WILSON
COLLEGE




9th Annual Student Research Day

Celebrating the Creative and Scholarly Achievements
of Wilson Students

April 27,2018

WILSON COLLEGE

9th Annual Student Research Day

Welcome to ninth annual Wilson College Student Research Day. Today is my favorite day of the academic year because the research presented, undergraduate and graduate, is the culmination of the academic experience at Wilson College. Everything students have learned at Wilson, from writing papers—over and over—and classroom debates to field and lab experiences, comes together to create these capstone presentations.

A Wilson education is grounded in the liberal arts. Regardless of their area of focus, students are exposed to a broad-based curriculum that bridges the sciences, arts, humanities and social sciences. Students learn to think critically and ask questions, review literature, gather and synthesize information to solve complex problems and communicate their findings effectively. Research is where students put their academic training into action, and today is when we see the benefits of the liberal arts on full display.

Research at Wilson is most often a student-initiated process, driven by individual intellectual curiosity and interest. Students conduct original research and explore their findings under the guidance of faculty advisers who also serve as mentors, encouraging students to contribute to the scholarly discussions in their fields. This student-faculty collaboration is the hallmark of a Wilson experience.

This year we have more than 35 students representing multiple disciplines presenting research covering a variety of topics. While the schedule makes it impossible to see all our presenters, I encourage you to explore your intellectual curiosities by attending as many presentations as possible.

Sincerely,
Elissa Heil
Dean of Faculty, Vice President of Academic Affairs

SCHEDULE OF EVENTS

Concurrent Session I 9 - 9:50 A.M.

» BROOKS AUDITORIUM

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Elissa Heil, vice president of academic affairs, dean of faculty

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Stress and Depression Among Hispanic English Language Learners

Abigail Selman '18 (p.11)
A Comparison of Stress Levels Between Traditional and Nontraditional Students

Justine Commero '18 (p.12)
The Effects of an Art Activity on Perceived Stress Levels of College Students

» LENFEST LEARNING COMMONS

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Barbara Mistick, president

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Novella: Frame of Mind

Kirsten Bilger '18 (p.14)
Novella: Untitled

Raymond Kerr '18 (p.15)
Much Ado About Villainy

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Investigation of Possible Points of Contamination by Lactobacillus and Pediococcus in a Microbrewery

Amanda Hasse '18 (p.17)
Comparison of Factors that Affect the Ethanol Concentration in Blood During Putrefaction

Karis Daniel '18 (p.18)
Validating Fecal DNA Technologies for Ungulate Conservation

LENFEST LEARNING COMMONS

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Casino Royale is Too Much for One 007: James Bond and Adaptation

Frances Caroscio '18 (p.20)
American Myths and Historical Narratives: The Contemporary American Frontier Novel

Susan Davies '18 (p.21)
Changing the Nature of Society: The Media and Individuals on the Autism Spectrum

Concurrent Session III 11 - 11:30 A.M.

» BROOKS AUDITORIUM

Roger Shaffer '18 (p.22)
Exploring Discontinuities in Pillage Games

Kirsten Bilger '18, Katie Shank '19, Hong Nguyen '18 (p.23)
ACP-CMA College Media Convention

LENFEST LEARNING COMMONS

Cathy Rice '19, Elsa Schaefer '20, Desiree Serrano '19, Katie Shank '19 (p.24)
Health Care in Dominican Bateyes: *Medical Spanish Mission Trip*

Session IV 11:40 - 11:55 A.M.

» APPENZELLAR DANCE STUDIO

Shannon McKenzie (p.25)
Rewind Repeat Reflect

Poster Session 11:30 A.M. - 1:30 P.M.

» LENFEST COMMONS

Catarina Versichelli '19 (p.35)
Mechanisms Leading to the Formation of Blastema on Ambystoma mecicanum

Heather Shuler '19 (p.36)
The Roles of Favorability, Believability, and Methods of Evaluation of Online News Posts: A Comparison Between Donald Trump and Hillary Clinton Supporters

Karis Daniel '18 (p.37)
Examining Site Fidelity Behavior in a Threatened Songbird Species, Catharus bicknelli

Sardrick Owusu '19 (p.38)
Effects of Protein Supplements on Markers of Muscle Recovery

Shannon Gunter '19 (p.39)
Reprogramming of Adult-Derived Stem Cells into Oocytes for Reproduction in Echinoidea (Sea Urchins)

Tara Leeking '17 (p.40)
A Comparative Analysis of Composting Processes on Fulton Farm

Zachary McMaster '19 (p.41)
Analysis on the Effects of Pre-Operative Physical Therapy on Range of Motion in Individuals Undergoing Total Knee Replacements

Biology 270: Biology of Cancer (p.42)
Marquise Beckett '18: *Ewing's Sarcoma*
Lauretta Birabwa '19: *Pancreatoblastoma in juveniles*
Kaitlynn Champion '20: *Erythroleukemia*
Erin Claycomb '20: *Medullary Ductal Carcinoma*
Laury JeanBaptiste '20: *Acute Lymphocytic Leukemia*
Sam Ritter '20: *Pancreatic cancer*
Miranda Simpson '19: *Prostate Cancer*
Elsa Tabaku '20: *Lymphoma*

Karah Taylor '19: *Endometrioid Adenocarcinoma*
Catarina Versichelli '19: *Glioblastoma Multiform*

Health Science 216: Human Anatomy and Physiology II

Diabetes (p.43)
Daniel O'Keefe '21, Anastasia Case '20, Morgan Reynolds '20, Sierra Gress '21, Drew Ceneviva '20, Abigail Clark '21, Brianna Campbell '21

Hypertension (p.43)
Mary Martzouk '21, Alyssa Monn '21, Allison Schulz '21, Brianna McMaster '21, Kylie Andrew '21, Kimberly Nickey '21, Zachary McMaster '19

Interstitial Cystitis (p.43)
Sara Ball '19, Justina Swope '21, McKenzi Garlock '21, Elizabeth Descamento '21, Ashley Shatzer '20, Araceli Garcia-Ramirez '21

Alzhiemer's Disease (p.44)
Emma Golibart '20, Tara Harmon '20, Kayla Berman '21, Elivia Kipe '21, Ashley Hamilton '21, Chloe Sprecher '21, Kara Collingsworth '21, Caroline Watson '21

Osteoporosis (p.44)
Makayla O'Donnel '21, Lindsey Purvis '19, Cloe Richards '21, Gayle Alleman '21, Autumn Hurley '20, Taya Jenkins '21, Caitlin Hunsecker '21

Nursing 414: Medical Surgical Nursing

Dangers of Polypharmacy (p.45)
Taylor Amsley '18 and Ashley Lynch '18

The Importance of Oral Care on Critcally Ill Patients (p.46)
Heather Paxon '18 and Beverly Meyers '18

Medication Reconciliation Process (p.46)
Sierra Watson '18 and Kristy Zeis '18

Classics/Fine Arts 128: Introduction to Archaeology

Wilson College Fulling Mill Project: Overview (p.47)
Alyssa Belanger '20, Jasmine Lemus '21, Abryl Navarro '21, Amanda Peterson '20, Zacharie Smith '21

Timeline of the Mill (p.47)
Elizabeth Hauck '19, Sarah Wain '19, Abigail Wilson '21, Danielle Zona '18

The Lehman Farm (p.47)
Alyssa Bingaman '21, Olivia Dorsey '21, Chloe Case '21, Angela McCormick '22, Bethany Comp '21

Fulling (p.47)
Bethany Chaney '21, Kennedy Hamilton '19, Chelsea Scofield '21, Morgan Wallech '20

Chambersburg (p.47)
Omar Abarca '20, Victor Celleri '21, Nadira Boddie '21, Miranda Long '18, Allen Bull '19

The Mill Letterbox (p.47)
Adrianna Broome '21, Lizmarie Navarro '21, Jenifer Glickenstein '21, Lee Price '19, Divine Hilliard '21

Concurrent Session V 1:30 - 2:20 P.M.

