



UNIVERSITY *of* WEST FLORIDA

STUDENT SCHOLARS

SYMPOSIUM

AND FACULTY RESEARCH SHOWCASE

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2017

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UNIVERSITY *of*
WEST FLORIDA

Office of
Undergraduate
Research

PROGRAM & ABSTRACTS



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UNIVERSITY *of* WEST FLORIDA

STUDENT SCHOLARS
SYMPOSIUM

AND FACULTY RESEARCH SHOWCASE

APRIL 20, 2017
PROGRAMS & ABSTRACTS

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EVENT ORGANIZED BY

Office of Undergraduate Research
Office of Research and Sponsored Programs

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We would like to thank the following sponsors for the event:

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OUR Faculty Advisory Board 2017

We gratefully acknowledge the Office of Undergraduate Research Faculty Advisory Board for their dedicated service in support of UWF's research mission.

Allison Schwartz
Pam Vaughan

Peter Cavnar
John Bratten

David Ramsey
Giang-Nguyen Nguyen

Matt Crow
Youngil Lee

Special thanks to students, faculty, and staff and to all who contributed to the organization of this symposium

WELCOME

“

What was once an activity limited to a small number of students in a few departments has transformed into a cornerstone of the UWF experience.

”

**Allison Beauregard Schwartz,
Ph.D.**

*Director, Office of
Undergraduate Research*



W elcome to the University of West Florida's 2017 Student Scholar Symposium and Faculty Research Showcase. This annual event brings together our graduate and undergraduate students as well as our faculty members from our five colleges to present their research and creative projects. This event lets us celebrate the innovation, academic scholarship, research and creative endeavors of students across all disciplines.

I want to thank the faculty and staff who have encouraged and mentored our students in their research throughout the year. I would also like to thank those whose efforts made this event possible.

I hope you enjoy the symposium today and take the time to see the outstanding works on display.

Yours sincerely,
Martha D. Saunders, Ph.D.
President



I am proud to welcome and congratulate the students and faculty on behalf of the Division of Research and Strategic Innovation.

We in the Division welcome, encourage, and celebrate all your outstanding achievements and are thankful to have you as part of our UWF family.

Pam Northrup, Ph.D.
*Vice President for Research
and Strategic Innovation*

SCHOLARS



At the University of West Florida scholarly activity and innovation are valued and encouraged. Supporting our undergraduate and graduate students to participate in research and creative activities engages their intellectual curiosity, satisfies their thirst for discovery, and gives them an outlet for their creativity. The Office of Research and Sponsored Programs is thrilled to support the 2017 Student Scholars Symposium and thank you to all the faculty who have spent many extra hours working with their students to prepare their presentations for the symposium.

Mark Roltsch, Ph.D.
Assistant Vice President for Research & Director, Research and Sponsored Programs



It is my pleasure to welcome you to the 2017 Student Scholars Symposium and Faculty Research Showcase. What an exciting time to be involved in undergraduate research at UWF! UWF recently launched its “Sea Change” campaign and undergraduate research is undoubtedly experiencing a sea change of its own. What was once an activity limited to a small number of students in a few departments has transformed into a cornerstone of the UWF experience. With this year’s event, we have updated the format to be more inclusive of research across campus, bringing in oral presentations, research panel discussions, and fine and performing art lecture recitals. This year’s event represents over an astounding 500 UWF undergraduate, graduate, and faculty authors and spans 28 departments and all five academic colleges. I personally invite you to visit the 348 student presentations that were supported by awards from the Office of Undergraduate Research this year. Please join me in celebrating the accomplishments of all of our students!

Allison Beauregard Schwartz, Ph.D.
Director, Office of Undergraduate Research



On behalf of the College of Arts, Social Sciences and Humanities, it’s my pleasure to welcome you to the Student Scholars Symposium and Faculty Research Showcase. We are honored to be afforded the opportunity to showcase the scholarly achievements and collaborations of our faculty and students. Your work demonstrates the excellence that represents both CASSH and UWF. We hope you take pride in your successes and achievements and take time to celebrate your efforts.

Steve Brown, Ph.D.
Dean of the College of Arts, Social Sciences and Humanities

WELCOME



On behalf of the College of Education and Professional Studies, I extend my congratulations to the faculty and students who are presenting their research at UWF's Scholars Celebration. A priority goal for the College of Education and Professional Studies is to support student participation in high-impact learning opportunities including conducting research with faculty mentors. This week's events highlight the very best of faculty-student collaboration on creative and scholarly pursuits and showcases the wonderful opportunities that UWF provides for students who seek to distinguish themselves beyond the classroom.

We encourage you to continue striving for excellence in your future academic endeavors and your careers. You should be proud of your hard work and achievements.

William R. Crawley, Ph.D.
*Dean of the College of
Education and Professional
Studies*



The faculty, staff and students of the Hal Marcus College of Science and Engineering are happy to welcome you to the Scholars Symposium which showcases the research underway in the College with our faculty and students working together on collaborative projects.

We hope you enjoy interacting with our undergraduate, and graduate students as well as our outstanding faculty during the Scholars Celebration events.

Michael T. Huggins, Ph.D.
*Professor and Dean of the Hal
Marcus College of Science and
Engineering*



On behalf of the College of Health, I extend my congratulations to the faculty and students who have collaborated in the research projects exhibited in this Student Scholars Symposium and Faculty Research Showcase. The benefit of these collaborations will reach well beyond today, with potential for extending this and other relationships in scholarly endeavors. To the students we will say, pay it forward. Once you are in the position to mentor another, remember this experience and take the opportunity. To the faculty we will say, thank you for giving of your time to mentor your student. We know you'll walk away from the experience re-energized. We are all fortunate to be at a university that embraces faculty and student success and supports these endeavors financially. Enjoy the event, be proud, and continue to strive for excellence. Go Argos!

**Ermalynn M. Kiehl,
Ph.D., ARNP**
Dean of the College of Health

SCHOLARS



University College at the University of West Florida is proud to support The Student Scholars Symposium. Research is an important form of high impact learning that leads to increased understanding, mentorship opportunities and sharing of creative ideas and concepts. The contributions of UWF faculty and students have an impact locally, nationally and globally.

Congratulations to all of our students who are taking their education to the next level and the faculty who lead the way. We celebrate you as you share your activities and accomplishments with our campus and community.

Sincerely,

Kim M. LeDuff, Ph.D.
*Dean and Associate Vice Provost
University College*



Congratulations to all faculty and students participating in the University of West Florida's Student Scholars Symposium and Faculty Research Showcase. Collaboration between students and faculty in scholarly and creative activities provides our students with a high impact learning experience that sets them apart from students at other institutions. The steady growth of participation in this annual spring celebration of research highlights the increased support available for creative activities at UWF and the growing importance of research as a differentiating component of our mission.

Tim O'Keefe, D.B.A.
*Dean of the College of
Business*



The benefit
of these
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endeavors.



Ermalynn M. Kiehl,
Ph.D., ARNP
Dean of the College of Health



**“ Research is an important
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and sharing of creative
ideas and concepts.”**

Kim M. LeDuff, Ph.D.

Dean and Associate Vice Provost

University College

SCHEDULE AT A GLANCE

9:00AM- 3:30PM

Special Sessions

*University Commons - Conference Center
(Bldg. 22)*

9:30AM- 1:00PM

3-Minute Thesis Presentations

*University Commons - Conference Center
(Bldg. 22)*

10:00AM – 12:00PM

Poster Presentations

*University Commons -
Auditorium & Great Hall (Bldg. 22)*

10:00AM- 3:30PM

Music Hall Performances

*Center for Fine & Performing Arts
(Bldg. 82)*

DETAILED SCHEDULE

MAIN POSTER SESSION 10:00AM – NOON

9:00-10:00am	Poster Setup
10:00am-noon	Main Poster Session (271 poster presentations) Auditorium and Great Hall, Commons Building (Bldg 22)

CONFERENCE ROOM A 9:30AM – 3:30PM

9:15-9:30am	Session I presenters check-in
9:30-10:30am	3-Minute Theses Presentations Session I (12 presentations)
10:30-10:45am	Session II presenters check-in
10:45-11:45am	3-Minute Theses Presentations Session II (12 presentations)
12:00-12:15pm	Session III presenters + COB elevator pitch presenters check-in
12:15-1:00pm	3-Minute Theses Presentations Session III (10 presentations)
1:00-1:15pm	College of Business Excellence in Market Research Award Recipient Presentation
1:30-3:30pm	Art History Oral Presentations (10 presentations) Faculty mentor: Justin Sturgeon

CONFERENCE ROOM B 10:00AM – 3:00PM

10:00-11am	Earth & Environmental Science Poster Presentations (11 presentations) Faculty mentor: Chasidy Hobbs
11:15am-1:45pm	Social Justice Movements Poster Presentations (15 presentations) Faculty mentor: Gloria Horning
2:00-3:30pm	Earth & Environmental Science Poster Presentations (13 presentations) Faculty mentor: Chasidy Hobbs

CONFERENCE ROOM C 9:45AM – 3:30PM

9:45-10:45am	<i>I Can Truth, and You Can Too: Locating Real News in a Fake World</i> Undergraduate Student Research Discussion Panel Faculty mentor: Jasara Norton
11:00am-12:00pm	Kugelman Honors Seminar Presentation Undergraduate Student Research Discussion Panel Faculty mentor: Greg Lanier
12:45-1:45pm	<i>Pokemon Go: Augmented Reality and Collective Efficacy</i> Undergraduate Student Research Discussion Panel Faculty mentor: Jocelyn Evans
2:00-3:30pm	<i>Pensacola Parks Project</i> Undergraduate Student Research Discussion Panel Faculty mentor: Jocelyn Evans

CONFERENCE CENTER LOUNGE 9:00AM – 2:00PM

- 9:00am-2:00pm** Visual Art Installation Displays (Presentations 10am-noon)
Digital Multimedia
Faculty mentor: Thomas Asmuth
Irish Experience 2016 (Dept of Art)
Faculty mentor: Nicholas Croghan
The Spring 2017 Graphic Design Graduation Show Catalog
Faculty mentor: Joseph Herring
An Advertising Campaign for the Spring 2017 Graphic Design Graduation Exhibition
Faculty mentor: Joseph Herring
Environmental Design: Senior Graphic Design BFA Exhibition Spring 2017
Faculty mentor: Joseph Herring
Theater Irish Experience
Faculty mentor: Charles Houghton

COMMONS BUILDING OUTDOOR PATIO 9:00AM-NOON

- 9:00am-noon** Engineering Project Showcase
Faculty mentor: Mohamed Khabou

ROOM 272 9:00AM-3:00PM

- 9:00-10:00am** UWF Sigma Tau Delta Honor Society
Undergraduate & Graduate Student Mixed Media Showcase
Faculty mentor: Kelly Bushnell
- 1:00-3:00pm** Inorganic Chemistry Oral Presentations
Undergraduate Student Presentations
Faculty mentor: Leo ter Haar

ROOM 260 9:00AM-3:30PM

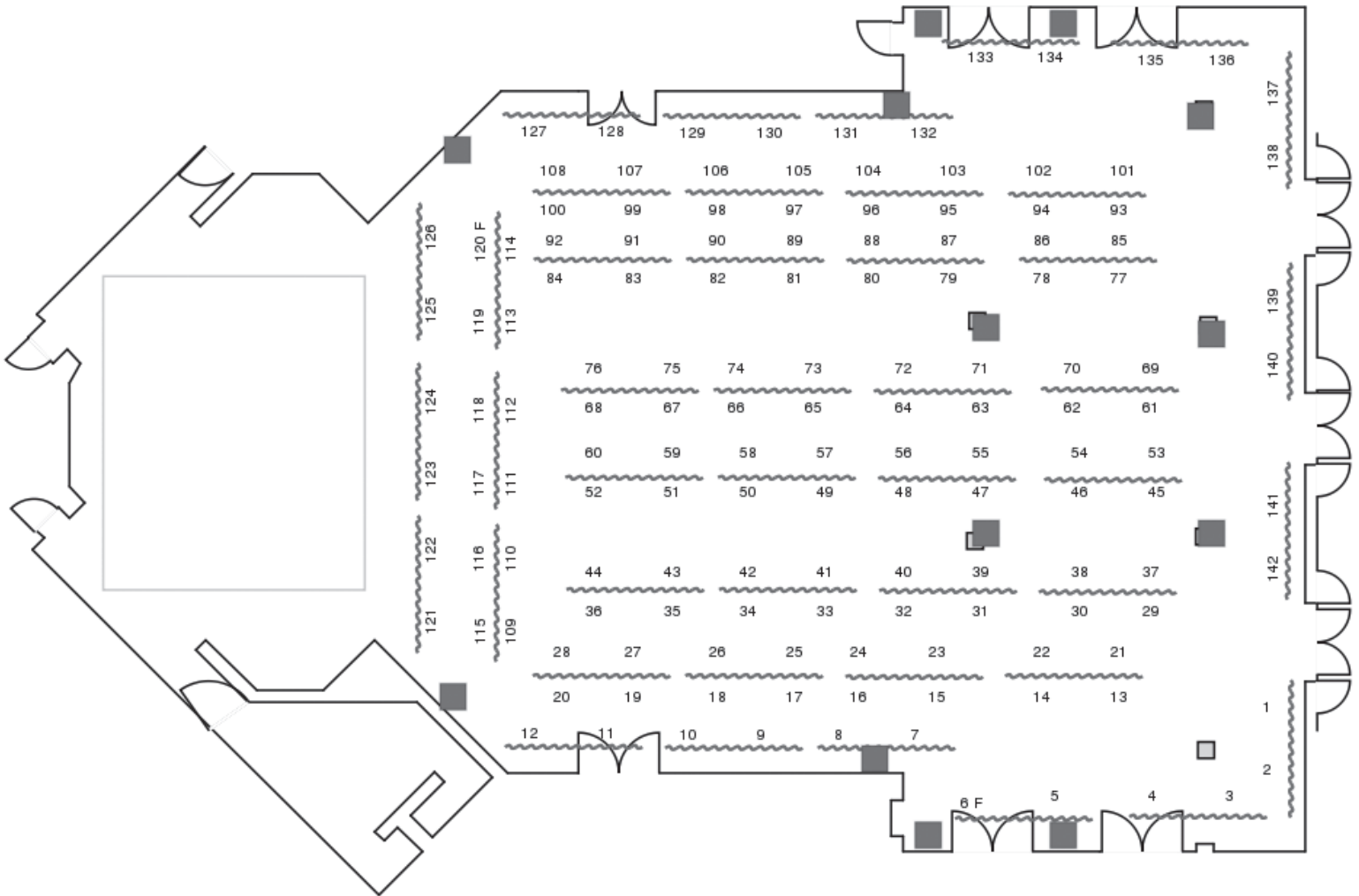
- 9:00-10:00am** **Political Philosophy**
Undergraduate Student Research Discussion Panel
Faculty mentor: David Ramsey
- 10:00-11:00am** **Edmund Spenser's Masterful Romantic Epic: The Faerie Queene (Early Modern Literature)**
Undergraduate Student Research Discussion Panel
Faculty mentor: Kathy Romack
- 11:00am-noon** **The Works of John Milton**
Undergraduate Student Research Discussion Panel
Faculty mentor: Kathy Romack
- 12:30-1:30pm** **Defining Our Coastal Heritage: Old Challenges and New Approaches**
Graduate Student Research Discussion Panel
Faculty mentor: Jamin Wells
- 1:45-3:15pm** **Pillars of Conquest: Examining the Patterns and Practices of Conquest in the Caribbean & the Gulf South**
Graduate Student Research Discussion Panel
Faculty mentor: Erin Stone
- 3:15-3:30pm** **Frida Kahlo: A Documentary, by Ian Hamilton**
Graduate Student Film Screening
Faculty mentor: Amy Mitchell-Cook

MUSIC HALL, BUILDING 82 10:00AM-3:30PM

- 10:00-12:00pm** **Concertos** – Various Student & Faculty Presentations
1:00-3:30pm **Lecture Recitals** – Various Student & Faculty Presentations

POSTER PRESENTATIONS MAP

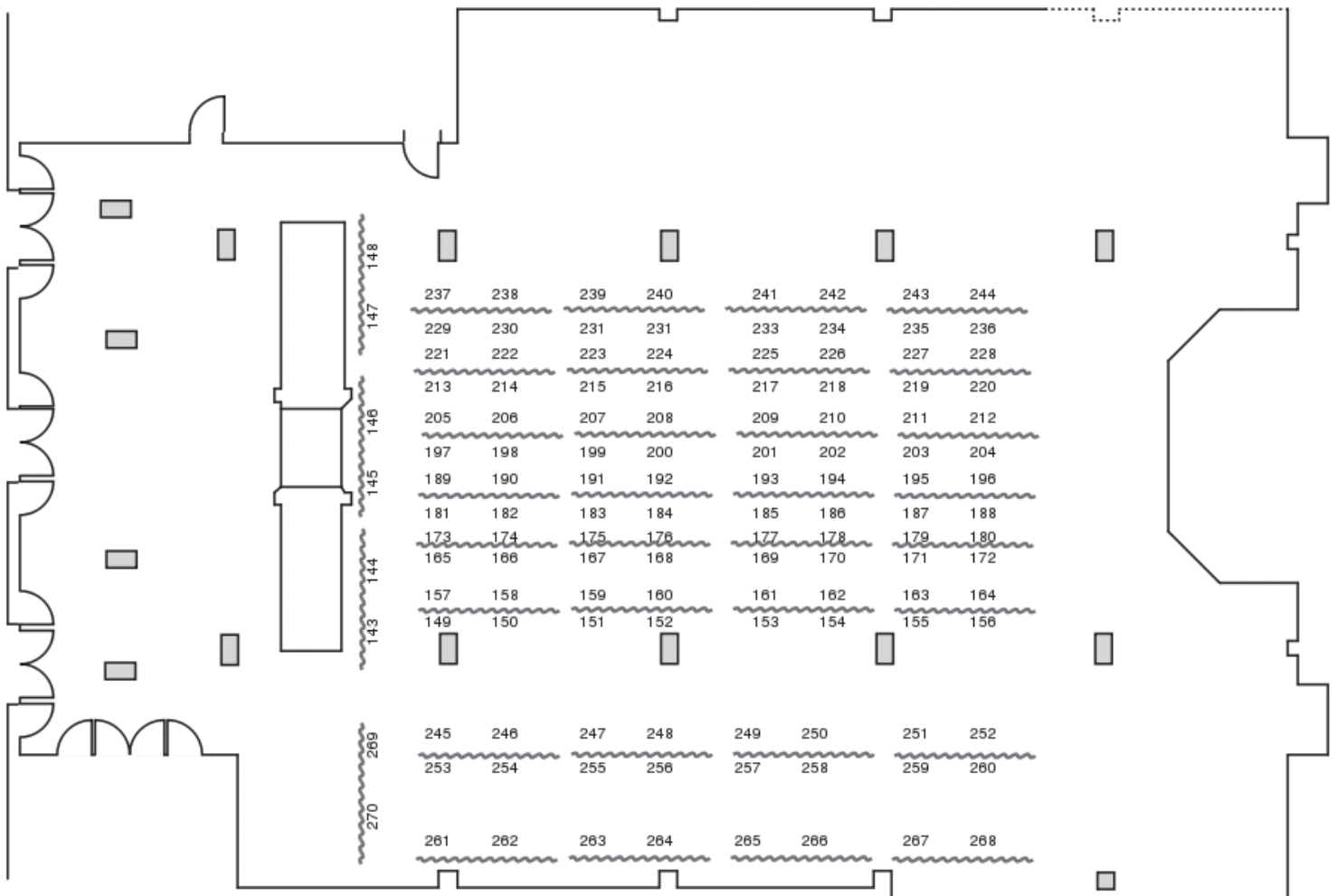
COMMONS BUILDING - AUDITORIUM



500 UWF undergraduate, graduate, and faculty authors

28 Departments

COMMONS BUILDING - AUDITORIUM



5 Academic
Colleges

348 Presentations
supported by OUR
Awards or Programs

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01. POSTERS

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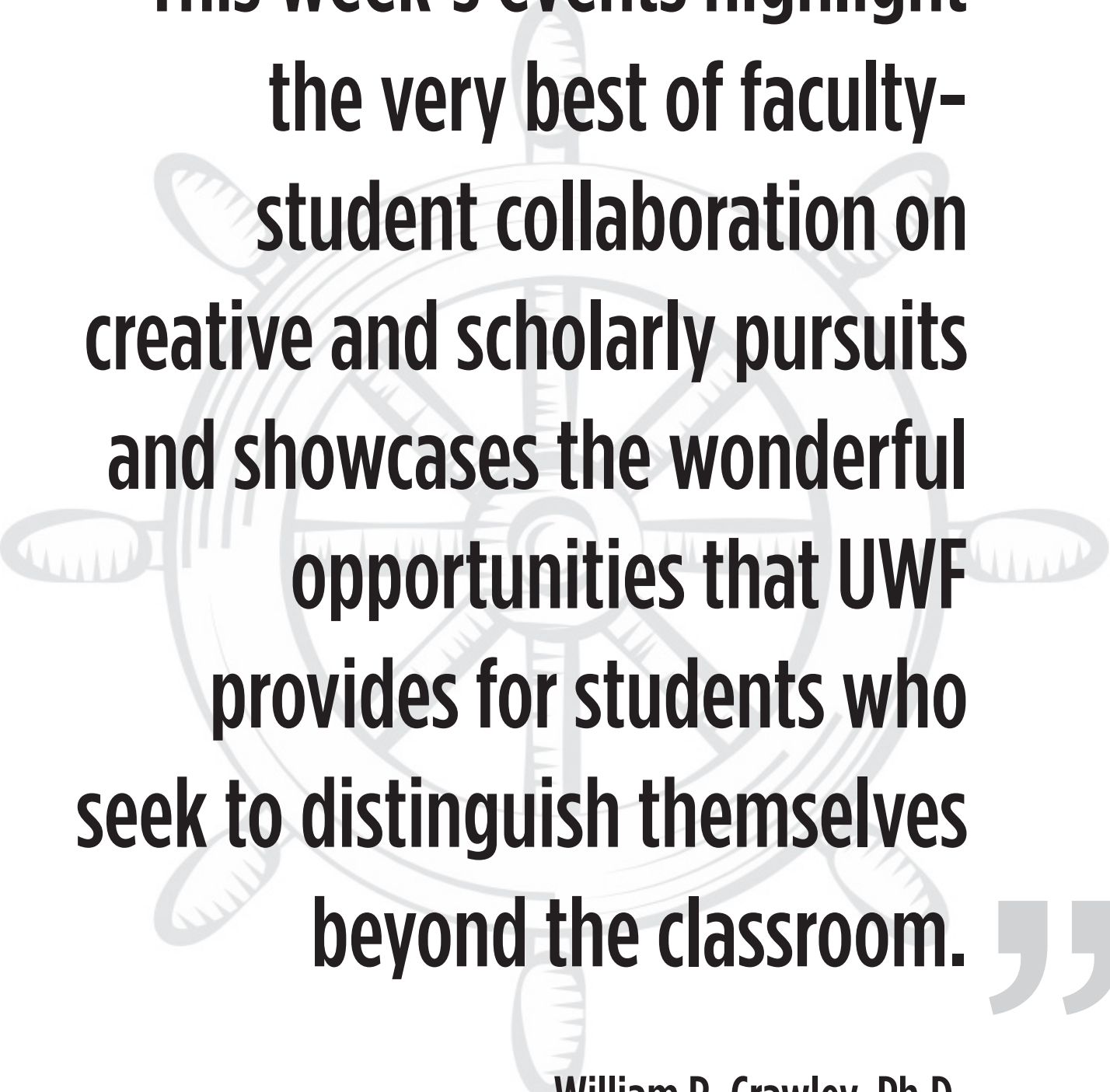
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02. 3-MINUTE THESIS PRESENTATIONS

LOCATION – CONFERENCE ROOM A

Alphabetical by First Author, Presentation Time, and Page Number of Abstract

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Davis, Matthew <i>Biogeographic Population Structure and Phylogenetics in Atlantic and Caribbean Sharpnose Sharks (Genus rhizoprionodon)</i> Biology	12:45, p.112	Murphy, Madison <i>Remembering the Women of the Bauhaus: Gender Inequality in a Self Proclaimed Equal School</i> Art	10:00, p.105
Delouis, Linorche <i>Stress Levels of Nursing Students in Simulated Care</i> Nursing	12:30, p.111	Noll, Anthony <i>Redefining Community: Creating the Objective Public Space Index</i> Kugelman Honors Program	9:30, p.104
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President

03. SPECIAL SESSIONS

LOCATION	TIME	FACULTY MEMBER HOST	FORMAT	TITLE OF SESSION
Conference Room A	9:30-1	The Office of Undergraduate Research	Oral Presentations	<i>3-Minute Theses</i>
Conference Room A	1-1:15	Robert Perkins	Oral Presentations	<i>Excellence in Market Research Award Recipient Presentations</i>
Conference Room A	1:30-3:30	Justin Sturgeon	Oral Presentations	<i>ARH4930 Art History</i>
Conference Room B	10-11	Chasidy Hobbs	Undergraduate Student Poster Presentations	<i>GEO Earth & Environmental Sciences Senior Seminar Session 1</i>
Conference Room B	11:15-1:45	Gloria Horning	Undergraduate Student Poster Presentations	<i>MMC4990 Social Justice Movements</i>
Conference Room B	2-3:30	Chasidy Hobbs	Undergraduate Student Poster Presentations	<i>GEO Earth & Environmental Sciences Senior Seminar Session 1</i>
Conference Room C	9:45-10:45	Jasara Norton	Undergraduate Student Panel	<i>I Can Truth, and You Can Too: Locating Real News in a Fake World (ENC1102 English Composition II)</i>
Conference Room C	11-12	Greg Lanier	Undergraduate Student Panel	<i>IDH4039 Honors Seminar</i>
Conference Room C	12:45-1:45	Jocelyn Evans	Undergraduate Student Panel	<i>Pokemon Go: Augmented Reality and Collective Efficacy</i>
Conference Room C	2-3:30	Jocelyn Evans	Undergraduate Student Panel	<i>Pensacola Parks Project</i>
Conference Center Lounge (upstairs)	9-2pm Displays 10am-12pm Presentations	Thomas Asmuth	Undergraduate Visual Art Installation	<i>ART3613C Digital Multimedia</i>
Conference Center Lounge (upstairs)	9-2pm Displays 10am-12pm Presentations	Nicholas Croghan	Undergraduate Visual Art Installation	<i>Irish Experience 2016 (Department of Art)</i>
Conference Center Lounge (upstairs)	9-2pm Displays 10am-12pm Presentations	Joseph Herring	Graphic Design Showcase	<i>The Spring 2017 Graphic Design Graduation Show Catalog</i>
Conference Center Lounge (upstairs)	9-2pm Displays 10am-12pm Presentations	Joseph Herring	Graphic Design Showcase	<i>An Advertising Campaign for the Spring 2017 Graphic Design Graduation Exhibition</i>
Conference Center Lounge (upstairs)	9-2pm Displays 10am-12pm Presentations	Joseph Herring	Graphic Design Showcase	<i>Environment Design: Senior Graphic Design BFA Exhibition Spring 2017</i>
Conference Center Lounge (upstairs)	9-2pm Displays 10am-12pm Presentations	Charles Houghton	Undergraduate Presentations - Mixed Formats	<i>Theatre Irish Experience</i>

<u>LOCATION</u>	<u>TIME</u>	<u>FACULTY MEMBER HOST</u>	<u>FORMAT</u>	<u>TITLE OF SESSION</u>
Room 272	9-10	Kelly Bushnell	Student Mixed Media Showcase	<i>UWF Sigma Tau Delta English Honor Society</i>
Room 272	1-3	Leonard Ter Haar	Undergraduate Student Oral Presentations	<i>CHM4611/CHM4930</i>
Room 260	9-10	David Ramsey	Student Panel	<i>Political Philosophy Panel</i>
Room 260	10-11	Kathy Romack	Undergraduate Student Panel	<i>ENL4224 Early Modern Literature</i>
Room 260	11-12	Kathy Romack	Undergraduate Student Panel	<i>ENL4341 Milton</i>
Room 260	12:30-1:30	Jamin Wells	Graduate Student Panel	<i>Defining our Coastal Heritage: Old Challenges and New Approaches</i>
Room 260	1:45-3:15	Erin Stone	Graduate Student Panel	<i>Pillars of Conquest: Examining the Patterns and Practices of Conquest in the Caribbean & the Gulf South</i>
Room 260	3:15-3:30	Amy Mitchell-Cook	Graduate Student Film Screening	<i>Frida Kahlo documentary</i>
Patio	9-12	Mohamed Khabou	Undergraduate Student Show and Tell	<i>Engineering Project Showcase</i>

04. CENTER FOR FINE & PERFORMING ARTS

LOCATION - MUSIC HALL

Alphabetical by First Author, Title, Department and Performance Time

<u>TIME</u>	<u>NAME</u>	<u>INSTRUMENT</u>	<u>PIECE</u>	<u>FORMAT</u>
10:00 AM	Daniel Thomas	Piano	<i>Piano Concerto in A minor, Op. 16, Edvard Grieg (1843–1907)</i>	Concerto
10:15 AM	Ramel Price	Violin	<i>Violin Concerto No. 3, Op. 61 I. Allegro non troppo, Camille Saint-Saëns (1835–1921)</i>	Concerto
10:30 AM	D'Andre Wells	Trumpet	<i>Trumpet Concerto in E flat Major, Johann Hummel (1778–1837)</i>	Concerto
10:45 AM	Nyasha Brice	Harpsichord	<i>Harpsichord Concerto in F Minor, BWV 1056, Johann Sebastian Bach (1685–1750)</i>	Concerto
11:00 AM	Christina Burkett Pearse	Voice	<i>Alleluia, from Exultate Jubilate, Wolfgang Amadeus Mozart (1756–1791)</i>	Concerto
11:15 AM	Samuel Klaus	Piano	<i>Piano Concerto in A minor, Op. 16, Edvard Grieg (1843–1907)</i>	Concerto
11:30 AM	Donovan Black	Voice	<i>"I Couldn't Hear Nobody Pray" Dr. Robin Williams "Were You There" Moses Hogan (1957–2003) "He Got the Whole World in His Hands" Moses Hogan (1957–2003)</i>	Concerto
11:45 AM	Ryan Murphy	Trumpet	<i>Trumpet Concerto in F minor, Op. 18 Oskar Böhme (1870 – 1938)</i>	Concerto
1:00 PM	UWF Chamber Choir	Choral	<i>Lux Aeterna, Morten Lauridsen (b. 1943)</i>	Lecture Recital
1:15 PM	Margaret Duke/Blake Riley	Viola	<i>Trauermusik, for viola and string orchestra, Paul Hindemith (1895–1963)</i>	Lecture Recital
1:30 PM	Lydia Harris	Piano	<i>Music in Venice and the Shores of History</i>	Paper Presentation
1:45 PM	Amber Coble/Easton Ellenberg	Voice	<i>Ständchen (Serenade), D. 957 Op. 4, Franz Schubert (1797–1828)</i>	Lecture Recital
2:00 PM	Kelly Renfro	Voice	<i>Music Education and the Quaver Curriculum</i>	Lecture Recital
2:15 PM	Morgan Seip	Voice	<i>Du Bist die Ruh, Franz Schubert (1797–1828)</i>	Lecture Recital
2:30 PM	Amber Coble	Voice	<i>Pythagoras and 'Musicematics</i>	Paper Presentation
2:45 PM	Ramel Price	Voice	<i>Sonata for Violin and Piano, Op. 24, Ludwig van Beethoven (1770–1827)</i>	Lecture Recital
3:00 PM	Ashly Faircloth	Voice	<i>Lavender Pond, Michael Head (1900–1976)</i>	Lecture Recital

I. POSTER PRESENTATION ABSTRACTS

Organized by Department

CULLEN, ZOE 54

Faculty Mentor: Barbra White; Bruce Davidson

Career Anchors for Millennial Accountants

Accounting and Finance

Graduate

Dr. Edgar Schein defines a career anchor as a person's perceived area of competence, values, and motives that he or she would not want to forfeit when faced with a career decision that might prevent him or her from fulfilling it. Hardin, et al (2001) utilized a survey instrument developed by Schein to look at CPAs in relation to their career anchor and job setting. Utilizing an updated version of the Schein instrument (2013), this research builds on that study and focuses on the younger professional accountants. This younger generation of accountants are part of the Millennial generation, which prior research has indicated vary significantly in their wants, values and desires for an employment situation. Based on the survey results, 40.5% of the Millennials possessed a lifestyle career anchor, and 19.8% possessed a security career anchor. The other six career anchors were selected by fewer than 10% of the respondents. These percentages show a significant change from Hardin, et al (2001), and provide insight into the job preferences of the future leaders of the accounting profession. This research provides important information and guidelines to organizations seeking to recruit and retain young accounting professional and in trying to provide a desired work situation. Young professionals should be aware of their career anchor, so they can manage their career choices, rather than conform to choices that others have made for them.

