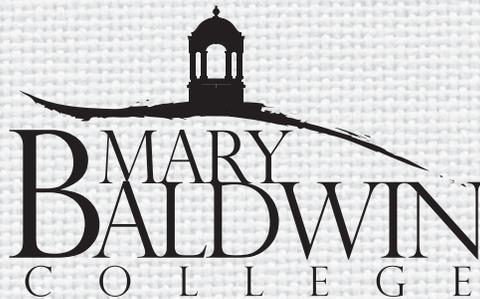


THE SHOWCASE OF UNDERGRADUATE RESEARCH,  
SCHOLARSHIP, AND CREATIVE ACTIVITY AT MARY BALDWIN COLLEGE

SENIOR PROJECTS ● HONORS PROJECTS ● SPECIAL PROJECTS

MAY 12, 2016

# CAPSTONE FESTIVAL



PARTICIPANTS IN THE CAPSTONE FESTIVAL HAVE BEEN NOMINATED BY THE FACULTY BASED ON THE HIGH QUALITY AND ORIGINALITY OF THEIR WORK AND HAVE ACCEPTED NOMINATION.

# CAPSTONE FESTIVAL

In the early days of Mary Baldwin Seminary, a Capstone Festival of sorts existed.

“All final examinations were held in public and members of the Board of Trustees and the townspeople attended to view students parse sentences, do intricate math problems, and recite soliloquies,” writes Professor Emerita of History Patricia H. Menk in her book *To Live in Time: The Sesquicentennial History of Mary Baldwin College 1842–1992*.

By the late 1800s, the practice of public recitations had disappeared. In 2006, Mary Baldwin College inaugurated a new Capstone Festival.

At each year’s festival, a select group of students, nominated by faculty, present their senior, honors, and special undergraduate research projects to the MBC community and the general public. The high quality and breadth of research, scholarship, and creative activities on display is a testament to the legacy of those earlier years and a celebration of our future.

The Festival is sponsored by the Advisory Board of Visitors, the Office of Sponsored Programs and Undergraduate Research, the Global Honors Scholars Program, and the Committee on Research, Scholarship, and Creative Activity.

## FESTIVAL PARTICIPANTS

### ASHLEIGH AYCOCK

**Project and Academic Advisors:** Mary Hill Cole and Amy Tillerson-Brown

**Type of Project:** Senior Project

**Presentation Category:** Presentation with multi-media support

**Title:** “Thrice Sold Graves”: A Class Analysis of Victorian London through Burial and Cemetery Reform



**Abstract:** London’s problems with overcrowding and sanitation of its cemeteries during the Victorian Era were due in part to heavy industrialization and an increase in communicable diseases spread through urban overpopulation. In order to improve interment, London’s upper-class

expanded city limits outward to create new cemeteries. Ashleigh’s thesis analyzes burial and cemetery legislation passed between 1837 and 1901 in order to understand why Victorian cemeteries faced abhorrent sanitation, grave robbing, and improper interment. Research revealed that, although London’s elite sought to improve interment, legislation and upper-class society abandoned London’s poor to post-mortem neglect and a continuous cycle of poverty.

**Biography:** Ashleigh Aycock is a history major with minors in English and anthropology. As a “military brat,” she has called many states and countries home. Ashleigh has been accepted into American University’s public history and archives program and will begin earning her master’s degree in the fall of 2016.

### FAITH ANDREWS BEDFORD

**Project and Academic Advisor:** Sara Nair James

**Type of Project:** Senior Project

**Presentation Category:** Presentation with multi-media support

**Title:** “Padre e Padrone”: Daniele da Volterra and Michelangelo



**Abstract:** Fifty years after Renaissance artist Daniele da Volterra created his fresco *Descent from the Cross*, the esteemed classicist painter Nicholas Poussin called it one of the three greatest paintings

in Rome. Subsequent scholars, however, have failed to fully appreciate Daniele’s work. For centuries, people knew him primarily as “The Breeches-maker” because he painted garments over the “offending parts” of some of the nude figures in Michelangelo’s *Last Judgment*. Although this demeaning nickname reduced him to an object of derision, Daniele’s sensitive censorship probably saved this masterpiece from destruction. It was his ultimate gift to the man whom he called father and master. Michelangelo furthered few artists’ careers, yet, recognizing Daniele’s talent, he offered him sketches and ideas, became his advocate in the competitive politics of the Roman art world, and helped his younger friend gain numerous commissions. During Michelangelo’s final years, Daniele was often by his side. Close examination of the literature and a portrait recently attributed to Daniele reveal an earlier, deeper level of friendship and mutual support between the two artists than has been previously recognized. Numerous hitherto undiscussed elements in Daniele’s frescoes, paintings and sculpture illustrate the ways in which he acknowledged his mentor’s influence and support.

**Biography:** Faith Andrews Bedford is an art history major from Ivy, Virginia. She writes and curates exhibitions on the American artist Frank W. Benson. She also teaches “From Memories to Memoirs” and writes for numerous magazines including *Country Living* where her column “Kids in the Country” appeared for many years. Her books include three volumes on Benson and two collections of essays. She plans to continue to write, teach, and learn.