» BROOKS AUDITORIUM

Amanda Waxman '18 (p.26)
Bringing Humane Education to the American Classroom

Michele Rogers '18 (p.27)
Wilson College Then and Now, Progress Towards Sustainability

Patricia Mari-Marquez '21 (p.28)
Not Just Black and White

LENFEST LEARNING COMMONS

Sarah Taylor Foltz '18 (p.29)
After the Anti-Hero: The Post-Antihero and His Significance in the |Melodramatic Mode

Stephanie Peebles '18 (p.30)
Training the Assistance Dog

Aurora Ortiz '18 (p.31)
Not Mexican Enough, Not American Either: Reading the Chicano Experience Through a Psychological Lens in Bless Me, Ultima and The House on Mango Street

Session VI 2:30 - 3:20 P.M.

» BROOKS AUDITORIUM

Jaelynne Ruble '21 (p.32)
The True Legacy of King

Frances Caroscio G'18, Heather Ellerbrock, Timothy Horn '18, Patricia Mari-Marquez '21, Stephanie Peebles '18, Araceli Garcia Ramirez '21, Jaelynn Ruble '21, Taylor Sandford '19, Rachel Stoner '20, Luori Zhuma '18 (p.33)
Notes from the Road: The MLK Travel Seminar

Honors Session 3:20 - 3:40 P.M.

» BROOKS AUDITORIUM

Dasia Edwards '18 (p.34)
Talking Dogs in Miguel Cervantes' Coloquio de los perros

Disert Scholar Session 3:40 - 4:10 P.M.

» BROOKS AUDITORIUM

Disert Introduction by
Elissa Heil, vice president of academic affairs, dean of faculty

Deborah Rifflard '18 (p.9)
The Effects of Probiotics on Canine Weight and Fecal Fat Content

DISERT SCHOLAR RESEARCH PRESENTATION

Deborah Rifflard ’18

Majors: Biology, Animal Studies
Activities: Campus Activities Board

Advisers
Deborah Austin, professor of chemistry
M. Dana Harriger, professor of biology

The Effects of Probiotics on Canine Weight and Fecal Fat Content

Obesity is a global and a national epidemic that affects nearly 37% of U.S. adults. According to the National Institutes of Health (NIH), obesity is now the second leading cause of preventable death in the U.S. and is responsible for an estimated 300,000 deaths per year (2015). Obesity is a metabolic disorder that has a variety of causes, however the most common is an imbalance of energy intake and expenditure. Obese adults are predisposed to developing a number of diseases such as cardiovascular disease, type 2 diabetes, hypertension, and osteoarthritis. These adults may also experience a decreased lifespan and an overall lower quality of life. Studies in animals and humans have demonstrated that the gut microbiota and several metabolic disorders, including obesity, have a positive correlation. Restoring the beneficial microbiota population by adding probiotics into one’s diet may aid in weight loss. In this study, a controlled population of whippets from the Wilson College Veterinary Medical Center were utilized to minimize breed variables. All dogs were housed in the same environment, fed the same diet, and received the same amount of daily exercise. The initial weights of the dogs were recorded. Fecal samples were analyzed using the Van de Kamer method to establish baseline fat content. A probiotic capsule was administered to the treatment group once a day at the morning feeding for thirteen consecutive weeks. The weights of the whippets and the fat content of fecal samples were determined every two weeks for five months. Preliminary results suggest that weight loss can be achieved by taking a probiotic pill and that age affects fatty acid content in feces. Probiotics may provide a possible naturopathic treatment alternative that is non-invasive and cost-effective for the control of obesity in humans.

ORAL RESEARCH PRESENTATION

Aurora M. Ortiz '18

Major: Spanish
Activities: Allies President, *The Billboard*, Psychology Club, WCGA

Adviser
Steven Schmidt, assistant professor of psychology

Stress and Depression among Hispanic English Language Learners

Hispanics are one of the fastest growing population in the United States. According to Pew Research Center, the Hispanic population reached almost 58 million in 2016. This number is only an estimation because many undocumented immigrants are unwilling to participate in studies due to fear of deportation. However, even though Hispanics are such a fast growing population, the research focused on this minority is very limited. Research is even more limited on the effect that learning a new language has on an individual. The present study explores the difference in perceived stress and depressive symptoms between Hispanic English Language Learners (ELLs) and Native-English speakers. The participants were ninety-two adults (33 Native-English speakers and 59 Hispanic ELLs) living in Chambersburg Pennsylvania. No statistically significant differences were found between the two groups. However, Hispanic ELLs scored slightly higher ($M = 0.38$) in depressive symptoms than Native-English speakers ($M = 0.35$). On the other hand, Native-English speakers scores slightly higher in perceived stress ($M = 2.26$) than Hispanic ELLs ($M = 2.15$). Further research is needed to further investigate if there are culturally based differences in what a person considers to be stressful and depressive symptoms. It is possible that Hispanics have different ideas of what stress and depression are in contrast to the ideas of their Native-English speakers counterparts.

ORAL RESEARCH PRESENTATION

Abigail Selman '18

Major: Psychology

Adviser
Steven Schmidt, assistant professor of psychology

A Comparison of Stress Levels between Traditional and Nontraditional Students

College students deal with a lot of stress inside and outside of the academic setting. This study was to research stressors and perceived stress among traditional and nontraditional college students. It was hypothesized that nontraditional students would report a higher number of stressors but score lower on perceived stress than traditional college students. Participants (*N=128)* completed an online survey with questions from the Perceived Stress Survey and the Stressful Events Checklist. The hypothesis that nontraditional students would report more stressors but score less on perceived stressed was not supported by the results in the study.

ORAL RESEARCH PRESENTATION

Justine Commero ’18

Major: Psychology
Minor: Studio Arts
Activities: Psychology Club

Adviser
Steven Schmidt, assistant professor of psychology

The Effects of an Art Activity on Perceived Stress Levels of College Students

It has been demonstrated in previous research that art is therapeutic to individuals when it comes to stress, depression, and other mental illness such as anxiety. This study attempts to further replicate previous findings and demonstrate the extent of the effectiveness of art therapy amongst undergraduate Wilson College students in relation to perceived stress. It is hypothesized that participation will a paint night will decrease stress for college students. In this experiment, a paint night was used as the art therapy activity. In this experiment, a paint night was used as the art therapy activity. The Perceived Stress Scale (PSS) was used to measure the students perceived stress. The results of this experiment did not support the hypothesis. This is strongly believed to be due to the small sample size. There were 10 participants in the experimental group and 9 participants in the control group. However, this study may be helpful in assisting future researchers in structuring an experiment of their own with a similar hypothesis.