TURNIPSEED, PATRICK 55-56

Faculty Mentor: Kevin Krieger

Argo Investment Fund

Accounting and Finance

Undergraduate

OUR Travel Award

Argo Investment Fund (AIF) has been in existence for around two years. This group of student members meets biweekly to consider stocks for selection in our student-run portfolio. We manage around \$25,000 in funds, and own three individual stocks and nine mutual funds. Our members take turns as lead analysts for potential investments and present their findings to one another. We then share our presentations with a group of around 20 or so local investment professionals from the banking, portfolio management, and insurance industries. They network with us, provide advice for AIF, and talk about internship and career possibilities.

Our contacts from the Pensacola Morgan Stanley office

arranged, in November of 2016 for a group of our members to come and visit their equity trading desk in New York City so that we might see how actual analysts conduct their day-to-day work, including discussion of the process of buying one of AIF's recent investments (stock in Verizon Wireless (VZ)). We were also able to tour the floor of the New York Stock Exchange the following day and speak with their floor traders on the job. This was a once-in-a-lifetime type of opportunity for AIF members. The experience in New York City was eye-opening and inspiring.

FORDYCE, SARA 60

Faculty Mentor: John Bratten

Determination of the Optimal Conservation Treatment for Waterlogged Leather and Botanical Remains

Anthropology and Archaeology

Undergraduate

OUR Project Award

In order to discover the most beneficial archaeological uses for lyophilization, experiments should be performed on as many different organic materials as possible. Afterward, the results will be compared to similar materials treated by traditional preservation methods. Specifically, I will be working with waterlogged leather and botanical remains originating from a sixteenth century shipwreck. Each test will be done using the freeze-dryer as well as the traditional conservation methods most effective for each material. This project has the ability to produce much needed data for the progression of lyophilization processes used in Archaeological preservation. The detailed results of my experiments will be described in my paper.

BAGGETT, JENNI 67

Faculty Mentor: Ramie Gougeon

Evaluation of Two Archeological Recovery Methods

Anthropology and Archaeology

Undergraduate

OUR Project Award

Since the 1966 publication of flotation techniques for the recovery of floral, faunal, and other light materials, terrestrial archeologists have incorporated bulk sampling of midden and feature soils into their recovery strategies. Ethnobotanists, however, have noted the negative effects of flotation processing on plant remains and now recommend dry sieving of soil samples over flotation recovery. This method is not without its challenges, as its efficiency (nearly everything is captured) is anecdotally offset by the time involved in separating the sorted artifacts after sieving. This project evaluates whether

flotation or dry sieving is better suited for material recovery from archeological contexts. The project supports an ongoing study of the effects of flotation and dry-sieve recovery methods on the quality of ethnobotanical materials. The results of this study provide a quantitative evaluation of time-spent processing vs. quantity of materials recovered using each method. Expected results include finding a statistically significant difference in the amount of time spent processing materials, with flotation taking less time than dry sieving. Conversely, I anticipate finding measurable differences in the quantities of artifact types recovered by each method. Dry-sieving is anticipated to result in greater recovery of all material classes. Whether these greater quantities justify the cost of processing in terms of hours/labor will be considered in my analysis. This research is important as obtaining quantitative data on the efforts put into each recovery method will enable researchers to better budget for and schedule various material analyses. Additionally, as the efficacy of these recovery techniques are thought to be region- and environment-specific, this study will impact future research involving ethnobotanical analyses across west Florida.

CUNNINGHAM, SHANNON 59

Faculty Mentor: John Bratten

Waterlogged Wood from a 16th-Century Spanish Shipwreck: The Effectiveness of a Polyethylene Glycol Pretreatment Combined with Lyophilization

Anthropology and Archaeology

Undergraduate

OUR Project Award

Since 1996, the UWF Division of Anthropology and Archaeology has been actively excavating and researching three 16th-century Spanish shipwrecks, known as Emanuel Point Ships, I, II, and III. Thousands of artifacts have been recovered from the vessels, including organic artifacts comprised of waterlogged wood, leather, and floral remains. To properly stabilize organic materials, the scientist must “bulk” up the cells of the objects prior to dehydration. Without bulking, artifacts made from wood may collapse, shrink, or crack dramatically. Many scientists have had positive results with immersing artifacts in a 70 percent solution of polyethylene glycol (PEG), a wax-like substance, which gradually replaces the water and “bulks” the cells. Although the PEG immersion treatment often results in a stable final product with little cracking or shrinkage, the synthetic bulking agent is expensive and frequently leaves the wood very dark in color with an unnatural greasy texture. Due to increased costs, this treatment method for larger wooden items is now becoming cost prohibitive. Recently, freeze drying has collectively been determined by the archaeology community to be the most suitable and most cost effective method to stabilize organic materials, specifically waterlogged wood. Unfortunately, there is little data available that reports on the duration of ideal drying times or a comparison of pretreatment bulking techniques for waterlogged wood. My research will test several combinations of drying times and various PEG pretreatments (varying molecular weights) for both hard and soft woods.

JOHNSTON, JANENE 112

Faculty Mentor:

Magnetic Models: Creating an Interpretive Model of a Civil War Case Shot

Anthropology and Archaeology

Graduate

Graduate Travel Award

3D modeling has been successfully incorporated into the realm of public outreach and interpretation. The ability to virtually access and manipulate artifacts and monuments allows people to interact with the object where they are otherwise incapable of doing so. Creating replicas also provides a hands-on experience by permitting visitors to examine and hold certain objects, including the more delicate cross-mended materials. This project utilizes magnets in an attempt to connect the plastic replicas of three shell fragments found at a Civil War Battlefield in Florida. The large fragments were found during a survey of the battlefield in a linear pattern, prompting crewmembers to piece them back together. The successful matches encouraged project members to experiment with photogrammetry and 3D modeling. The model will then be given to the state park as an interpretive tool for visitors.

MCSHERRY, ELIZABETH 68

Faculty Mentor: Samuel Dira

Perception, Preparedness For, and Coping Strategies to Environmental Risks in NW Florida

Anthropology and Archaeology

Undergraduate

OUR Project Award

The primary objective of this endeavor has been to observe how communities react to and prepare for disasters and environmental stresses. The project focuses on two different means to achieve this. The first is in the Wedgewood community where my supervisor, Dr. Samuel Dira, and I have collected data on the socioeconomic repercussions of relevant local factors, most specifically on the nearby landfill. The other expands the survey to the broader Pensacola area and will focus specifically on preparatory measures taken before hurricanes, damage inflicted, and reactions to the experiences. We looked at how the community has developed since and the general perception of the recovery, then use the data from both areas to determine what localized issues can be attributed to the presence of landfills. This is accomplished through a comparison between the smaller community that is in closer proximity to the landfill and those that are not. In turn, this we are able to determine how the effects of landfills on local communities are exacerbated under the circumstances presented by natural disasters, and if current mitigation and recovery procedures/efforts adequately assess these particular issues. We then looked at both the short-term and long-term responses to determine how time factors into these results and into how these issues are prioritized after the more immediate effects have dissipated.

MUMFORD, MEGHAN**58**

Faculty Mentor: Gregory Cook

1559 Luna Shipwrecks

Graduate

Graduate Travel Award ; CREO

Anthropology and Archaeology

Investigations on the second shipwreck identified as a vessel from Don Tristán de Luna y Arellano's 1559 fleet have intensified during the past two years due to a Florida Division of Historical Resources Special Category grant. The site, known as Emanuel Point II, is a well-preserved example of ship architecture related to early Spanish colonization efforts. This site, along with the Emanuel Point I wreck and the newly discovered settlement site on the nearby shoreline of Pensacola Bay, constitute a maritime landscape of sixteenth-century colonization. Archaeologists and students from the University of West Florida have focused recent excavations on the vessel's stern and midships. Additional remote sensing surveys have been conducted in the area. This presentation will summarize new findings and outline future research agendas related to the 1559 fleet and nearby settlement.

SLYKE, ANDREW; JUSTIN MILEWSKI**66**

Faculty Mentor: John Bratten

An Investigation into the Ballast Piles of the Emanuel Point Shipwrecks

Anthropology and Archaeology

Undergraduate

OUR Project Award

The first archaeological evidence that denoted the discovery of Emanuel Point III, the third shipwreck (EPIII), associated with Don Tristán de Luna's 1559 colonization fleet was a basalt ballast rock. Ballast is essential to a ship as it aids in maintaining its center of gravity. Basalt was the most predominant type of stone found in the ballast of the two previously studied Emanuel Point shipwrecks (EPI and EPII). An earlier study determined that ballast from EPI dates to 1.5 million years ago and was sourced to the coast of Brazil near Salvador, while the samples from EPII dated to 7 million years ago and originated from Lanzarote, one of the Canary Islands. Using the three different forms of analyses implemented by the first researcher, thin-section examination, whole rock geochemical analysis, and Argon-Argon (Ar-Ar) dating, similar tests for the basalt from EPIII will be conducted. These results will expand upon our database of knowledge relative to 16th-century ballast and provide insight into where the Spanish may have encountered basalt outcroppings during the Spanish Exploratory Period, adding to our larger understanding of maritime history.

WILLARD, ANDREW**111*****The Investigation and Preliminary Assessment of Ship Structure Associated with The Emanuel Point II Shipwreck***

Anthropology and Archaeology

Graduate

During the 2012 UWF maritime archaeological field school, a large, complex portion of ship structure was discovered directly aft of the articulated stern of the Emanuel Point II shipwreck. In addition to a small amount of ballast, the structure was comprised of planks and framing timbers along with associated artifacts. One primary focus of the past two field seasons was to determine if this structure represented additional remains of the EP II ship or if it verified the presence of an additional shipwreck from the fleet of Tristan de Luna's colonization fleet. This paper provides an overview of the structural components and preliminary interpretations of this structure.

ERGLE, REBEKAH**121**

Faculty Mentor: Christopher Dake

Achilles Tendon Rupture in a 21 Year Old Soccer Athlete

Athletic Training

Undergraduate

Objective: Achilles tendon ruptures are uncommon in younger athletes (Maffulli 1999). This case study will evaluate this injury, management, and rehabilitation in a collegiate soccer player.

Background: A 21 year old male soccer player sustained an Achilles tendon rupture. He reported a feeling of being kicked in the posterior right leg, despite the injury being non-contact. Observation revealed that the belly of the right calf was sitting higher than the left. After palpation, a divot was found in the Achilles proximal to the insertion.

Differential Diagnosis: Achilles tendon rupture, Achilles tendon strain, Achilles tendon and soleus rupture.

Treatment: Surgery was required to repair the tear. Following surgery, the athlete remained in a cast for 6 weeks. At this time he was non-weight bearing. He also did not begin physical therapy initially. Once the cast was removed, he began very basic rehabilitation and was placed in an immobilization boot.

Uniqueness: Achilles tendon ruptures are less common in a younger more athletic population. These injuries are typically seen in men after the age of 30 or 35 and in women around the age of 80. (Maffulli 1999) Conclusions: There are numerous different treatment styles and techniques, the procedures used on this particular athlete are constant with the large majority of the research on injuries of this nature (Khan 2005). Athletic trainers should be aware of the various techniques to improve outcomes.

RYAN, ISHMAEL; AMANDA DEMMA; EMILY WILSON

122

Faculty Mentor: Christopher Dake

Mental Toughness

Athletic Training

Undergraduate

UWF Athletic Training Program

Mental toughness (MT) can be defined as possessing the natural or developed psychological edge that enables you to, generally, cope better than your opponents with the many demands (competition, training, lifestyle) that athletics place on a performer (Jones et al, 2002, p. 209). Specifically, mental toughness allows players to be more consistent and better than their opponents in staying determined, focused, confident, and in control under pressure (Crust and Clough, 2011, 23). Khan et al. (2016) states that mental toughness is an attribute that separates the winner from the loser, the champion from the rest of the field (p. 1). Our research project is designed to evaluate the level of mental toughness in college football players of a Division II institute. The survey is designed for the participants to gauge statements on a scale of 1 to 5, with 1 being you strongly disagree with the statement and 5 being you strongly agree with the statement. Example statements include: I have an unshakable self-belief in my athletic abilities and I have a killer instinct to capitalize on the moment when I know I can win. After obtaining a roster of the players, a link to the survey was emailed to the participants for them to complete. After a three week time period, the data will be collected and analyzed using the Qualtrics system. Data analysis will focus on comparing the level of mental toughness between the offensive and defensive players.

ABDEL QADER, WADEY;**KENDRA HAMMOCK; KHURSANA DUTY 205**

Faculty Mentor: Hui-Min Chung

Effects of pink1, buffy, deBcl, and presenilin (psn) genes on mitochondrial health in *Drosophila melanogaster*

Biology

Undergraduate

SURP Program; OUR Travel Award

The fruit fly *Drosophila melanogaster* is an excellent model organism to study neurobiology because it's an organism that reproduces quickly and has a similar genetic makeup to many other organisms, including humans. For instance, several human neurodegenerative diseases, such as Parkinson's and Alzheimer's, have been linked to similar genes found in fruit flies. In this study, we investigated several of the genes associated with these neurodegenerative diseases including, presenilin (psn), buffy, deBcl, and pink1 for their impact on mitochondrial health due to their pro-apoptotic or pro-survival nature. By comparing the motility capacity of flies lacking either one of these genes to the wild type during the larval stage, a baseline of these genes' effects on motor neuron health was established. This was measured by comparing the average speed of these loss-of-function mutants to wild type larvae. We found that flies with loss of function mutations of psn or pink1 show a decrease of motility in the larval stage,

whereas flies with loss of buffy show an increase in motility. We conclude the psn and buffy genes seem to have opposite effects concerning motor neuronal health. Further analysis on the mobility of a psn-buffy double mutant helped to conclude that presenilin has a greater effect on motility than buffy. We will further analyze the effects of the different presenilin transgenes on rescuing the decreased motility in a psn mutant and a psn buffy double mutant. The findings of these investigation will be discussed at the symposium.

ALVARADO, SAMUEL 199

Faculty Mentor: Julia Dane

The Rise of Sunna

Biology

Undergraduate Student

OUR Support; SEA-PHAGES

Program A Bacteriophage is a virus that infects a bacterial host and has the ability to reproduce inside it to further perpetuate its spread. After the phage makes enough copies, it will destroy the host cell. The purpose of our research is to explore the mechanisms of phages and to see if the phages found could be used to work in tandem with antibiotics in the medical field so that we can treat bacterial infections with precision. We modified our project by attempting to induce the lytic cycle in some of the phages that were temperate by way of UV light exposure and Hydrogen peroxide exposure. However, the most successful of those treatments on the phages turned out to be the UV light exposure as it caused the necessary stress to the phages that would trigger the lytic cycle as they only tolerate so much UV light. We successfully isolated and created high titer lysates that could be used for bioinformatics research. Using the DOGEMS Project, we worked as a class to learn the concepts of "blasting" a strand of DNA and to find the matching primer pairs which will allow us to order the primers to run PCR reactions. We will be presenting our findings on the phage Sunna's genome and annotate it using the DNA Mastering software to isolate and annotate the genes. This will help us better understand how we can use this information to aid humanity with the help of phages in medicine and beyond.

BIJOU, CHRISTOPHER; LOGAN WALKER;**ROWLAND WELCH; ASHLEY BARHAM 197**

Faculty Mentor: Jeff Eble

Genetic Connections among Estuarine Fish Populations

Biology

Undergraduate

OUR Project Award

Genetic connectivity between coastal marine populations may be obstructed or promoted by oceanographic currents. Recent oceanographic modeling in the Gulf of Mexico (GoM) indicates persistent currents may restrict effective gene flow between sites along the west Florida continental shelf. The proposed oceanographic barriers are likely to restrict gene flow among populations by forcing larvae offshore and away from coastal sites, potentially impacting population

BIOLOGY

sustainability. However, the extent at which the barriers affect genetic connectivity has not been confirmed. This project is designed to test the hypothesis that currents play a pivotal role in regulating gene flow among locations in the northeast Gulf of Mexico. Multi-species sample collection and pilot DNA analysis (CO1 gene sequencing) following standard genetic lab procedures is ongoing. We predict DNA sequence analysis will reveal restricted gene flow between sites in the northern and eastern GoM based on previous research tracking oceanographic drifters that indicated isolation of the region from Tampa to Naples.

Key words: genetic connectivity, oceanographic currents, larval dispersal, Gulf of Mexico, estuarine dependent species, CO1 gene sequencing

BRICKER, LYDIA; CONNER J LOVELL 215

Faculty Mentor: Hui-Min Chung

Phages 101: Paving the Way for the Future

Biology

Undergraduate

Sea-Phages

Bacteriophages are viruses that share properties with all viruses and infect bacterial hosts. Phages have been used throughout history as a means to eliminate bacterial disease such as dysentery and cholera. Phages can be found all over the planet and are highly genetically diverse, numbering about 10^{31} . By isolating a bacteriophage from a soil sample and analyzing its genetic makeup, we hope to contribute to the growing knowledge of bacteriophages and lead to the discovery of useful implementations in the scientific and eventually even the medical world. We have isolated our phage, Nicholas, that belongs to cluster L phages. We are also beginning to isolate a phage from cluster W. Cluster W phages are almost completely in a class of their own with three total phages isolated thus far. We will present our discovery on Nicholas, and compare Nicholas to the cluster W phages by using genomic and bioinformatics tools. We hope our finding will shed light on understanding the diversity of the phage world.

BROWER, AMY 229

Faculty Mentor: Alexis Janosik

Using Environmental DNA to Detect Lionfish in Estuarine Habitats

Biology

Graduate

HMCSE Graduate Research Grant

Once an introduced or non-native species establishes residency and becomes harmful to an environment, it is then considered an invasive species. Introduced species pose a threat to current biodiversity and alter the way the community structure works in the ecosystem. Two invasive species of high concern are *Pterois volitans* (Red lionfish) and *Pterois miles* (Devil firefish). Commonly known as lionfish, these species were artificially introduced to the Western Atlantic Ocean. Today, lionfish can be found all throughout the Northern Gulf of Mexico and even as far south as the Amazon outflow

in Brazil. The lionfish invasion is considered to be the worst marine invasion on record. Lionfish have been recently observed invading estuary systems even though they are not traditionally euryhaline species. Confirming presence of a species in estuarine environments can be costly in terms of resources and can be difficult due to environmental conditions and fishing methods required. Thus, physical detection is challenging if the target species is present, but not seen. When an organism is difficult to detect using traditional methods, environmental DNA can provide a solution. The purpose of this study is to detect the presence of lionfish in various locations throughout river systems and estuarine environments of the Northern Gulf Coast using environmental DNA (eDNA).

BARAJAS, ANA; KHURSANA DUTY 214

Faculty Mentor: Hui-Min Chung

Assessing the Gut Microbiota Composition in Flies with Poor Brain Physiology

Biology

Undergraduate

OUR Project Award; OUR NUR 2017 Participant

Studies have shown biological byproducts of microbiota in our digestive system calibrate our immune and endocrine systems by entering our circulatory system. In addition, gut microbiota is linked to different neurological outputs, including: mood, fitness, and neurological disorders. (Sampson, 2015) Currently, evidence correlating the balances of intestinal microbe diversity and the neurochemicals that affect functions of the nervous system exists. However, it is unclear if deficient microbiota leads to poor brain function or if poor brain function negatively impacts gut microorganisms. To learn the nature of the brain gut microbe relationship, I would like to employ the genetic approach; and the goal is to find the genetic factors that influence the brain function as well as the gut microbiota. *Drosophila melanogaster* will be used to study the correlation between brain function and gut microbiota. I will be comparing the gut microbes of wild-type flies to flies with a mutation in the *pink1* gene (associated with Parkinson's disease), and also to flies with a mutation in the *psn* gene (associated with Alzheimer's disease). The working hypothesis for this experiment is mutations affecting brain functions will influence the health of the digestive system and will likely decrease the diversity of gut microbes. I expect to identify bacterial species in wild-type flies and in mutation flies, and compare the difference, if any, between them. The results I present will shed light on if poor brain physiology affects the microbiota composition in the gut.

BRANTLEY, MOLLY; ANTHONY NOLL 198

Faculty Mentor: Jocelyn Evans

Technophilia: An Examination of Technology's Role in Collective Efficacy within Public Spaces

Biology

Undergraduate

As we notice an evolution in technology in our society, there is also a change in the various uses of it. Specifically, to this project, we will examine how personal distractors like technological devices effect the collective efficacy within a public space. We will examine four Pensacola parks to do an objective count and observational analysis of the number of individuals using technological devices. From there we will identify how many people are using that technology to isolate, or connect, with other park attendees. This qualitative study has the potential to impact those who utilize public spaces in, and beyond, Pensacola.

BROOKS, KENDRA; FLORIAN CESBRON 209

Faculty Mentor: Jane Caffrey

Changes in Primary Production, Nutrient Fluxes and Rates of Succession Following the Deployment of an Artificial Reef System in the Northeast Gulf of Mexico

Biology/ Center For Environmental Diagnostics and Bioremediation

Graduate

Florida Restore Act Resource Excellence Program

The use of artificial reef systems and has grown rapidly in the United States since the mid 1900's in both freshwater and marine habitats (Bohnsack and Sutherland 1985, Mazzei, 2015). However, whether these artificial systems accomplish their proposed goal to provide value to marine life and humans alike remains widely controversial. In the past, artificial reef effectiveness has typically been measured in terms of increased fishing abundance or fishing success. However, few studies have examined the benefits of primary producers and the resulting changes in biogeochemistry that may influence the surrounding water column. The success of artificial reefs depends, in part, on the primary production potential available to support the reef-based food web. Nutrients such as nitrogen and phosphorous in the water column and sediment serve as important fuel for these primary producers (Mazzei 2016). This study examines the types of organisms and the rate they colonize an artificial reef on the shallow Florida shelf in the Gulf of Mexico during its introductory year. In a controlled laboratory setting, primary production, respiration, and nutrient fluxes will be evaluated at different periods of colonization. We anticipate seasonal differences in biomass and chl-a production due to the changes in in situ conditions, as well as varying nutrient and oxygen concentrations corresponding to the amount of plant and animal biomass and light level. These combined results may help determine the biogeochemical effect artificial reefs have on their surrounding environment and the rate at which these changes occur.

BUTLER, COURTNEY; NOAH TRIFT 213

Faculty Mentor: Hui-Min Chung

On The Hunt

Biology

Undergraduate

Sea-Phages

SEA-PHAGES is a discovery-based undergraduate research program that aims to increase interest in biological sciences. Over the course of the last 6 months, UWF's SEA-PHAGES program has been involved in a two-phase process to isolate, characterize, and annotate new bacteriophages. Along the phage hunting adventure, we have hit a setback when we found that many of our phages were temperate instead of the ideal, lytic. We found that exposing the samples to a brief UV light treatment could increase the recovery of lytic phages. This UV procedure led to the discovery of the phage, Badbeach. We will present our investigation results on Badbeach and Largelime with morphological and genomic information, as well as the results on the class investigation of the cluster W phages. We found that these phages belonged to a few different clusters, one of which being Cluster W. only three phages so far have been characterized into Cluster W. DOGEMS is an ongoing project in which we will be using BLAST to isolate and identify this fourth W phage.

CAPPS, RACHEL 210

Faculty Mentor: Jane Caffrey

Nitrogen Fixation in Seagrass Bed Sediments

Biology

Graduate

Graduate Travel Award; SCAC Grant; SGA Grant

Seagrass meadows provide key ecosystem services including nursery and foraging grounds, storm and erosion buffers, biodiversity enhancers and global carbon and nutrient cycling. Coastal marine environments have sustained significant losses worldwide due to climate changes and anthropogenic pressures such as eutrophication, sedimentation and habitat loss. Seagrasses are particularly sensitive to eutrophication where, excess nitrogen can lead to blooms of phytoplankton, macroalgae and epiphytes. Nitrogen concentrations are often very low in coastal waters and sediments, which may limit primary productivity. Biological nitrogen fixation is a microbial process that converts dinitrogen to bioavailable nitrogen, which is readily taken up by seagrasses. In oxygenated rhizospheres, diazotrophs provide plants with ammonium and use root exudates as an energy source. Nitrogen fixation rates and nutrient concentrations differ between seagrass species and substrate types. *Thalassia testudinum* has a higher biomass and is a climax species than *Halodule wrightii*, which is a pioneer species. We hypothesize that seasonal shifts in nitrogen fixation will coincide with seasonal shifts in seagrass biomass due to higher nutrient requirements during peak growth and lower requirements during senescence and dormancy. The ratio of porewater ammonium to phosphate suggests that seagrass growth may be nitrogen limited. Significant rates of ammonium oxidation

BIOLOGY

in both surface and rhizosphere sediments contribute to this imbalance. Thus, nitrogen fixation may be critical in supporting plant growth.

CLARK, AUSTIN; JOSEPH REIDY 242

Faculty Mentor: Hui-Min Chung

Furthering the Mitochondrial Genome Investigation of *Donax variabilis* using Long-Range PCR and Plasmid Vectors

Biology

Graduate

OUR Project Award

The coquina clam, *Donax variabilis*, is a diverse and edible mollusk that is found locally and can act as a bioindicator of pollutants such as toxic metals and hydrocarbons. Despite the prevalence and ecological importance of coquina, no genomic investigation has been performed on this species to date. Previously, we identified three highly conserved regions within the coquina mitochondrial genome, obtained DNA sequences of the genes in these regions, performed phylogenetic analysis of closely related species and hypothesized an overall gene arrangement. This data is the foundation for our continuing inquiry, and is the foundation for a coquina-specific undergraduate teaching lab project at the University of West Florida. The objective of this research is to test our hypothesized mitochondrial gene arrangement and increase sequence coverage of conserved regions. We will accomplish this objective by utilizing previous findings as a template, and implementing long-polymerase chain reaction (long-PCR) to amplify across conserved regions, and plasmid cloning vectors to create pure colonies of genes of interest. Within coquina's mitochondrial genome, we predict this study to result in unique DNA sequence and arrangement information in non-conserved regions, and more robust DNA sequence information within conserved regions. The results will enable phylogenetic analysis and may reveal novel inheritance patterns, gene rearrangements, deletions, or polymorphisms. All data obtained will be submitted to genomic databases, and successful procedures will be integrated into the existing coquina undergraduate teaching lab project.

DANIEL, CARRIE; MELISSA EDHERINGTON-HAGY;

WADE JEFFREY; LISA W AidNER 202

Faculty Mentor: Melissa Edherington-Hagy; Wade Jeffrey; Lisa Waidner

Thompson Bayou Microcosm Experiments: Aerobic Anoxygenic Phototrophic Bacteria Community Shifts Upon Particle Enrichment

Biology

Undergraduate

CEDB Work Study

Aquatic ecosystems contain a diverse bacterial community, but anthropogenic inputs severely impact biodiversity. The 2010 Deepwater Horizon incident was accompanied by sudden inputs of oil and the dispersant, Corexit. The effects of Corexit in the environment remains uncertain. In preliminary coastal experiments, we found a subset of bacteria that responded positively to Corexit. These bacteria, the Aerobic

Anoxygenic Phototrophs (AAP) are photoheterotrophic and their contribution to organic matter consumption may be greater than abundances would suggest. Seawater becomes cloudy when dispersant is added, increasing particulates. We hypothesized that AAP bacteria are generalists, but we did not know if Corexit-induced AAP success was due to turbidity or the organic content of the dispersant. To determine why AAP bacteria fared better than the rest of the microbes, we tested particle addition in microcosms in Thompson Bayou. We set up 400 mL water samples in clear and dark bottles with three treatments: no addition, addition of Chelex (no organics) or alginate (organic-rich) at 1 mg/mL, and incubated in situ for 23 hr. Initial and end-point water samples were collected and preserved for microscopy and DNA analysis. Quantitative PCR (qPCR) was used to determine the abundance of AAP and all bacteria. Microscopy counts did not differ among the treatments, but qPCR results indicated a 1.5X increase in AAP in the inorganic treatment, and a 0.5X decrease in the organic treatment. There was no significant effect of light availability. These data contribute to a better understanding of ecological effects of dispersants.