### JOHNNA BINGHAM

**Project Advisor:** Paul Callo

**Academic Advisor:** Paul Deeble

**Type of Project:** Senior Project

**Presentation Category:** Poster

**Title:** Parasitic Intensity and its Effect on Nest Defense

**Abstract:** Malarial parasites enter host cells through mosquito vectors, utilize nutrients, and damage cells, which can lead to detrimental effects on host fitness. One measure of host fitness is an individual’s ability to protect itself or its offspring from predators. This current study explores the effect of malarial par-

asite load in the wild on aggressive displays of Red-eyed Vireos (*Vireo olivaceus*). Nest defense behaviors in the presence of a predator Blue Jay model were observed and blood smears were examined to determine an individual's level of parasitic load. Individuals with higher parasitic load exhibited more defensive vocalizations ( $r = 0.577$ ,  $p = .031$ ), contrary to the expected outcome. Parasitic load did not significantly affect an individual's number of attacks ( $r = -0.105$ ,  $p = 0.710$ ), closest approach ( $r = -0.252$ ,  $p = 0.365$ ), duration of vocalization ( $r = -0.225$ ,  $p = 0.420$ ), or time until response ( $r = 0.420$ ,  $p = 0.119$ ) to the predator model. High parasite burden may not have adverse effects on Red-eyed Vireos because of its high prevalence and ecological history with malarial parasites.

**Biography:** Johnna Bingham is a biology major (biomedical science emphasis) from Elon, North Carolina. She is a volunteer EMT-Basic and will attend the Master of Science program in Physician Assistance at the Murphy Deming College of Health Sciences, beginning in January of 2017.

## CELINE BROOKS

**Project Advisors:** Louise Freeman and Peter Ruiz-Haas  
**Academic Advisor:** Maria Craig  
**Type of Project:** Honors Thesis  
**Presentation Category:** Poster  
**Title:** The Effects of Prenatal Exposure to Flibanserin on Ultrasonic Vocalizations in Mouse Pups



**Abstract:** Last summer, the Federal Drug Administration approved the release of the drug Addyi (Flibanserin) to treat acquired or generalized Hypoactive Sexual Desire Disorder (HSDD) in premenopausal women (FDA). HSDD is characterized by "an absence of sexual fantasies as well as little to no desire for sexual activity that is accompanied by distress and interpersonal difficulty" (Gellad et al. 2015). Currently, there is a limited amount of published research on the safety of Flibanserin during pregnancy and while breastfeeding. The purpose of this study is to determine whether Flibanserin has an effect on mouse pups' ultrasonic vocalizations and if Flibanserin passes into maternal milk. If Flibanserin is causing a neural deficit, I expect to observe an effect on mouse pups' ultrasonic vocalizations.

**Biography:** Celine Brooks is a double major in psychology and chemistry with an emphasis in biochemistry, and was inducted into Phi Beta Kappa as a junior. She was

raised in Big Stone Gap, Virginia. In her free time, she enjoys hiking, reading, and baking. After graduation, she plans to apply to doctoral programs for biopsychology and behavioral neuroscience.

## KIAH BROOKS

**Project and Academic Advisor:** Jim Sconyers  
**Type of Project:** Senior Project  
**Presentation Category:** Visual or audio-visual creation  
**Title:** Life After a Storm



**Abstract:** For Kiah, being around nature brings tranquility, and she wants people to get that same feeling from these photographs. These photographs are of reflections within puddles and are meant to show Kiah's audience that there are different ways to view the world.

**Biography:** Kiah Brooks is a studio art major in photography at MBC. Recent work was selected for exhibition in the 2016 Southwest Virginia Juried Student Photography Competition at Radford University. She received an Honorable Mention in the MBC 2016 Annual Student Show. Kiah also volunteers at the Staunton Augusta Art Center.

## KAYLA E. BURGESS

**Project and Academic Advisor:** Laura van Assendelft  
**Type of Project:** Senior Project  
**Presentation Category:** Presentation with multi-media support  
**Title:** Contributions of Women on the Supreme Court of the United States



**Abstract:** Getting appointed to the U.S. Supreme Court has many challenges and barriers. This seems to be especially true for women, as they were not appointed to the Court until 1981. While there is a growing body of literature that suggests that the judicial decision-making process

of women differs from men, little research addresses whether gender differences may affect workload equality. This study examines Court workload, comparing women to men but also controlling for the influence of years on the Court and ideology (since women are more likely to be in the minority on 5-4 cases, given the ideological bal-

ance of the Court). While this analysis provides a descriptive snapshot of women's contributions on the Supreme Court, it also provides a measure of potential influence. Results of this study indicate that the U.S. Supreme Court may be the only branch of government where there appears to be no glass ceiling for women.

**Biography:** Kayla E. Burgess, of Nokesville, Virginia, is a political science major with a minor in Spanish. Upon graduation, she is seeking a career in Federal or local government. She then hopes to pursue graduate studies in political science with a specialization in American government and politics.

## SARAH DAUGHDRILL

**Project Advisors:** Amy Tillerson-Brown and Mary Hill Cole  
**Academic Advisor:** Mary Hill Cole  
**Type of Project:** Senior Project  
**Presentation Category:** Delivered paper  
**Title:** "A Much Injured Race": How The United States Pushed Towards Indian Removal



**Abstract:** The Indian Removal Act of 1830 resulted in the forced relocation of thousands of Cherokees in 1838, an event which came to be known as the Trail of Tears. Passage of the Act was ensured by the support of Andrew Jackson, who was President from 1829-1837.