ORAL RESEARCH PRESENTATION

Francesca Giustini '18

Major: English (creative writing)
Activities: *The Billboard*, *Bottom Self Review* literary magazine

Adviser
Michael Cornelius, professor of English

Novella: Frame of Mind

Leah Coady misses her old chaotic suburban life and its monotonous mysteries: her living room's unwillingness to remain clean more than 3 minutes; why parents often act like children; the inaccuracy of the microwave's "popcorn" button; her love/hate relationship with coral lipstick; and the appeal of her least favorite food, pickles, to her four children, just to name a few. Despite her efforts, Leah never would have won Housewife of the Year, or even the Month. Although, she would have preferred a simple "thank you" to a fancy title and plaque she would have to had to dust. These were now Suzanne's problems.

This was all lost because of Leah's one desire: to dance like the woman who adorned her wall, Suzanne Valadon from Pierre-Auguste Renior's *Dance in Bougival*. Once considered her only guiltfree escape from stress, dancing led her to become absorbed in the painting—literally, causing the strained housewife to switch lives with the painted dancer. Now hanging on the wall, Leah is sentenced to observe the life she left behind. The impression Suzanne leaves on the world while dancing in Leah's old worn out shoes could cost them both their frame of mind.

ORAL RESEARCH PRESENTATION

Kirsten D. Bilger '18

Major: English (creative writing)
Minor: Religion
Activities: *The Billboard*, *Bottom Shelf Review* literary magazine

Adviser
Michael Cornelius, professor of English

Novella: Untitled

Phoebe Anderson tries to her best to live up to her parentage. Being a daughter of the Greek goddess Athena, there is a lot of expectations to uphold. Along with having high grades, Phoebe is also her sorority's debate champ. Despite having a rough start in life, things finally seem to be going Phoebe's way. Until she learned that people are not always as they seem. When one of her fellow sorority sisters, Amanda, gets too interested in the fact that deity children exist, Phoebe learns that she has a darker purpose than just curiosity. Now Phoebe must team up with two fellow deity children, Veronica and Ulysses, to stop Amanda before it is too late.

ORAL RESEARCH PRESENTATION

Raymond Kerr '18

Major: English (literary studies)

Adviser
Lisa Wooley, professor of English

Much Ado About Villainy

Much Ado About Nothing and *Othello the Moor of Venice* offer two of William Shakespeare's more intriguing marriage plots, where the marriage plot's stasis is interrupted by antagonistic villains. While these villains use similar tactics and both commit themselves to their villainous ways, their motivations come from two different sources and yield two surprising end results. Using a closely read comparison and contrast, this research hopes to examine the motivative factors that lead Shakespeare's most notorious villains to their villainy. Ultimately, one villain (Don John) is a product of his societal position, while the other (Iago) is a victim of his own fear and hatred. The end results of their disruptive activities produce two very polar opposite outcomes. This essay explores the correlations between these two plays and their chief antagonists, exploring how their differing motivations for their villainy might ultimately impact the outcome of their actions.

ORAL RESEARCH PRESENTATION

Kirstin Lehman '18

Majors: Biology, Veterinary Medical Technology
Minor: Chemistry
Activities: Dressage, Eventing, Campus Activities Board, WCGA, Archery Club, tutor, admissions tour guide

Advisers
M. Dana Harriger, professor of biology
Bradley Stiles, adjunct assistant professor of biology

Investigation of Possible Points of Contamination by Lactobacillus *and* Pediococcus *in a Microbrewery*

The number of microbreweries, breweries that produce a limited amount of beer, has grown 15 percent since 2015 and now makes up 12 percent of the beer industry, according to the Brewers Association. These breweries are growing in popularity all over the world due to their small batch sizes, attention to detail, and individualized flavor profiles; however, they are at increased risk for contamination by microbes due to limited resources and increased human manipulation of the product. This poses a problem economically because spoiled beer decreases profit. Brewing begins by malting grains, which are then boiled. After boiling, hops are added to the same tank. The liquid is then cooled and transferred to a fermentation tank, where yeast is introduced. After fermentation, the fluid portion goes to a conditioning tank, where it stays until bottling, kegging, or tapping. *Lactobacillus* and *Pediococcus* are Gram positive, anaerobic bacteria that most commonly spoil beer, making it unpalatable with an unfavorable aroma. These spoiling bacteria can contaminate the beer at multiple points during the brewing process. For this study, samples were collected throughout the brewing process, particularly at points of transfer within a local microbrewery: Roy Pitz in Chambersburg, Pennsylvania. Two beer products, a lager and an ale, were sampled. Samples were cultured in Hsu's *Lactobacillus Pediococcus* medium, an agar that inhibits the growth of yeasts and selectively grows *Lactobacillus* and *Pediococcus* at 37°C, for a total of three days. Lagers and alesrequire different processing temperatures; therefore, microbial growth in these two types of beer was of particular interest. The ability to identify any specific points of bacterial contamination would allow the brewer to evaluate existing protocols, enhancing the quality of their products.

Research in collaboration with Chris Collier, Roy Pitz Brewing Company brewmaster, Chambersburg, PA

ORAL RESEARCH PRESENTATION

Amanda Hasse ’18

Major: Biology and Chemistry
Activities: Field Hockey, softball

Advisers
Deborah Austin, professor of chemistry
Katie Sarachan, assistant professor of chemistry
Brad Engle, assistant professor of biology

Comparison of Factors that Affect the Ethanol Concentration in Blood During Putrefaction

Determination of blood alcohol content (BAC) is important in some legal cases, and additional factors must be considered when determining BAC from a corpse. Ethyl alcohol concentrations detected post-mortem differ from those measured ante-mortem. Using an equine model, this study aimed to determine ethanol levels following a simulated state of putrefaction. Blood samples were collected, and then ethanol was added in vitro to simulate concentrations at the legal limit, half the legal limit, and twice the legal limit. To mimic normal putrefactive changes over the course of 24 hours, some samples were supplemented with one or both of the microbes, *Escherichia coli* and *Candida albicans*. In addition, trials were performed under anaerobic environments, blanketed with either nitrogen or carbon dioxide, to mimic gas conditions during the putrefaction stage of body decomposition. The final concentrations of ethanol under the varying microbial and gas conditions will be measured using gas chromatography–mass spectrometry (GC-MS) and compared with the amounts of ethanol initially present, the microbes present, and the gas conditions. The results from this study may aid in quantifying the effects of putrefaction on ethanol levels in post-mortem blood samples.