DUTY, KHURSANA; ANA BARAJAS 216

Faculty Mentor: Hui-Min Chung

Assessing Gut Microbiota in Flies with Impaired Brain Physiology

Biology

Graduate

Gut microbiota is the array of microbes that inhabit our intestines. They exert a powerful influence on our overall health. They protect us from pathogens, help the digestion of food, and calibrate our immune and endocrine systems. Recent studies suggest that balanced microbiota is important for brain development and function. Diverse and abundant microbiota is correlated with the healthy brain. However, it is unclear whether a poor composition of microbes is the cause of an altered brain physiology or it is a result of an already existing flaw in the developmental genetics. Here we investigate the divergence in the gut microbiota composition in the individuals with a known unhealthy brain in comparison to those with a healthy brain. The organism suitable to this study is *Drosophila melanogaster*, a common fruit fly. With fruit flies we are able to obtain various experimental subjects that have gene mutation affecting brain physiology. Majority of genes that are associated with disease in humans are also found in the fruit fly, such as *pink1* gene (its mutation is associated with Parkinson's disease) and *psn* gene (its mutation is associated with Alzheimer's disease). We hypothesize that the *pink1* or *psn* mutations in flies will influence the health of digestive system and will likely decrease the diversity and abundance of gut microbes. If the brain influences the development of microbiota, there will be a measurable difference in the mutant fly gut microbiota compared with the wild type flies.

GARSKA, KATHERINE; KEVIN KOCOT 221

Faculty Mentor: Alexis Janosik

Sexual Dimorphism in the *Coronis scolopendra*: Differential Opsin Expression Using the Transcriptome of the Eye

Biology

Graduate

HMCSE Graduate Research Grant

Stomatopods (mantis shrimp) are marine crustaceans related to crabs, shrimp and lobsters. Stomatopods can be classified as either spearmen or smashers, based on the morphology of their second maxilliped, which can be modified into a serrated blade or an enlarged dactyl club. Known for their unique visual capabilities, stomatopods have one of the most complex visual systems in the animal kingdom. The eyes of an individual stomatopod can contain up to, if not more than 16 classes of photoreceptors; in contrast, human eyes contain 4. These photoreceptors contain proteins called opsins which are responsible for the stomatopod's ability to see different wavelengths, including infrared and ultraviolet. *Coronis scolopendra* is a spearing stomatopod, and the only stomatopod species that exhibits drastic sexual color dimorphism. Females are a dark brown, while males are light tan. Based on this unusual coloration and complex visual system, I will be characterizing the transcriptome of the *C. scolopendra* eye in both males and females to determine if sexual dimorphism plays a role in opsin expression in this species. Specimens will be collected from Destin, Florida and eyes will be preserved. RNA from eye tissue will be extracted, and reverse transcribed into cDNA, which will be sequenced. Sequences will be reconstructed into transcriptomes in a process called de novo assembly. The assembled sequences will be annotated and opsin expression will be compared between male and female transcriptomes. This will be the first study on a sexually dimorphic stomatopod examining sexual dimorphism at a molecular level.

GIRAUDY, KRISTAL ; JORDAN MORGAN 200

Faculty Mentor: Tanay Kesharwani

Green Synthesis of Halogenated Thiophenes, Selenophenes, and Benzo[b]selenophenes Using Sodium Salts as a Source of Halides

Biology

The halogen-containing heterocyclic and carbocyclic compound classes are extremely important, widely used organic compounds. Over 200 manufactured drugs in pharmaceuticals contain halogens. An environmentally benign process for the synthesis of halogenated thiophenes, selenophenes, and benzo[b]selenophenes was successfully employed using electrophilic halocyclization. The method utilized is an improvement of previously reported methods, which required abrasive reaction conditions, toxic solvents and resulted in moderate yields. In contrast, our method required mild conditions, green solvents and reagents, and resulted in moderate to high yields of the product. In addition to the superior methodology, this is the first reported approach for the synthesis of chlorinated benzo[b]selenophenes via electrophilic chlorocyclization. These sulfur- and selenium-containing heterocycles are present in biologically useful

molecules that are known to have non-steroidal, anti-inflammatory, antitumor and antiviral properties.

GORE, BEIJA; KENDRA BROOKS; FLORIAN CESBRON 211

Faculty Mentor: Jane Caffrey

Measuring Primary Production on Artificial Reefs

Biology

Undergraduate

OUR Project Award

The goal of this research is to look at the effect of artificial reef habitat on ecosystem productivity. We address the standing question: are artificial reefs biogeochemical hotspots with increased rates of primary productivity? My project was to measure primary production on plexiglass plates that were deployed on an artificial reef in 14 m of water. Biofilms growing on the plates during a 2-month period were collected from the field, placed in water filled chambers in a controlled temperature environmental chamber. Changes in oxygen concentrations over time in the light and dark were monitored and used to calculate primary production and respiration. Following the incubations, plates were scraped to collect chlorophyll a and total biomass as dry weight, which is more accurate than wet weight. Chlorophyll a is a measure of the biomass of macro- and microalgae growing on the plates. This is an ongoing experiment and these results will be compared to a graduate student who using limestone rocks and making the same measurements.

HAMMOCK, KENDRA; WADEY ABDEL QADER; KHURSANA DUTY; ASHLEY SAKHICHAND; ANA BARAJAS 217

Faculty Mentor: Hui-Min Chung

Investigating Interaction Between Presenilin and Buffy Proteins in Programmed Cell Death

Biology

Graduate

HMCSE Graduate Research Grant

The Presenilin (Psn) protein is essential to a wide range of biological functions during and post animal development to support proper tissue formation and maintain cell health. It is evolutionally conserved and universally required across all species of the animal kingdom. Psn is the catalytic subunit of the secretase, an enzyme important for the determination of cell fate in cell signaling pathways. In addition to its role in secretase complex, Psn has been shown to interact with many other proteins to achieve a multitude of cellular functions. In humans, mutations in Psn have been linked to Alzheimer's disease. Alzheimer's disease and other neurodegenerative diseases have been associated with malfunctions in programmed cell death pathways. Programmed cell death (PCD) is necessary for regulating the time and place cell division will occur so an animal will grow to proper size and pattern formation. Much of how and when Psn regulates programmed cell death, however, remains unclear. It is possible that Psn regulates PCD through its role in the secretase complex; alternatively, it may interact with other proteins

BIOLOGY

involved in programmed cell death, such as the pro-cell survival protein Buffy. The objectives of this research are to investigate potential interaction between Buffy and Psn and to elucidate if Psn acts dependently with, or independently from the secretase complex in PCD. Current wing blemishing found on double Buffy-Psn mutants suggest Buffy and Psn do interact; however, further investigation is needed to determine if this interaction is dependent on or independent from secretase.

HATCHELL, BECCA; EMMA ROBERTO 196

Faculty Mentor: Wayne Bennett

Metabolic Sensitivity and Temperature Tolerance in Squareback Marsh Crabs (*Armases cinereum*)

Biology

Undergraduate

OUR Works!

Squareback marsh crabs (*Armases cinereum*) are common residents of temperate and tropical mangroves and salt marshes from Maryland to Florida and extending into Central America. Squareback crabs contribute to the ecology of wetland communities by aerating soil through their burrowing activities, and help retaining nutrients in their ecosystem by consuming large amounts of leaf litter and plant material. Owing to their wide distribution, squareback crabs experience a range of air temperatures across their geographic range from near freezing to over 40 °C, but it is unclear how crabs from differing thermal habitats may be impacted by climate change. The purpose of this study was to compare metabolic rates and temperature preference of squareback marsh crabs located in the Florida panhandle (30.4213° N, 87.2169° W) to crab populations in south Florida (24.7710° N, 80.9120° W). No significant difference was seen in temperature preference of squareback crabs from the Florida panhandle (25.7°C) and south Florida crabs (25.3°C). Likewise, Gilson respirometry measured oxygen uptake rates at 23 and 30°C that were statistically similar between populations. Both populations also showed markedly low temperature quotient values (1.3 and 1.2, respectively), suggesting that crab metabolic rates are relatively insensitive to temperature increase. Our results suggest that squareback crab thermal adaptations are highly conserved across wide geographic ranges, and that the 2-3°C increase in sea surface temperatures predicted for Florida in coming decades will have little effect on squareback crab populations.

HOBBS, SIERRA; CARSON CRIST 218

Faculty Mentor: Hui-Min Chung

Nicholas Phage, A National Treasure

Biology

Undergraduate

Sea-Phages

A bacteriophage is a virus that parasitizes a bacterium by infecting it and reproducing inside it. Bacteriophages are found ultimately everywhere and the number of bacteriophage species outnumber species of bacteria 10:1. Upon entering the Science Education Alliance-Phage Hunters Advancing

Genomics and Evolutionary Science (SEA-PHAGES) program our ultimate goal was to isolate bacteriophages and analyze their genetic codes. We started our adventure by collecting soil on the Edward Ball Nature Trail on the University of West Florida campus, we proceeded to enrich the soil and remove all possible bacterial cells from the solution and growing whatever bacteriophages were present in that sample. After a series of experiments, we were able to produce plates with high enough titers of one single bacteriophage species, and we named it Nicholas. Using the genetic material from Nicholas, we sequenced and analyzed the full genetic sequence. We will analyze its genetic makeup to determine its actions in the environment and in its host bacteria and present our findings. In addition, we will discuss how to use limited genomic information to figure out the category of bacteriophage of interest from a mixture of phage DNAs with PCR technique through the DOGEMS project.

LANGGUTH, DIANA; JEFF EBLE 212

Faculty Mentor: Jeff Eble

Blenny Diversity in the Northern Gulf of Mexico

Biology

Undergraduate

OUR Project Award

The objective of this research is to use a combination of traditional taxonomy (morphology) and molecular taxonomy to investigate combtooth blenny (family Blenniidae) diversity in the northern Gulf of Mexico (nGOM), with a focus on the genus *Hypoleurochilus*. Six *Hypoleurochilus* species occur in the West Atlantic, but only the featherduster blenny (*H. multifilis*) is currently known to occur in the Gulf of Mexico north of Tampa; however, divers have recently photographed an unknown *Hypoleurochilus* species on shallow nGOM reefs. These unknown blennies may represent a northward range expansion of the zebetail blenny (*H. caudovittatus*), which is currently considered to be a small range endemic, restricted to reefs and near shore sites around Tampa. Alternatively, the unknown blennies may be a previously unidentified *Hypoleurochilus* species. The goal of this project is to investigate whether the unknown blennies observed in Pensacola are simply a northward range expansion of the zebetail blenny, or an unidentified cryptic *Hypoleurochilus* species. To investigate *Hypoleurochilus* diversity I will collect blennies with the help of volunteers along the nGOM coast. Collected blennies will first be identified morphologically and then DNA will be extracted and CO1 gene sequences will be generated to support DNA-based identification. CO1 gene sequences will be compared with published *Hypoleurochilus* sequences in the FISH Barcode of Life Database (FISH-BOL) to determine whether the unknown fish we've collected are either zebetail and featherduster blennies or whether they potentially represent a new *Hypoleurochilus* species.

LAPAK, MICHELLE; SOHAIL MIRZA 219

Faculty Mentor: Hui-Min Chung

Fantastic Phages and Where to Find Them

Biology

Undergraduate

Sea-Phages

This poster was created to share with Physical education teachers how to teach the same class lesson in five different ways (styles A-E) at the SHAPE Florida conference in Tampa, FL. During this session, participants were taken through the handouts that were prepared and provided for them that consisted of each way to teach the same lesson different ways. Ultimate Frisbee was used as the example sport through each lesson. The teaching styles of A-E have been shown to engage students in cognitive activity, psychomotor movement, and help students take part in the decision making process. In this session participants will engage in hands on examples of each teaching style.

Specific objectives of this presentation:

- Physically experience the different teaching styles (A-E)
- Demonstrate the role of the teacher and the student through each style
- Provide examples of other sport games used with these styles

The session featured a brief introduction followed by physically participating in the teaching styles A-E. Each style was taught with the attending teachers being the students and the presenter being the teacher. After each style there was a short discussion of the teaching style. A handout was provided in person to the teachers that attended that explained the teaching styles in great detail.

LEHR, ALLISON 201

Faculty Mentor: Matthew Ruckman

Factors Influencing Student-Athlete Retention***Across Multiple Divisions***

Biology

Undergraduate

Student retention is becoming an increasingly important statistic for universities. It has become the practice to examine the needs of subsets of students in order to improve student success and retention. One subset of students that are of particular interest are student athletes, since this population must consider many factors when choosing a school that other subsets of students do not. These additional factors were examined through the use of a survey distributed via social media. Those surveyed were both currently enrolled and former students athletes across all sports and divisions. Factors examined included satisfaction with head coach, athletic department, team success, team relationships, academic achievement, and academic support. The goal is that this information will better indicate practices and programs instituted by universities that may aid in the increased retention of student athletes. The results of the study support

the extant literature that each of these factors influence a student-athlete's intention to remain at a university or leave.

**MCCLAIN, MARGARET; AUSTIN GALLAGHER;
NEIL HAMMERSCHLAG; MARCUS DRYMON;****DEAN GRUBBS 193**

Faculty Mentor: Toby Daly-Engel

Connectivity and Relatedness in Tiger Sharks between the Gulf of Mexico and the West Atlantic

Biology

Graduate

Graduate Assistantship

Shark dispersal for the purposes of reproduction is generally poorly understood, including that of Tiger Sharks (*Galeocerdo cuvier*), a large, circumglobal, coastal-pelagic species (Randall, 1992, Werry et al, 2014). While it has been found that both gravid and non-gravid females will often group together without males, no discrete mating areas or nursery grounds for tiger sharks have yet been identified in the Gulf of Mexico or West Atlantic Ocean (Sulikowski et al, 2016). Juvenile tiger sharks show some site fidelity, but adults appear to have large ranges, and their movement patterns are largely unknown (Werry et al, 2014). This research aims to identify reproductive relatedness including patterns in site fidelity and kinship among sites within and between the Gulf of Mexico and the West Atlantic (Bahamas). Using highly polymorphic microsatellite DNA fragment analyses, we will examine the relatedness of individuals from four sites, two in the Bahamas and two in the northern Gulf. We will use assignment testing to identify potential distribution corridors and critical habitat for tiger sharks, and examine genetic connectivity between broad geographic regions. Based on dispersal patterns observed in other large coastal shark species (Blower et al, 2012), we hypothesize that there will be shallow structure between the different sample sites due to habitat variation and philopatry. We further hypothesize that this structure will be male-biased, reflecting the female dependence on coastal nursery habitat.

MCMULLEN, ALLIE; NICK LUDERHNANI 203

Faculty Mentor: Nick Luderhnani

The Unsung Hereos

Biology

Undergraduate

Sea-Phages

There are trillions of vicious microscopic organisms all around you, and you've probably never even heard of them. There are an estimated 10^{31} of these creatures on the planet: they outnumber every single living thing on Earth combined. Though they are tiny, they can eat and take down a bacterium and reproduce within it until the cell explodes. With every attack, these hunters change their DNA to be better adapted for the future, which means no two are alike. They are called bacteriophages, and they are the future of genetic therapy and

BIOLOGY

disease control. To find our own sample of phages, we purified soil samples from the university nature trail, then isolated phages using serial dilutions. Using a method we created, we stressed infected bacteria with pineapple juice to cause the release of the lysogenic phages within. Now our goal is to annotate our genomes and add them to GenBank, a genetic sequence database. Our group will also discover which of our phages is in the genetic cluster, a rare find! We will present the results of our research at the Student Scholar Symposium.

**MERSON, BLAINE; ANA BARAJAS; AMARA EJKEMEWA;
KENDRA HAMMOCK; KHURSANA DUTY;
WADEY ABDEL QADER; ASHLEY SAKHICHAND 220**

Faculty Mentor: Hui-Min Chung

Investigating the Effects of Presenilin on Mitochondrial Health in *Drosophila melanogaster*

Biology

Undergraduate

OUR Travel Award

Many vital cellular mechanisms are evolutionarily conserved between humans and the fruit fly, *Drosophila*; Presenilin is one example. Presenilin is a subunit of the enzyme secretase, which mediates cell-cell communication in animal development. Mutations in Presenilin are linked to the neurodegenerative pathology of Alzheimer's disease, which have been associated with unhealthy mitochondria. A cell culture study by Wang, et al., demonstrated Bcl-2 protein complexes with Presenilin, and indicated a loss of function Presenilin mutant has more resistance to apoptosis than wild type Presenilin. This could suggest wild type Presenilin has some pro-cell-death characteristics and could contribute to regulating apoptosis, and potentially effect mitochondrial health. In *Drosophila*, two Bcl-2 homologs are identified: Buffy, a pro-survival Bcl-2 family homolog, and Debcl, a pro-cell-death Bcl-2 family homolog. If wild type Presenilin assists in promoting cell death via antagonizing of Bcl-2 homolog, Buffy, it is conceivable the phenotype derived from loss of function Presenilin may cancel out the loss of Buffy. This study investigates Presenilin's effect on mitochondrial health by using *Drosophila melanogaster* to analyze the cell death phenotype derived from a) loss of function Presenilin mutant, b) loss of function Bcl-2 mutant (Buffy), and c) Presenilin/Buffy double mutant. We analyze mitochondria health by quantifying locomotor ability, ATP production, and cell-death. In cell culture studies Staurosporine (STS), an apoptosis-inducing drug, intensifies cell death phenotypes. We found that 0.4uM STS significantly reduces wild type fly development and adult fly eclosion rates and causes a 60% reduction in total progeny eclosed compared to the control group.

MORROW, MORGAN 238

Faculty Mentor: Scott Taylor

PCOS: Problems with Infertility and Pregnancy

Biology

Undergraduate

Kugelmann Honors Program

Polycystic ovary syndrome (PCOS) is a chronic disease affecting at least 5% of the women of reproductive age. The purpose of this presentation is to educate the public about a controversial disease diagnosis and the effects it has on infertility, conception, and pregnancy. The poster presentation will cover the background of the disease, normal hormonal and physical properties relating to the disease, diagnosis, medications involved, infertility, conception, and issues with pregnancy. The research methods used in this project involve synthesizing information from scholarly articles mostly limited to the past 10 years. I will begin my research by gaining general knowledge about PCOS. After learning about the disease in general, I will focus my research to the problem of infertility and the process of assisting with conception. There will be a strong focus on the various medications used to correct menstruation, ovulation, and conception. I will investigate the effectiveness of these medications, as well as any risks involved with using them. Finally, there will be a focus on fetal and infantile development in relation to the medications used to aid in conception, or the disease in general.

MOSELEY, PATIENCE 239

Faculty Mentor: Scott Taylor

Lagodon rhomboides as Model Organism for Developmental Neurogenesis

Biology

Graduate

In contrast to mammals, the fish CNS produces new neurons throughout life and, following injury, neurons fully regenerate and function is restored. Understanding how and why persistent neurogenesis and CNS regeneration occur in fish, but not in mammals, is crucial for developing the ability to treat CNS injury and disease in humans. The zebrafish has a relatively simple early developmental period compared with many marine fish species and does not represent the full diversity of developmental mechanisms among vertebrates. Therefore, the objective of this research is to develop the pinfish, *Lagodon rhomboides*, as a marine fish laboratory model that will improve our understanding of the complex factors that affect neurogenesis. Pinfish will be reared and maintained in fiberglass tanks equipped to control light cycle, temperature, and other environmental factors that usually induce spawning in marine fish. Controlling or manipulating these factors to simulate the ideal conditions for the spawning will allow this project to be carried out throughout the year. The long-term goal of this research is to identify the mechanisms that regulate neurogenesis in the vertebrate CNS during both development and injury-induced regeneration. Using the zebrafish genome as a template, polymerase chain reaction (PCR) and gel electrophoresis were used to identify expressed genes in the pinfish retina. The gene for Rhodopsin,

the critical visual pigment in rod photoreceptors, was cloned from the pinfish retina and fully sequenced. This was the first gene ever sequenced from pinfish and now, next-generation sequencing is being used to sequence the entire pinfish genome.

NASH, CODY; JILL M. HENDON 194

Faculty Mentor: Toby Daly-Engel

The Impact of Varying Reproductive Periodicity on Frequency of Multiple Paternity in the Finetooth Shark, *Carcharhinus isodon*

Biology

Graduate

Graduate Travel Award

It has recently become apparent that polyandry females mating with multiple males in one breeding season is prevalent among the elasmobranchs (sharks, skates, and rays). This often leads to multiple paternity, or individual broods being sired by multiple males. As opposed to the clear advantages of polygynous mating to the male, the adaptive advantage of polyandry to the female or her brood is not clear. Some theories include female bet-hedging, trading up, or increased genetic diversity in the overall population. Alternatively, because injuries to the female are probable during mating events, it may simply be safer for her not to resist a theory known as convenience polyandry. We are using polymorphic microsatellite markers to determine the frequency of multiple paternity in a small coastal shark of the Northern Gulf of Mexico (GoM), the finetooth shark (*Carcharhinus isodon*). This species has shown evidence of co-occurring annual and biennial reproductive periodicity in the Northern GoM population. We will compare the frequency of multiple paternity between these two subsets in order to determine if the rate is impacted significantly by long-term sperm storage and/or mate encounter rate. This will be the first study of its kind on *C. isodon*, allowing for comparison to other *Carcharhinids* to help determine how life history characteristics can impact mating behavior. This information is essential for forming effective management plans for species that are impacted by human activity.

QUINTIN, STEPHAN; SARAH REXWINKLE 230

Faculty Mentor: Yougil Lee

The Effect of Endurance Running Exercise on Establishment of Neuroprotection against Pharmacologically Induced Parkinson's Disease

Biology

Undergraduate

OUR Project Award

Parkinson's disease (PD) is the primary neurodegenerative disease affecting more than ten million people worldwide; however, decades of pharmacological therapeutic trials against PD remain unsatisfactory. In contrast, endurance exercise (EE) has emerged as a potent non-pharmacological intervention that ameliorates the unfavorable progression of PD. Despite the convincing evidence, underlying mechanisms responsible for EE-induced neuroprotection

remain poorly understood. Given that mitochondrial dysfunction in dopaminergic neurons is a potent inducer of PD, we hypothesized that EE would promote removal of malfunctioning mitochondria and induce new generation of mitochondria, resulting in neuroprotection against PD. Using an animal model: 1) sedentary group, 2) PD sedentary group, 3) exercise group, and 4) PD + exercise group, we examined if EE elicits neurogenesis, we measured proteins levels of tyrosine hydroxylase (TH) using Western blotting since TH levels are closely correlated with the number of dopaminergic neurons. Furthermore, we analyzed protein levels of brain derived neurotrophic factor (BDNF) known for promoting neurogenesis. We found that, compared with PD sedentary group, PD + exercise group significantly enhanced neuroregeneration evidenced by increased TH levels in the striatum, but exercise-mediated BDNF elevation was observed. Collectively, our results indicate that EE mitigates Parkinson's disease-mediated cell death and enhances neuroregeneration.

RAMIREZ, JUAN; DANNY BAO PHU; ALICIA CHEZ MARTIN 240

Faculty Mentor: Scott Taylor

Atoh1 Gene Expression in Zebrafish Nervous Tissue Regeneration

Biology

Undergraduate

OUR Project Award

Nervous tissue regeneration in humans only occurs in peripheral nerves and not in the central nervous system (CNS), but certain non-mammalian vertebrates such as the zebrafish (*Danio rerio*), fully regenerate neurons in the periphery and CNS. Humans and zebrafish share many homologous genes and molecular pathways critical in neurogenesis. *Atoh1* is one such pro-neural molecule possibly required for proliferation and differentiation of neural progenitor cells, however, critical knowledge of *Atoh1*'s role in CNS and peripheral neural regeneration is lacking. Investigating the expression and function of *atoh1* in neural tissues will improve our understanding of possible treatments of CNS injury/disease and neurogenesis. We hypothesized that following neural damage, *atoh1* gene expression will be increased compared to uninjured neurons and inversely correlated with Notch pathway genes based on published research indicating that *Atoh1* negatively regulates Notch signaling, and that Notch signaling is crucial in neurogenesis. In three separate caudal fin wounding trials, comparative analysis of relative levels of *atoh1* expression of uninjured and injured zebrafish caudal fin tissue at post-injury time points of 4, 8, 24, 48, and 96 hours was conducted. Contradictory results to our hypothesis showed *atoh1* gene reduction immediately following injury and gradually increasing over time suggesting initial downregulation of *atoh1* might be necessary for Notch signaling to promote proliferation, and later upregulating *atoh1* might suppress Notch signaling to promote neural differentiation. Ongoing histological analysis will identify *atoh1* expressing cells compared to Notch pathway genes following neural injury to shed light on visual systems or brain regeneration in zebrafish.

RIGGS, FELICIA; NICHOLAS WAGNER 241

Faculty Mentor: Wayne Bennett

Critical Oxygen Minima in Little Skates

Biology

Undergraduate

In the last 20-30 years over-fishing, loss of habitat, coastal pollution, and rising sea surface temperatures have put elasmobranch populations in peril. The batoids have been especially hard hit. The International Union for Conservation of Nature (IUCN) red list suggests that 80% of batoids are threatened or endangered. Unfortunately, preservation and restoration efforts have been stymied by a lack of information about the group's ability to withstand changing water conditions. The little skate (*Lucoraja erinacea*), is a North Atlantic, cold-water species listed as a threatened species by the IUCN. Atlantic Seaboard Populations of little skates in the US are declining as coastal seawater temperatures continue to increase. The causative factor for the decline is thought to be decreasing oxygen tensions, however; without a better understanding of how skates respond to hypoxic water conditions, is not possible to identify effective management strategies to halt the population decline. The purpose of my study is to evaluate what, if any, adaptations little skates have for mitigating hypoxia effects by exposing a group of skates to simulated, periodic habitat hypoxic events in the laboratory, and comparing their hypoxia tolerance (measured as critical oxygen minimum), to the results of control skates acclimated to fully oxygen saturated water. Little skates are an important commercial species, and are ecologically important as a deep-water bioturbator responsible for shaping benthic community structure and facilitating nutrient turnover through its foraging activities. My results are a first step in describing low-oxygen tactics and strategies used by little skates.

SAKHICHAND, ASHLEY 206

Faculty Mentor: Hui-Min Chung; Kendra Hammock

STS Effects on *debcl* and *buffy* Genes

Biology

Undergraduate

OUR Works!

Every healthy organism on this planet is growing, changing, and developing. Genes like *buffy* and *debcl* are necessary to maintain proper cell growth and development. *debcl* promotes controlled cell death, and *buffy* suppresses a cell death. A healthy organism has an equal balance of both. Staurosporine (STS) is an external chemical known to induce cell death. This study investigates the functions of *debcl* and *buffy* on developmental rate when treated with STS to induce cell death. Wild type flies were used in comparison with the *debcl* and *buffy* mutant to establish a baseline. At the start of each trial we placed young flies of the same genotype in a vial containing STS treated food. The flies then laid eggs for two days and were then discarded. We incubated the eggs on the STS food. On Day 6 and Day 8 we noted the number of larvae and/or pupa are present in each vial. On Day 11 and Day 15 we recorded the number of adult flies eclosed per a vial. At Day

15 each trial was concluded and the data was assessed. We found when treated with STS we observed an average of 50% increase of eclosed adult flies when compared to the wild type flies. *Buffy* mutants were only an average 20% less than wildtype flies. We will present a more detailed analysis of the study at the symposium

SIEGFRIED, TABITHA 237

Faculty Mentor: Philip Darby

Video Analysis of Native and Non-Indigenous Fish-Predator Impacts on Florida Apple Snails (*Pomacea paludosa*)

Biology

Undergraduate

OUR NCUR 2017 Participants

The Florida apple snail (*Pomacea paludosa*) is prey to a myriad of wetland predators. All size classes of snail are vulnerable, and previous studies indicate that predation plays a role in snail population regulation. The African jewelfish (*Hemichromis letourneuxi*) is an invasive species in Florida that has been documented to prey on snails. In a pilot mesocosm study, we had noted non-lethal fish attacks on snails that appeared to influence snail behavior. For this study, we isolated individual fish in 10-gallon aquaria to observe their behavioral impacts on snails. We set up 12 aquaria: six with jewelfish and six with the native redear sunfish (*Lepomis microlophus*). Two snails at a time were placed in each of the aquarium tanks and the interactions between the fish and snails were recorded for 30-minute intervals. Data were collected for each fish for 2-3 discrete periods over two days. The preliminary results show that jewelfish attacked snails 18.5 times during a 30-minute interval with a total of 287 attacks in 15 trials. The redear sunfish attacked snails 9.4 times during a 30-minute interval with a total of 145 attacks in 15 trials. Jewelfish were notably more aggressive in their attacks. Recovery times for snails to become active after attack were 1.7 times longer for jewelfish vs. redear attacks. Recovery time was the amount of time the snail spends inside of its shell after an attack. Our data have implications for apple snail behaviors associated with demography that may be influenced by non-indigenous predators.

SIMMERING, ARIANNA; PATRICIA QUINA 195

Faculty Mentor: Wade Jeffrey

Establishment of a Time Series Database for Pensacola Beach Microbial Ecology

Biology

Undergraduate

OUR Project Award; OUR Works!

Microbial diversity encompasses a spectrum of variation between all types of microorganisms in the natural world and as they are altered by anthropogenic effects. Microorganisms are essential for all ecosystems to function effectively, and they play a large role in terrestrial, marine, and aquatic environments. Microorganisms can be affected by natural and anthropogenically initiated changes, and by creating a time series database for a given location, these changes

could be easily detected and studied. In this experiment six liters of water was sampled from the Pensacola Beach Pier bi-weekly; then analyzed using the standard suite of microbial ecology methodology. The techniques used in this experiment follow standard protocol for the following methods: bacterial production, chlorophyll a, bacterial direct counts, flow cytometry, phytoplankton primary production, nutrient analysis, and molecular diversity and bioinformatics. By sampling throughout all seasons, a full and complete understanding of seasonal variability across multiple variables in this area can better determine baseline conditions. The objective of this study was to act as a continuation of a previous study as well as characterize the microbial ecology of Pensacola Beach, in order to create a long term baseline for seasonal conditions that can be used in future studies.