However, Jackson, a known Indian hater and an unafraid warrior, did not single-handedly seal the fate of the Indians affected by the Indian Removal Act. Instead, the U.S. had already been moving towards Indian removal for at least a century prior to Jackson, prompted by desire for the land which the Indians occupied. Although Jackson was not silent in his dislike for Indians or in his desire for their lands, United States policy, and the American people, had favored Indian removal long before Jackson became President. Events such as the Yamasee War (1715-1717) and Tecumseh's Rebellion (1811), both of which were fought over who should have Indian territory, prove that the relationship between Indians and Americans was already negative by the time Jackson was elected in 1828. In 1829, to make matters worse for the Indians, a resident of Georgia discovered gold on land that was mostly occupied by Cherokees. All of these factors ultimately led to the Trail of Tears.

**Biography:** Sarah Daughdrill is a history major from Fluvanna, Virginia. After graduation she plans to take one year off and then return to school to pursue a master's

degree in either history or library science.

## WENDY DEPTULA

**Project and Academic Advisor:** Paul Callo  
**Type of Project:** Senior Project  
**Presentation Category:** Poster  
**Title:** The Effect of Nest Height on Avian Malaria Parasite Prevalence in Migratory Songbirds



**Abstract:** Avian malaria is a common vector-borne disease caused by parasitic protozoans that invade the tissues and red blood cells of birds. Garvin and Remsen (1997) proposed a hypothesis in which canopy-nesting birds would have higher parasite loads than ground-nesting bird species, because

they are exposed to more transmitting insect vectors in the canopy. To test their hypothesis, blood samples were collected from Red-Eyed Vireos (*Vireo olivaceus*) and Ovenbirds (*Seiurus aurocapilla*) in May of 2009 and again in May of 2015 in Augusta County, Virginia. Red-Eyed Vireos are canopy-nesting birds, whereas Ovenbirds nest on the ground. Parasite infections (*Plasmodium* and *Parahaemoproteus*) were determined by polymerase chain reaction using primers that amplify a section of the cytochrome b gene. Infection rates significantly differed between Red-Eyed Vireos and Ovenbirds ( $X^2=18.733$ ,  $df=1$ ,  $p=0.000015$ ). These results support the nest height hypothesis.

**Biography:** Wendy Deptula is a biology major with a minor in economics from Monmouth, Oregon. She has a true passion for birds and is planning to pursue a job in the ornithological field following graduation in May of 2016.

## TARA ECKENROAD

**Project Advisor:** Mary Jane Epps  
**Academic Advisor:** Marion Ward  
**Type of Project:** Senior Project  
**Presentation Category:** Poster



**Title:** Effects of Meadow Restoration on Biodiversity and Nutrient Cycling  
**Abstract:** Ecological restoration is a widely-applied conservation strategy with the goal of restoring degraded habitat. However, little is known about the broader

ecological effects of restoration. To assess the effects of small-scale native meadow restoration on biodiversity and nutrient cycling, I performed a biodiversity and decomposition analysis on a restored meadow and on an adjacent unrestored meadow in each of four sites across Central Virginia. At each site, I sampled arthropod diversity using pitfall traps and measured decomposition by mass loss from litter bags (teabags) over a three-month period. Through this project, I have expanded our understanding of the effects of meadow restoration on biodiversity and nutrient cycling.

**Biography:** Tara Eckenroad is a biology major with bio-medical emphasis and dual minors in criminal justice and sociology from Blairsville, Pennsylvania. Tara is a member of Alpha Phi Sigma, the National Criminal Justice Honor Society. Her career goal is to be employed in a forensic science laboratory.

## TASSANY FORERO

**Project Advisor:** Mary Jane Epps

**Academic Advisor:** Paul Deeble

**Type of Project:** Senior Project

**Presentation Category:** Presentation with multi-media support

**Title:** The Effects of an Invasive Grass (*Microstegium vimineum*) on Soil Chemistry, Decomposition, and Plant Growth in the Blue Ridge Mountains



**Abstract:** The invasive grass *Microstegium vimineum* (*Poaceae*) has been quickly taking over forests and disturbed areas on the east coast. This study examines how *M. vimineum* affects the germination and seedling growth of native plant species in the Blue Ridge Mountain,

using *Tradescantia virginiana* as a model. I also observed effects on soil processes by measuring decomposition and concentrations of minerals in the soil. I predicted that *M. vimineum* would reduce growth, germination, and decomposition, concurrently reducing nutrient levels in the soil. Analysis of various sites showed that *M. vimineum* significantly hindered germination rates, plant growth, decomposition, and levels of phosphorus and potassium in the soil. *Microstegium vimineum* is thus an invasive species of great concern for the ecosystem of the Blue Ridge Mountains.

**Biography:** Tassany (TJ) Forero is a biology major (bio-medical emphasis) from Garner, North Carolina. She has volunteered at a variety of medical facilities, including walk-in clinics, retirement homes, and hospitals. After graduation, TJ plans to matriculate into medical school and eventually become a pediatrician.