ORAL RESEARCH PRESENTATION

Karis Daniel '18

Major: Biology
Minors: Latin, Animal Studies
Activities: Muhibbah, Environmental Club, archery, EFT Club

Advisers
M. Dana Harriger, professor of biology
Budhan Pukazhenthi, Smithsonian Conservation Biology Institute

Validating Fecal DNA Technologies for Ungulate Conservation

The use of fecal DNA as a tool for ungulate conservation has been validated for several threatened species, but with mixed success. Degradation and low DNA concentrations challenge its reliability for use in genomic research. This study assessed validity and integrity of fecal DNA for two critically endangered ungulate species. Over six weeks, DNA was collected, isolated, and analyzed from fecal samples of Scimitar-horned oryx (*Oryx dammah dammah, n*=7) and Dama gazelle (*Nanger dama ruficollis*, *n*=4) at the Smithsonian Conservation Biology Institute. One set of fecal samples was processed fresh; two additional sets were incubated (40 ˚C) to simulate effects of heat degradation. DNA was isolated from all samples using QIAGEN's MO BIO PowerFecal© DNA isolation kit, and sample purity for all three treatments (fresh, 24h, 1 week) was tested using a NanoDrop™ Spectrophotometer. DNA quality was analyzed using PCR and gel electrophoresis to amplify two primers: Cytochrome-b (421bp) and a control region fragment (560bp). DNA isolated from fecal samples was of sufficient purity for utilization in further analyses. There was no significant difference between DNA purity in fresh or incubated treatments for either *O. dammah dammah* or *N. dama ruficollis*. Fragment amplification was successful for both species. Cytochrome-b produced stronger amplification of *O. dammah dammah* DNA, while the control region fragment proved slightly more effective with *N. dama ruficollis* DNA. These results suggest that species-specific genomic DNA can be isolated from *O. dammah dammah* and *N. dama ruficollis* fecal samples (Cytochrome-b and control region), and short-term heat exposure does not necessarily undermine the utility of this DNA for genomic analyses.

ORAL RESEARCH PRESENTATION

Michael Montana G'18

Major: M.A. Humanities (art and culture)

Advisers
Michael Cornelius, professor of English

Casino Royale is Too Much for One 007: James Bond and Adaptation

James Bond, secret agent 007, has excited and captivated audiences since the release of *Dr. No* in 1962. Throughout the course of fifty-five years and twenty-four films in the official series, Bond has become a cultural icon and one of the only mythopoetic figures created in the 20th century. Before the official film series, author Ian Fleming gave life to Bond with a series of novels, beginning with *Casino Royale* in 1952. While Fleming may have created 007, the official film series is what has truly cemented the character as a cultural touchstone for multiple generations of audiences. The crux of exploring James Bond is the dialectical tension inherent between the Fleming source material and the long-running film series. Using adaptation theory, the aim of this project is to examine that tension as presented in three adaptations of *Casino Royale*—1954, 1967, and 2006. *Casino Royale* holds importance as the genesis of the character, but is also the only Fleming work to be adapted multiple times over the course of decades. Each specific adaptation must confront a host of unique challenges in bringing 007 to the screen in a way that respects the source material, recognizes the importance of the official film series, conforms to societal and cultural shifts, and meets the weight of audience expectations. Three chapters will focus on key elements that are impacted by the challenges of adaptation, which are the character of James Bond, the women of Bond, and the Bond genre.

ORAL RESEARCH PRESENTATION

Frances Caroscio ’18

Major: English (literary studies)
Activities: Sigma Tau Delta

Adviser
Steven Schmidt, assistant professor of psychology

American Myths and Historical Narratives: The Contemporary American Frontier Novel

Westerns are violent tales about masculine heroes who tame the wilderness. These heroes navigate the sublime wilds of the American frontier as they confront and conquer native peoples. Manifest destiny and ethnocentric views once dominated the pages of the American frontier novels, yet in recent years they have become reflective works that criticize the ideologies that shaped the very foundations of American identity. Westerns originated as myths that perpetuated an early American vision of rugged individualism in the new world. Now they function to rework the less-than-ancient American myth by refashioning, revising, and extending the confines of traditional western narratives. Using the common tropes of westerns, contemporary authors subvert them by implicating guilt where it was not previously assigned and denying the widely accepted validity of quantifiable human experience. By criticizing American society at its very core, the authors of contemporary frontier novels push their readers to redefine the limits of their worldly understanding by forcing them to question and reevaluate the values and ideals that influence their perceptions of world in which they live.

ORAL RESEARCH PRESENTATION

Susan Davies G'18

Majors: M.A. Humanities (child development)

Adviser
Michael Cornelius, professor of English

Changing the Nature of Society: The Media and Individuals on the Autism Spectrum

One in every sixty-eight children has been diagnosed with being on the Autism Spectrum. There are several more that go undiagnosed. The media is a very influential tool when it comes to bringing education and awareness to the public on issues. Due to the mind 'mental mapping' the brain also likes to put things into categories, which could lead to stereotyping. This thesis explored how the media of movies, television, and literature represented characters with Autism Spectrum Disorder (ASD) in a society where the population is influenced by popular media. Explored was if media used ASD to move the plot forward and for entertainment purposes or if the media entertained while giving an educational representation of those individuals with ASD. Selected were the movies *Rain Man* (1988), *The Accountant* (2016), *Dumb and Dumber* (1994), *Dumb and Dumber To* (2014), and *Why Him* (2016). Television series selected where *The Big Bang Theory* (2007-2017) and *Atypical* (2017). Mise en scene was looked at with the medical and social model theories in mind to search for patterns and stereotyping. Literature reviewed were the novels *The Gauguin Connection* (2012) by Estelle Ryan and *The Curious Incident of the Dog in the Night-time* (2013) by Mark Haddon. A Life-Writing by Temple Grandin was also analyzed. Analysis had shown that though television did a better job at representation and entertaining there were many patterns and stereotypes formed across all media explored. Results showed that characters with ASD tend to be portrayed as savants which glamorized ASD. Doing so failed to show the struggles those with ASD deal with on a daily basis. Also uncovered was the producers and authors unwillingness to commit to if their character had ASD. Grandin also seemed to stereotype those with ASD and glamorize it while endorsing things she had no experience with.

ORAL RESEARCH/POSTER PRESENTATION

Roger Shaffer '18

Majors: Financial Mathematics, Economics

Adviser
James Hay, associate professor of accounting and business

Exploring Discontinuities in Pillage Games

This research project is aimed at finding discontinuous examples of pillage games. The reason why the study is aiming at finding a discontinuous example in a pillage game is because in real life, pillage games are usually discontinuous. A working definition of a pillage game is a type of cooperative games among n players. A good example would be a pillage game with lithium as the single good with n equal to four countries. The commodity, lithium, is shared between the 4 countries with an allocation of (0.2, 0.3, 0.4, 0.1). The space of allocations is given by

$$X \equiv \left\{ (x_1, x_2, x_3, ..., x_n) \middle| x_i \geq 0, \sum x_i = 1 \right\}$$

I already found two discontinuous examples of functions. One function is an example of discontinuous 1-D function, the other one is an example of discontinuous 3-D function. With these leads, I am building an example of a discontinuous pillage game that satisfies the three order axioms.

$$\pi: \mathrm{P}(\{1,2,3,4,5, \ldots . . \mathrm{n}\}) \times \mathrm{X} \rightarrow \mathbb{R}^n$$

- (WC): if $C \subset C'$, then $\pi(C', x) \geq \pi(C, x), \forall x \in X.$
- (WR): if $y_i \geq x_i \forall i \in C \subset \{1, 2, ..., n\}$, then $\pi(C, y) \geq \pi(C, x), \forall x \in X.$
- (SR): if $\emptyset \neq C$ and $y_i > x_i \forall i \in C$, then $\pi(C, y) > \pi(C, x), \forall x \in X.$

ORAL RESEARCH PRESENTATION

Kirsten Bilger '18
Major: English

Katie Shank '19
Major: Communications

Hong Nguyen '18
Majors: Business Management, Communications

Advisers
Kimberly Maske Mertz, *The Billboard* adviser
Robin Herring, *The Billboard* adviser

ACP-CMA College Media Convention

On October 25, 2017, eleven staff members of *The Wilson Billboard* newspaper traveled to Dallas, Texas to attend the ACP-CMA College Media Convention sponsored by Associated Collegiate Press and the College Media Association. During the five-day convention, students from across the country participated in over 275 educational breakout sessions and enjoyed keynote speakers including Hugh Aynesworth and Bob Scheiffer. In addition, students had the opportunity to network with fellow journalism students, graduate and internship program representatives, and professionals in the field. This presentation will provide a glimpse into what the Billboard staff members learned and the opportunities that were opened to them as a result of the convention. Those interested in learning more about the ACP-CMA College Media Convention are encouraged to visit http://collegemedia17.org/ for more information.