SPEED, SARAH; ARIEL EGAN 223

Faculty Mentor: Ariel Egan; Toby Daly- Engel

DNA Extraction and PCR Techniques:

The Methodology Behind Studying Multiple Paternity in the Atlantic Sharpnose Shark (*Rhizoprionodon terraenovae*)

Biology

Undergraduate

OUR NCUR 2017 Participants

Reproductive strategies can influence genetic diversity and fitness, and are therefore of interest for conservation and management. Studies indicate that multiple mating by females (polyandry) is common among sharks, but to date no small coastal sharks have been studied. The Atlantic sharpnose shark (*Rhizoprionodon terraenovae*) is an abundant, small coastal shark found in temperate and tropical waters of the western Atlantic and Gulf of Mexico, where it is an important part of both artisanal and commercial elasmobranch fisheries. Life history characteristics in this species are generally established, but the occurrence of polyandry as a reproductive strategy remains undocumented. For this study, tissue samples from approximately 10 *R. terraenovae* broods per year for three years were collected off the coast of Alabama. We will focus on describing the methodology of two types of DNA extraction techniques, as well as the application of microsatellite markers for parentage analysis through Polymerase Chain Reaction (PCR). With the resulting data, we aim to discern the occurrence and frequency and variation of multiple mating in *R. terraenovae* over several reproductive seasons to determine the variation of this trait in wild populations. The results of this study will provide baseline biological information on reproduction and genetic diversity in the *R. terraenovae* population in the Gulf of Mexico.

SWAIN, COURTNEY; KRISTAL GIRAUDY;

TANAY KESHARWANI

204

Faculty Mentor: Peter Cavnar

The Apoptotic Behavior of Neutrophils Under the Treatment of Thiophenes and Selenophenes

Biology

Undergraduate

OUR Project Award

Kostmann syndrome is a form of severe congenital neutropenia, in which patients suffer from weakened immune systems due to the low concentration of neutrophils in their blood. Neutrophils are the most abundant type of white blood cells that play a major role in the immune system. The pathogenesis of Kostmann syndrome is the early and excessive programmed cell-death, or apoptosis, of neutrophils. To understand the mechanisms that drive apoptosis of neutrophils, we must investigate the mitochondrial functionalities of neutrophils. Mitochondria are a major regulator of apoptosis in neutrophils, and the mitochondrial membrane potential serves as an early and primary indicator of apoptosis. Thiophenes and selenophenes were the initial compounds observed in this study. Both types of compounds have medicinal properties and are widely used as components for pharmaceuticals. In this study, the goal was to observe and analyze effects of thiophene and selenophene compounds on the apoptotic behavior of neutrophils by investigating the mitochondrial transmembrane potential of the treated neutrophils. The study was conducted using a differentiated PLB-985 neutrophil cell line. The mitochondrial transmembrane potential was analyzed using the differential fluorescent dye, JC-1, which specifically stains mitochondria in accordance to their membrane potential. Our studies show that thiophene compounds had a significant increase in apoptotic behavior as compared to the untreated neutrophils while the selenophene compounds exhibited variable apoptotic behavior. Further studies will be used to study specific thiophene and selenophene compounds in order to study the overall impact of these medicinal complexes on the apoptosis of neutrophils.

VANTASSEL, NICHELLE

244

Faculty Mentor: Alexis Janosik

Characterizing Fish Communities of Northwest Florida Coastal Dune Lakes

Biology

Graduate

HMCSE Graduate Research Grant

Coastal Dune Lakes (CDL) are a rare aquatic habitat worldwide. The Northwest Florida Coastal Dune Lakes (NWFLCDL) of are even more rare and unique habitats due to their characteristic intermittent connection to the Gulf of Mexico. These intermittent connections can cause temporary estuarine environments. While there are policies in place to help protect and preserve the lakes and their surrounding area, little is known about the fish communities in the

NWFLCDL. Since As, traditional sampling to monitor fish communities can be costly and time-intensive, this project aims to characterize and monitor the fish communities of the NWFLCDL using environmental DNA from water samples and eDNA metabarcoding. Metabarcoding involves using generalist molecular markers to describe diversity within a specific taxonomic group. Nutrient (phosphorus, nitrogen, chlorophyll concentration) and water quality data (specific conductance, temperature, dissolved oxygen, pH, turbidity, salinity) from previous studies and measurements taken in the field will be used to describe how abiotic factors relate to the fish communities in the NWFLCDL. This project will provide a baseline of information necessary to stress the importance of preserving unique habitats.

**WHITAKER, JUSTINE; AMY BROWER;
MARGARET HUNTER; ALEXIS JANOSIK 243**

Retracing the Phylogeographic Structure of the Lionfish (*Pterois volitans* and *P. miles*) Invasion: A Two Marker Approach

Biology
Faculty
CREO

Lionfish (*Pterois volitans* and *P. miles*), native to the Indo-Pacific, now have an invasive range that extends from the Atlantic Ocean of United States to Brazil and into the Caribbean and Gulf of Mexico. To examine population connectivity in the invasive range, published *P. volitans* d-loop sequences were compiled with newly sequenced lionfish (n=145). Lionfish tissue samples were collected from across their invasive range from Pensacola (n=23), St. Petersburg (n=20), Jacksonville (n=37), Key Largo (n=30), Bahamas (n=20) and Trinidad and Tobago (n=15). Targeted regions for amplification included two mitochondrial genes: d-loop (control region) and the cytochrome oxidase I (COI). Based on the d-loop sequences, all samples were identified as *P. volitans* and none corresponded to *P. miles*. However, based on the COI sequences, one sample from the Bahamas corresponded to *P. miles*. This is the first known record of *P. miles* in the Bahamas and it would have been overlooked without inclusion of the COI marker, suggesting that studies using the d-loop alone may have misidentified *P. miles* samples. The rare haplotype H03, found in the northern region of the invasive range, was identified in one sample from Trinidad and Tobago, which may be evidence of a secondary introduction. Haplotype composition and genetic diversities confirmed previous studies, including lower genetic diversity in the invasive than the native range, and genetic differentiation between the northern and southern region within the invasive range. This study suggests employing multiple markers is necessary to gain further insight into the highly successful invasion of lionfish.

WILKINSON, SHERIDAN; AMELIE MURREL 222

Faculty Mentor: Alexis Janosik

Phylogeography and Population Genetics of Coquina Clams, *Donax variabilis*

Biology

Undergraduate

SURP Program; OUR Project Award

Donax variabilis (coquina clams), while small and mostly unseen, are an important bio-indicator of the health of beaches; numerous coquinas present indicate a healthy beach ecosystem. This mollusc has a widespread distribution along the Eastern and Gulf Coast of the United States and is currently described based on morphological data as only one species. These coquina clams have a veliger larval stage during which they inhabit the open, pelagic zone where they are likely susceptible to ocean currents. To investigate population connectivity across the known distribution, we conducted molecular analyses to elucidate the species status of *D. variabilis*. Mitochondrial cytochrome oxidase subunit I (COI) and 16S mitochondrial rRNA gene sequences were collected from 151 individuals representing 15 collection sites along the Eastern and Gulf Coast from New Jersey to Texas in an attempt to reconstruct the evolutionary history of this species. Population level analyses were performed. Morphological differences between populations were also examined through a nonparametric pairwise comparison of the shell size ratios. Preliminary results have shown that two species are present among the sample populations.

WORLEY, GRACE; DONALD VAUGHN 207

Faculty Mentor: Hui- Min Chung

Shedding Some Light on Bacteriophages: The Biology of *Alectrona* and *Sunna*

Biology

Undergraduate

Sea-Phages

A bacteriophage is a virus that infects bacteria. These bacteriophages are the most diverse life-forms on earth, with an estimated 1031 types of phages present in the biosphere. By isolating and studying new species of phages, we are contributing to scientific knowledge on their diversity. Our SEA-PHAGES group collected soil samples from the campus nature trail. Our intention was to isolate and identify new phages that use the bacteria *Mycobacterium smegmatis* as their host. However, our first trial was unsuccessful. Most likely due to characteristics of the soil, most of the phages in the sample appeared to be temperate, and did not produce plaques. We then hypothesized that applying UV light to the samples would stress the bacteria and induce lysis, producing testable plaques. This method was successful, and we were able to isolate two distinct bacteriophages, *Alectrona* and *Sunna*.

ZAW, MAY; KHURSANA DUTY 208

Faculty Mentor: Hui-min Chung

Understanding the Relationship Between Probiotics and the Gut Microbiome

Biology

Undergraduate

OUR Project Award

Gastro-intestinal microbiome is the collection of bacteria and other microbes that inhabit an animal's gastrointestinal tract. Throughout the years, scientists have found people with digestive disorders tend to have different microbiomes comparing to those with healthy digestive system, and most recent studies suggest the gut microbiome also regulate neuron health, possibly through the traffic of the periphery neural system attached to the gut to the central neural system in the brain. The interaction between the gut microbiome and the host physiology has thus becoming a highly discussed topic; however, such interaction is complex with much currently unknown. Understanding this complex relationship can pave the road to the treatment or prevention of digestive disorders such as irritable bowel syndrome and even neurological disorders such as Alzheimer's and Parkinson's disease. With regards to the gut microbiome, probiotics have becoming increasing popular as a dietary supplement to boost the gut microbiome. Many have accepted its benefits to the digestive system, but not many studies have been done on the duration of the supplement's benefits. To shed light on the long-term effects of probiotics and the potential of manipulating the gut microbiota, *Drosophila melanogaster*, the common fruit fly, was used to investigate this topic. This study had two primary objectives. The first objective was to determine whether the fly inherits its microbiome from the mother or acquires it from external sources. The second objective was to determine whether gut microbiome can be acquired and manipulated from probiotic supplements.

BARNES, LAUREN; JOSEPH YOUNT; SAVANNA WARD; BRYAN ZANCA; JULIA SCHWIEG, ALLYNN BURNS 75

Faculty Mentor: Karen Molek; Abayomi Daniel Olaitan

Surface-Assisted Laser Desorption/Ionization Mass Spectrometry of Carbohydrates and Lipids Using Transition Metal Oxide Nanoparticles

Chemistry

Undergraduate

OUR Project Award; OUR Travel Award

Surface-assisted laser desorption/ionization mass spectrometry (SALDI MS) is a soft ionization technique that has many applications for biomolecule analysis. As opposed to ionization techniques that utilize matrix solvents, (e.g., matrix-assisted laser desorption/ionization (MALDI)), SALDI utilizes surfaces that do not interfere with the identification of low mass ions in the mass spectrum, hence, allowing for easier detection of small molecular weight molecules. Transition metal oxide (TMO) nanoparticles such as TiO₂ and Co₃O₄ have been shown to possess high photocatalytic properties and high surface area to volume ratios which make them potentially good surfaces for SALDI MS. Our preliminary data

showed that Co₃O₄ nanoparticles generated a higher signal-to-noise (S/N) ratio for carbohydrates than NiO, TiO₂, and Fe₃O₄ nanoparticles. For instance, the S/N ratio observed for the sodiated species of glucose ([M+Na]⁺) on a Co₃O₄ surface was 134, while, S/N ratios on NiO, TiO₂, and Fe₃O₄ surfaces were 62, 76, and 86, respectively. In this presentation, we will discuss SALDI MS data utilizing TiO₂, Co₃O₄, Fe₃O₄, and NiO nanoparticles as SALDI surfaces for soft and efficient desorption/ionization of carbohydrates (glucose and sucrose) and lipids (methyl octacosanoate and cholesterol). Also, different SALDI sample plate preparation techniques will be evaluated to determine the most efficient sampling method.

BIFULCO, SAVANNAH; PHILLIP BANN 100

Faculty Mentor: Pam Vaughan

Biological Toxicity Testing of Photochemically Degraded Oil/Water Accommodated Fractions

Chemistry

Undergraduate

SURP Program; OUR Project Award

Water accommodated fractions (WAFs) were created from MC252 surrogate oil in sterile seawater upon exposure to natural sunlight using various optical color and spectral filters. Acidic and basic water soluble species were extracted and relative toxicity effects determined as a measure of bacterial growth inhibition using 3H-leucine incorporation in naturally occurring marine bacterial communities from the northern Gulf of Mexico. The basic species produced under exposure to a red filter showed greatest toxicity indicating that the longest wavelength of light is responsible for its formation. Acidic species tested showed samples created during exposure to a yellow filter had the greatest toxicity. These results indicate that regions of the visible spectrum contribute significantly to the formation of toxic species from oil.

BRANNON, CHEYENNE 91

Faculty Mentor: Pamela P. Vaughan

Fractionation and Biological Toxicity Studies of Crude Oil Water Accommodated Fractions with Dispersant

Chemistry

Undergraduate

OUR Travel Award; OUR Project Award

Water accommodated fractions (WAFs) were created in the dark, full natural sunlight, with and without the dispersant (Corexit 9500A) and at varied salinity (0 and 35 psu). Acidic and basic soluble species were extracted and subsequent bacterial growth inhibition (toxicity) of natural seawater bacterial communities from the northern Gulf of Mexico was examined using 3H-leucine incorporation. Acid fractions containing dispersant were more toxic in WAFs made at low salinity compared to samples at higher salinity. In general, acid fractions created from sun exposure exhibited increased bacterial growth inhibition compared to dark samples. Basic fractions indicated toxicity was primarily due to the oil rather than dispersant.

**BUTLER, DE'ZHANA; CHRISTOPHER WALTER;
AARON MENA; DILLION FRANCIS; SABINA CABRERA**Faculty Mentor: Karen Molek; Alan Schrock;
Pamela Vaughan; Timothy Royappa***Synthesis, Characterization, and Growth Kinetics of LiOH and KOH-Synthesized Surface Modified Zinc Oxide Quantum Dots***

Chemistry

Undergraduate

SURP Program; OUR Works!; OUR Travel Award

Quantum dots (QDs) are semiconducting nanoparticles that fluoresce at various wavelengths. After the initial synthesis of a QD, the QD is typically blue to yellow shifted. As the QD begins to increase in size the QD becomes more red-shifted and unstable. Most QD synthesis is cadmium based and toxic. The primary goal of this research is to synthesize QDs with zinc acetate that are non-toxic, blue-shifted, and that have stabilized growth patterns with surface modifiers. This will allow for potential use of QDs in biological applications. In this presentation, we will report UV/Visible and fluorescence spectroscopy data on the growth kinetics of these nanoparticles over a thirty-day time frame. Preliminary data on the use of higher concentrations of metal hydroxide (i.e., LiOH and KOH) to zinc acetate solution, storage at cold temperature and in a dark environment, and utilizing surface modifiers revealed the production of small, blue-shifted, and stable QDs. Factors that contribute to the production and/or lack of production of small-sized, blue-shifted, and stable QDs will be discussed in our presentation. In addition, we will compare QD's stability, size, and growth rate obtained with the use of polyethylenimine, dopamine, and glutathione modifiers to QDs synthesized without the use of any modifier. Finally, we envisage that the low levels of cytotoxicity of the synthesized surface-modified QDs will be incorporated in a study with embryonic cells.

FARRAN, BRETT; MOLLY-CATHERINE BRANTLEY 74

Faculty Mentor: Hui-Min Chung

Kingsolomon: King of the Phages

Chemistry

Undergraduate

OUR; Sea-Phages

A bacteriophage is a virus that reproduces by infecting bacteria and using their cellular machinery to synthesize what it needs. If some bacteria are our enemy, then bacteriophages are the enemy of our enemy. Of the countless phages on Earth, we have the ability to project medicine to new heights in ways antibiotics could not have. They are everywhere but are so small we have only researched a small portion of the suspected 10^{31} phage species found on Earth. The SEA-PHAGES program strives to classify phages. Kingsolomon is one of the phages that we have had the pleasure to discover and research. We conclude that Kingsolomon is classified as a siphoviridae phage with a long and flexible tail. It possesses a head that is similar to the phage Rosebush, although ours has a smaller tail (Falbo, 2001). Currently we are analyzing the genetic and

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genomic information of Kingsolomon. In addition, we are also interested in the self-defense mechanism of bacteria and of phage. We would like to learn whether two different phages can infect the same bacterial cell, such as Kingsolomon and another phage called Zeno. We will be presenting the results of these two studies in the symposium.

FRANCIS, DILLON

84

Faculty Mentor: Michael Summers

Start Site Heterogeneity of the HIV-1 RNA and its Effect on Structure and Function

Chemistry

Undergraduate

UWF MARCU STAR Program

The 5-Leader (5-L) of the human immunodeficiency virus-1 (HIV-1) RNA genome is highly conserved and constantly in an equilibrium between the monomer and dimer conformations. In the monomer conformation, the RNA is preferentially translated into proteins necessary for reproduction, while in the dimer conformation, the RNA is packaged as the genome for a new virion. The exact start site of the RNA has not been listed consistently in the literature in the past years. It was found that in vivo, there exists a mixed population of capped viral RNA with start sites that begin with one, two, or three guanosines (Cap1G, Cap2G, and Cap3G, respectively). This discrepancy had a profound effect on the folding patterns of the RNA, as it was observed using native gel electrophoresis Cap1G 5-L favored the dimer conformation, whereas the Cap2G and Cap3G preferred the monomer conformation. This difference in start sites therefore influences the structure and function of the RNA. We use nuclear magnetic resonance spectroscopy to determine the exact structural mechanism by which start site differences direct this change. Using specific nucleotide- and site- specific labeling schemes, we were able to identify a sensitive signal that is unique to the Cap2G construct only. Assigning signals in the full 5-L is difficult due to the numerous signal overlap. To overcome this problem and assign the residue that the sensitive signal belongs to, we constructed smaller oligo controls of the full 5-L.

HAMILTON, HEATHER;**WILLIAM M. FARMER; ALLYNN B. BURNS** 90

Faculty Mentor: Leonard Ter Haar

Geometrically Spin-frustrated Materials as Adiabatic Demagnetization Refrigerants

Chemistry

Undergraduate

NASA Grant FSGC-11-NNX15-002.

Succinic acid is a sustainable raw material growing in use for 2000 Da polyester polyols, although there is a lack of fundamental information about the compatibility and crystallization behavior in polyol blends and copolymers. To explore these issues, DSC characterization, crystallization kinetics, thermodynamics, and powder x-ray diffraction studies were performed on succinic acid-based polyols made

with 1,4-butanediol, 1,6-hexanediol, their blends, and on copolyester polyols made at 20%, 40%, 50%, and 80% molar ratios of the diols. The polyol blends show incompatibility with separate crystallization dynamics from butanediol and hexanediol polyesters in the blends. The copolyester polyols show compatibility and new crystal morphologies. We will report the synthesis, Johnson-Mehl-Avrami-Kolmogorov crystallization kinetics, powder diffraction results, and thermodynamics for the crystallization processes of the polyol blends and copolymers.

**HAMILTON, HEATHER; AMANDA SEBA;
JACQUELINE BLUE; THOMAS HUNT; CLAY FINLEY 89**

Faculty Mentor: Alan Schrock

Succinate Polyester Polyol Copolymers and Blends: Synthesis, Compatibility, Crystallization Kinetics, and Crystal Morphologies

Chemistry

Undergraduate

OUR Project Award; OUR Travel Award

Ascorbic acid was reacted with copper(II) chloride dihydrate to give a blue crystalline metal organic framework ($[\text{Cu}_9\text{Cl}_{12}(\text{cpa})_6(\text{H}_2\text{O})_3]\text{U} \cdot x\text{H}_2\text{O}$) with a triangles-in-triangles Kagome lattice of copper(II) ions. The individual triangles are composed of oxo-bridged trimers of copper(II) ions, with an additional copper(II) ion linking each vertex of the trimer to a neighboring trimer. We explore the intra- and inter- copper trimer exchange pathways in this two-dimensional spin frustrated system as a function of the lattice topology of the unpaired spins that stem from the copper(II) ions. DFT based computational studies were used to evaluate the theoretical basis for superexchange within the trimers and between the trimers in the build-up of the lattice layers. The results of the computational study, coupled with previously reported magnetic measurements, were used to support the potential efficiency of this material as an adiabatic demagnetization refrigerant. Additionally, structural characterization was done by powder X-ray diffraction to confirm the robustness of the crystallographic porosity (20.0 Å... diameter channels) and accessible surface area. Molecular dynamics calculations were used to determine the optimal solvent quantity and orientation against the walls inside the channel system. TGA data were used to augment the computational and geometric calculations of channel volume and contents to map future synthetic directions. This research was supported via NASA grant FSGC-II-NNX15-002.

Jacobs Jade; Kassandra R. Oldham; Brett J. Bookheimer;

HAGA, KALEIGH ; NICCOLE L. AULD, JADE JACOBS

87

Faculty Mentor: Tim Royappa

Crysta Structure of the Trifluoromethylator, (1,10-Phenanthroline)(Trifluoromethyl)Copper(I)

Chemistry

Undergraduate

OUR Works!

In recognition of Black History Month my research explores U.S. Naval Aviation history as it relates to the impact African Americans made in support of the United States of America. Ensign Jesse LeRoy Brown was the Americas' first African American naval aviator. He also holds the distinction as being the first and only African American naval aviator to be killed in combat during the Korean conflict.

LOVE, PETE

83

Faculty Mentor: Leonard Ter Haar

Magnetic Materials for Adiabatic Demagnetizations Cryogenics

Chemistry

Undergraduate

Kugelman Honors Program

Traditional refrigeration uses environmentally hazardous coolants, operates inefficiently, and is not compact. Magnetic refrigeration is a rapidly developing technology that offers increased energy and space efficiency. The technology works by cooling paramagnetic complexes when in contact with a cold reservoir, applying a magnetic field aligns the unpaired electrons to lower the entropy of the system and allow an adiabatic heat transfer out of the magnetic material as the field is slowly removed. Developing a magnetic-based refrigerant is of particular importance in spacecraft. NASA desires for their technology and systems in space to be solid state to avoid the need for compressed fluids that are more likely to leak and malfunction. In this study, published magnetic materials will be analyzed to determine their ability to function as adiabatic demagnetization refrigerant utilizing the magnetocaloric effect. Expected results will determine the characteristics of metal-complexes that make for the best refrigerants to construct a magnetic refrigerator. The conclusions drawn from the data analysis will be used to propose structures that combine the most desirable characteristics of magnetorefrigerants. The proposed structures will be analyzed using computational software to determine the viability of lab synthesis, as well as predict the characteristics they may exhibit.

MCCALL-BUTLER, DEZHANAE; SABINA CABRERA;**DILLION FRANCIS; NICOLE FROOKS;****JESSICA GUNN; AARON MENA 114**

Faculty Mentor: Sabina Cabrera; Pamela Vaughan;

Karen Molek; Alan Schrock; Timothy Royappa

Synthesis, Characterization, and Growth Kinetics of NaOH and CsOH-Synthesized Surface-Modified Zinc Oxide Quantum Dots

Undergraduate

SURP Program; OUR Project Award

Chemistry

Quantum dots are semiconducting nanoparticles that fluoresce at different wavelengths in accordance to nanoparticles size. Quantum dots (QDs) have been used in light emitting diodes, solar cells, photodetectors, and televisions. Most QDs are synthesized with cadmium, a toxic element, which cannot be used in biological systems. After initial synthesis of QDs, particles start to increase in size, becoming unstable and red-shifted. The objective of this project is to synthesize stable, blue-shifted QDs in a controlled environment. Preliminary synthesis results suggest that PEI and cold temperature conditions produce more stable QDs than QDs synthesized without the use of PEI. In this presentation, we will demonstrate the use of zinc acetate and metal hydroxides (specifically CsOH and NaOH), which are non-toxic materials, to synthesize stable and biologically applicable zinc oxide QDs. We will also show the absorbance and emission intensity data of the synthesized QDs from UV-Visible and fluorescence spectrophotometry data collected over a thirty-day period. In addition, we will report the QDs synthesis results performed using the following conditions: (i) high concentrations of cesium and sodium metal hydroxides, (ii) low concentrations of zinc acetate, (iii) synthesis at room (i.e., ~25 °C) and, (iv) storage in a dark environment and room and/or cold (~4 °C) temperatures, and (v) use of polyethylenimine (PEI) as a capping agent. We anticipate that this work will lead to further investigations into the synthesis of safe, reliable, and functional QDs for various biological applications.

MENA, AARON; THOMAS DIXON; CECILIA GENTLE;**RENSKE VAN DER VEEN 77**

Faculty Mentor: Karen Molek

Photo-Induced Phase Transitions of Spin-Crossover Nanoparticles within the Thermal Hysteresis Loop

Chemistry

Undergraduate

University of Illinois at Urbana-Champaign Graduate College; SURP Program at ULUC

Photo-induced spin-state transitions in metal-organic nanomaterials have been vastly studied in recent years due to their possible applicability in nanophotonics and nanoelectronics. Spin-crossover (SCO) materials are transition metal compounds that exhibit the possibility of spin-state transitions by external stimuli; such as the application of a magnetic field, change in temperature,

change in external pressure, or induced light irradiation. Understanding the ultrafast relaxation dynamics of spin-state transitions, specifically of octahedral iron(II) complexes, has been a central research topic in coordination chemistry. Additionally, SCO nanoparticles' size, along with their magnetic properties, open up the possibility of uses in biological applications, such as drug delivery, cancer treatments, and protein detection. In this project, photoinduced dynamics of [Fe(HTrz)₂(trz)][BF₄] nanorods, within their thermal hysteresis loops, were to be studied by ultrafast nanosecond-resolved transient absorption spectroscopy, specifically with pump-probe Nd:YAG nanosecond lasers; however, experimental setup for pump-probe spectroscopy was necessary. The construction of a flow cell for pump-probe spectroscopy of the nanorods was carried out in order to allow a constant flow of colloidal nanoparticle solution during the spectroscopy. A set of two Nd:YAG nanosecond pulse lasers were reconstructed and repaired in order to carry out nanosecond-resolved pump-probe spectroscopy. Additionally, the synthesis of [Fe(HTrz)₂(trz)][BF₄] nanorods was completed by the reverse-micelle technique in order to tune particle size during the initial synthesis. The nanorods were characterized by transmission electron microscopy (TEM) in order to ensure the synthesis of nanoparticles with rod-shaped morphology. Modifications were implemented to the synthesis, based on the results given by the TEM imaging.

PHILLIPS, AIMEE**85**

Faculty Mentor: Tanay Kesharwani

Synthesis of 1-methyl-7-azaindole Derivatives Using Electrophilic Iodocyclization

Chemistry

Undergraduate

OUR Works!

7-azaindole derivatives are an important class of organic heterocycles. These structures have practical applications in areas of synthetic chemistry, medicine, and materials science. Molecules containing the 7-azaindole core structure are biologically active and have medicinal applications including antitumor, thrombin recognition, and antimalarial properties. Herein, we have developed a novel methodology for the synthesis of 1-methyl-3-iodo-7-azaindole derivatives via electrophilic iodocyclization of 3-alkynylpyridines. The method is simple, occurs under mild reaction conditions, and goes to completion at room temperature. The synthesis results in yields as high as 82 percent and demonstrates a high tolerance for functionality at the second position. Subsequent functionalization is possible due to the unique placement of the halogen moiety on the ring. Using our method, chemists can achieve a diverse library of valuable 7-azaindole derivatives hosting an abundance of practical applications.

QUINTIN, KATHERINE**79**

Faculty Mentor: Korry Barnes

Synthesis of Novel Sulfonamide Quinoxalines

Chemistry

Undergraduate

OUR Works!

Quinoxalines represent a class of heterocyclic compounds that have found a wide range of utility in organic chemistry, most notably pharmaceuticals. They are composed of a benzene ring fused with a pyrazine ring. Notable examples of biologically active compounds containing the quinoxaline functional group include olaquinox, carbadox, echinomycin, levomycin, and actinoleutin. Although many compounds are reported in the literature containing the quinoxaline nucleus, few references were found containing studies of tethering sulfonamide groups to the quinoxaline ring itself. Progress in the synthesis and biological activity of an initial library of quinoxaline sulfonamides is described. There is a constant push for efficient ways to synthesize molecules of medicinal value, such as those containing quinoxaline functional groups, using inexpensive commercially available chemicals. Using Diversity Oriented Synthesis (DOS) is a newer strategy that attempts to make a large number of small structurally diverse molecules, each with the potential for different biological interactions, and then test the individual molecules for bioactivity. DOS is a faster route to drug discovery, as opposed to selectively synthesizing known molecules using solely combinatorial methods that offer limited structural diversity. Our project focuses on leveraging DOS strategies to produce an initial library of compounds that contain quinoxalines functional groups and may have pharmacological traits. Recognizing the potential applications of quinoxalines and the potential of DOS for producing novel compounds brings about a question: can quinoxalines be synthesized towards a library of small molecules to evaluate their biological properties and uses as potential drug leads?

REID, LAURYN**92**

Faculty Mentor: Timothy Royappa

Alternate Syntheses of Copper(I)-based Trifluoromethylating Agents

Chemistry

Undergraduate

OUR Project Award

Attempts were made to synthesize five copper(I) complexes: tris(triphenyl-phosphine)copper(I) acetate (1), tris(triphenylphosphine)copper(I) phenolate (2), tris(triphenylphosphine)copper(I) trifluoroacetate (3), (1,10-phenanthroline)copper(I) trifluoroacetate (4), and (1,10-phenanthroline)copper(I) phenolate (5). These complexes were intended for use as intermediates in the preparation of two important trifluoromethylating agents, namely tris(triphenylphosphine)(trifluoromethyl)copper(I) and (1,10-phenanthroline)(trifluoromethyl)copper(I), that have the potential to play a significant role in the manufacture of pharmaceutical and agrochemical compounds. Complexes 2 and 3 were successfully synthesized. The reaction for complex 1 produced bis(triphenylphosphine)copper(I) acetate rather than the desired tris(triphenylphosphine)copper(I)

acetate. X-ray diffraction analysis of isolated crystals of 4 revealed bis(1,10-phenanthroline)copper(I) trifluoroacetate hemihydrate. The products of these various reactions were analyzed using single-crystal X-ray diffraction, nuclear magnetic resonance spectroscopy, and infrared spectroscopy. Efforts are ongoing to recrystallize and characterize 5.