## AJI FATOU GAYE

**Project Advisor:** Judy Klein

**Academic Advisor:** Jane Pietrowski

**Type of Project:** Senior Project

**Presentation Category:** Presentation with multi-media support

**Title:** Is Vocationalization of The Gambia's Education System a Viable Option for Lowering Youth Unemployment?



**Abstract:** In The Gambia, men and women between 15-24 years make up approximately 47% of the population, but, unfortunately, 43% of the youth population remains unemployed. As expected in every economy, the youth play a vital role in ensuring national development and economic growth.

Therefore, this research explores the role that Technical Vocational Education and Training (TVET) may play in decreasing the youth unemployment rate. Using the Human Capital Model, the Lewis Dual-Sector Model, and original data from the World Bank, I explore best policy options in neighboring West African countries that can be implemented to solve the problem of youth unemployment in The Gambia. In this presentation, I argue that policy changes in terms of education and infrastructure will have a positive effect on the youth employment rate, while trying to solve the notion of structural unemployment.

**Biography:** Aji Fatou Gaye is an international economics and business major from Banjul, The Gambia. Aji has dedicated her time to identifying economic problems in developing countries and finding viable solutions. In this regard, Aji has applied to be a Program Assistant in Sustainable Development and Poverty Reduction at the United Nations Development Programme (UNDP), starting in the fall.

## ALISSA HALL

**Project Advisor:** Katherine Turner

**Academic Advisor:** Kristen Egan

**Type of Project:** Senior Project

**Presentation Category:** Delivered paper

**Title:** The Roots of Ecofeminism in Cather and Brontë



**Abstract:** Ecofeminist literary theory has been used to study literature since the 1970's. A critical examination of *Wuthering Heights*, by Emily Brontë, and *O Pioneers!*, by Willa Cather, reveal that although they predate the organized ideas of ecofeminism, they were already making use of

the principles of ecofeminism within their works. In particular, their female characters connect with the land in ways the male characters cannot even begin to.

**Biography:** Alissa Hall is an English major from Delta Junction, Alaska. She has worked as a teaching assistant for Dr. Kristen Egan and Dr. Steve Grande. In the fall, Alissa will be entering a M.A. program in English Literature at James Madison University, where she will continue to make use of ecofeminist ideas.

## YENNY M. HEVENER

**Project Advisor:** Joseph Sprangel

**Academic Advisor:** Virginia Trovato

**Type of Project:** Senior Project

**Presentation Category:** Presentation with multi-media support

**Title:** The Fast-Food Industry: More Than Just Food Fast

**Abstract:** The purpose of the fast-food world is in part focused on providing the fastest service. Likewise, when customers expect to receive the best service experience, customer satisfaction plays an important role. Yet most large fast food chains are struggling significantly, according to the 2015 American Customer Satisfaction Index (ACSI) report. This project analyzes customer satisfaction among various fast food chains through use of the ACSI report and a secret shopper personal survey. Lastly, this project looks at training suggestions that could improve customer satisfaction in the fast food industry.

**Biography:** Yenny Hevener is a business major with an emphasis in human resources management. She was born in Peru and lives in Staunton, Virginia. After graduating, Yenny hopes to work in the human resources field.



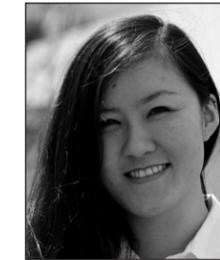
## CAROLYN HUYNH

**Project and Academic Advisor:** Joseph Sprangel

**Type of Project:** Senior Project

**Presentation Category:** Presentation with multi-media support

**Title:** Sincerely Viet



**Abstract:** "Sincerely Viet" is a business plan that is the foundation for a series of authentic ethnic restaurants, beginning with a Vietnamese restaurant in Washington, D.C. The restaurant model is to serve authentic ethnic cuisines paired with a cultural experience. This plan covers the

company overview, operating plans, marketing analyses and strategies, and financial plans.

**Biography:** Carolyn Huynh is a business major from Orange County, California. She plans to attend graduate school for a dual MBA/JD degree. Her ambition is to be fluent in multiple languages and travel the world.

## SAMI LANGSTON

**Project Advisor:** Theresa Rollison

**Academic Advisor:** Jim Sconyers

**Type of Project:** Senior Project

**Presentation Category:** Visual or audio-visual creation

**Title:** *Sunspot*: Drawing Reality into Fantasy



**Abstract:** A noted lack of diversity in mainstream entertainment has led to minority groups being pushed aside in our society's most popular stories. Popular comics, films, and novels tend to focus on heterosexual, cisgender, white males, as this has been coded as the default that all audi-

ences can identify with, something that harms our ability to empathize with people landing anywhere on the spectrum outside of those rigid qualifications. *Sunspot* is an attempt to create a more inclusive fantasy world featuring a range of characters drawing from our world's diverse mythologies, encapsulating all races, genders and sexualities. *Sunspot* is hosted at sunspot.comic.tumblr.com.

**Biography:** Sami Langston is a studio art major with an emphasis in graphic design. She was born in Richmond, Virginia, and developed an early love of animation and illustration. She hopes to continue to study sequential art and graphic design after graduation and continue to contribute to a more inclusive comic industry.