ORAL RESEARCH PRESENTATION

Desiree Serrano '19
Major: Nursing

Katie Shank '19
Major: Communications
Activities: *The Billboard*

Elsa Schaefer '20
Major: Nursing
Activities: Student Nursing Assoc.

Cathy Rice '18
Major: Nursing

Adviser
Wendell Smith, associate professor of Spanish

Health Care in Dominican Bateyes: *Medical Spanish Mission Trip*

In conjunction with Wilson's first Medical Mission trip to La Romana, Dominican Republic, this past January, students will present their findings from a review of research on the health problems particular to the *bateyes* of the Dominican Republic. Housing a population of sugar cane workers originally from Haiti, the *bateyes* were erected as temporary shelter. Today they have become a system of isolated, cinderblock or wood-and-tin villages in the Dominican sugarcane fields housing thousands in substandard conditions. Our class studied the systemic, structural violence of a life of agricultural labor with little hope of a better future. Presentations will highlight the public health challenges of a lack of clean water, a lack of citizenship status, a lack of transportation, and tuberculosis

ORAL RESEARCH PRESENTATION

Shannon McKenzie '18

Major: Animal Studies, Integrated Dance Studies
Minor: Business
Activities: Orchesis

Adviser
Megan Mizanty, visiting assistant professor of dance

Rewind Repeat Reflect

"VCR" is the culminating dance thesis of Shannon McKenzie. An Integrated Dance Studies major, McKenzie explores themes of monotony, repetition and habitual movement, mirroring the rhythms of daily life. She asks, "How can one change in our day radically affect us?" Informed by her additional coursework in evolutionary biology and psychology, she has created a contemporary dance work that is heavy in partnering and human contact. Featuring dancers Sami Heckendorn, Jessica Mcdowell, Shannon McKenzie, Lauren Monahan, Jessica Rice and Myah Quirin. McKenzie started the work in Fall 2017 giving the group 7 months to construct the piece.

ORAL RESEARCH PRESENTATION

Amanda Waxman ’18

Major: Environmental Science

Adviser
Edward Wells, professor of environmental studies

Bringing Humane Education to the American Classroom

Humane education is a developing field which encourages students to look beyond the classroom and think critically about issues involving human rights, animal welfare, and environmental preservation. In this presentation, Amanda Waxman will further discuss what humane education is, how it can fit into K-12 curriculums, and, most importantly, why humane education is beneficial to students in the long term. She will also share original lesson plans and activities she created for a humane education curriculum.

ORAL RESEARCH PRESENTATION

Michele Rogers '18

Majors: Psychology, Environmental Sustainability
Activities: Environmental Club, Psychology Club

Adviser
Christine Mayer, director, Fulton Center for Sustainability Studies

Wilson College Then and Now, Progress Towards Sustainability

The AASHE Sustainability Tracking, Assessment & Rating System (STARS) is a voluntary assessment utilized in higher education for gauging the relative progress of institutions of higher education toward their sustainability goals. This research examines the progress to date of sustainability in dining service efforts by comparing 2009 AASHE benchmarks with the current operations specifically in areas of food waste composting and the College's food purchasing practices. Existing campus attitudes and perceptions are also a part of this research.

ORAL RESEARCH PRESENTATION

Patricia Mari-Marquez '21

Major: Veterinary Medical Technology
Activities: VMT Club, Spanish Club

Adviser
M. Dana Harriger, professor of biology

Not Just Black and White

I will present a map of areas in and around Chambersburg where African Americans were lynched and share stories surrounding these lynchings. In addition, I plan to explore the social practice of lynching in the South and how that compares with lynchings in the Chambersburg area. I will then contrast this with the strength shown by individuals in the Civil Rights Movement, who fought for their rights as citizens in a time of great hostility and open racism.

ORAL RESEARCH PRESENTATION

Sarah Taylor-Foltz G'18

Major: M.A.Humanities

Adviser
Larry Shillock, professor of English

After the Anti-Hero: The Post-Antihero and His Significance in the Melodramatic Mode

Today, many critics believe that we are living in a second Golden Age of television. Soap operas have become increasingly popular, particularly on cable. Many of these evening cable dramas differ from network shows and sitcoms in that they do not follow the conventions typical of melodrama. Rather than focus on the suffering of women in the domestic sphere, a staple of daytime drama, much of this work revolves around a male character who many scholars refer to as morally ambiguous or antiheroic. Characters like Walter White of *Breaking Bad*, Jax Teller of *Sons of Anarchy*, and Frank Underwood of *House of Cards* neither perform social banditry (West) nor possess the redemptive qualities that have come to define the antihero's actions in the public sphere. Collectively, these new, more severe characters become less, not more, socially redeemable over time. As narratives dominated by them progress, such figures shift from a recognizably mainstream masculinity into a hyper-masculinity that includes extraordinary brutality. It is therefore better to refer to them as post-antiheroes or protagonist-villains. This project explores the ways in which these post-antiheroes simultaneously present hyper-masculinity and, in its hegemonic forms, change the melodramatic mode itself. Thus, the post-antihero's story borrows from melodrama so that a story of excess (i.e., about excess competition, excess drama, and excess violence) precludes the restoration of morality that audiences have come to expect from the villain-protagonists of today's melodrama.

ORAL RESEARCH PRESENTATION

Stephanie Peebles '18

Major: Animal Studies, Religion
Minor: Psychology

Adviser
Freya Burnett, professor of veterinary medical technology
David True, associate professor of religion

Training the Assistance Dog

Assistance dogs are becoming more widely used to help people with a broad range of disabilities. Training assistance dogs can be a huge endeavor. Only half of the dogs specifically bred and trained for the work pass the requirements to become full time assistance dogs. Therefore, each element of training must be thoroughly considered and well planned to help the dog succeed in assistance careers. The purpose of the current study was to identify and train critical aspects of assistance dog training. By utilizing positive reinforcement methods, it was determined that a strong assistance dog training program should include confidence building, cognition games, good manners, and generalization.