ROTH, JUDY; RALF ROMERO**81**

Faculty Mentor: Leonard Ter Haar

Using Exchange-Correlation Functionals to Examine Cu(II)Phenoxyacetate Post Analysis of Copper Acetate

Chemistry

Undergraduate

Ter Haar Grant

Copper acetate was geometrically optimized using point group symmetry (C_{2v} , C_{2h} , D_{2h}) and analyzed in a molecular modeling and calculation software hereto referred to as ADF. Exchange correlation functionals were prepared in ADF and compared to literature crystallographic data to determine the best method for analyzing bonding in the dimer structure. The focus of analysis was centered on the d-orbital manifolds and cited bond lengths between copper-copper, copper-oxygen, oxygen-carbon, and copper-water. The calculation parameters were then applied to Cu(II)Phenoxyacetate, a hexamer, and compared to literature crystallographic data. Thermal data was also acquired through the preparation and analysis of Cu(II)Phenoxyacetate crystals.

ROTH, JUDY; RALF ROMERO**82**

Faculty Mentor: Leonard Ter Haar

Density Functionals for Acetate-bridged Exchange-coupled Heisenberg Molecular Magnets Ranging in Size from Dimers to Hexamers

Chemistry

Undergraduate

Ter Haar Grant

Bisphenoxyacetate copper(II) is a hexamer of Heisenberg $S = 1/2$ exchange-coupled spins that serves as a model compound for increasingly larger spin-frustrated molecular magnets. To evaluate the nature of its exchange-coupling, DFT methods were applied to smaller clusters, the smallest being the dimer found in copper(II) acetate monohydrate. $Cu_2(Ac)_4(H_2O)_2$ dimers were geometrically optimized using various point group symmetries (C_2 , C_{2v} , C_{2h} , D_{2h}) and compared to crystallographic and magnetic data. Computational effects of the exchange correlation functionals allowed for the molecular orbital analysis of the crystallographic structure and for the determination of the best method for analyzing bonding in a Heisenberg spin exchange coupled dimer. Results for the d-orbital manifolds and literature cited bond lengths between copper-copper, copper-oxygen, oxygen-carbon, and copper-water validated the computations. The optimized exchange correlation parameters were then applied to $Cu_6(PhAc)_{12}$, a hexamer, and compared to crystallographic data. Thermal analysis data on freshly prepared Cu(II)phenoxyacetate crystals confirmed the robustness of the hexameric molecular magnet.

**SEIVERT, MATTHEW; CAMERON DAVIS;
AMY MCKENNA; YURI CORILLO; RICHARD SNYDER**

Faculty Mentor: Pam Vaughan

***FT-ICRMS Analysis of Photochemically Degraded
and Burned Surrogate Oil***

Chemistry

Undergraduate

Surrogate oil samples were weathered through both photochemical degradation and burning. Photochemically degraded samples were exposed from 24 hours to 45 days at constant temperature. Burned oil samples were prepared by open flame ignition and burned to exhaustion. Samples were then analyzed using Fourier Transform Ion Cyclotron Resonance Mass Spectrometry (FT-ICRMS). Negative ion electrospray ionization (ESI) FT-ICRMS results indicated Photochemically degraded samples had a decrease in HC and N1 heteroatom species, and an overall increase of oxygenated heteroatom species for sulfur and nitrogen compared to whole surrogate oil. Burned samples showed similar heteroatom distributions compared to whole surrogate oil. Burning oil decreased microbial toxicity from Water Accommodated Fractions made from burned oil exposed to sunlight. WAFs made from weathered oil were still photochemically reactive even after 45 days as WAFs made in sunlight from weathered oil were more toxic to marine microbes than WAFs made in the dark. Additionally, laboratory weathered samples will be compared to real world samples collected off the coast of Florida between May 2010 and June 2012 that highlight the immense chemical functionality and diversity of oxygenated compounds with ESI to target acidic and basic compounds and atmospheric pressure photoionization (APPI) to highlight nonpolar functional groups.

STARRATT, HADLEY 80

Faculty Mentor: Korry Barnes

***Targeting Gram-Negative Pathogens with
Novel 2-Aminoimidazole Scaffolds***

Chemistry

Undergraduate

OUR Project Award

Recent advances in combating multi-drug resistant bacteria have primarily focused on targeting Gram-positive bacterial strains. However, Gram-negative bacteria continues to pose an increasingly significant threat to public health. The bacteria are resistant to most available antibiotics. Small molecules and natural products containing the 2-aminoimidazole functional group have proven to be particularly useful in combating these Gram-negative bacteria. Although much progress has been made toward utilizing compounds containing this privileged functional group, no examples exist in the literature of 2-aminoimidazoles containing a sulfonamide moiety, another known pharmacophore with antimicrobial properties. Our project focused on constructing an initial library of 2-aminoimidazole sulfonamide scaffolds and evaluating their antimicrobial and biological activities. Synthetic progress toward these novel scaffolds will be presented.

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References: 1. (a) Al-Mourabit, A.; Zancanella, M.A.; Tilvi, S.; Romo, D. *Nat. Prod. Rep.* 2011, 28, 1229. (b) Melander, C et al. *J. Med. Chem.* 2014, 57, 7450 and references cited therein.

TONNAER, AMANDA; RRAHUL TOPIWALA;

NEAL PATEL; ZHIBO YUAN 86

Faculty Mentor: Tanay Kesharwani; Elsa Reichmanis

***Design and Synthesis of Solution Processable N-channel-Conjugated
Polymers and Device Applications***

Chemistry

Undergraduate

OUR Travel Award

Compared to traditional inorganic materials, organic semiconductors have advantageous properties which allow for low cost, adaptability to low-temperature processing on flexible substrates, and tunable electronic properties. Organic semiconductors are essential for the evolution of flexible and stretchable electronic products and would allow for the development of low-power displays, and printable sensors among other applications. High-performance n-channel semiconductors are important for the development of plastic electronic devices such as organic field-effect transistors (OFETs) and complementary metal "oxide" semiconductor (CMOS)-like complementary circuits. n-Channel π -conjugated polymers were synthesized with a structurally engineered side chain to increase solution processability while maintaining close π - π stacking. The synthesized polymers were characterized by ^1H NMR.

TRAN, CHAU; CONSTANCEL SMYLIE; MOHSAN KHAN 88

Faculty Mentor: Timothy Royappa

Synthesis of Bimetallic Nanoparticle Precursors

Chemistry

Undergraduate

OUR Project Award

There are two major methods for synthesizing both gold nanoparticles (NPs) and bimetallic nanoparticles: the aqueous method and the non-aqueous method. In both cases, tetrachloroauric(III) acid (HAuCl_4) is reduced to metallic gold in a controlled manner. In aqueous solutions, citrate is the reductant, and in non-aqueous solutions, the reduction is carried out in two steps using a thiol first and then sodium borohydride. The Millstone group at the University of Pittsburgh has successfully synthesized bimetallic gold-copper NPs using a hybrid technique involving a water-soluble thiol-modified poly(ethylene glycol) (PEG). They have found preliminary evidence that the precursors to their bimetallic NPs are neutral thiolate complexes with a PEG chains. However, these proposed bimetallic precursor molecules have never been isolated or structurally characterized, although related all-gold and all-copper four-center thiolate complexes are known. We describe the progress made in our lab towards crystallizing these precursor molecules.

**WARD, SAVANNA; BRYAN ZANCA;
KALE KING; AMELIA LEENIG 78**

Faculty Mentor: Karen Molek; Daniel Olaitan

Design and Application of a Novel Nitrogen Gas Adsorption Device

Chemistry

Undergraduate

SURP Program; OUR Project Award

A nitrogen gas (N₂) adsorption device was designed and constructed for accurately measuring the specific surface areas of commercially obtained nanoparticles of carbon, TiO₂, Fe₃O₄, NiO, and Co₃O₄. As opposed to other gas adsorption measuring devices, this N₂ adsorption device utilizes a carburetor for adsorption measurement in place of a manometer or electronic pressure sensor. The device was constructed using 316 grade quarter inch stainless steel tubing, swagelok stainless steel compression fittings, and a pre monobloc float chamber. Preliminary data from the adsorption experiments conducted on Co₃O₄ nanoparticles using the N₂ adsorption device were analyzed following the Brunauer-Emmett-Teller theory. The Co₃O₄ surface area was found to be 31.0157 m²/g. Comparison of the specific surface area of Co₃O₄ nanoparticles obtained using the N₂ adsorption device showed good agreement with the surface area values provided by the manufacturers of the nanopowders and with surface area values determined by XRD. In this presentation, we will discuss the design, construction, and operation of the N₂ adsorption device. In addition, we will demonstrate the application of the N₂ adsorption device for characterizing and determining the specific surface areas of commercially obtained nanoparticles of TiO₂, Fe₃O₄, NiO, and Co₃O₄. Finally, we envisage that the application of this simple, cheap, and easy to use N₂ adsorption device will be incorporated into a physical chemistry laboratory course.

WILSON, JULIE; LACEY MAGILL 73

Faculty Mentor: Carl Saint- Louis; Alan Schrock

Tuning Red-Shifted Highly Fluorescent Polycyclic Azaborine***Chromophores***

Chemistry

Undergraduate

OUR Project Award

Polycyclic aromatic azaborines are exceptionally valuable because of their electronic and optical properties which can be beneficial in designing sensors and fluorophores. We have designed, synthesized and investigated a series of red-shifted highly fluorescent polycyclic azaborine chromophores as high-luminescent organic materials. The incorporation of electron withdrawing substituents to the left hemisphere of the polycyclic azaborine chromophores resulted a 150 nm red-shift of the fluorescence from 490 nm to 640 nm with a 218 nm Stoke shift. The incorporation of electron donating moieties to the right side of the chromophores also resulted in a red-shift in the fluorescence only by 62 nm with a 105 nm Stokes shift. Furthermore, the addition of a halogen (bromide) to the left hemisphere behaved similarly to a weak electron donating group also resulting in a red-shift of the fluorescence by 15 nm with a 106 nm. The addition of electron donating

substituents to the left hemisphere of the polycyclic azaborine chromophores also resulted in a red- shift of the fluorescence of the azaborine chromophores by 115 nm with a 155 nm Stokes shift creating a balance between emission red-shift, quantum yield, and Stokes shift. Based on these findings, we have devised a new method to tune red-shifted fluorescent azaborine chromophores.

PISARSKI, MELISSA 50

Faculty Mentor: Frank Ferdik

Smoke Screen: The Case of Cameron Todd Willingham

Communication

Undergraduate

Kugelman Honors Program; OUR Travel Award

After an unfortunate house fire claimed the lives of Cameron Todd Willingham's three young children, an investigation into his involvement in this travesty ensued. Mr. Willingham fell under suspicion when fire investigators discovered what they, at the time, believed to be irrefutable evidence of arson. Despite vehemently pledging his innocence, Mr. Willingham was executed for this supposed offense. Although this did appear to be a simple enough case implicating him in this crime, opposing evidence absolving him would soon emerge, yet only after he was sentenced to death. Within the American justice system, unfortunate grave miscarriages of justice such as these sometimes do occur. This case then in particular provides a platform for discussion of prosecutorial misconduct, flawed investigations, the evolution of science, wrongful convictions, and expert and lay witness testimony, among other topics, that are central to ensuring that our justice system operates to the highest standards in producing just and correct case outcomes. This presentation represents a preliminary effort to uncover justice system limitations that sometimes permit such grave miscarriages of justice, which are an affront to the very values upon which our system is predicated.

WHITLOCK, RACHAEL 51

Faculty Mentor: Jocelyn Evans

Age and Perceived Safety Within Public Parks

Communication

Undergraduate

Kugelman Honor Program

The focus of this research is to explore whether there is a correlation between a person's age and their perception of personal safety within their community and, more specifically, in public parks. To collect data to address this research question, surveys will be conducted in five different public parks in Pensacola, Florida. The survey includes questions related to individual perceptions of public space and controls for past experiences with violence and crime. My hypothesis is that people who are younger (age 18-35) will, on average, feel safer in public spaces than people who are older (36-70). I also believe that whether respondents have children or have lived in the area for many years will factor into their perceptions of area safety.

AYER, JAY**49**

Faculty Mentor: Chassidy Hobbs

The Unrecognized Link Between The Portrayal of Sharks and Their Extinction

Communication

Undergraduate

OUR Travel Award

A review of the literature suggests a possible relationship between the public's negative feelings toward sharks and their portrayal in the media. Negative feelings appear to stem from overdramatic news stories and misinformation, such as in the Discovery Channel's "Shark Week" programming. The repeated exposure of the public to more graphic imagery concerning sharks, rather than anything that would create positive mental image of the animals, has helped to create an irrational fear of sharks in the general public. Evidence shows that many people with this attitude towards sharks are misled by sensationalized stories which also create irrational fears. Further research shows that people feel less inclined to help protect endangered shark populations because of their dissonance with the truth about sharks. A future outcome of this lack of concern may be the extinction of many shark species, which in turn would lead to further environmental damage such as overpopulation by traditional shark prey. This outcome is possible because the lack of concern about sharks leaves the creatures unprotected by overfishing laws. This lack of concern also allows problems like shark finning operations to continue without much concern from the public. Though the outcome of shark extinction and the portrayal of sharks in media seems unrelated, a closer look at evidence displays a probable causal link between the two. Further research would allow us to provide a clearer connection between people's attitudes toward sharks and future possible shark extinction. Defining this problem now could prevent this potential disaster from occurring.

ANDERSON, KEEGAN**137**

Faculty Mentor: John Coffey

DLDDL: An Experiment in Subversive Game Design

Computer Science

Undergraduate

Kugelman Honor Program

In the field of game design, some common conventions of communicating information to the players have been developed. Players who are literate with the medium of video games anticipate these established conventions across similar works and designers rely on the expectation of this literacy to design intuitive interfaces and controls. The purpose of this project is to explore ways in which the subversion of these expectations and assumptions that players may bring into a game space may be used as a tool for designers. The successful subversion of player expectations mechanically could potentially have useful applications for challenging player assumptions narratively or socially through play. I have created a short top down style two dimensional game titled DLDDL: Don't let Dylan Die in which on-screen invocations

of established gaming conventions such as a health bar, the orientation of the screen, and the title of the game should lead players to make assumptions about the game space; namely, that the other entities in the game mean the player harm. Over the course of the game, players should be able to determine that this assumption was false. I plan to have a range of individuals of varying familiarity with gaming conventions play this game and provide feedback on their experiences and expectations. I will analyze this feedback and attempt to draw conclusions about the efficacy of my attempt at subversive game design and postulate about its uses or implementation in larger scale projects.

BAPTISTE, DELIKARL; AUSTIN ADKISON**135**

Faculty Mentor: Dallas Snider; Matthew Schwartz; John Morgan

An Online Analytical Processing Database for Environmental Water Quality Analytics

Computer Science

Undergraduate

OUR Works!

Online analytical processing databases allow for the efficient analysis of vast amounts of data. In this presentation, we describe the design of an online analytical processing cube structure for use in the analysis of multiple measures of environmental water quality data. The measures, also known as facts, will be the quantitative values returned by various water quality tests while the dimensions will be the attributes that describe the what, when and where of the water quality test measures. The data model and build process presented here will allow for varying types of tests and for the insertion of new data as it becomes available. The overall goal of this design is to provide business intelligence capabilities to water quality decision makers.

SPAID, WILLIAM III**136**

Faculty Mentor: Dallas Snider; Jason Ortegren

Calculating the Pearson Correlation of Barometric Pressure and Rainfall Levels using Structured Query Language.

Computer Science

Undergraduate

SURP Program; OUR NCUR 2017 Participant

The goal of this project is to see if there is a correlation between the amount of barometric pressure levels in the North Atlantic Ocean and the amount of rainfall that occurs over the continental United States in the summer. To accomplish this, we loaded two data sets from the National Oceanic and Atmospheric Administration into a standard structured query language (SQL) relational database tables. One data set includes average monthly barometric pressure readings from 330 North Atlantic stations and the other data set includes monthly rainfall totals from 796 continental stations. The data in both sets were collected from 1948-2012. A cross join was performed in SQL to pair up every North Atlantic station with every continental U.S. station. Next, the Pearson correlation was calculated on each combination of land based and oceanic stations to determine which stations had

the most positive or negative correlations between them. A total of 262,680 Pearson correlations were calculated in the database using SQL. When we are successful, then we will see a pattern emerge among our data that will allow us to see how barometric pressure in one location might predict rainfall in another.

**DENNEY, ANDREW; ERIC PAPA;
DAVID PATRICK CONNOR; KATIE FORSTER** 252
*Sex Offenders in Higher Education: Experiences and Perceptions
Towards Sex Offender Registration and Community Notification Laws*
Criminology & Criminal Justice
Faculty
OUR Works!

As part of registration and community notification laws (RCNL) throughout the U.S., convicted sex offenders are required to register within their specific community. Registration can include, but it is not limited to, restrictions on where one can live, notifying neighbors of their residence, and making all personal and offense information publicly available online. Registered sex offenders (RSOs) are also either required to be employed or enroll in a school (e.g., university, state college, vocational/technical) to satisfy their community supervision requirements. With sexual offenses being perhaps the most stigmatized offense-type, many RSOs cannot obtain employment. Consequently, they enroll in institutions of higher education to satisfy their conditions of community supervision with the hopes of increasing their chances of successfully obtaining and maintaining gainful employment. Utilizing survey data from approximately 800 RSOs enrolled in institutions of higher education in the state of Florida, this project examines two individual research questions. First, what are the experiences of RSOs enrolled in institutions of higher education in their role as a student and in their personal lives pertaining to their status? Second, what are these RSOs' perceptions towards various RCNL requirements? Policy implications, limitations, and future directions for research are discussed.

DETEROW, RACHEL 249
Faculty Mentor: Natalie Goulette
Evaluating VOP Holds within a Local Correctional Facility
Criminology & Criminal Justice
Undergraduate
OUR Works!

Correctional facilities have largely become overpopulated and underfunded throughout the years and probation has served as a means to alleviate some of the stress on these facilities. However, with new policies related to violation of probation (VOP) holds, such practices may be adding more stress to the system. Offenders held through VOP holds use resources that over time may show to be a wasteful expense. While some offenders held through VOP holds receive probation violations, not all offenders receive those charges. Even those that receive probation violations do not earn time served or any type of gain time. There are conflicting arguments that while VOP holds use resources from the correctional facility,

it saves other resources in locating the offender and protecting the community. This study analyzes data obtained from a local correctional facility over the last three years using first appearance hearings. Policies relating to VOP holds as well as characteristics of offenders receiving VOP holds will be examined.

GALLAGHER, LINDSEY; JANISE BEST 248
Faculty Mentor: Matthew Crow
*News Accounts of Police Deadly Force:
Did a Ferguson Effect Emerge in Reporting?*
Criminology & Criminal Justice
Undergraduate
OUR Works!

The police shooting of Michael Brown in Ferguson, MO and other high-profile cases that followed have resulted in police use of deadly force emerging as a highly salient issue in the United States, public protests, social movements, and, in some cases, violent riots in major cities. Hirschfield and Simon (2010) provide evidence that major events like a sensational police killing can shift patterns of symbolic constructionism in police violence news (p. 156). The current study examines news coverage of police deadly force incidents before and after the shooting of Michael Brown to explore whether a Ferguson effect on news coverage has emerged, resulting in changes in media coverage of these incidents.

MORALES, NOE; QUAN TRAN 253
Faculty Mentor: Quan Tran
Correctional Officer Injuries
Criminology & Criminal Justice
Undergraduate
OUR Works!

Determining causes of work related injuries among correctional officers and how such injuries impact the prison environment constitute the main goals of the present research. Correctional officers have an extremely important and very unique job as they are responsible for supervising law violators, searching cells for drugs, weapons and other contraband, as well as responding to administrative demands. Officers perform these crucial duties within dangerous workplace environments inclusive of violent and unpredictable inmates, as well as other work-related hazards that can predispose officers to workplace fatal and non-fatal injuries. If correctional officers are injured, this can create a trickle effect throughout the institution. Possible consequences of officer injuries can include prolonged work hours for non-injured officers, greater disorder levels across facilities, and, higher inmate-to-officer ratios. Through the collection of semi-structured, in-depth qualitative interviews with correctional officers and administrators, this study aims to uncover reasons why officers fall victim to any type of workplace harm, and the potential implications of this for entire corrections agencies. Results are intended to enhance the health and wellness of correctional officers, as well as improve the inner-functioning of corrections systems more broadly.

PAUL, BAILEY

250

Faculty Mentor: Sara Evans

Factors Influencing Disparities in Arrest Rates by Race

Criminology & Criminal Justice

Undergraduate

OUR Works!

The disparities between specific races show that there is a divide, this is especially apparent when it comes to arrest rates. The difference in arrest rates between Whites and Blacks brings to question if one race simply commits more crimes or if there are other factors that are leading to one race being arrested more often. These factors can include poverty, family history, the community and more. The research that will be provided will show how these factors can affect the disparities of arrest rates. It will also be shown specifically if these factors are the same for drug arrest rates. Implications for policy and future research will also be discussed.

VANVALKENBURG, AUSTIN;

TYLER GALLUCCIO; NATALIE SCHARRON 251

Faculty Mentor: Sara Evans

Pokemon Go Victimization

Criminology & Criminal Justice

Undergraduate

OUR Project Award

Video games were one of the biggest technological advances in the early 70s. Ever since video games hit the market they have been ever changing with new advances and new features coming out every year. In 2016 Niantic launched the game Pokémon Go, which took gaming to a whole new level. The reason Pokémon Go is different from any other games is because Pokémon go blends reality with virtual reality (sometimes referred to as augmented reality), which is a new concept to the gaming world. Along with any new item you may discover new problems that correlate with this new item. This research project will examine the issue of possible victimization while using the game Pokémon Go. The user must go around town to collect Pokémon as well as meet up with other people to trade and train their Pokémon. As a result, this game can leave players vulnerable to victimization by directing players to places they normally do not go, and encouraging interaction with strangers, which they may not normally do. This project will explore victimization rates among players of Pokémon Go as compared to victimization rates within the general population. The project will conclude with directions for future research based on these findings.

AYRES, KIRSTEN; SAMUEL TREVINO

235

Faculty Mentor: Thomas Asmuth

The Construction and Production of an Operational and Reliable Marine Sciences Sensor Array (MSSA) Based on Open Source Hardware

Earth & Environmental Science

Undergraduate

OUR Project Award; OUR NCUR 2017 Participant

In this study, we are investigating the feasibility of building a CTD like device from easily available open source equipment to reliably provide data collection at a fraction of the cost. Data collection for rigorous scientific studies usually depends on specialized, costly commercial equipment. But over the past two decades the developments from the free/libre open source software (FLOSS) and open source hardware (OSH) communities, have leveled the playing field between citizen science and advanced scientific research. Open source equipment allows citizen researchers to have access to hardware that is difficult to obtain, while also allowing the citizens to develop their own software to create individual copyrights and products that can be manufactured. The readily available FLOSS and OSH products are decreasing the gap between knowledge in citizen science and the understanding of advanced technology. The inexpensive electronics components, sensors, prototyping platforms, and microcontrollers (e.g. Arduino, Raspberry Pi, etc.) are challenging the notion of specialty and expense for research. The availability of open source technologies has spurred innovation in citizen science. A Conductivity, Temperature, and Depth (CTD) is a common device for marine science water studies, but is also price prohibitive. Researchers such as those employed or funded by federal agencies, such as the Environmental Protection Agency, can afford the expense of a CTD which can cost upwards of \$25,000. CTDs can also have additional sensors for water clarity (turbidity), dissolved oxygen, photosynthetically available radiation, and GPS location. To receive the similar results at a low cost, the proposed project aims to build two prototypes from open source hardware. We have coined the term Marine Sciences Sensor Array (MSSA) for the proposed device.

BRIGGS, TY; PHILLIP SCHMUTZ 236

Faculty Mentor: Phillip Schmutz

Calculating Aeolian Sediment Dynamics Relative to Varying Concentrations of the Gravel Lag

Earth & Environmental Science

Undergraduate

OUR Project Award; OUR NCUR 2017 Participant

In beach-dune systems the size and texture of sand grains can impact and alter the fluid threshold necessary for movement of sand. Therefore, intrusive sediments such as high concentrations of gravel can heavily influence the rate of sediment transport and subsequently coastal dune development. Scattered throughout Santa Rosa Island, Florida there is extensive concentrations of gravel within the back barrier system, which is a product of hurricanes transporting the road pavement gravel base via wave storm surge. This human introduced gravel is an intrusive sediment and holds

potentially negative implications for aeolian sedimentary transport and coastal dune development. The primary goal of this research is to evaluate how this intrusive gravel lag inhibits aeolian sediment transport activity and if the removal of the gravel lag facilitates an increase in sediment transport. The study site is located on Pensacola Beach and consists of multiple five-meter by five-meter survey plots. Each survey plot contains different concentrations of the gravel lag, with one of the plots cleared of all lag deposits. Wind speeds and sediment transport dynamics are measured via a vertical array of anemometers and Wenglor sediment particle counters. Based on limited sediment transport events, results indicate increased transport rates in the clear plot; however, a larger variety of wind speeds are necessary to fully support the research hypothesis. The initial stages of this research project occurred during the summer months. An evaluation of wind data over the past 6 years found that wind speeds in Pensacola are lowest during the summer and peak during the late winter and springs months. Therefore, it is reasonable to infer that the continuation of this project into the spring, during more frequent strong winds, will provide the data necessary to truly test the research hypothesis.

CORBITT, SHELBY

228

Faculty Mentor: Chasidy Hobbs

Putting the "Eco" in Economics

Earth & Environmental Science

Undergraduate

OUR NCUR 2017 Participant

September 2016 was the warmest September in 136 years. Scientific observations have shown that climate change is happening, planet Earth is warming, and that the activities done by humans play a major role in creating the dangerous greenhouse gasses causing this change. This project presents concrete examples of ways business are changing day to day operations in order to decrease their impact on anthropogenic climate change. There are many examples of businesses setting the standard of going green, leading the way for significant decreases in their contribution of GHG emissions. One way businesses are going green is by switching over to green power; power from renewable sources like solar, wind, biogas, etc. rather than conventional power from fossil fuels such as coal and natural gas. Along with alternative power, businesses can do 100% recycling with closed-loop operating processes; post-consumer recycling includes almost all waste generated by a commercial or industrial business. Businesses increasingly use recycled building materials as well, for both interior and exterior needs. So far recycled business materials and other sustainable materials that fall under LEED building requirements currently implemented have diverted over 80 million tons of waste from landfills. Green infrastructure, the management of storm water on the outside of the building, can be used alongside the building materials to keep environmental impacts low which reduces the overall impact on climate change. These are just a few examples of how some businesses are leading the way to reduce anthropogenic impacts to climate change and better our communities.

ELLIS, SAMANTHA

227

Faculty Mentor: Chasidy Hobbs

Growing Cat Populations in a Welcoming World

Earth & Environmental Science

Undergraduate

OUR NCUR 2017 Participant

Trap-Neuter-Release (TNR) programs capture and sterilize feral cats, ones that are unowned and not domesticated, before returning them to their place of origin. These programs are considered the current most humane way of dealing with the overflowing feral cat population, an invasive species not native to any area of land. Cat Activist groups claim that TNR programs reduce the number of cats in a location, as well as protecting the native species who are at risk of predation by feral cats and decreasing noise and litter complaints against them. 70% of cat owners in a North Carolina study believed that TNR was capable of eliminating a feral cat colony. Do TNR Programs reduce cat populations? Social and Environmental factors prove otherwise. Surveys delivered to both Cat Colony Caretakers and standard homeowners state the different views and results of TNR programs. Personal beliefs on the welfare of outdoor cats differ between communities; cats can be seen as nuisances and inconveniences or helpless victims of human error. The environment surrounding each TNR program can change the outcome; a rural area may be more forgiving to thriving cats than an urban environment with more aggressive rebuttals against their existence and dangers such as cars and poison. Areas of the world with high pet abandonment rates also find more failure in TNR programs due to abandoned cats increasing colony numbers. These factors combined show that TNR programs scarcely work at reducing population sizes.

FOSTER, DAVID

234

Faculty Mentor: Zhiyong Hu

The Impacts of Parties

Earth & Environmental Science

Undergraduate

OUR Project Award

People often use theory and faith to determine what is best for their futures and that of others whose outcomes they themselves may never experience. This project puts political and economic theory to the test by using the real-life conditions of US citizens and seeing how each party has positively or negatively impacted their well being. Including, but not limited to: housing status, racial diversity, average income, level of employment, higher level education attainment, and kinds of industries promoted. It is essential that we not speculate on how our opinions are shaping the lives of millions around us, but found them on concrete evidence. Misinformation must be challenged, and using geographic information systems and the US census this project finds statistically significant data which makes the truth on parties more clear. To differentiate theories which may only benefit the few from those which benefit the most US citizens.

HUGGINS, AMBER**224**

Faculty Mentor: Matthew Schwartz

Determining the Accuracy and Comparability of Field and Laboratory Methods for Measuring Nitrogen and Phosphorus in Environmental Surface Waters

Earth & Environmental Science

Undergraduate

OUR Works!

Regional surface water sampling frequently uses both field and laboratory analytical methods for both educational and research outcomes. The Hach handheld colorimeter is used by UWF researchers and professors to determine dissolved inorganic nitrogen and orthophosphate in surface waters in the field. Water grab samples are usually returned to the lab for analysis by standard spectrophotometric methods. Our recent data have brought into question the comparability of these methods across the range of concentrations found in regional environmental waters. We analyzed split identical lab standards and field samples using both the field and laboratory methods to determine interreliability of the two methods, as well as any issues regarding the accuracy and precision of the field (Hach) methods at extremes (low and high) of regional nutrient concentrations.

Keywords: Nutrient Analysis, Inorganic Nitrogen, Phosphorous, Hach, Spectrophotometric

HUYETT, JULIA**226**

Faculty Mentor: Johan Liebens

A Statistical Analysis of Streambank Erosion Using Soil Particle Size in the Florida-Alabama Panhandle River Basin

Earth & Environmental Science

Undergraduate

Practicum in Environmental Studies

Based on a similar experiment done in western Canada, parameters for predicting stream bank erosion were investigated using a regression model equation that would consider bank slope sediment particle size along with values for bank slope, bankfull width, stream discharge, unit stream power, and hydraulic radius. Sediment samples were taken from 25 different stream sites in the Florida-Alabama panhandle river basin with previously known erosion rates and were measured for percent particle size diameter. Using exponential regression models developed in R statistical software, it was found that it may be possible that soil particle size is a predictive factor in stream erosion research when examining diameter sizes ·10, ·50, and ·90. The model with the best predictive capacity for streambank erosion explained 65% of calculated erosion volume when accounting for all three diameter sizes and using variable values for slope, stream discharge, and hydraulic radius.