## CIARA MCLAREN

**Project Advisor:** Jane Pietrowski

**Academic Advisor:** Judy Klein

**Type of Project:** Senior Project

**Presentation Category:** Presentation with multi-media support

**Title:** Trade Liberalization in the Haitian Rice Market: A "Devil's Bargain?"



**Abstract:** In 1995, as part of an International Monetary Fund (IMF) structural adjustment program (SAP), Haiti drastically reduced its import tariff on rice, allowing imports far cheaper than the domestic product to enter the market. This thesis analyses the effects of trade liberalization in

the rice market, with particular emphasis on vulnerable rural farmers. I conclude that trade liberalization in the rice market is correlated with a variety of positive social outcomes, such as improvements in undernourishment; that said, it is likely that rice farmers faced a reduction in already low incomes.

**Biography:** Ciara Ainsley McLaren is an economics and international affairs double major from Fort Lauderdale, Florida. This fall, she will be entering the University of Florida's master's program in international relations with a FLAS fellowship in Swahili.

## ERIC MOWEN

**Project Advisor:** Paul Ryan

**Academic Advisor:** Teri Maerki

**Type of Project:** Senior Project

**Presentation Category:** Visual or audio-visual creation

**Title:** Idiomatic Motor Which Picked Up Speed Rapidly



**Abstract:** Over the past year or so, I have greatly changed the way I approach my painting. Simply by exploring the medium itself, in terms of the physical properties of paint, and how it is applied to the canvas, it has been easier to also explore and develop my own personal artistic style. Through

my project, I have continued this artistic evolution by investigating the way in which my own mind operates and processes information. In the work I'm doing right now, my goal is to employ a sort of stream-of-consciousness approach by rapidly creating compositions without allowing myself to analyze the image that is developing.

**Biography:** Eric Mowen graduated from Mary Baldwin College in January 2016 with a degree in studio art. His hometown is Waynesboro, Virginia. He is currently working to improve his portfolio and plans to begin applying to MFA programs in painting within the next two years.

## MARIA OSBORN

**Project and Academic Advisor:** Paul Deeble

**Type of Project:** Senior Project

**Presentation Category:** Poster

**Title:** The Effects of Different Wavelengths of Light on Cell Migration in HT-1080 Fibrosarcoma Cells



**Abstract:** Low Level Light Therapy (LLLT) is an innovative method used to promote wound healing and accelerate cellular processes. Photobiomodulation, or the use of a light source to stimulate cellular activity, is an effective method in studying the processes and effects of light on

cells and their metabolic activities. This study examines the relationships between wavelengths of light, length of treatment, and the migration of HT-1080 Fibrosarcoma cells. Effects were examined by treating wounded cells for different treatment times with varying wavelengths of light. Results indicate significant increase in migration of cells treated with wavelengths between 600-740 nanometers for 15 seconds.

**Biography:** Maria Osborn is a biology/biomedical emphasis major with a minor in leadership. Her hometown is Manassas, Virginia. She is a cadet in the Virginia Women's Institute for Leadership and a member of the Tri-Beta Biological Honor Society at Mary Baldwin. Her future endeavors include nursing school and obtaining her Ph.D. in molecular biology.

## EMMA REGER

**Project and Academic Advisor:** Katherine Turner

**Type of Project:** Senior Project

**Presentation Category:** Delivered paper

**Title:** Gender, Genre, Power: The Question of Feminist Revisionist History in Susanna Clarke's *Jonathan Strange and Mr. Norrell*

**Abstract:** Susanna Clarke's popular novel *Jonathan Strange and Mr. Norrell*, when published in 2004, shot to the top of book of the year lists for *Time*, *Washington Post Book World*, and *The New York Times*. Praised as rewriting history to give minority characters a voice, yet



also deemed overly masculine with little regard for its female characters, *Jonathan Strange and Mr. Norrell* is perhaps one of the most conflicted novels to appear so far in the twenty-first century. The genre traditions Clarke employs in her novel (historical fiction, fantasy, and the gothic), are

known for their ability to give female characters power – even if the work is set in a time period when women historically had very little. This thesis explores the question of Clarke's feminist revision in *Jonathan Strange and Mr. Norrell* in relation to the traditions of historical fiction, fantasy, and the gothic.

**Biography:** Emma Reger is an English major with a minor in creative writing. She was a recipient of the Benn Creative Writing award in 2015 and is a member of the English honors society Sigma Tau Delta. Following Mary Baldwin, she hopes to pursue a master's degree in the field of library science.

## ALANA RISTER

**Academic Advisors:** Peter Ruiz-Haas and Kathy McCleaf

**Type of Project:** Senior Project

**Presentation Category:** Presentation with multi-media support

**Title:** Women's Perspectives on Pornography

**Abstract:** Society stigmatizes users of pornography, causing them to adopt covering behaviors. Kenji Yoshino discusses how the act of covering can support stigma. In this study, women's current perspectives on pornography are assessed. Additionally, the covering behaviors and the influence of these behaviors on stigma are analyzed.



A qualitative study was designed to explore women's current perspectives on pornography, covering behaviors, and the influence women have on stigma. Thirty-six participants responded to an online questionnaire about their feelings about pornography, use of pornography, and covering behavior. The results show a change in the perspectives on pornography, including a new stigma on judging others. The respondents also defined pornography as sexually explicit material meant to arouse the consumer that has a negative connotation. Finally, from the responses, three themes of covering behaviors emerged: technology covering, privacy, and lack of discussion. Future research

is necessary to understand technology's influence on covering and if increasing discussion on pornography can reduce the stigma of pornography.