ORAL RESEARCH PRESENTATION

Aurora M. Ortiz '18

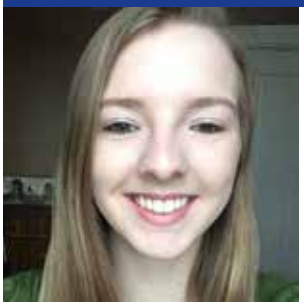
Major: Spanish
Activities: Allies President, *The Billboard*, Psychology Club, WCGA

Adviser
Amanda McMenamin, assistant professor of Spanish

Not Mexican Enough, Not American Either: Reading the Chicano Experience through a Psychological Lens in Bless Me, Ultima *and* The House on Mango Street

By applying a psychological lens in the literary analysis of the texts *Bless Me, Ultima* by Rudolfo Anaya and *The House on Mango Street* by Sandra Cisneros, I argue that the young Chicanos—or Americans of Mexican descent—that populate the pages of the stories demonstrate the inherent difficulties involved in the process of coming of age between cultures. As "border subjects," young Chicanos straddle the boundaries of at least two cultures, as they also attempt to navigate the equally liminal frontiers between childhood and adulthood. This has effects on their development and psychological well-being due to increased levels of cognitive dissonance, as they endeavor to fit into two or more cultures that often do not share many common aspects. Young Chicanos tend to have lower self-esteem and higher levels of stress and depression. This can be traced to the higher levels of culture shock—or acculturation—that they experience amidst both their families and their peers. Thus, through close reading, *Bless Me, Ultima* and *The House on Mango Street* depict the struggles faced by young Chicanos as they become adults. Their biggest struggle is trying to fit into cultures that do not fully accept them. I ultimately argue that the texts demonstrate that the final step between childhood and adulthood for Chicanos is understanding that they do not have to fit perfectly into a single culture, but rather can create their own—a hybrid space of inclusivity.

ORAL RESEARCH PRESENTATION



Jaelynne Ruble ’21

Major: Veterinary Medical Technology
Minor: Studio Art

Adviser
Tammy Ege, assistant professor of veterinary medical technology

The True Legacy of King

A discussion on the true life of Dr. Martin Luther King Jr., revealing the facts that were not taught in schools. This presentation incorporates interviews of local students from different academic levels that reveal the “whitewashed” version of King. The accounts from students lead the examination into how well the education system portrays King, and how it teaches topics relating to race.

ORAL RESEARCH PRESENTATION

Notes from the Road: The MLK Travel Seminar

Frances Caroscio G'18 (M.A. Humanities), Heather Ellerbrock, Timothy Horn '18 (philosophy), Patricia Mari-Marquez '21 (vetrinary medical technology), Stephanie Peebles '18 (animal studies and religion), Araceli Garcia Ramirez '21, Jaelynn Ruble '21 (Veterinary Medical Technology), Taylor Sandford '19 (psychology and studio art), Rachel Stoner '20, Luori Zhuma '18 (religion)

Adviser
David True, associate professor of religion
John Elia, associate professor of philosophy

A student panel will share their findings from this course that includes a week of travel in the South. The title "Notes from the Road" speaks to these travels but also to the course's animating idea, follow after King, that is thinking critically to understand the actual King (versus the popular representation of him). The trip included visits to key civil rights sites in Greensboro, North Carolina and in Selma, Montgomery, and Birmingham, Alabama. For much of the trip the group was located in Atlanta, Georgia where we lived as one, trained in nonviolence, and worked with refugee children.

HONORS RESEARCH PRESENTATION

Dasia Edwards '18

Majors: Spanish, Animal Studies

Adviser
Wendell Smith, associate professor of Spanish

Talking Dogs in Miguel Cervantes' Coloquio de los perros

In the novel *Coloquio de Los Perros* by Miguel Cervantes, readers are introduced to the main characters, Berganza and Cipión, who happen to be talking dogs. When the dogs discover they are able to talk and reason (things thought to be only humans qualities), Berganza decides to share a story about his life with different masters to Cipión, who always makes sure Berganza is being true to his story. The aim of this research is to analyze Coloquio de Los Perros through an animal studies lens in order to determine the reasoning for Cervantes choosing dogs as the novel's main characters. In order to answer this question, a deep analysis of the novel and referencing of ideas from other scholarly articles were performed. As a result of this analysis, it appears that Cervantes used dogs as his choice of main characters to show a pattern of human behavior: trust and betrayal.

POSTER RESEARCH PRESENTATION

Catarina Lynn Versichelli '19

Mechanisms leading to the formation of blastema on **Ambystoma mecicanum**

The cells responsible for limb regeneration in mammals are turned off and unable to be turned back on. Understanding the process in more detail can help with identifying the problems with mammal limb regeneration. Being able to regenerate a limb that was lost could reduce rejections from skin grafts and eliminate the search for donor limbs. No longer would people have to rely on partially functioning prosthetics. The patient might be able to regain one hundred percent of limb movement/function. The regeneration process starts with the formation of a blastema at the site of amputation where differentiated cells (specialized cells performing specific functions) undergo dedifferentiation (reversing the differentiated cells to an earlier developmental stage). More specifically for skeletal muscle regeneration, satellite cells (the adult stem cells) are activated and proliferate, which repair and regenerate the damaged and missing muscle. This pathway allows for an abundance of new muscle cell precursors that then proliferate, differentiate, and fuse together as new muscle fibers are formed along with the reconstruction for a functional contracting muscle system. Along with this, positional cells must also be reprogrammed and activated so that the limb grows back correctly. There are other signaling pathways and dedifferentiated cells involved with the formation of the blastema like vascular cells, endothelial cells, fibroblasts and nerve cells (to name a few). This research project focuses on blastema stem cell growth and localization in the *Ambystoma mexicanum* by conducting limb regeneration experiments on both sexes. The left limb will be amputated at the elbow for each axolotl. The expected results from this experiment is that after inducing an industrial amputation on the axolotls, they will undergo a normal regenerative process forming a blastema at the amputated site where signaling pathways involved are not altered in any way.

Advisers
M. Dana Harriger, professor of biology
Abigail Berkey, assistant professor of biology

POSTER RESEARCH PRESENTATION

Heather Schuler '19

The Roles of Favorability, Believability, and Methods of Evaluation of Online News Posts: A Comparison between Donald Trump and Hillary Clinton Supporters.

In the era of the Internet, information is in abundance. In addition to traditional sources of information, such as newspapers and television, Internet web sites are becoming primary sources for the distribution and acquisition of news and other information. As the number of sources publishing news online continues to grow and reliance on the Internet for information increases, consumers of information are being challenged to determine the trustworthiness and credibility of these sources. This is especially true with the advent and use of "fake news" and "alternative facts" in politics and news. Recent accusations of fake news impacting the 2016 presidential election calls for the need to better understand how consumers interpret political claims as authentic and credible. In addition, social media sites, such as Facebook and Twitter, allow for the sharing of news and information within online social networks of friends, families, bloggers/vloggers, celebrities, politicians, organizations, and more. Thus, research is needed to examine how individuals evaluate the credibility and veracity of online sources that create and disseminate information and as well as the content of information that is being accessed online. This research looks at how people evaluate online posts in terms of favorability and believability, and how these evaluations are influenced by methods of evaluation. Furthermore, differences in these methods of evaluation between voters for the Republican and Democratic candidates in the 2016 presidential election will be analyzed.