MAYSON, LEWIS**6**

Faculty Mentor: Johan Liebens; Geoffrey Marchal

Detection of DDT in Wetland Sediments in Upper Escambia Bay

Earth & Environmental Science

OUR Works!

The headwaters of Escambia Bay, Florida have been subjected to decades of anthropogenic releases and runoff, resulting in a high potential for the accumulation of persistent organic pollutants in aquatic sediments. One particular organochlorine pesticide, dichlorodiphenyltrichloroethane (DDT), was used extensively after WWII before its negative impact on reproductive health in wildlife resulted in its ban by the USEPA in 1972. Research into DDT concentrations in upper Escambia Bay has been conducted by faculty and researchers at the University of West Florida since 2008, and recent findings by Johan Liebens and Geoffrey Marchal might indicate that DDT in the wetland sediments has either degraded or been transported from the system. This research project intends to perform an analysis for DDT and its breakdown products, DDE and DDD, in the wetlands north of Escambia Bay. The results from this study could conclude almost a decade of monitoring and could potentially guide future decisions on the necessity for further investigations for DDT. The research project will consist of two main components: field collection of sediment samples and a subsequent lab extraction and analysis for concentrations of DDT, DDE, and DDD. Samples will be taken from 7-8 sites that have shown past detectable levels of DDT. The samples will be prepared for quantitative analysis by performing an acetone-hexane soxhlet extraction based on standardized USEPA methods. Final concentrations from the extraction will be determined using a gas chromatograph (GC-ECD) and additional soil tests, such as particle size analysis and percent carbon, will also be performed.

MCQUEEN, HALEY**225**

Faculty Mentor: Matthew Schwartz; Thomas Asmuth

Biogeochemical Analyses Supporting Turbidity***Paintings: ISEA 2016 Hong Kong***

Earth & Environmental Science

Undergraduate

OUR Travel Award; OUR Project Award

Biogeochemical and physical water quality data have been collected to help represent water quality in areas of the Pensacola Bay System and Kowloon Bay, Hong Kong. A series of photographs, taken by a ROV submarine, have been created. The water quality parameters nitrogen, phosphorus, chlorophyll, specific conductivity, and dissolved oxygen have been used to help relate water quality to the visual characteristics within photographs. This research and STEAM collaboration was presented at ISEA 2016 Hong Kong, where water quality data and photographs were also taken. Overall the goal of this research is to create a greater understanding of water quality by using visual aids.

**MITCHELL, TYLER; REBECCA FOGLIETTI;
JASON T. ORTEGREN; JUSTIN T. MAXWELL** 233
Faculty Mentor: Jason Ortegren
Ocean Atmosphere Influence on U.S. Tornado Variability
Earth & Environmental Sciences
Undergraduate
SURP Program; OUR Travel Award

Between 1975 and 1998, natural hazards in the U.S. accounted for over 300 billion dollars in damages. For the same period, among all types of geologic hazards, tornadoes were responsible for the third most human fatalities and the third-highest economic cost behind only floods and hurricanes. We documented historic spatiotemporal patterns of tornado outbreaks (from both tropical and non-tropical systems) in the eastern U.S.A., 1975-2014 and analyzed the time-space associations between low-frequency ocean atmosphere variability and historic tropical and non-tropical tornado outbreaks in the study area. The annual number of U.S. tornadoes is significantly associated with the sea-surface temperatures of the Atlantic Ocean, indicating some potential for increased predictability and preparedness.

PLIER, PAIGE 232
Faculty Mentor: Matthew Schwartz
Biological Indicators of the Spatial Variability in Submarine Groundwater Discharge in a Subtropical Estuary
Earth & Environmental Sciences
Graduate
HMCSE Graduate Research Grant

Submarine groundwater discharge (SGD) is a widely recognized phenomenon known to greatly influence coastal ecosystems. SGD has received adequate recognition for its role in biogeochemical cycling and freshwater inputs, but its spatial variability remains misunderstood. Depending on local hydrological conditions, the spatial distribution of SGD tends to be naturally patchy. This study used a multidisciplinary approach in an effort to understand the spatial heterogeneity of SGD and its implications on biological indicators. The spatial distribution of a previously identified SGD location was investigated using radon chemical tracers, meiofauna indicator species, water quality, and sedimentology. A Durrige© RAD7 continuous radon air monitor was used to identify SGD point-source locations, which were further investigated with various methods including Shimadzu spectrophotometry, FLASH 2000 gas combustion, and Mastersizer 3000 particle analysis. Relationships between variables were analyzed using regression and ANOVA statistical models to test for significant relationships. This study refined the use of continuous radon monitors for SGD research and aimed to test the validity of using biological indicators to study spatial variation in SGD.

COLLINS, ERIC 129
Faculty Mentor: Bhuvanewari Ramachandran
The Implication of Renewables, BES, and EV's in a Sustainable Power System
Electrical and Computer Engineering
Undergraduate
SURP Program

A few decades ago, the thought of using solar panels to save money on the power bill was nonexistent. However, as advancements in renewable energy technology continue, adding renewables to one's home or business is becoming more and more beneficial. The prices of renewables such as solar panels and wind turbines has decreased drastically over the past couple decades. This is shifting their use from being not only beneficial to the environment, but to the wallet as well. This research is focused primarily on the monetary prerequisites resulting from the use of renewables. That is, how much is the installation cost, how long is the payback period, and how much of a profit may result.

KEYHANI, ARMAND 130
Faculty Mentor: Bhuvanewari Ramachandran
Real-time Simulation of Demand Side Management Techniques and Vehicle to Grid Power Flow in a Smart Distribution Grid
Electrical and Computer Engineering
Undergraduate
SURP Program; OUR Travel Award

The price per kilowatt-hour of energy delivered by the electric power utility varies as the total power demanded by the region it serves varies throughout the day. To save money and protect power system equipment, it is necessary to schedule the energy consumed during these periods of high/critical demand and higher pricing. In this project, a number of demand-side management strategies (DSM) are tested and compared on a modified IEEE 37-bus distribution feeder model in real time using an OPAL-RT real time simulator. This study focuses on the use of battery electric vehicles (BEVs) as energy storage components of a smart-grid. A stochastic model is used to predict the location of BEVs and their state of charge (SOC) over a 24-hour period. During the high demand periods or fault conditions, a number of BEV users may connect to the grid and supply power by using vehicle-to-grid (V2G) power flow. This number depends on the level of consumer interest in participating in V2G service as well as the location and SOC of each vehicle. The results show that a power utility may benefit by offering incentives to consumers with BEVs that are available to supply power to the grid.

LEONARD, SETH; CALEB LEONARD;**HADEN MCGILL; JARROD HALL****132**

Faculty Mentor: Andreas Fuchs

Autonomous Field Line Striper

Electrical and Computer Engineering

Undergraduate

OUR Project Award

The Autonomous Field Line Striper is a self-guided robot that paints the necessary lines onto a sports field. This device is two wheel drive with differential steering, allowing it to make zero radius turns. This is essential for quality field marking. The vehicle uses high precision location technology in order to paint straight and accurate. This device makes painting a sports field easy and efficient.

RASCH, JONATHAN; RYAN DOUGHERTY**131**

Faculty Mentor: Andreas Fuchs

Automatic Motor Controlled Antenna Tracker

Electrical and Computer Engineering

Undergraduate

Senior Designed Capstone Project

The unmanned air vehicle (UAV) has become a staple in industry and society, but its use is limited by two things flight time and communication range. This project will present a solution to the latter of the two, and provide a method to increase the distance that an operator may communicate with their UAV. The solution proposed in this project will utilize Global Positioning System (GPS) coordinates to manipulate a directional antenna to track an object, thus extending the distance of communication. GPS was chosen over alternative methods, such as Received Signal Strength Indicator (RSSI) tracking, for its superior cost and reliability. The result is a portable Automatic Motor Controlled Antenna Tracker (AMCAT) that can increase the applications of the UAV by addressing communication range limitation.

BARBOSA, RENAN**134**

Faculty Mentor: Michael Reynolds

Deep Reinforcement Learning for Balancing Inverted Pendulum

Mechanical Engineering

Undergraduate

OUR Project Award

The problem of balancing an inverted pendulum usually requires a hand-crafted algorithm that is specific for each system. The purpose of this research is to develop a model-free algorithm, capable of finding end-to-end policies directly from the sensors' inputs with a competitive performance when compared to other model-based algorithms with full access to the dynamics of the domain and its derivatives in a real two-wheeled self-balancing Inverted Pendulum. To achieve this goal, the following algorithms were selected: DDPG [Silver et al., 2014; Lillicrap et al., 2015], TRPO [Schulman et al., 2015], TNPG [Schulman et al., 2015]. These algorithms have an increased chance of success with dynamically complex problems if combined the simple efficiency of DDPG with the

stable improvement properties of TRPO or TNPG. There are demonstrations at OpenAI that the algorithm VIME [Rein Houthoof et al., 2017] when applied to TRPO or TNPG increases the success rate through exploration in tasks with more sparse rewards which with some improvements may lead to the desired goal of developing a multi-purpose algorithm. To achieve the ultimate goal of this project, the development of a real two-wheeled Inverted Pendulum robot had to be set as the initial goal. Also required was the construction of a model set with algorithms based on existent, efficient control techniques to serve as a model of comparison to determine the success rate of the experiments.

DUNSON, ALLEN; CHRISTIAN HOGUE**133**

Faculty Mentor: Cheng Zhang

Optimization of Solar Car Body Design for Drag Reduction

Mechanical Engineering

Undergraduate

Faculty Support

To reduce greenhouse gas emissions and alleviate our reliance on fossil fuels, engineers are trying to find alternative methods to make cars release less harmless gasses. Solar energy is an energy source that is slowly becoming more viable as technology increases to match the energy output. The University of West Florida Solar Car team plans to build and test a solar car and compete in solar car races alongside other nationally recognized engineering programs. In order to improve the performance of a solar car, it is very important to reduce the aerodynamic drag. To save the cost, we plan to finalize a small-scale solar car model before constructing a full-scale one. We will first use SolidWorks to design several small-scale solar car models. We will then use ANSYS Fluent to perform computational fluid dynamics modeling of the flow around the solar car models to further optimize the solar car body design. We will also use a 3D printer to create solar car models to further test them at different wind speeds in the Armfield wind tunnel available in the Department of Engineering. Flow visualization and drag measurement will be performed. The Solar Car project is expected to bring attention to the extracurricular engineering programs present at the University of West Florida, providing stepping stones into industry for automotive and solar applications.

GRIFFITH, KARA**4**

Faculty Mentor: Raina B. Garrett

Rhetorical Grammar Exercise

English

Graduate

Graduate Travel Award

I will be presenting a rhetorical grammar exercise that teachers can use in their classes. The exercise will use two versions of the same song, "Everybody Wants to Rule the World." Students will also have a paper copy of the lyrics. After students have listened to one song a couple of times, they will punctuate their lyrics based on the song. Then, they will punctuate the second version of the song after listening to it. Teachers can then have a discussion with students to discuss

why they chose specific punctuation, and teachers can also compare the types of punctuation in each song version.

LANGHAM, KENT 2

Faculty Mentor: Katherine Romack

Christ's Qualifying Period in Paradise Regained

English

Graduate

Graduate Travel Award

Although John Milton's earlier works as well as *Paradise Lost* promote the notion of a competitive pursuit of God through willful obedience, Milton's depiction of Christ changes radically in *Paradise Regained*, a four-book epic that serves as the sequel to *Paradise Lost* and was published in 1671, just three years before Milton's death in 1674. Yes, Jesus is still willfully obedient to the Father, but this obedience is different than the obedience we see in Milton's prior works. It is not obedience that is strong and worthy of earthly fame, but Jesus rather now entering his great dual, not of arms, / But to vanquish by wisdom hellish wiles (l. 174-175). Christ's wisdom is not that of power or of great thinking strategies, as He does not outwit Satan through intellectual ability, but it is rather the fact that Jesus, throughout His time of temptation, is able to constantly be mindful of His Father's affirmation and remain confident in His identity as the Father's Son beloved (l. 85). In this essay, I will examine the way in which Jesus overcomes Satan and what it means for humanity. In *Paradise Regained*, Jesus regains paradise through humility and by overcoming Satan by simply knowing His position as God's Son, an overcoming that qualifies Jesus to go to the cross and be the atonement for humanity's sin.

TREVINO, HANNAH 5

Faculty Mentor: Raina B. Garrett

Regenerative Pedagogies for FYC: Multimodality and Revision

English

Graduate

Graduate Travel Award

This presentation exhibits an example of regenerative pedagogies, or classroom activities that make explicit the inventive stages of writing. In teaching revision, students compose, together, in the program OneNote to play with spatial arrangement and the visual components of writing spaces. Microsoft OneNote is a spatial platform for collaborative revision. OneNote encourages dialogue in a way that writers can visualize the social and multi-vocal components of research writing. The organization platform allows students to compose and annotate the text through the use of text boxes that can be reorganized in any order or shape. This reorganization enables revision through students' identification of transitions, quotations, and their own voices within the text. OneNote also enables real-time sharing with which students can collaborate with their professor or peers. The fluidity of the program enhances student engagement with the text through spatial logic while ultimately producing a linear arranged text.

ANAYA, MIRAN; CALEB KING, ALEXANDER MALLARY, LAURYN REID, JOHN SCHWINDTDA; MORGAN ARMSTRONG; MATTHEW CAULFIELD; JAMIE DURBIN; DIANA HANKS 3

Faculty Mentor: Nancy Schrock

Meta-writing: Research and the Writing Process

English

Undergraduate

English Department

During the Spring 2017 semester, the Writing for STEM class (ENC3455) ran a short research experiment on measuring dry baking ingredients for the purposes of writing a paper on the experiment and then reflecting on writing as a process. The Team Chefs' experiment compared two methods of measuring flour and sugar: spooning into a measuring cup or using the cup to scoop the flour or sugar. The two methods gave different weights, particularly for the flour. The different weights for two cups of flour were then used to bake chocolate chip cookies, which showed appearance and taste differences as judged by the class in a blind taste test. These results agree with literature sources that recommend weighing dry ingredients for more consistent results. The Chefs compiled the findings as a typical research paper, and in a final meta-writing exercise, the team reflected on the process of going from running experiments to completing a paper. This poster will detail the team's process and reflections on writing as a process.

DUNCAN, LAUREN; ELIZABETH EVANS; DILLION FRANCIS; ROBIN HALL; BRANDON HINDERKS; AMBER HUGGINS; HALEY MCQUEEN; SHANNON NELSON, MATTHEW SEIVERT 1

Faculty Mentor: Nancy Schrock

Meta-writing: Research and the Writing Process

English

Undergraduate

English Department

During the Spring 2017 semester, the Writing for STEM class (ENC3455) ran a short research experiment on brewing coffee for the purposes of writing a paper on the experiment and then reflecting on writing as a process. The Team Baristas' experiment compared coffee brewed by two methods: automatic percolator and automatic drip. The two coffee makers showed differences in brew time and ease of clean up, and the coffee they brewed differed in taste and color. A blind taste-test panel compared the coffee from each maker and voted the Mr. Coffee drip maker to deliver the better tasting coffee. Data also showed that the Mr. Coffee took less time to brew and was easier to clean. These results are consistent with available literature sources although taste opinions vary. The Baristas compiled the findings in the form of a typical research paper, and in a final meta-writing exercise, the team reflected on the process of going from running experiments to completing a paper. This poster will detail the team's process and reflections on writing as a process.

ADAMS, MEAGAN**176**

Faculty Mentor: Eric Greska

Electromyographic Activity of the Deltoids During the Performance of Vertical Pole Movements

Exercise Science and Community Health

Undergraduate

Kugeman's Honors Program

Pole fitness is a new, popular form of exercise focused on increasing endurance and overall strength. This study compares the effectiveness of four vertical pole movements for the deltoids. Five intermediate pole dancers completed three repetitions of the climb, cat pounce (CP), caterpillar push up on the pole (CPP), and caterpillar push up on the floor (CPF). Surface electromyography (EMG) was analyzed in the anterior deltoid, lateral deltoid, and posterior deltoid independently during each exercise. Statistical analysis found statistical differences ($p < 0.05$) within four muscles, the left anterior deltoid, left lateral deltoid, left posterior deltoid, and right lateral deltoid. Comparisons between exercises have shown the CPF to have the highest EMG activation levels within the anterior and lateral deltoid muscles and work significantly more than the other exercises. Though EMG activation for the CPF was not the highest in the posterior deltoids, it is still effective at activating these muscles. Overall, the CPF may be the best vertical pole exercise for strength training purposes among the five exercises looked at in this study.

Key Words: muscles, pole fitness, strength training, electromyography

ADLOF, LAUREN**184**

Faculty Mentor: Ludmila Cosio-Lima

C-Reactive Protein and CVD in First Responders

Exercise Science and Community Health

Graduate

SCAC Grant

Background: Studies have shown that risk stratification for the general population at risk for atherosclerotic cardiovascular disease (ASCVD) plays an important role in primary prevention of cardiovascular disease. High sensitivity C-reactive protein (hs-CRP) and low-density lipoprotein cholesterol (LDL-C) have emerged as two of the widely accepted nontraditional risk factors for atherosclerotic disease that have shown incremental prognostic value in predicting cardiovascular events. First responders such as firefighters and police officers have high occupational demand and prevalence of stress-related diseases, such as increased risk of heart disease and sudden cardiac death. Due to their high risk of cardiovascular disease and heart attacks, the need for frequent and reliable CVD risk factor screening for police and firefighters is essential. Purpose: The objective of this pilot study was to identify a relationship between hs-CRP and LDL-C levels and ASCVD risk factors in paid police officers compared to firefighters. Methods: Blood draws and anthropometrics from 14 male firefighters (Age: 35.5 ± 3.2 yrs; Height: 71.1 ± 3.2 inches; Weight: 199.9 ± 42.4 lbs; BMI:

27.8 ± 6.4 kg/m²) and 13 male police officers (Age: 39.5 ± 8.7 yrs; Height: 67.7 ± 6.4 inches; Weight: 216 ± 49.3 lbs; BMI: 33 ± 7.1 kg/m²) were taken and cardiovascular risk factors were analyzed using chi square statistics. Results: Mean Systolic and Diastolic Blood Pressure in firefighters were found to be $123.6 \pm 11.2/77.5 \pm 10.21$ mmHg, respectively. Mean hs-CRP among firefighters was 2.9 mg/L ± 0.3 mg/L and LDL-C of 167 ± 37 mg/dL. A moderate-to-high positive relationship was observed for high hs-CRP levels and LDL-C among firefighters ($r = .68$, $p < .001$). Mean Systolic and Diastolic Blood Pressure and Mean hs-CRP values in police officers are expected to be comparable to those of the firefighters. Conclusion: Due to their high occupational demands and increased risk of stress related CVD, the need for frequent and reliable CVD screening for police and firefighters is essential. This study demonstrated that local firefighters and police officers have a high risk of developing ASCVD. Therefore it is of utmost importance to develop screening methods that will aid in the development of early detection and prevention strategies to help decrease the incidence of on-duty sudden cardiac death in firefighters, and stress-related CVD in police officers. This project was supported by a grant from the University of West Florida through the Office of Research and Sponsored Programs.

ATWOOD, KYM**190**

Faculty Mentor: Susan Jans-Thomas

The Saenger Theatre: The Grand Dame of Palafox

Exercise Science and Community Health

Doctoral

Faculty Support

This paper concentrates on the era of segregation and Vaudeville in relationship to African American Vaudeville acts performing in the Saenger Theatre in Pensacola. The paper seeks to determine if African American Vaudeville acts performed at the Saenger between 1925 and the 1930s. The paper discusses the entrance and seating of African Americans attending Saenger shows and the history of the Saenger as a movie palace.

BARRINGTON, PATRICIA**245*****Use of Technology in the Classroom to Promote Student Learning***

Exercise Science and Community Health

Faculty

Health Promotion faculty at the University of West Florida utilize a Mobile Computer Laboratory to provide technology-driven instructional strategies and to promote high levels of engagement. Students use the MCL in health promotion classes to assess web resources, analyze and condense large amounts of information, and create publications with immediate feedback comparable to workplace health promotion projects. Students completed a pre- and posttest at the start and end of the semester that included items on the Motivated Strategies for Learning Questionnaire and an 18-item survey that focused on technology use. Findings from the MSLQ indicated minimal difference overall in motivation

and learning strategies. Findings from the technology survey indicated that the computers helped students understand the course concepts, enhanced learning, and added value to the activities.

FRANCIS, BRIDGES 246

Characteristics of Victims and Offenders in Homicide-Suicide Incidents, 1968-1975

Exercise Science and Community Health
Faculty

Extant research reports differences among veterans of military service and non-veterans regarding interpersonal and domestic violence and suicide; however, none until recently explored homicide followed by suicide among military veterans. The National Violent Death Reporting System employs a state-based surveillance system that collects data from only 18 states, excluding Florida. Florida Department of Health's Bureau of Vital Statistics (DOH/BVS) collects data about homicide and suicide decedents; however, they do not link homicide to suicide events. Newspaper surveillance tools were employed for linking homicide and suicide events. The main goal of the study was to identify characteristics/factors that differentiate veteran and non-veteran perpetrators who commit homicide-suicide. Using DOH/BVS data, 505 male perpetrators were identified and 360 were non-veterans. A random sample matched by male gender yielded 145 non-veterans. There were too few females among veterans ($n = 2$) so they were excluded from statistical analysis. Veteran ($n = 145$) and non-veteran ($n = 145$) male perpetrators of homicide-suicide were compared for sociodemographic and contextual factors using Chi-squared and t-test analyses. Male veteran perpetrators of homicide-suicide were more likely to be older, White, non-Hispanic, widowed, to have committed suicide at home, and to have used any type of firearm than male non-veteran perpetrators. Findings point to the need to tailor suicide risk assessments to include questions specific to homicide-suicide events and to the importance of assessing suicide and violence risk in the older military veteran population. Any conclusions are the authors own and do not necessarily reflect the opinion of DOH.

CROWLEY, CATHERINE 186

Faculty Mentor: Christopher Dake

Chiari I Malformation In a 15 Year Old High School Football Player

Exercise Science and Community Health

Undergraduate

Athletic Training Program

Objective: Chiari I Malformation and concussion symptoms are similar in nature and athletic trainers need to be able to recognize when there is a need for medical clearance and CT scan to differentiate between the two (Starnes, Smith, & Smith, 2015).

Background: A 15-year old male, offensive lineman football player reported symptoms of occipital headache, dizziness, loss of balance, nausea without vomiting and photophobia during a full contact practice. The athlete had previous

complaint of headache and dizziness at practice during weeks previous and was instructed on better hydrating practices. Differential Diagnosis: Migraine headaches, cluster headaches, occipital neuralgia, concussion.

Treatment: Due to the severity of the symptoms the athlete was referred to neurology for consult. Acetazolamide therapy was started to decrease intracranial pressure and improve pain associated with headaches. Neurosurgeon recommended brain stem decompression surgery that consists of C-1 C-2 laminectomy and dual graft patching to make more room for the herniation and decrease intracranial pressure.

Uniqueness: Sudden onset of symptoms is very rare in Chiari I Malformation as patients typically have slow progressive neurological symptoms (Boari, Spina, & Gagliardi, 2015). According to Aitken et al. (2009) 37%-57% Chiari I Malformation diagnosis are asymptomatic.

Conclusion: Athletic trainers need to be aware the symptoms of Chiari I Malformation mimic that of a concussion (Starnes, Smith, & Smith, 2015). Athletes diagnosed with this condition are at a higher risk of catastrophic injury or death with minor head trauma and should be denied medical clearance for contact sports (Illes & Kirschen, 2014).

CUARESMA, GIOVANNI; RYAN COUCH 177

Faculty Mentor: Eric Greska

The Effects of Listening to Music and Texting while Walking

Exercise Science and Community Health

Undergraduate

SURP Program

Pedestrian-related injuries result in about 4,500 deaths and an estimated 16,000 traffic injuries in the United States alone. Young adults, frequently on college campuses, are at higher risk for pedestrian related injuries than any other age groups. The use of cell phones can be attributed to this increase in injury. Texting while walking has shown to increase inattentive blindness, or reduced situational awareness, leading to more accidents. The objective of this research is to examine the gait mechanics of an individual walking while texting and listening to a beat (song or metronome) to identify any adjustments made during these tasks. This research is aimed to define potential risks of texting and listening to music while walking, and bring awareness to the dangers of this behavior. Subjects are required to walk along a 15"20 meter path five times under each condition: under the influence of music alone, texting alone, music and texting simultaneously, and neither. Gait variables will be statistically analyzed using a MANOVA test. Piloting research shows participant decreases in time for speed and stride length, supporting evidence of decreases in gait velocity and step length. In addition, increases in cycle time and double limb support time indicate the body's need to maintain posture and safety through slower walking. Early results indicate there is no connection between music and the control conditions for any gait variables, such as speed or stride length, unless in the presence of texting. This suggests that texting is the primary source of gait changes.

**DAVIS, HALLIE; ANDREA NELSON;
CHRIS O'GRADY; ERIC GRESKA 178**

Faculty Mentor: Eric Greska

***Objective Activity Measurement Before
and After Shoulder Arthroplasty***

Exercise Science and Community Health

Undergraduate

OUR Project Award; OUR Works!

The purpose of this study is to gain knowledge on the percent increase of shoulder range of motion and muscle activation in subjects with severe shoulder osteoarthritis after an arthroplasty procedure. This will be accomplished by collecting pre- and six-week post-surgery data using a Delsys Trigno system. The subject pool will consist of men and women varying in age and severity of osteoarthritis. For data collection, inertial measurement units (IMUs) will be placed on the subject's injured side to define four segments: forearm, upper arm, torso, and pelvis. Eight electromyography (EMG) sensors will be used to evaluate muscle activation at the following locations: trapezius group (upper, middle, and lower), infraspinatus, deltoid group (anterior, middle, posterior), and pectoralis major. After all sensor placement, subjects will undergo manual muscle testing and active range of motion (AROM), including internal and external rotation, abduction, and flexion of the shoulder both actively and passively. A MANOVA will be used to determine if the subject's pre- and post-data values are statistically different. It is expected that subjects will show a significant improvement in all components of AROM, as well as an increase of muscle usage and a decrease in muscle guarding.

DIMITROV, DIMITAR 187

Faculty Mentor: Christopher Dake

Ulcerative Colitis in a 16 Year Old Football Player: A Case Study

Exercise Science and Community Health

Undergraduate

Objective: Ulcerative colitis is a chronic idiopathic inflammatory bowel disease characterized by continuous mucosal inflammation that starts in the rectum and extends proximally. Typical presenting symptoms include bloody diarrhea, abdominal pain, urgency, and tenesmus' (Feuerstein & Cheifetz, 2014, p. 1553). Multiple conditions present with similar symptoms, therefore athletic trainers need to be able to recognize the various conditions.

Background: Diarrhea in a 16-year-old white male high school football player that persisted for two months. Then blood appeared in the patient's stool; however, he still did not seek medical attention. The athlete's condition progressively worsened to a point where he had to use the restroom with great urgency up to thirty times a day and excreting blood only. Differential Diagnosis: Crohn's disease, intestinal cancer, and ulcerative colitis

Treatment: The initial treatment included change in diet: no nuts and seeds, raw vegetables, red meat, and tomato

sauce. The patient was prescribed steroids and NSAIDS. The patient underwent surgery that included removal of the colon, attachment of the small intestine to the abdominal wall and an ostomy bag, and creation of the pouch that is attached to the anus.

Uniqueness: The overall incidence is reported as 1.2 to 20.3 cases per 100,000 persons per year, with a prevalence of 7.6 to 245 cases per 100,000 per year (Feuerstein & Cheifetz, 2014, p. 1553).

Conclusions: Athletic trainers can learn that athletes may not always complain about symptoms; however, knowing one's athletes and careful observation might help identify unusual behaviors that suggest underlying health problems.

DUSENBERRY, TOM 179

Faculty Mentor: Eric Greska

***Electromyographic Analysis of Baseball
Pitchers and the Effects of Fatigue***

Exercise Science and Community Health

Undergraduate

Purpose: To view upper body muscle activation using electromyography (EMG) data in collegiate baseball pitchers and determine how fatigue effects the kinetics of the pitcher's form.

Introduction: Understanding how fatigue affects a pitcher's form will help reduce the risk of overuse injuries. This study will provide coaches, athletic trainers, and physical therapists with increased knowledge of the muscles involved in the pitching motion. This information will help design improved training methods and rehabilitation programs for developing baseball pitchers.

Methods: The participants will be prepped by placing EMG sensors on several superficial muscles of the upper body. Then they will be asked to throw ten pitches for data collection to determine a baseline. The participant will then throw ten pitches immediately following the end of practice for fatigue data collection and this data will be compared to the baseline sequence. Results: The data will be analyzed using Visual 3D software and the pitcher's pre- and post-practice throws will be compared.

Clinical Relevance: The data could be used to develop improved training programs for the pitchers when building strength and endurance. Focusing on which muscles are affected by fatigue may help prevent the athlete from injuring the weaker muscles or the muscles being overworked to maintain the ball velocity.

FRASER, MICHAEL 180

Faculty Mentor: Eric Greska; Amy Crawley

Comparison of Back Squat Versus Safety Squat on Activation of Seven Superficial Thigh Muscles

Exercise Science and Community Health

Graduate

Faculty Support

The barbell back (BB) squat has been the predominate exercise to build lower body strength for years. A recent variation of the BB squat is the safety bar (SB) squat. The safety bar sits differently on the shoulders. **PURPOSE:** To compare the activation level of seven superficial thigh and gluteal muscles during a BB squat and a SB squat. **METHODS:** Ten resistance trained men (ages 18-25) volunteered to participate in the study. Electromyography (EMG) sensors were placed on the rectus femoris, vastus lateralis, vastus medialis, biceps femoris, semitendinosus, gluteus medius, and gluteus maximus of the dominant leg. Subjects performed three sets of five repetitions of 135 pounds for each type of squat. The squat performance order was counterbalanced and randomized across all subjects. Data analysis was performed using an ANCOVA to determine if there was a significant difference in EMG activation between the two squat types ($p < 0.05$). **RESULTS:** Only the gluteus medius showed a significant difference (BB=0.61041, SB=0.73042, $p = .024$) in squatting. **CONCLUSIONS:** Findings support the use of the SB squat to increase activation of the gluteus medius compared to the BB squat. While the other six muscles tested did not demonstrate a statistically different increase in EMG activation with safety bar squats, there was a trend of higher EMG activation across all muscle groups. **PRACTICAL APPLICATIONS:** These findings suggest that incorporating the traditional barbell back squat with safety bar squats may improve the development of the gluteus medius without losing subsequent activation of other prime movers in the squat.