**Biography:** Alana Rister, from Mobile, Alabama, is a double major in sexuality and gender studies and chemistry (environmental chemistry), with minors in psychology, physics, and leadership studies. She is a member of Phi Beta Kappa, Iota Sigma Pi, Sigma Pi Sigma, and the Virginia Women's Institute for Leadership. In June, she will be starting a Ph.D. chemistry program at the University of Nebraska-Lincoln.

## KATIE SAIN

**Project Advisors:** Mary Hill Cole and Amy Tillerson-Brown

**Academic Advisor:** Mary Hill Cole

**Type of Project:** Senior Project

**Presentation Category:** Presentation with multi-media support

**Title:** Jacobitism from 1688-1746: Highland Movement to Preserve Cultural Identity

**Abstract:** Scotland is divided into two culturally distinct regions, the Highlands and Lowlands, by physical barriers. These divisions allowed for Highlanders to remain autonomous while the Lowlands assimilated to English customs due to their proximity to England. Policies enforced by England and the Lowlands threatened Highland

culture and led to the creation of the Jacobite movement. Jacobitism was a campaign carried out by Highlanders to prevent the eradication of their cultural identity. The final battle at Culloden in the Rebellion of 1745 marked the end of Highland culture and their integration into the English system. Highlanders lost their cultural identity because England controlled the land through social and political changes.

**Biography:** Katie Sain is a double major in anthropology/sociology and history with a minor in English. Her hometown is in Cumberland, Virginia. In a year, Katie will attend a graduate school to get a dual master's degree in anthropology and history.



## REETU SINHA

**Project Advisor:** Katherine Turner

**Academic Advisor:** Sarah Kennedy

**Type of Project:** Senior Project

**Presentation Category:** Delivered paper

**Title:** Female Agency in Tennyson's *Idylls of the King*: Stereotypes and Sexuality in the Victorian Age



**Abstract:** Tennyson's *Idylls of the King* (published, revised, and republished in the mid nineteenth century) is a collection of twelve non-sequential narrative poems describing the rise and fall of King Arthur of Camelot, updated and adapted to fit a Victorian audience. This paper focuses primarily on

the roles and actions of the main female characters: Enid, Elaine, Vivien, Ettare, and Guinevere, both within the context of the story and Tennyson's substantial revisions. Tennyson, in revisions, expanded the scope of the poems to apply to the broader context of Victorian England. The paper finds that this evolution constitutes a dismantling of one-dimensional female stereotypes and instead affords increasing power and agency to female characters in their increased complexity.

**Biography:** Reetu Sinha is an English and philosophy double major with minors in creative writing and peace-building and conflict resolution. She is from Plano, Texas, and plans to take a year off there before entering a joint J.D/Ph.D program.

## AUTUMN SMITH

**Project Advisor:** Daniel Métraux

**Academic Advisor:** Amy Miller

**Type of Project:** Senior Project

**Presentation Category:** Delivered paper

**Title:** Geisha Survival in Modern Japan: Are Adaptation and Symbolism Enough to Preserve the Culture?



**Abstract:** Geisha are professional artists that have been symbols of Japanese culture for centuries. They are trained in the many arts of Japan, including dance, tea ceremony, flower arrangement, poetry, and music. So deeply embedded in Japanese history, geisha numbers are beginning to dwindle

in the fast-paced society of a rapidly modernized Japan. This research examines the willingness of geisha to sacrifice tradition in order to adapt to this changing society, as

well as their prominence in national and foreign media as a symbol of Japan. Despite numerous attempts at adaptation and their image being synonymous with Japanese culture, the geisha culture will need continuing alteration to the rules and traditions to survive and avoid turning into a relic of the past.

**Biography:** Autumn Smith is an Asian studies major. Her hometown is Randleman, North Carolina. She previously studied abroad at Doshisha Women's College in Kyoto, Japan, and plans to study abroad again at Kansai Gaidai University in the fall. Following graduation, Autumn aims to participate in English teaching programs in Japan.

## ELIZABETH SUCHANIC

**Project Advisor:** Theresa Rollison

**Academic Advisors:** Claire Kent and Jim Sconyers

**Type of Project:** Senior Project

**Presentation Category:** Presentation with multi-media support

**Title:** Click & Read Book Club: Brand Identity



**Abstract:** Click & Read Book Club is an online community of readers interested in engaging, connecting, and growing through common reads. A recognizable brand identity became imperative to communicate Click & Read's mission, as membership has grown exponentially since

programming began in January 2015. This body of work outlines the pieces of an impactful brand identity for Click & Read Book Club in order to attract new members and more effectively distribute information to their existing members. Materials are broken into three strategic areas: brand identity, print media, and social media. Individual pieces include a finalized logo design and a twenty-page comprehensive brand book, a social media announcement template, and a typographic calendar. The work was informed by extensive marketing research and through creative literary approaches to marketing.

**Biography:** Elizabeth (Betsey) Suchanic is a marketing communication and studio art major from Garnet Valley, Pennsylvania. Upon completion of her degree program in December, Betsey became the Director of Business Support at the Staunton Creative Community Fund, where she leads education and training programs for entrepreneurs and small business owners.