Advisers
Steven Schmidt, assistant professor of psychology

POSTER RESEARCH PRESENTATION

Karis Daniel '18

Examining site fidelity behavior in a threatened songbird species, Catharus bicknelli

Site fidelity behavior, the tendency of an individual to return to the same site every breeding season, has been observed in a number of migratory bird species but has not been examined in Bicknell's thrush (*Catharus bicknelli*). Species that exhibit high site fidelity are more vulnerable to habitat loss. *C. bicknelli* faces habitat loss caused by precommercial thinning (PCT), a common forest management practice for increasing stem density throughout the Northeastern United States and Southeastern Canada. Though *C. bicknelli* can inhabit regenerating forests, the habitat is suitable only 5-12 years post-thinning. If the species does show site fidelity, PCT may inhibit the ability of individual birds to return to preferred nesting sites, contributing to accelerating population declines for the species. This study aims to discern whether *C. bicknelli* exhibits site fidelity, and if so how PCT affects this behavior. Bird banding and visual encounter data for Bicknell's Thrush in North America will be acquired from the U.S. Geological Survey's Bird Banding Laboratory. Location data for each bird will be compiled to create a breeding site history record for individual birds. If *C. bicknelli* exhibits site fidelity, birds are expected to return to the same breeding grounds three or more times within their lifespans. Additionally, thrushes in un-thinned forests should exhibit higher site fidelity than birds in thinned forests. Results of this study may provide insight into the importance of maintaining key nesting sites for at-risk species such as *C. bicknelli* and aid in generating improved land management practices for the species.

Advisers
Deborah Austin, professor of chemistry
Abigail Berkey, assistant professor of biology

POSTER RESEARCH PRESENTATION

Sardrick Owusu '19

Effects of Protein Supplements on Markers of Muscle Recovery

For athletes, muscle recovery is essential to prevent muscle injury. In muscle recovery, the body synthesizes proteins to build up new muscle fibers, which aids in muscle growth. Improving rates of muscle recovery for athletes is important; therefore, it is very beneficial to find ways to improve the rate at which protein is synthesized to recover damaged cells. Muscle protein synthesis occurs as a response to resistance exercise or nutrition intake. During workout, the muscle tissue breaks down and amino acids are needed for muscle protein synthesis to repair the damage. The amino acids that are ingested are shuttled to the muscle tissue and are used in protein synthesis for muscle repair and growth. Research has shown nutritional supplementation containing mixed carbohydrates and amino acids was beneficial and improved muscle growth. This study will test a wider range of supplements and will measure serum creatine kinase and Myoglobin levels in athletes over a period of time as a measure of muscle damage: Serum creatine Kinase and Myoglobin levels will decrease more quickly when nutritional supplements work better. In this study, twenty male athletes aged nineteen to twenty-three will be put in four groups of five and will perform resistance training over a 13 day period, during which the first seven days will be a week of baseline training with no supplements involved. Three group will be assigned to one nutritional supplements (Whey Protein, chocolate milk and BCAA Leucine).The 4th group will serve as a control group with no supplement to be taken. I hypothesize that Whey Protein supplement should have the best recovery rate on increment in muscle protein synthesis after an intense workout. This study will help determine the most essential and beneficial nutrient to aid in the rate for muscle recovery in athletes to prevent muscle injury.

Advisers
Brad Engle, assistant professor of biology
Katie Sarachan, assistant professor of chemistry

POSTER RESEARCH PRESENTATION

Shannon Gunter '19

Reprogramming of Adult-Derived Stem Cells into Oocytes for Reproduction in Echinoidea (Sea Urchins)

Stem cells are unspecialized, self-renewing cells that give rise to specific cell types during development, growth, tissue renewal and repair. Induced pluripotent stem cells (IPSCs) are adult-derived cells that have been reprogrammed to an embryonic cell-like state that enables the development of an unlimited source of any type of human somatic cell line. Since the discovery of IPSCs is relatively new they are currently being researched and tested to determine their potential therapeutic value, including the treatment of various genetic disorders. Although the use of IPSCs to develop somatic cell lines is well established, research on the development of germline cells, such as oocytes, from IPSCs is still in its infancy. This study is designed to determine whether adult-derived cells can be isolated from Echinoidea (sea urchins), and reprogrammed under various culture conditions as germline cells, specifically oocytes. Several transcription factors, such as Oct4 (Pou5f1), Sox2, cMyc, and Klf4 will be used under controlled culture conditions to facilitate the reprogramming. To test if the reprogramming is successful, the eggs will be examined using morphological characteristics and an attempt will be made to fertilize the eggs to induce larval development. The results of this study could potentially lead to more effective and efficient ways to reprogram adult-derived stem cells to become oocytes that may be used for reproduction. Also, this study may be beneficial to help facilitate future studies focused on fertility treatment in women.

Advisers
Brad Engle, assistant professor of biology
Katie Sarachan, assistant professor of chemistry

POSTER RESEARCH PRESENTATION

Tara Leeking '17

A Comparative Analysis of Composting Processes on Fulton Farm

Composting is a biological process that breaks down organic matter. Fulton Farm has employed the use of composting for over 10 years, collecting waste from agricultural residues, lawn and shrub trimmings, and pre-consumer food waste from the Dining Hall on Wilson College Campus. A static or windrow method has been used in the past. New technologies in composting have been presented to Wilson College, including an in-vessel composter and Apex Composting Additive. These methods are said to produce quality compost with a shorter turn-around for viable compost for the Farm to utilize. This study focuses on the different methods of composting being employed on the Fulton Farm and the analysis of compost samples.

Advisers
Christine Mayer, director, Fulton Center for Sustainability Studies

POSTER RESEARCH PRESENTATION

Zachary McMaster '19

Analysis on the Effects of Pre-Operative Physical Therapy on Range of Motion in Individuals Undergoing Total Knee Replacements

There are approximately 700,000 knee replacement procedures performed annually in the US. This number is projected to increase to 3.48 million procedures per year by 2030. The main reason as to why these were performed is due to the occurrence of Osteoarthritis. This is a condition in which the area around the joint can lead to pain, loss of function, and overall disability in older adults. Numerous studies indicated that pre-operative physical therapy before total knee replacements (TKR) can improve post-operative success, including a shortened amount of time being spent in the hospital after surgery, and possibly less time in an out-patient facility. With the constant refinements in different types of insurance, and changes in coverage of physical therapy, it is important as a patient to receive exceptional care in order to regain full range of motion, and function in the knee as quickly as possible with fewer visits. This study will involve analyzing patient files from several physical therapy clinics in order to determine if there is a correlation in regards to the occurrence of physical therapy before TKR and range of motion or not. I will be analyzing 100 patients that have had total knee replacements. Of those patients, 50 of them will have underwent physical therapy before surgery, and the other will have only had physical therapy after surgery. Patient names will remain anonymous and HIPPA regulations will be followed to the fullest extent.

Advisers
Tonia Hess-Kling, assistant professor of exercise and sport science
M. Dana Harriger, professor of biology

POSTER RESEARCH PRESENTATION

Biology 270
Biology of Cancer

Advisers
M. Dana Harriger, professor of biology

Join the students enrolled in Bio 270, Biology of Cancer, in an interactive forum and engage with them as you learn about various types of cancer. Posters will reflect a comprehensive presentation of knowledge that the students gathered as they researched specific forms of cancer. This student-centered, active learning experience incorporates the scientific poster presentation to foster learning of cancer biology. Students successfully mined primary literature to collect information ranging from epidemiological data on incidence and population trends, suspected correlations to exposures and heritable factors to current and trending diagnostic and therapeutic approaches. Students also include information gathered from their experiential component in which they contacted and/or interacted with a variety of experts on the front lines of cancer biology ranging from oncologists and researchers to foundations and support groups. An overlying goal of the poster project was to substantially enhance the depth of understanding of cancer biology as well as provide a forum for an educational opportunity to convey facts and concepts about cancer to the broader community.

