that could host this database. The objective of this project is to evaluate each program to determine which one would be more suitable at storing, presenting, and updating this information. Eight geologic locations in Mercer County were selected to test the capabilities of each program. The location, rock type, geologic age, geologic features, site accessibility, and other information were collected for each location. The transferring of data into My Maps, one would have to re-share the current map in an email in order for the community to see the updated info. In Google Earth, one would have to post the completed map into the appropriate forum for specific people to see. Within each site a unique URL is assigned to your map so one can post to a webpage or send privately. (Dr. Reed Schwimmer) **PSTR**