## DEJHANIRA KAREN TORRICO

**Project Advisor:** Paul Deeble

**Academic Advisor:** Paul Callo

**Type of Project:** Senior Project

**Presentation Category:** Poster

**Title:** The Effect of the Flavonoid Quercetin on the Migration of HT-1080 Fibrosarcoma Cells



**Abstract:** Quercetin dihydrate is a well-studied member of the flavonol class of flavonoids, and it is currently being marketed as an all-natural supplement. Displaying great antioxidant, anti-bacterial and anti-viral properties has made it a likely candidate for health benefits attributed to the consumption of

plant foods and treatments utilizing medicinal plants. Its rapid breakdown upon consumption diminished its importance in the diet, but its medicinal role concerning wound healing due to plant extract treatments had yet to be specifically addressed. Through *in vitro* experimentation using the Cell Scratch Assay with HT-1080 fibrosarcoma cells, Quercetin's effects on cell migration, an important component of wound healing, were not found to be significant. The distance migrated in all treated and untreated cells progressively increased but individual measurements were highly variable. Based upon these results, there is no strong support for Quercetin's importance as an active ingredient in plant extract treatments capable of improving the cell migration component of wound healing.

**Biography:** Dejhania K. Torrico is a biology major from Fairfax, Virginia, and was inducted into Phi Beta Kappa as a junior. She will be continuing undergraduate studies with the goal of obtaining a Bachelor's of Science in Nursing starting fall 2016. Dejhania was accepted into Shenandoah University's accelerated second degree program.

## MARICRUZ PEREZ VALENZUELA

**Project and Academic Advisor:** Paul Deeble

**Type of Project:** Senior Project

**Presentation Category:** Poster

**Title:** The Presence of *Actinomyces* as Indicator of the Severity of Gingivitis and its Relationship to Age

**Abstract:** Studies have found that older people tend to develop gingivitis more rapidly and more severely than younger people. It has also been seen that proportional changes in plaque flora could contribute to the severity of gingivitis. The severity of gingivitis positively correlates with the bacterial growth of *Actinomyces*. The purpose



of this research study was to further investigate the presence of *Actinomyces* bacteria as it relates to the age of the dental patient as a possible predictor of gingival inflammation. Mouth swabs were taken from people of varying ages and inoculated in a thyoglycollate broth to provide optimal growth

conditions for *Actinomyces* bacteria. After four days of incubation, the samples were tested for the presence of *Actinomyces*. Techniques were derived to most effectively identify *Actinomyces* growth through the use of qualitative digital imaging; *Actinomyces* growth was scored across a range of patient ages.

**Biography:** Maricruz Perez Valenzuela is a biology major from Chesapeake, Virginia. After graduating from Mary Baldwin College, Maricruz plans to begin working at a veterinary clinic in her hometown, where she will gain the experience necessary to be accepted into the Virginia-Maryland College of Veterinary Medicine.

## SARAH WEBB

**Project Advisor:** Nancy Ross

**Academic Advisor:** Paul Ryan

**Type of Project:** Senior Project

**Presentation Category:** Visual or audio-visual creation

**Title:** Spite



**Abstract:** Ceramic wares are made with the thought of their purpose in mind, with user friendliness a key element in the overall design. Ultra-thin wares and tapered edges are undesirable for everyday usage because they create fragile and sharp products. I elected to take a different

approach to the designing of wares, with the specific intention of removing functionality from each piece. The resulting body of work took on a juxtaposed theme between the threat of injury and delicacy. This idea of dangerous but beautiful is what I kept in mind with the crafting of each piece. I take inspiration from forms that collect, ruffle, and fold around themselves, such as coral, seaweed, flower petals, kale leaves, gathered fabric, rapidly expanded metal, and hyperbolic geometry. My goal is to invoke a mixed sense of aversion and curiosity when viewing each piece, while being conscious of design and movement. Each piece in my show incorporates a whimsical, razor-sharp edge or addition to a thrown

form, employing a technique that I developed and refined myself over the span of six years.

**Biography:** Sarah Webb is a studio art major with an emphasis in drawing, painting, and ceramics. She is from Yorktown, Virginia, and plans to go on to graduate school to further her artistic career.

## RANDY WELCH

**Project and Academic Advisor:** Paul Callo

**Type of Project:** Senior Project

**Presentation Category:** Poster

**Title:** Plumage Reflectance in Nocturnal and Diurnal Raptors



**Abstract:** In order to test the hypothesis that nocturnal raptors and diurnal raptors will differ in the amount of light reflectance at different wavelengths on their dorsal and ventral sides, due to differences in environment, behavior, hunting tendencies, and avian vision structure, the

plumage of 51 Great Horned Owls (*Bubo virginianus*) and 44 American Kestrels (*Falco sparverius*) were measured using a spectrophotometer. Variance within each species between males and females as well as variance between different measurement locations was analyzed. Variance between species was then analyzed by comparing the amount of reflectance as a percentage at measurement position number two. It was found that the male raptors in each species reflected more light overall across all wavelengths as compared to female raptors. Analysis of measurement positions and reflectance then revealed that measurement position number two yielded the highest percentage of reflectance in both species of raptors. Further analysis led to the finding of a significant difference in percentage of reflectance between *Falco sparverius* and *Bubo virginianus*, with *Falco sparverius* displaying a higher percentage of reflectance overall at measurement position two in all wavelengths examined.