HARRIS, JESSICA 188

Faculty Mentor: Christopher Dake

Abdominal Strain in a Collegiate Women's Volleyball Player: A Case Report

Exercise Science and Community Health

Undergraduate

Faculty Support

Objective: To discuss an abdominal injury in a collegiate volleyball player. Athletes more susceptible to an abdominal strain are those in sports that require strong rotational movements or flexion/hyperextension movements (Anderson, M.K., Hall, S.J., & Martin, M., 2005). They are usually acute (traumatic) injuries seen in athletes in the sports of baseball, softball, basketball, gymnastics and track and field (Anderson, M.K., Hall, S.J., & Martin, M., 2005).

Background: To discuss the case of a 21-year-old female collegiate volleyball player who presented to the sports medicine staff with left upper quadrant abdominal pain during a practice session.

Treatment: Treatment lasted for at least 14 days. The treatment plan was very conservative.

Uniqueness: More commonly an injury to the rectus abdominus occurs at the origin in the lower quadrants, however, this injury is at the insertion site. Abdominal injuries are either rare or underreported. Therefore, the research on the topic is very limited.

Conclusions: Pain in the abdominal region can be treated with removal of the original stimulus. However, recognizing the factors contributing to abdominal pain and dysfunction can be a challenge for the sports medicine professional. A heedful and modest approach to abdominal pain is necessitated, particularly by health care providers in varied practice settings.

HYDE, JOSH; SARAH BASTAKI 189

Faculty Mentor: Sarah Bastaki

The Effects of Endurance Exercise on Anti-diabetic Phenotypes in Skeletal Muscle Fibers

Exercise Science and Community Health

Undergraduate

OUR Project Award

Diabetes is a disabling disease that affects 9.3% of Americans. While Type 1 diabetes is genetic, type 2 diabetes is caused by life styles (lack of physical activity and over eating), resulting in insulin resistance and thus blood glucose stays high in the blood instead of getting into the tissues. People with Type 2 diabetes selectively lose slow muscle fibers, which contain more glucose transporter 4 (GLUT4) and mitochondria, both of which are critical for reducing blood glucose levels. Recent studies have shown that endurance exercise (EE) elicits muscle fiber type shifting from fast to slow, and autophagy (a self-eating mechanisms) contributes to restoration of insulin sensitivity and removal of dysfunctional organelles such as mitochondria. In this study, we hypothesized that EE would promote autophagy and mitochondrial biogenesis as well as GLUT4 expression in fast muscle fibers (tibialis anterior muscle). Using a mouse model of endurance exercise (treadmill running for 60 min at 12 m/min, 5 days/week for 6 weeks), we examined autophagy levels, mitochondrial biogenesis, and GLUT4 protein expression levels via a Western blotting technique. Our data showed that while EE exhibited a significant increase in autophagy as evidenced by elevated autophagy-related proteins (LC3, BNIP3, and FOXO3), EE failed to elicit mitochondrial biogenesis and GLUT4 expression. Our study indicates that although 6 weeks of EE is enough to induce autophagy, mitochondrial biogenesis and GLUT 4 expression seem to require more than 6 weeks of exercise frequency.

KENNY, DAISY**165**

Faculty Mentor: Eric Greska; Ludmila Cosio Lima; Daniel Drost

TPI Exercises Positively Affect Golf Swing Performance

Exercise Science and Community Health

Graduate

Background: While a multitude of research exists relative to various exercise interventions for novice golfers, there is no current research that incorporates Titleist Performance Institute's (TPI) golf specific exercises for collegiate golfers. Purpose: To determine if incorporating TPI exercises as part of a golfer's strength and conditioning program would impact swing performance variables in male and female collegiate golfers.

Methods: Subjects included 17 (M=10, F=7) NCAA Division II collegiate golfers (age=20.30±1.53years; height=1.70±0.08m; weight=75.99kg±10.51), who maintained a handicap of 3. The testing procedures included a pre- and post-biomechanical analysis using 3D motion capture and a TPI screen. A 10-week TPI intervention was implemented twice per week and tailored to the teams most common physical stability and mobility weaknesses identified by the TPI screen. Repeated measures ANOVA's were conducted for each dependent variable: hip-velocity (HV; °/s) x-factor angle (XF; °), and club head velocity (CV; m/s). A Bonferroni correction was used to avoid error when making multiple comparisons, adjusting the alpha level to p0.017.

Results: Subjects significantly increased HV (9.33±1.24°/s to 10.39±1.59°/s; p<0.001) and XF (52.63±8.58° to 57.90±7.96°; p=0.011). Although not significant, overall CV increased (44.53±5.25 to 45.02±5.11; p=0.075).

Conclusion: The incorporation of TPI exercises as part of a strength and conditioning program positively impacts swing performance in collegiate golfers. Greater HV, paired with an efficient kinematic sequence, can result in increased ball displacement. According to previous research, improving the XF increases the body's ability to store energy at the top of the backswing, and generate power.

KUHLMEIER, THEA**166**

Faculty Mentor: Eric Greska

Preventing Overuse Shoulder Injuries in Collegiate Volleyball Players

Exercise Science and Community Health

Undergraduate

OUR Project Award

Shoulder injuries are very common among collegiate volleyball players. During games, shoulder injuries are the third greatest, only after ankles and knees. Volleyball related shoulder injuries are predominately due to the repeated overhead movement that is performed while attacking and serving. The goal of this research project is to evaluate the effect of an exercise program to reduce the prevalence of shoulder problems in collegiate volleyball. Ten collegiate UWF volleyball players in their off-season will create the subject pool. These athletes range from 18-21 years old. Before going

through the program each of the athletes will be tested for shoulder mobility and swing velocity using the Delsys Trigno Inertial Measurement Unit (IMU) system. Each of the athletes will then go through the Oslo Sports Trauma Research Center (OSTRC) Shoulder Injury Prevention Program. The program is designed to increase glenohumeral internal rotation, external rotation strength and scapular muscle strength, and improve kinetic chain and thoracic mobility. The program will be administered three times a week for 6 weeks as part of the regularly scheduled team practices. It is hypothesized that the exercise program will improve shoulder mobility and swing velocity. It is also hypothesized that there will be a reduction in the prevalence of shoulder injuries. T-tests will be used as statistical analysis for the data.

LOKEN, BRIAN; MICHAEL**HONEYWELL; HIROKI ISEJIMA 173**

Faculty Mentor: Christopher Dake

Blood Flow Restriction Training affects on Hypertrophy and Strength in the Upper Extremities

Exercise Science and Community Health

Undergraduate

OUR Project Award

The objective of this experimental research study is to test if hypertrophy occurs while using blood flow restriction during training the upper extremities. Blood flow restriction (BFR) training utilizes restrictive cuffs to slow blood flow in the users' extremities creating a blood pooling effect. This state promotes hypertrophy and strength gain in individuals who participate in low-intensity training while BFR is applied. This mimics the same responses seen from high intensity training sessions. Research has shown an increase in muscle strength and hypertrophy, most often focusing on the lower extremities. Due to the lack of research present for upper extremities, this study will test the strength and hypertrophy gains in the muscle after participating in low intensity upper extremity training while BFR is applied. It is well established that BFR resistance training produces changes in muscle hypertrophy similar to those produced by current high-intensity interval training (HIT) regimens, when training volume and frequency are similar. (Abe, Kearns, & Sato, 2006) Abe et al. (2005) investigated the effects of low-intensity (20% of one rep max (1RM)) squat and leg curl exercise training with and without BFR on blood flow restricted thigh and non-restricted gluteus muscle volumes in young men. They found that the quadriceps, biceps femoris, and gluteus maximus muscle volumes increased. With these two studies in mind, we would like to see if similar gains can be made in the upper extremities for possible strength training regiments and rehabilitation programs.

METT, SVETLANA**183**

Faculty Mentor: Francis Stephen Bridges

Characteristics of Homicide-Suicide among Military Veterans and Non-Veterans in Florida, 2000 to 2010

Exercise Science and Community Health

Doctoral

2016-2017 Hoyt Innocative Informativs Mentorship Grant Extant research reports differences among veterans of military service and non-veterans when it comes to interpersonal and domestic violence and suicide; however, none until recently explored homicide followed by suicide among military veterans. The National Violent Death Reporting System employs a state-based surveillance system that collects data from only 18 states, excluding Florida. Florida Department of Health's Bureau of Vital Statistics (DOH/BVS) collects data about homicide and suicide decedents; however, they do not link homicide to suicide events. Newspaper surveillance tools were employed for linking homicide and suicide events. The main goal of the study was to identify characteristics/factors that differentiate veteran and non-veteran perpetrators who commit homicide-suicide. Using DOH/BVS data, 505 male perpetrators were identified and 360 were non-veterans. A random sample matched by male gender yielded 145 non-veterans. There were too few females among veterans (n = 2) so they were excluded from statistical analysis. Veteran (n = 145) and non-veteran (n = 145) male perpetrators of homicide-suicide were compared for sociodemographic and contextual factors using Chi-squared and t-test analyses. Male veteran perpetrators of homicide-suicide were more likely to be older, White, non-Hispanic, widowed, to have committed suicide at home, and to have used any type of firearm than male non-veteran perpetrators. Findings point to the need to tailor suicide risk assessments to include questions specific to homicide-suicide events and to the importance of assessing suicide and violence risk in the older military veteran population. Replication studies across other states should expand the generalizability of the findings.

PRESNALL, JESSICA**181**

Faculty Mentor: Eric Greska

The Effects of Internal Versus External Verbal Cues on Muscle Activation

Exercise Science and Community Health

Undergraduate

The purpose of my research is to examine the effects that verbal cues can have on muscle activity during a specific resistance training exercise. Verbal cues alone, without any physical changes to an exercise, have exhibited a great influence on muscle activity. The use of verbal instructions can allow for specific muscles to be targeted. For many professionals, including physical therapists, occupational therapists, or personal trainers, it can be troubling to not know if their patient will be targeting the correct muscle when given an exercise. Additionally, previous research has shown that giving verbal instruction prior to an exercise can help reduce the risk of injury. Knowing the positive effects and proper usage of verbal cues can help professionals in many fields confidently instruct their clients and know that they

are targeting the correct muscle group. For the current study, the two specific cues that I will be looking at are internal and external. On testing day, subjects will be asked to perform the Romanian Deadlift exercise at 60% of their 1-repetition maximum (RM) for 3 different sets and electromyography (EMG) will be used to record muscle activity. For this study, two hypotheses have been proposed: 1) verbal instruction will result in a specified muscle to be targeted during a resistance training exercise and 2) internal verbal instruction will cause for a larger increase in muscle activity in a specified muscle than external instruction. A paired-samples t-test will be used to compare differences in muscle activity of the two instructions.

REXWINKLE, SARAH; STEPHEN QUINTIN**191**

Faculty Mentor: Yougil Lee; Yongchul Jang

The Effect of Endurance Running Exercise on Establishment of Neuroprotection against Pharmacologically Induced Parkinson's Disease

Exercise Science and Community Health

Undergraduate

OUR Project Award

Parkinson's disease (PD) is the primary neurodegenerative disease affecting more than ten million people worldwide; however, decades of pharmacological therapeutic trials against PD remain unsatisfactory. In contrast, endurance exercise (EE) has emerged as a potent non-pharmacological intervention that ameliorates the unfavorable progression of PD. Despite the convincing evidence, underlying mechanisms responsible for EE-induced neuroprotection remain poorly understood. Given that mitochondrial dysfunction in dopaminergic neurons is a potent inducer of PD, we hypothesized that EE would promote removal of malfunctioning mitochondria and induce new generation of mitochondria, resulting in neuroprotection against PD. Using an animal model: 1) sedentary group, 2) PD sedentary group, 3) exercise group, and 4) PD + exercise group, we examined if EE elicits neurogenesis, we measured proteins levels of tyrosine hydroxylase (TH) using Western blotting since TH levels are closely correlated with the number dopaminergic neurons. Furthermore, we analyzed protein levels of brain derived neurotrophic factor (BDNF) known for promoting neurogenesis. We found that, compared with PD sedentary group, PD + exercise group significantly enhanced neuroregeneration evidenced by increased TH levels in the striatum, but exercise-mediated BDNF elevation was observed. Collectively, our results indicate that EE mitigates Parkinson's disease-mediated cell death and enhances neuroregeneration.

SCHAFFNER, JENNIFER;
MORIAH DOUGLAS; JALEESE COPE 174

Faculty Mentor: Christopher Dake

***Positive and Negative Attributes of Working
in the High School Setting as an Athletic Trainer***

Exercise Science and Community Health

Undergraduate

Context: Understanding what entices athletic trainers to enter into a particular setting, may help future graduates determine to which field they might choose to pursue.

Objective: The objective is to provide more information to college athletic training students on whether a job in the high school setting would suit their aspirations and to identify whether or not a possible attribute might sway their decision in a different direction.

Design: This study would be considered mixed methods research. It was research that is designed to answer a variety of questions to potential problems. In the hope of describing, exploring, or explaining the high school athletic trainer experience. This method was chosen because it was the most practical way to portray the chosen topic of information.

Setting: The setting is high school athletic trainers in the United States.

Methods: Surveys containing quantitative and qualitative questions were distributed through the National Athletic Trainers Association database. The appropriate analysis will be completed to answer the research questions.

Results: Anticipated results will show trends in the barriers faced among high school athletic trainers who work in the United States. These results will be divided based on the demographic information provided to the researchers.

Discussion: Awareness of the issues that athletic trainers face in the high school setting is important to provide a healthier appreciation of all aspects of the athletic training experience so that athletic training students will be able to properly gauge which setting they would most like to be employed under.

SCHAFFNER, JENNIFER 175

Faculty Mentor: Christopher Dake

S.I.C.K. Scapula in a 20 Year Old Female: A Case Study

Exercise Science and Community Health

Undergraduate

Objective: The acronym SICK refer to finding: Scapular malposition, Inferior medial border prominence, Coracoid pain and malposition, and dysKinesis of scapular movement (Burkhart, Morgan, & Kibler, 2003). This syndrome is defined by asymmetric malposition of the scapula in the dominant shoulder, which usually appears during examination as one shoulder presenting lower (Burkhart, Morgan, & Kibler, 2003).

Background: 20-year-old female with scapular dyskinesia. Mechanism of injury was a weightlifting accident where

spotter was not paying attention and allowed the weight to drop on the patient's shoulder. A winging scapula was noted on exam and a torn labrum was found on MRI. Surgery was performed to repair the labrum. After two years of physical therapy, strength has improved but patient is still exhibiting a winged scapula and scapular dyskinesia.

Differential Diagnosis: Torn labrum, scapular dyskinesia, and inhabitation of the long thoracic nerve

Treatment: Treatment of SICK Scapula is conservative physical therapy and focused on kinetic chain- based rehabilitation to regain normal muscular activation patterns. Physical therapy started immediately after evaluation with initial focus on improving pain-free range of motion.

Uniqueness: Warner et al found alterations of the scapular position and motion in 68% to 100% of patients with a history of shoulder injuries (Warner, Micheli, Arslanian, Kennedy, & Kennedy, 1992). The current patient not being an overhead throwing athlete makes her different from the norm.

Conclusions: Athletic trainers need to be aware the symptoms and treatment for SICK scapula due to the commonality of the syndrome in throwing athletes.

SHAIA, STEPHANIE;
HALIEGH CASTONGUAY; JESSE NETO 182

Faculty Mentor: Eric Greska

***Event Related EEG Changes During Active,
Passive, and Imagined Movement***

Exercise Science and Community Health

Undergraduate

OUR Project Award; OUR Works!

Background: Cortical activation patterns related to movement intention and motor awareness can be measured using electroencephalography (EEG). Specifically, changes in signal power known as Event Related Desynchronization and Synchronization (ERD/ERS) represent changes in cortical activation. A better understanding of ERD/ERS patterns, and how they vary between active, passive, and imagined movement, is needed. Simultaneous use of EEG and movement tracking systems enables complete analysis of a movement from planning through execution. Purpose: The purpose of this study is to examine the ERD/ERS mechanism in a healthy population during active, passive, and imagined movements. Methods: Thirty-two channel EEG, tibialis anterior EMG, and VICON motion capture data will be recorded for ten healthy, college age subjects. Subjects will be asked to perform right ankle dorsiflexion under four movement conditions: imagined, passive, passive + imagined, and active. ANOVA will be used to examine differences between the four movement conditions. Results: This study is ongoing and findings will be reported at its conclusion. Discussion: Understanding brain activation patterns corresponding to peripheral movement is valuable. Data regarding ERD/ERS phenomenon is applicable to various avenues of current research. The combined use of EEG and EMG systems provides information needed

in the development of neuroprosthetic devices. Increased information regarding detection of movement intention can be used to improve reliability and functionality of human-machine interfaces. Information about the effects of imagined and passive movement on brain activity can influence physical therapy protocols.

STRAUGHN, MARISA; LAUREN ADLOF; JD WALLOP 185

Faculty Mentor: Amy Crawley; Ludmila Cosio Lima

The Effects of a Periodized Resistance Training Program on Body Composition of ROTC Cadets

Exercise Science and Community Health

Graduate

UWF Internal Fellowship Grant

BACKGROUND: Similar to the general US population, the rate of cardiovascular disease, sedentary lifestyle, and obesity in military populations is growing. Android obesity, a type of obesity where excess fat accumulates around the thoracic and abdominal cavities, is associated with an increased risk of cardiovascular and metabolic deficiencies. Military populations are confronted with high physiological demands therefore it is crucial for them to be in good physical condition and minimize excess body fat in the thoracic and abdominal areas.

PURPOSE: This research investigated the effects of a 7-week periodized training program on body composition of ROTC cadets.

METHODS: Subjects consisted of 23 Army and Air Force ROTC cadets (male=18, female=6), Age (yrs)= 2.26±5.96, Height (cm)=172±8.68, Weight (kg)=72.98±12.91. The intervention group (IG n=14) trained for 1 hour/day, 4 days/week and the control group (CG n=9) participated in traditional military training protocol for 1 hour/day, 3 days/week.

RESULTS: Findings revealed that both groups demonstrated a significant decrease in overall body fat percentage ($p=0.005$) pre to post training, but only the IG demonstrated a significant training effect evidenced by decreases in the abdominal area ($p=0.009$) and mid-axillary ($p=0.025$).

CONCLUSION: Although this research demonstrated that periodized resistance training reduces abdominal body fat among ROTC cadets, it is important that future studies address certain limitations (small sample size and length of training period) this study encountered. Due to the health risks associated with android obesity, including increased cardiovascular and metabolic disease risk factors, implementing a periodized training program may be beneficial in diverse military populations.

VINCI, DEBRA; MELICIA WHITT-GLOVER;
CHRISTOPHER WIRTH; ALEXANDRA VENEZIA 247

Impact of Training Childcare Teachers to Incorporate Physical Activity in Classroom Settings on Physical Activity Levels in Preschoolers

Exercise Science and Community Health

Faculty

Florida Department of Health

Background: Rates of overweight/obesity in children are of concern in NW Florida with 34% of preschoolers and students in grades 1-3 overweight or obese. This study presents the efforts to provide training to childcare providers to incorporate physical activity (PA) within the childcare setting as a community-based obesity prevention strategy. The Let's Wiggle with 5-2-1-0 Teacher Training curriculum was developed and implemented. This curriculum focused on hands-on training with childcare providers using Physical Activity Curriculum Cards developed for this project. **Methods:** Childcare providers were recruited to attend four training workshops offered from September 2015 to April 2016. The 2-hour training sessions occurred on a Saturday morning with pre-assessment data collected the week prior to the workshop and post-assessment data collected up to six weeks post workshop.

Results: Four childcare provider workshops were implemented. There was a total of 145 participants from 31 childcare centers. Self-assessment increased after training when assessing knowledge and skills related to the benefits of PA for children; developmental milestones; age-appropriate PA; strategies for incorporating PA in childcare centers; and age-appropriate/ability-appropriate PA adaptation strategies. Direct observation showed small increase in the percent of time in moderate-to-vigorous with a trend toward increase in the percent time in MVPA for teachers who attended training. **Conclusions:** The data identified high acceptability of the training to promote classroom-based PA among childcare providers. Program implementation will continue for Year 3 and focus on increased understanding of childcare providers' knowledge, attitudes, and skills towards integrating PA within the classroom settings.

FISCHER, SYLVIA; ZANE BARRIOS 41

Mapping German Youth Cultures

Government

Faculty

OUR Works!

Zane Barrios and Dr. Sylvia Fischer worked on an analysis of a range of German films from the 20th and 21st centuries, dealing particularly with the topic of youth cultures. The films of the project have been released between 1950 and 2016, coming from East Germany, West Germany, and reunited Germany. Barrios and Fischer conducted a content analysis, evaluating each film qualitatively via a set of yes/ no questions that pertain to the topic of youth and youth cultures, such as "Does the film challenge you to think differently?" or "Is (youth) rebellion a central theme in the film?". In addition, a

GOVERNMENT

quantitative analysis was conducted for each film, counting the number of occurrences of explicit political contexts and (state) authorities in the films. The project will explore the relationship between youth, youth rebellion and state authorities in the three different Germanies, and discuss its surprising and not so surprising outcomes.

FISCHER, SYLVIA 42

German Culture and Memory

Government

Project of the 2016 Study Abroad in Germany Group

Faculty

OUR Travel Award

While learning about German culture and history, the group particularly focused on public representations of Germany's history through cultural artifacts such as monuments, museums, exhibitions, and other public forms of display. During the program, the group visited many of these displays of Germany's past, and reflected on their significance as objects that create a collective memory and a distinct national identity. Students had to create a blog and a dossier. In the dossier (research paper), students had to explore in detail one of the monuments, sites, exhibitions or museums that we visited. They had to research the history of the object, discuss its representational and architectural aspects, contextualize it within the framework of memory cultures, and relate it to the question of national identity. The assignment also included a questionnaire. Students had to come up with questions about memory cultures in Germany, and ask them to students from the University in Ulm. The poster will display excerpts from the students' blog and from their dossiers, as well as pictures.

GREEN, AYL A 40

Faculty Mentor: Michelle Williams

Millennial Voting Behaviors and Opinions a State of Florida Survey Analysis

Government

Graduate

Government Department Funds

This research will analyze the results of a Florida state-wide mixed method survey conducted among millennials ages 18-34. The purpose of this investigation is to analyze millennial voter participation and efficiency during the 2016 primary election. The ultimate goal of this research is to understand the voting behaviors of Florida millennials and ultimately provide recommendations for statewide measures that could make it easier for young citizens to get out and vote. Currently, the United States does not employ a nationwide standard for electoral practice. Comparative analysis will examine how the State of Florida compares to other major electoral states and will also survey recent changes in primary and general election rules nationwide.

GRIMM, BRITTANY 44

Faculty Mentor: Erin Stone

Mansa Musa I

Government

Undergraduate

OUR Explorers Program

This poster will feature research on Mansa Musa I of Mali. Specifically it will examine Mansa Musa as a renaissance man in Africa. The African King is well known as the richest individual of the 14 century; he even caused gold inflation by giving away "charity" during his great expedition. Although he is not credited for being a renaissance man, he spoke several different languages including Arabic, went on an expedition by horseback to Mecca, and brought hundreds of scholars back to Africa with him. These thinkers were architects, mathematicians, and philosophers who together built schools, libraries, and churches. Mali became a true inspiration for learning. This poster will ultimately argue that Mansa Musa was an innovator and a power figure, "renaissance man" like the famous Leonardo Da Vinci of Italy.

WILLIAMS, BRIAN 43

Early Voting: An Analysis of Voter Choice and Satisfaction

Government

Faculty

Postdoctoral Research Associate

It is widely held that electoral participation is intrinsic to the health of a democratic political system, and is a sign of democratic legitimacy. If so, satisfaction with the vote casting process should be important to the various stakeholders within a democratic society. Using new data from the Haas Center's Voter Satisfaction Survey conducted during the 2016 primary and general elections in Escambia County, we assess how voter demographics, confidence in electoral integrity, knowledge, and partisanship affect two interrelated electoral phenomena: (i) the choice of voting method early by mail, early in-person, or election day in-person and (ii) satisfaction with these vote casting procedures. Our main findings are that more knowledgeable voters are more likely to cast an early vote, and that individuals with higher levels of confidence in electoral integrity tend to be more satisfied with their vote casting experience. Among those who lack confidence in electoral integrity, we also find that Republicans are more likely to view voter fraud as the biggest threat, while Democrats are more likely to be concerned about hacker interference. This suggests that addressing voter concerns about electoral integrity can help to maximize voter satisfaction, but also that partisan differences across voters should be taken into account when trying to do so.

URBAEZ, ELISABETH

231

Faculty Mentor: Chasidy Hobbs

New People, New Problems: The Social, Health, and Environmental Degradation of the Lower Class

Graphic Design

Undergraduate

Gentrification describes the process of attracting a new middle-income demographic to a neighborhood through the renovation of housing, storefronts, and etc., while bringing on the displacement of longtime residents. My research reveals that low-income citizens and minorities in increasingly gentrified areas bear a disproportionate burden when faced with the changes brought on by new businesses and a rapidly changing demographic. These changes often result in a replacement of local culture, loss of housing, scarcity of resources, and the creation of social and health problems that are not felt by the new higher-class population. This, in turn, gives way to social tension that contributes to the further isolation and segregation of longtime residents. This literature review explores the effects of gentrification on minority and low-income citizens in North America, Canada, and the United Kingdom (English-speaking, Western countries). Data regarding the (1) social, (2) health, and (3) environmental challenges that low-income and minority groups face evince the harmful nature of gentrification on lower-class citizens in particular, and aim to make the reader aware of the privilege of the white middle-class. Root causes of gentrifying movements are also discussed. Understanding these issues surrounding gentrification is crucial to the improvement of class relations and the participation of low-income and minority groups in the implementation of local policy.

JONES, JONATHAN

115

Faculty Mentor: Christopher Dake

Post ACL Arthrofibrosis and ACL Reconstruction: A Case Study

Health and Leisure Sciences

Undergraduate

Objective: Arthrofibrosis is defined as a complication due to injury or trauma where an excessive scar tissue response leads to painful restriction of the joint motion (Disabled-World, 2014). Despite rehabilitation exercises and stretching scar tissue will form within and the surrounding joint capsule space and around the soft tissue. Background: The subject in this case was an 18-year-old female basketball player that has suffered a contact ACL injury. Differential Diagnosis: arthrofibrosis and no complication ACL Treatment: Early intervention, post-surgery, of scar tissue development remains the best intervention, including but not limited to, the use of: (1) 2-3days post-op CPM (constant passive motion) machine pre-programmed ROM 0-60, (2) Partial weight bearing with crutches, (3) 4 days/1-2 weeks: CPM ROM 0-90, heel slides, SLR, calf raises, (4) 3-4 weeks: CPM ROM 0-100, prone hangs, partial squats, and (5) 5-6 weeks: terminal knee extension to 120 degrees, biking, swimming, leg press, (6) 10-12 weeks: terminal knee extensions to 130 degrees, isokinetic evaluation, partial squats, leg press, biking with moderate resistance, and

(7) 4 months: isokinetic evaluation, continued strengthening, biking swimming (Shelbourne, Wilckens, Mollabashy, DeCarlo 1991). Uniqueness: Incidences of arthrofibrosis after Anterior Cruciate Ligament (ACL) reconstruction surgery varies from 4 to 23% although satisfactory functional outcome after multi-ligament reconstruction can be obtained, unsatisfactory ROM is a well-known phenomenon (Said, Chrstaisen, Faunoe, Lund, Lind, 2011). Conclusions: Athletes diagnosed with this condition are at a higher risk of septic knee and permanent loss of function.

NOLL, ANTHONY

116

Faculty Mentor: Karen Valaitis

Falling For Improvement: Analyzing CVA

Fall Data to Improve Healthcare Systems

Health Sciences and Administration

Undergraduate

Kugelmann Honors Program

As the demand for quality healthcare increases in America, so does the demand to find new and efficient ways to keep patients safe. This project is geared to examine the ways to keep CVA, also known as stroke, patients safe within physical therapy rehabilitation facilities. By using Value-Based Mapping to track the patient's daily activities and admissions process, coupled with analyzing patient fall report for the 2016 year, one can find areas that can be improved for the facility. After analyzing the data, there were potential positive and negative strategies for avoiding patient falls. All in all, this project has the potential to impact most healthcare facilities across the country who want to improve the safety of the patient's stay.

ADAMS, ANNA

17

Faculty Mentor: Amy Mitchell-Cook

Silent Heroes of the Montgomery Bus Boycott

History

Undergraduate Research

Faculty Support

The story of Rosa Parks refusing to give up her bus seat is branded into the minds of American children and a staple in civil rights education. This research challenges the story of the Montgomery Bus Boycott and aims to discover the silent heroes who fought to end separate but equal" policies in the United States. Specifically highlighting those like E.D. Nixon, Joanne Robinson, and Claudette Colvin. Primary sources prove that E.D. Nixon and Joanne Robinson aided each other in a three year long plan to boycott the Montgomery bus system. The pair searched for months, looking for a person to act as a figurehead for their movement. Nixon (head of the Montgomery chapter of the NAACP) knew that once someone stood up against these unfair practices they would be attacked the media (who would most likely spread false propaganda against them). This is why it was essential that whoever represented the boycott had a flawless reputation with absolutely no evidence of legal or moral misbehavior in their past. After rounds of meetings with women like Claudette

HISTORY

Colvin (who was also arrested for refusal to move from her seat on a Montgomery bus) Nixon and Robinson finally chose Rosa Parks to serve as the poster girl from their boycott. This research hopes to expose the hard work, planning, and dedication behind the Montgomery Bus Boycott that is too commonly overlooked.