Marquise Beckett '18: Ewing's Sarcoma
Lauretta Birabwa '19: Pancreatoblastoma in juveniles
Kaitlynn Champion '20: Erythroleukemia
Erin Claycomb '20: Medullary Ductal Carcinoma
Laury JeanBaptiste '20: Acute Lymphocytic Leukemia
Sam Ritter '20: Pancreatic cancer
Miranda Simpson '19: Prostate Cancer
Elsa Tabaku '20: Lymphoma
Karah Taylor '19: Endometrioid Adenocarcinoma
Catarina Versichelli '19: Glioblastoma Multiform

POSTER RESEARCH PRESENTATION

Health Science 216
Human Anatomy and Physiology II

Adviser
Tonia Hess-Kling, assistant professor of exercise science

Daniel O'Keefe '21, Anastasia Case '20, Morgan Reynolds '20, Sierra Gress '21, Drew Ceneviva '20, Abigail Clark '21, Brianna Campbell '21

Diabetes

Mary Martzouk '21, Alyssa Monn '21, Allison Schulz '21, Brianna McMaster '21, Kylie Andrew '21, Kimberly Nickey '21, Zachary McMaster '19

Hypertension

Sara Ball '19, Justina Swope '21, McKenzi Garlock '21, Elizabeth Descamento '21, Ashley Shatzer '20, Araceli Garcia-Ramirez '21

Interstitial Cystitis

POSTER RESEARCH PRESENTATION

Health Science 216

Emma Golibart ’20, Tara Harmon ’20, Kayla Berman ’21, Elivia Kipe ’21, Ashley Hamilton ’21, Chloe Sprecher ’21, Kara Collingsworth ’21, Caroline Watson ’21

Alzhiemer’s Disease

Makayla O’Donnel ’21, Lindsey Purvis ’19, Cloe Richards ’21, Gayle Alleman ’21, Autumn Hurley ’20, Taya Jenkins ’21, Caitlin Hunsecker ’21

Osteoporosis

POSTER RESEARCH PRESENTATION

Nursing 414
Medical Surgical Nursing

Adviser
Alaina Smelko, lecturer of nursing

The students of NUR 414, Nursing Leadership, will present posters related to best practices and performance improvement at the bedside. Topics chosen by each pair of students focus on areas that they had particular interest. Topics explored are oral care in critically ill populations, polypharmacy in the elderly, and medication reconciliation. Posters will reflect knowledge gained in clinical experiences, simulation, classroom discussions, and a literature review. Through a literature review, students have identified ways to improve practices. The overlying goal of the poster projects was to empower students to act as champions for change at the bedside and within the community.

POSTER RESEARCH PRESENTATION

Nursing 414

Taylor Amsley ’18 and Ashley Lynch ’18

Dangers of Polypharmacy

POSTER RESEARCH PRESENTATION

Nursing 414

Heather Paxon ’18 and Beverly Meyers ’18

The Importance of Oral Care in Critically Ill Patients

Pneumonia is one of the most common nosocomial infections in hospitals. Of pneumonias affecting patients, eighty-six percent are ventilator-associated pneumonias (VAP). VAP is a pneumonia that develops after 48 hours of being intubated and mechanically ventilated. Patients with VAP are at higher risk of death or increased hospital stay. “Between 250,000 and 300,000 cases per year occur in the United States alone, which is an incidence rate of 5 to 10 cases per 1,000 hospital admissions” (Koenig & Truwit, 2006). Pneumonia symptoms can be but are not limited to fever, tachycardia, chills, difficulty breathing, and shortness of breath. Critically ill patients exhibit dehydration, fatigue, and sepsis. Since an endotracheal tube this gives direct access to the lungs, decreasing infection in intubated patients becomes a priority. Some nursing interventions to prevent infection are antibiotic administration, turning and repositioning every two hours, maintaining the head of bed at 30 degrees, and oral care. “Although the American Association of Critical Care Nurses (AACN) has advocated tooth brushing and declared it to be one of the standards of critical care, less than 44% of critical care nurses report brushing teeth” (Prendergast & Kleiman, 2015). Therefore, encouraging the use of routine oral care is important because the use of oral care has decreased.

POSTER RESEARCH PRESENTATION

Nursing 414

Sierra Watson ’18 and Kristy Zeis ’18

Medication Reconciliation Process

POSTER RESEARCH PRESENTATION

Classics/Fine Arts 128
Introduction to Archaeology

Advisers
Bonnie Rock-McCutcheon, adjunct instructor of classics

The remains of an old stone building sit on the bank of the Conococheague Creek, part of the interpretive trail at the Fulton Farm. Surely these scattered stones and remnants of human activity have inspired countless people who have walked the trail to wonder what happened there, what human activity left such a mark on the landscape. This is the question that the students of Introduction to Archaeology (CLS / FA 128) have sought to answer this semester, through the Wilson College Fulling Mill Project. As a class, we mapped the site of the mill, performed an intensive surface survey, photographed, and sketched the site. In groups, students researched different questions that related to the mill, with each group producing a poster for today's event. In the course of their research, students moved beyond the library and even the Hankey Center – we visited the Franklin County Historical Center, were given valuable assistance by the Franklin County Archives, and interviewed many people in our attempt to better understand the mill, its history, and the role that it has played (and continues to play!) for those of us who live, work, and play on the banks of the Concocheague Creek.

Fulling Mill Project Overview
Alyssa Belanger '20, Jasmine Lemus '21, Abryl Navarro '21, Amanda Peterson '20, Zacharie Smith '21

Timeline of the Mill
Elizabeth Hauck '19, Sarah Wain '19, Abigail Wilson '21, Danielle Zona '18

The Lehman Farm
Alyssa Bingaman '21, Olivia Dorsey '21, Chloe Case '21, Angela McCormick '22, Bethany Comp '21

Fulling
Bethany Chaney '21, Kennedy Hamilton '19, Chelsea Scofield '21, Morgan Wallech '20

Chambersburg
Omar Abarca '20, Victor Celleri '21, Nadira Boddie '21, Miranda Long '18, Allen Bull '19

The Mill Letterbox
Adrianna Broome '21, Lizmarie Navarro '21, Jenifer Glickenstein '21, Lee Price '19, Divine Hilliard '21

We would like to thank the members of the Student Research Day Committee. Without you, this wonderful day showcasing our students and their research would not be possible.

Thank you for all your hard work.

Nicolaos Catsis
Visiting Assistant Professor of Global Studies

Tonia Hess-Kling
Assistant Professor of Exercise Science

Margaret Light
Director of Corporate and Foundation Relations

Rachael Picard
Faculty Assistant

Ronda Rinalli
Administrative Assistant to the Vice President for Academic Affairs

Courtney Wolfe
Associate Director of Marketing and Communications

We would like to thank our Student Research Day sponsors.
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Wilson College Student Research Day highlights the research, scholarship, creative activities and achievements of students and their faculty mentors.

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