**Biography:** Randy Welch is a biology major from Enterprise, Alabama. He plans to remain in Virginia after graduation and start a career in the field of biology.

## ALORA WOGSLAND

**Project Advisor:** Joseph Johnson

**Academic Advisor:** John Ong

**Type of Project:** Honors Thesis

**Presentation Category:** Presentation with multi-media support

**Title:** Contingent Valuation as Used to Examine the Economic Value of Open Space on the Mary Baldwin College Campus



**Abstract:** Environmental economics is a growing field of economic analysis. Contingent valuation is an economic valuation technique from the field that is often used to find the monetary value of environmental services. Wetlands that filter water and open space provided by lawns are

both considered environmental services. This project uses contingent valuation to find the economic value of Mary Baldwin College's lawns to the students who attend. A survey was developed and administered to MBC student participants. Their responses were then analyzed using the Turnbull Estimator and statistical analysis. Results show a range of values that students give to Baldwin lawns.

**Biography:** Alora Wogsland is an applied mathematics major with a minor in economics from Nashville. She is also president and founder of a creative writing club on campus as well as a member of Phi Beta Kappa and Omicron Delta Epsilon honor societies. After graduation, she is planning to work in mathematics and data analysis.

## MAY TERM ABROAD CAPSTONE NOMINEES

The following students were nominated for the Capstone Festival but are unable to participate because they are on a study abroad program during May Term. We include their information here in recognition of their achievement and commitment to international awareness.

## RASHEEDA BRADLEY

**Project and Academic Advisors:** Kimberly Craig and Heather Macalister

**Type of Project:** Senior Project

**Title:** Giving Voices: The Importance of Mentoring and Support for Black Women in College Who are Attracted to Other Women

**Abstract:** This study addresses the importance of mentoring and support for Black women who are or have been in same-gender loving relationships. Previous research has shown that mentoring and support is important for marginalized groups, but often studies do not take an intersectional approach. For Black women who are romantically or sexually interested in women, sexual identities may intersect with other identities, which brings us to the idea of triple consciousness. Coined by Patterson and Simmons (2008), the triple conscious occurs when one's race, gender, and sexual orientation are all sites of oppression. Due to these several sources of oppression, certain support systems are necessary and important for success. For example, Chambers and Sharp (2012) found that Black lesbian success relies on a unique system of support. In this study, I am focusing on Black women in college, aged 18-22. I predict that those Black women who were in or have been in relationships with other women and had both support and mentors will score better on the Scale of Negative and Positive Experiences (SPANE) and the Flourishing Scale, as well as have higher GPAs. Approximately 115 college women will complete the survey using Qualtrics. Results of this study can be used in a higher education setting, to help with improving programming, organization, and support groups that are centered on Black women who are interested in women.

**Biography:** Rasheeda Bradley is a psychology major from Maryland. As a result of doing her research on the importance of mentoring of Black women who are a part of the LGBT community, she hopes to become a higher education administration professional.

## CIARA DACOSTA-REYES

**Project Advisor:** Mary Hill Cole and Amy Tillerson-Brown

**Academic Advisor:** Amy Tillerson-Brown

**Type of Project:** Senior Project

**Title:** "White Man's Country": Forging Colonial Empires in Kenya and the Mississippi Delta 1900-1952

**Abstract:** In 1956, poet and philosopher Aime Cesaire stood before the Congress of Black Artists and Writers in Paris and stated that the situation of black people in America could only be understood within the framework of subjects living within a colonialist state. Cesaire was not the first black intellectual to make this comparison or to connect the oppression of black communities globally instead of fragmenting them into individual experiences. This study examined the nature of colonization in Kenya in relationship to the Kikuyu people and compared it to black farmers in the Mississippi Delta region between 1900 and 1952. Through critical examination of the role that race played in each society in determining the economic and social hierarchy, this thesis connected the monopolization of white economic strength through land ownership in both Kenya and the United States. The study also sought to connect black oppression globally, beginning by recognizing the identity that each community recognized for itself. In the Mississippi Delta, many African-American individuals and communities connected and identified with the "Mau Mau" rebellion in Kenya, which sought to overthrow British colonial rule. This finding led to a critical examination of why citizens of the United States could identify with a colonized group of people. Through historical analysis, common themes of racial oppression, as evidenced by mob violence, disenfranchisement, economic exploitation and intense poverty, emerged to connect these communities irrespective of nationality and country borders. Social conditioning factors such as violence and racism in the global black experience of oppression transcended national borders and is further understood within identification as an African Diaspora community.

**Biography:** Ciara Dacosta-Reyes is a history major and African-American studies minor from Chesapeake, Virginia. She is a Global Honors Scholar and a member of Phi Alpha Theta. She hopes to pursue a graduate degree in African-American Studies from Morgan State University in the fall of 2016 and eventually to earn a Ph.D in history.

Congratulations to all students participating in the  
**2016 CAPSTONE FESTIVAL**

Nomination to the Capstone Festival is in itself a high honor. To recognize extraordinary achievement, top honors will also be given in each presentation category. Panels of three judges will evaluate the creativity, challenge, and execution of the projects as well as the ability of the presenters to communicate the content and significance of their work to a general audience. Top honors awards are accompanied by a cash prize of \$150.