ALLEN, PHOEBE

23

Faculty Mentor: Marie-Therese Champagne

The Slaughter of Rhineland Jews in the First Crusade

History

Graduate

On November 27, 1095, with the words “Deus vult” (God wills it), Pope Urban II galvanized Catholic Christians into a state of religious fervor, urging the true believers to take up arms and embark on a Crusade to liberate the Holy Land and Jerusalem from the Fatimid caliphate. Early in 1096, a crusading party composed of peasants and minor knights, likely inspired by the preaching of Peter the Hermit, set out from France for the Holy Land. The unsanctioned People’s Crusade marched through the Rhineland, and found there an outlet for their zealous violence. In the tenth and eleventh centuries, Jewish communities and settlements developed and expanded rapidly throughout northern Europe; these communities became the targets of the crusading peasants. The Christian crusaders subjected Jews to forced baptism and conversion, massacring any man, woman, or child who refused. Many Jews reportedly committed suicide rather than be forcibly baptized. Random acts of violence and plundering also occurred. The slaughter of the Rhineland Jews resulted from heightened religious fervor, anti-Semitic beliefs, and socio-economic tensions.

ARROYO, SAMANTHA

35

Faculty Mentor: Marie-Therese Champagne

Concubinage in the Middle Ages

History

Graduate

Faculty Support

Concubines in the Middle Ages played a significant part in shaping numerous social and cultural roles for women. These roles are largely defined by acceptance from the Church and community. Despite the popular practice of nobility and kings taking concubines, concubinage declined in the later Middle Ages (c. 800-1500) due to ecclesiastical censure of the practice. Thus, concubinage faced a rise and fall in the Middle Ages, which brings into question: How was life like for concubines of the early Middle Ages (c. 450- 700)? How were the lives of the concubines effected by rising resistance from the Church and community? As acceptance declined for the practice, how did these women react to the threat against their livelihood? The Church fought a continuing battle both defining the role of concubines and marriage in the Middle Ages. Any woman who had sex outside of marriage could be considered the equivalent of a concubine or a prostitute. This connection was not restricted to a region or period. Condemnation of concubinage came in the form of

written stories called Exempla. These stories were reserved as examples used in sermons to condemn the practice. This research dives deeper into the rise and fall concubinage in specific areas by exploring common themes among the factors that ultimately led the practice to its decline at the end of the Middle Ages.

BROWN, CASSIE

24

Faculty Mentor: Marie-Therese Champagne

The Medical School of Salerno

History

Graduate

During the Middle Ages, universities dedicated themselves to teaching the art of medicine for the first time. Circa 1000 AD, the city of Salerno, Italy established the first medical school in Europe. Prior to the establishment of the school, Europeans knew of Salerno as a medical spa, which had well-respected doctors that many traveled to see. Because of its heritage of medical prestige, Salerno attracted many medical scholars, which allowed for the school to flourish. Scholars, such as Constantine the African, came to the city and brought new medical treatises. He translated many Arabic medical texts and gave the school new ways to treat illnesses. The school also allowed women to teach the art of medicine. Trota of Salerno, a teacher at the school, wrote several treatises on women’s health. The masters at the school also tackled the issue of better hygiene and diet. In their popular health manual, *Regimen Sanitatis Salernitanum*, it discussed the school’s views on hygiene and diet. Texts distributed in the medical school of Salerno spread throughout Europe and were used by European doctors during the later Middle Ages. From AD 1000 to 1300, the medical school in Salerno, Italy, flourished because of their well-known treatments for illnesses, women’s health issues, and hygienic and dietary practices.

BRYAN, GREG

13

Faculty Mentor: Amy Mitchell Cook

Untold Story of Andrew Jackson the War Criminal

History

Undergraduate

Focusing on the Andrew Jackson’s involvement in the First Seminole War, the research presented will demonstrate how the man who many recognize as the 7th president of the United States, could by any measure today, be considered a war criminal. However, it was the acts of this war criminal that led to the acquisition of Florida from Spain for the United States. From his childhood up until the time he took command of the Tennessee militia, Andrew Jackson lived a life of justice albeit violently. Andrew Jackson is known and attributed with many terrible things but the one that gets overlooked is perhaps the worst of them all. Andrew Jackson executed two men during his campaign throughout Florida in the First Seminole War. Alexander Arbuthknot and Robert Armbrister were citizens from other countries conducting business in Spanish controlled Florida during 1818, when Andrew Jackson captured them and had them executed. The research will

show that Jackson was a product of his violent upbringing and that while his crimes during the First Seminole War would be considered highly illegal by today's standards, it was ironically what led the Spanish to cede Florida over to the United States in 1819.

MADDOX, DILLON

10

Faculty Mentor: Erin Stone

Portugal: Corporatist Dictatorship to Democracy

History

Undergraduate

Faculty Support

This presentation will cover the economic, social, political, and administrative policies and structure of Antonio de Oliveira Salazar's corporatist dictatorship and how these variables contributed to the dictatorship's eventual overthrow and transition to democracy. Also covered is a brief description of the democracy's policies and structure and how these relate to the dictatorship. For context, the events that led up to Salazar's corporatist regime was the politics of the unstable and inefficient First Republic. The First Republic's ineptness prompted the Portuguese military to stage a successful coup. Under this military dictatorship, Salazar became finance minister. Upon having an extremely successful first year, Salazar started being seen by various groups as being a solution to military dictatorship. In 1932, Salazar was appointed as prime minister and from there Salazar aided in the drafting of the constitution of 1933. This constitution created a corporatist dictatorship which Salazar called the New State. Various primary and secondary sources will support this research. This presentation aims to show how the New State functioned and how these functions contributed to the New State's eventual overthrow and transition to democracy.

CAULDER, BROOKLYN

14

Faculty Mentor: Amy Mitchell Cook

Florida Seminole Wars

History

Undergraduate

This project focuses on the impact of the three Seminole Wars in Florida. It summarizes the wars and takes a look at how the wars impacted the growth of the Florida Territory. It will take a look at the economic, political, and social impact of the three wars.

DILKS, GABRIELLE

109

Faculty Mentor: Amy Mitchell-Cook

The Nuremberg Laws v. The Jim Crow Laws

History

Undergraduate

Faculty Support

This project involves discovering of the similarities between the Jim Crow laws in the United States and the Nuremberg Race laws in Germany. Each set of laws were designed to limit

the rights and privileges of certain groups and individuals; African Americans in the United States and Jews in Nazi Germany. The two sets of laws had a major impact on groups listed above. It not only focused on their political rights, but also their social and economic rights as well. Both parties were forced into segregated living conditions such as; restaurants, water fountains, neighborhoods. Their rights as citizens were taken away and in most cases forbade interracial relationships from taking place. As a result of these laws, both parties lived in fear of their lives from a threat of constant violence and no hope of justice. Both parties had to live every day in fear because to their government, they were less than human.

FOLTZ, JONATHAN

25

Faculty Mentor: Marie-Therese Champagne

The Sea Rises Higher: The Danish Invasions of England and the Birth of the English Nation

History

Undergraduate

Kugelman Honors Program

The modern state of England, as well as the modern national character of England and the concept of Englishness, is often argued by historians to be a result of the Hundred Years' War between the Norman English and French and the need for the Norman nobility of England to differentiate themselves from their continental opponents. While it is true that the English nobility did shift their bearing from being effectively French to a new culture based on the folk customs of the Anglo-Saxon peasantry while retaining some continental trappings, hence English, it is mistaken to assume this process began and ended during the Hundred Years' War. Instead, the transition from Anglo-Norman to English was the culmination of centuries of cultural evolution and drift, beginning with the Danish invasions of the Anglo-Saxon heptarchy in the ninth century and the unification of Anglo-Saxons under King Alfred the Great of Wessex. The Danish invasions, both in the ninth and eleventh centuries, served as a unifying factor among the Anglo-Saxon population of the English lands, and precipitated social and legal reform in both cases that further unified the fragmented people into a more unified nation. The later conquest of England by Sweyn Forkbeard' Haraldsson and his son, Cnut the Great, cemented Alfred's reforms and firmly established them through Danish rule, which further unified the English populace.

FUGARINO, SARAH

26

Faculty Mentor: Marie-Therese Champagne

Uncovering Jewish Burial During the Middle Ages

History

Graduate

Faculty Support

By the middle ages, Judaism had established a set of unique burial practices based on theology and environmental conditions. Diaspora, expulsions, grave-robbing, and "the Black Death" influenced how Jews buried their dead during this time. Primary sources indicate that the looting of Jewish cemeteries and robbing of graves became a serious issue in

HISTORY

the middle ages. Jews believed in eventual resurrection and thus believed that corpses should remain intact and buried shortly after death. Thus, Jewish burial practices differed from their Christian peers, and their cemeteries became distinct. This paper will analyze how and why Jews buried their dead according to certain practices and beliefs, and will analyze how different factors such as looting and disease influenced these practices. Specifically, this paper will focus on how Jewish burial practices during the middle ages led to cemeteries becoming distinct, sacred, and unique sites throughout Europe.

GALLO, ANNA 18

Faculty Mentor: Amy Mitchell-Cook

Consolidating Power in Nazi Germany: Himmler's Night of the Long Knives

History

Undergraduate

Faculty Support

Today, the German Third Reich can be classified as one of the most infamous regimes in European history. While Adolf Hitler typically garnered most recognition, other prominent figures in his inner circle should not be overlooked. Heinrich Himmler, the Reichsführer-SS, the eventual head of the Gestapo, the man responsible for creating the first concentration camp, and one of the key instigators in the purge of the SA certainly utilized his position to advance Hitler's and his own ambitions in a particularly turbulent time in Germany. Himmler's decisive control over the SS and the operations during the Night of the Long Knives crippled the SA, secured the loyalty of the Reichswehr, silenced some of Hitler's main political opponents, consolidated Hitler's power, and allowed him to gain greater power for himself and the SS.

HAMILTON, IAN 8

Faculty Mentor: Amy Mitchell- Cook

Expanding the Role of Documentary Films in Historic Narratives

History

Graduate

Graduate Travel Award

Documentary filmmaking has entered a new post-Ken Burns era praised for its innovative narrative and stylistic approaches but criticized for valuing entertainment over professional standards of historic research. This poster presentation details my effort to marry the professional standards of public history with the novel post-Ken Burns approach to documentary filmmaking through the production of two films. The poster will be complemented with an audio/visual component showing both films. The first, "Frida Kahlo: A Documentary," is in the traditional style that combines archival footage and voiceover to pique the interest of its audience to conduct their own research. The second, tentatively titled "Pensacola Punks," offers a comprehensive presentation of interviews, art, music, concert flyers, and zines collected during production. Pensacola Punks is different because, unlike most documentaries, all of the source material

will be available to any researcher at Voices of Pensacola. This effort of open sourcing my research will decrease the possibility of narrative manipulation and increase the integrity by presenting a well-balanced history of an under-documented subculture.

HILLS, MARIAH 27

Faculty Mentor: Marie-Therese Champagne

Stewards of the Gift of Medicine: Arabic and Christian Medical Culture

History

Graduate

Arabic scholars helped pave the way for Western medicine. They translated ancient Greek texts into Arabic and Latin and used them to build the familiar medical literature of the Middle Ages. In many ways, Arabic scholars continued the research of Greek philosophers. Modern science might look different had it not been for the early translations and medical innovations of Arabic physicians. More physicians in the second-century began to form broad hypotheses concerning epidemiology (the study of disease) and etiology (the study of the cause of disease) in medical practice. Early Christian societies had to determine how to benefit from science and medical innovations without betraying their beliefs. Both cultures adopted Greco-Roman epistemology of sickness and disease, but they developed at a different rate. What may surprise readers is that Christian and pagan religions shared similar attitudes toward healing. Medical knowledge and philosophy in Islamic and Christian societies in the Middle Ages similarly valued their respective religious beliefs as an important aspect of medical practice; however, differed because they each followed different ancient texts and formed different understandings of the body and disease.

HINSCH, ELAYNE 28

Faculty Mentor: Marie-Therese Champagne

Changes in Maritime Warfare 1200-1500

History

Graduate

Faculty Support

Changes in European maritime traditions allowed civilizations boldly explore the open seas, resulting in the development of new strategies in maritime warfare. The records of maritime laws and shipbuilding logs explain the growing importance of the maritime presence to the ruling powers in Europe. The change of maritime technologies from the thirteenth to the fifteenth centuries revolutionized maritime warfare by altering shipbuilding techniques and implementing new laws and policies. This caused European civilizations to rely on the maritime presence to control and dominate the seas. The use of historical records highlights new perspectives of the changing technologies and laws, strategic design changes, and new methods of maritime warfare that began the revolution in European dominance at sea. The laws that the ruling powers of Europe enforced are useful sources for tracking how Europeans increasingly used the waterways to their advantage. Utilization of available sources will be key to demonstrate the

ways maritime warfare changed throughout the Middle-Ages. The vital moments in technological development associated with maritime warfare are the focus of this research.

JOHNSON, CHRISTOPHER 9

Faculty Mentor: Erin Stone

The Ottoman Portuguese Wars

History

Undergraduate

Faculty Support

During the 15th and 16th centuries the Portuguese Empire's expansion into East Africa and farther into Asia prompted a series of conflicts with the Ottoman Empire over control of the region and its vital spice trade. This aggressive expansion into traditionally Ottoman and Arab controlled lands caused the Ottoman Empire to launch a series of engagements with the Portuguese that would culminate in a series of four wars fought between the rival powers. The military actions undertaken by the Ottoman Empire were hoped to curtail Portuguese influence in the region, reaffirm the Ottoman's place as the dominant Islamic power, and to regain the Ottoman monopoly on the Asian spice trade. The Ottoman Empire was long the evil nation that good Catholic nations were supposed to attack and dismantle. The Ottomans in turned hoped that by defeating Portugal in the Persian Gulf and along the Indian Coast that their trade networks throughout Southern Asia and East Africa halting European expansion east. After nearly a hundred years of fighting it would be the Portuguese Empire which stood as the dominant European power in East Africa and Asia. The control of the spice trade in India allowed the Portuguese to gain immense wealth and gain valuable trade with other European powers, that until this time was an Ottoman monopoly. The resulting boost to the economy would ultimately help to establish Portugal as a colonial power until its eventual decline due to increased pressures from the Dutch and the French.

MCKIBBEN, MATTHEW 29

Faculty Mentor: Marie-Therese Champagne

On Holy Images: Byzantium and St. John of Damascus

History

Graduate

In 726, Emperor Leo III removes the image of Jesus Christ atop the entrance to the Chalke Gate. This removal, based on speculative sources, presumes to be the initiation of widespread Iconomachy, which debates the legitimacy of sacred images. Scholars insist that Leo III's role within the Byzantine Iconoclasm framework is difficult to follow because of the lacking evidence. However, a debate did ensue that discussed the meaning of images as beneficial or damaging to the faith. John of Damascus focused attention upon images as necessary to the faith, and his Treatise On Holy Images wrestles with this particular necessity in relation to Christology. In opposition, Constantine V and the Bishops at Hieria argued that images cannot enlighten a sense of Jesus' divinity, and they utilized various theological arguments to

challenge the necessity of sacred images. Beyond the history of theological debate, the history of sacred icons within Byzantine culture and an attempt to study Leo III's relation to the Arabs is considered.

MENDOZA, EDUARDO 11

Faculty Mentor: Erin Stone

Prince Henry "The Navigator" of Portugal

History

Undergraduate

Infante Henrique of Portugal, otherwise known as Henry the Navigator, was an influential political figure in the 15th century during the rise of the Portuguese Empire. This project analyzes the life of Prince Henry, the so-called "Navigator," and his life accomplishments in hopes of finding proof of what he did and did not do. These words are chosen carefully due to the current heated debate among historians arguing about Henry's legacy. Many historians believe that Henry did not fulfill many of the things he claimed. Most notably his "accomplishments" include exploration of Western Africa and the coast of Ceuta as well as the creation of a Nautical School that attracted many experts in astronomy, navigation, and cartography. While some historians argue that Prince Henry was the man of his century, others believe Henry was simply an opportunistic man who had the chance to rewrite his history in his favor. While there is no arguing that Prince Henry is an iconic figure in Portuguese history, we must give credit where credit is due and debunk history if it needs to be.

PEACOCK, CAROLINE 30

Faculty Mentor: Marie-Therese Champagne

The impact of the Malleus Maleficarum on European Witch-hunts

History

Graduate

Beginning in the late Middle Ages there was a dramatic increase in the number of accusations of witchcraft. During these witch-hunts, thousands of individuals were accused, subsequently tortured, and frequently put to death. While a multitude of factors led to an increase in witch-hunts, one contributing factor was the publishing of the *Malleus Maleficarum* in 1486. In addition to providing the legal procedures for conducting a witch trial and justification for witch-trials, the *Malleus Maleficarum* also lists the various misfortunes that can be attributed to the work of witches. This paper shall examine the history of European witch-hunts and their associated trials prior to and after 1486, in order to come to a better understanding of how the printing of the *Malleus Maleficarum* shaped the way witchcraft was viewed. The history and witch trials show that the printing of the *Malleus Maleficarum* was one of the contributing factors that led to the infamous widespread European witch-hunts of the Middle Ages.

PEREZ, YARELIS**31**

Faculty Mentor: Marie-Therese Champagne

Cat Popluation during the Middle Ages

History

Graduate

By the Middle Ages, cats reputation started to fragment into superstition. The overall image that emerges from the literature was that cats were worshipped and seen as gods in ancient Egypt and in parts of Europe. This study shows that the Christian Church wanted to demonize and remove important pagan symbols such as cats to eliminate the threat of the Old Religion. Cats were seen as evil by the church and have been associated with witchcraft and the Black Death in Europe. This study shows that the cat population was affected by a negative attitude towards cats. The church viewed cats as having magical powers of shape-shifting, which were also believed to be used by the Devil and witches, thus starting the witch-hunts and killing of cats in the Middle Ages. Mostly women were accused of being witches, especially older women who were peasants who lived alone and often kept cats as pets for companionship. Because of the mass killings of cats, the cat population declined and furthered the spread of the Black Death.

PRITCHARD, ZACHARIAH**21**

Faculty Mentor: Erin Stone

Portugals Vietnam: An Examination of the Fall of Portuguese Africa

History

My project delves into the final days of Portugal's waning empire, as they attempted from the beginning of the 1960's till the mid 70's to hold onto the last remnants of their colonial Empire. However, as a modern map will show, they were not successful, yet questions remain as to why Portugal, like the rest of Europe, was unable to retain control of their colonial holding with superior numbers and weapons. I plan on examining the major characters and events, namely the fall of the Estado Novo regime, which played a part in the eventual secession of Portuguese speaking Africa from the mother country. In addition, I hope to investigate Portugal's unique position and reasons for attempting to hold onto their colonies with such resolution, in comparison to the majority of Europe, who did not. By looking into not only the politics, but also military strategy, My hope is to deduce whether the loss of Portugal's colonies falls squarely on the political unrest experienced in the mid-1970's or an amalgam of military failure and disturbance on the home front. Furthermore, I plan on looking into why the eventual native victories led not to a hard fought peace for the former colonies but rather civil war, namely in Mozambique and Angola, as the conflicts morphed into proxy wars between the USSR and the West.

RIDDELL, ANDREW**15**

Faculty Mentor: Amy Mitchell- Cook

Lord Kitchener's Army: Recruiting for the Great War

History

Undergraduate

On the fourth of August 1914 Britain elected to become involved in the conflict sweeping the continental European landscape. Britain was ill prepared for a large scale like the one knocking on their doorstep. The current Prime Minister Herbert Henry Asquith did not have a Secretary of State for War and with World War One looming it was time to fill that vacancy. Asquith called on Horatio Herbert Kitchener, who was at the time on leave in Britain from his post in Egypt. This was the best decision Asquith could have made. Kitchener was one of the few in the government who foresaw at the start of the war the long and arduous struggle ahead and therefore put in place measures for a continued conflict. Kitchener's recruiting and measures were unlike anything Britain had used before and while his troops may have taken longer to hit the battlefield they were better prepared for what lay ahead. Kitchener's institution of Pal's Battalions was one incredibly effective means of recruitment that had some pitfalls at the closing of the war. Through Kitchener's recruiting methods Britain was able to stave off conscription for two years through one of the bloodiest conflicts the world has ever known. Sources used in this paper range from published eyewitness accounts to secondary source materials.

RITZIE, DIANA**32**

Faculty Mentor: Marie-Therese Champagne

Medieval Confinement: Towers, Dungeons and Punishment in the Middle Ages

History

Graduate

During the Middle Ages, established European families commissioned the building of castles, not only as a residence, but as a fortification for the city. Powerful walls and enormous towers often served as a deterrent to foreign invasion. Many of these castles became associated with the European state of its origin. Castles included dungeons which became a place of confinement for prisoners of war as well as thieves, debtors, and individuals awaiting trial and sentence. Castles represented both a place of refuge and a symbol of confinement and punishment during the Middle Ages; in addition, the medieval confinement and punishment system introduced what later became the early modern prison system. Originally, authorities used the stockade as a public form of confinement. Later, places of interrogation were used by authorities which became known as torcher chambers. The use of confinement to await punishment transformed into confinement as a form of punishment. Prisoners were sentenced to confinement within the castle or adjoining structures such as London's Fleet Prison. Early prisons represented a damp, dirty and disease infested existence. Sometimes, prison guards cast prisoners into a deep hole called an oubliette from which they never reemerged.

Archeological research confirmed such "forgotten" holes within the depths of the Black Tower in modern day Turkey. Hardships within these walls turned to a death sentence for some prisoners when they became forgotten members of society.

SCHWITZERLETT, CHELSEA 20

Medieval Childbirth: The Plight of Women in the 12th- 14th Centuries

History

Graduate

European society in the Middle Ages was riddled with dangerous threats to human health. Poor sanitation, cramped living quarters, and lack of medical care exacerbated the threat against human health. While some of the more sensationalized epidemics, such as those of the plague and cholera seem much more significant when evaluating mortality, the death rate of women in childbirth was no less devastating to the female population. European women in the twelfth to fourteenth centuries suffered high mortality rates at the time of childbirth due to religious stigma and traumatic, though traditional, medical procedures. These customs and procedures devastated the female population of Europe and led to the evolution of both medical and religious customs. This project will include an in-depth analysis of the plight facing childbearing women in the twelfth to fourteenth centuries. Emphasis will be placed on the evolution of the female's status in childbirth. St. Augustine and Aristotle wrote extensively on the subject of the female's plight in childbirth. St. Augustine and Aristotle's doctrines, that prayer be the main source of medical treatment prescribed to women, represent the decidedly ambivalent treatment women received in the Middle Ages. Only through extensive trial and error, resulting in numerous female deaths, did assistance to women in childbirth evolve.

STONE, ERIN 36

Tainos vs. Caribs: An Imagined Conflict

History

Faculty

Graduate School Grant

From Columbus forward, the Spanish colonial project was founded on the use and abuse of Americas' indigenous peoples. Whether Indians were considered rebellious, cannibals, or useless, the Spanish found reasons to enslave the Carib of the Caribbean. In October of 1493, Christopher Columbus returned to the Caribbean. This time he altered his course, this time heading to the Lesser Antilles. It was in these small islands that Columbus and his men first encountered CaribIndians. Finding various human bones hanging from an abandoned hut, and others boiling in a pot, the travelers deduced that the island's inhabitants were cannibals. This judgement created the dichotomy between the good Taíno and the vicious Caribs that would survive for centuries. The Spaniards would use the specter of cannibalism, and the label of Carib, to justify the enslavement of indigenous peoples across the Caribbean and South America for decades to

come. However, recent archaeological and historical studies highlight the fluidity of the pre-colonial Circum-Caribbean. While most evidence can only prove occasional trade between distant regions or islands, it suggests the possibility of tighter kinship bonds connecting the Caribbean islands to both North and South America. It follows that the firm distinction and conflict between the Taínos and the Caribs was a Spanish construction, ultimately designed to enslave Indians. This paper deconstructs this dichotomy and begins to reveal the pre-Colombian relationship between the Taínos and the Caribs.

THRASHER, CHRISTOPHER 22

Faculty Mentor: Erin Stone

Surviving Spanish Conquest: Maya Social and Cultural Persistence

History

Graduate

Graduate Travel Award

After decades of bloody conflict, the Spanish conquistadors succeeded in politically dominating the Maya. Nevertheless, the Maya managed to persist both culturally and socially despite life under European siege and domination. This is partially because Maya territory was not at the center of the Spanish Empire. Also, the region was of relatively limited use to the Spanish in terms of natural resources, other than as a source of slave labor. However, consideration only of Spanish structures and designs in the New World promotes a Euro-centric view of Maya history. This project examines the Maya conquest from an indigenous perspective. Social and cultural structures developed during the Postclassic period that protected Maya ways of life. Disparate societies, new political developments like council-based rule, and Maya connections to the land itself frustrated Spanish designs for total control of the region and the reconfiguration of the Maya both culturally and socially.

TROTTER, SCOTT 33

Faculty Mentor: Marie-Therese Champagne

Plague of Justinian, The Cause and its Effect on

Justinian's Reconquest of the Western Empire

History

Graduate

In 535 C.E. the sun was obscured by a thick haze that lasted for eighteen months, causing temperatures to dip and crops to fail over much of the globe. Five years later, in 542 CE, the world's first pandemic began when the bubonic plague broke out in Egypt and spread through the Middle-East and Europe, killing an estimated thirty percent of the population. At the same time in Constantinople the Emperor Justinian's attempt to conquer what had been the Western Roman Empire stalled despite nearing completion. The timing of these three events, the environmental change, plague, and military stalemate, has led some historians to draw a cause and effect relationship between them. If true, a volcano or meteor strike, which was the likely cause of the atmospheric event in 535, prevented

HISTORY

Justinian's attempt to re-establish the Roman Empire of a century earlier and arguably opened the door for the rise of feudal Europe and the domination of Islam in the Middle-East and North Africa. There is scientific evidence linking the haze of 535 and the plague of 542 but there not enough to make any conclusions. The effects of the plague are better understood than its origin but again these conclusions are suspect. The theory that an atmospheric event in 535 caused a pandemic and the Byzantine failure to re-establish the Western Roman Empire draws conclusions that are not supported by the facts.

TURNAGE, BRENDA 19

Faculty Mentor: Amy Mitchell- Cook

Black Influences: St. Cyprian's Episcopal Church

History

Undergraduate

St. Cyprian's

The history of a church can reveal many important details about a community. When it comes to a particular race, such as African American, tracing a history can be a bit more difficult. St. Cyprian's Episcopal Church in downtown Pensacola, Florida is celebrating its 130th anniversary this year. Even its current parishioners do not know much about their founding. Originally it was apart of the Zion Chapel Mission and held services in several different parishes, such as Old Christ Church, until they were able to have their own building in 1930. Its presence in the black community has been an asset. They have had many influential figures pass through its doors over the years. Rita Jones was a Pensacola city councilwoman for many years and her mother, Corrine, was a community leader. It is essential to display the impact that the church has had not only in Pensacola, but in the Central Gulf Coast Dioceses. Sources for this presentation comes directly from St. Cyprian's and the members that have been apart of the church for several decades.

UNDERWOOD, MALANA 34

Faculty Mentor: Marie-Therese Champagne

Norse Mythology: The Influences of Religion on Scandinavian Culture

History

Graduate

Faculty Support

This research project will examine the influences of Norse mythology on the culture of the Vikings, ranging from the late eighth Century to twelfth century AD. Norse Mythological beliefs played a primary role in Norse culture, particularly in the practice and purpose of the raids on the British Isles and northern Europe. Different aspects of Viking Culture, including social relationships, economic systems, political structures, and interactions with other peoples, as well as mythological beliefs, had a significant effect on the interaction of Viking raiders with others. Norse mythological beliefs also affected the Scandinavians' lengthy conversion to Christianity, including the primary reasons for the conversion and any obstacles that developed throughout the process.

Scandinavian Sagas and other texts from Norse culture suggest influences on the development and practice of the Norse mythological belief system. This paper aims to emphasize the crucial role that Norse mythology played in the development of the Scandinavian culture from the initial Viking raids in the late eighth century to the Norse people's conversion to Christianity, including instances in which the lines between pagan and Christian practices were less pronounced. Those religious practices influenced many aspects of Scandinavian life in the later Middle Ages.

WILLIAMSON, SARA 16

Faculty Mentor: Amy Mitchell- Cook

The Repatriation of the Stolen Art Empire of the Third Reich

History

Undergraduate

Faculty Support

Focusing on the art stolen by the Nazis in World War II, this research highlights the continuing efforts to repatriate those stolen works of art to their rightful owners. The US National Archives has suggested that Hitler's troops stole up to one fifth of the art in Europe. A review of certain historical events pertaining to the art confiscated by the Nazis introduces the efforts by Allied forces, the Monument Men, and other associations to return that art to its country of origin. Desire for world domination may have driven Hitler to acquire as much of the world's finest artworks as possible in order to highlight what he had taken from the people of Europe. The allies found stolen artworks in thousands of holding areas in Germany and Austria. After the chaos of war, many of the finest works found their way into private collections and state museums. The story of stolen Nazi art revived in the nineties and has increased awareness by governments, museums, dealers and collectors of the need for careful research on possible confiscated works. In addition to works held by governments, museums, and dealers, every year as veterans of the war pass away, artifacts re-surface. It was only in 1998 that 44 leading nations finally committed to searching and returning artworks plundered by the Nazis. This research highlights the efforts began by the Allied forces, and continued by the Monument Men and other associations, to repatriate the art stolen by the Nazis during World War II.

WILSON, JACQUELINE 12

Faculty Mentor: Erin Stone

King Sugar

History

Undergraduate

Faculty Support

African slaves were transported to present day South America during the Portuguese Empire to grow sugar on engenhos. Engenhos was a Portuguese term for mill factories, in which sugar was grown and processed. As time would evolve, Brazil became the biggest producer of sugar. In the 17th century, sugar accounted for ninety-five percent of Brazil's exports. The middle passage allowed large numbers of Africans to

be transported to the New World. Sugar was the reason why colonization in Brazil was done so quickly. The slave society formed a major role in producing sugar. In the beginning, African slaves from the Cape Verde Islands were first involved in engenhos or sugar plantations. This group of Africans grew sugar in the Cape Verde Islands prior to European arrival. African slaves were not prone to tropical and European diseases like indentured servant or native peoples. Eventually, more enslaved Africans would be captured and sold to a slave society for producing quality sugar.

ZAVORAL, JOSEPH 7

Faculty Mentor: Marie-Therese Champagne

Pro Libertate: Sir William Wallace and the Formation of a Scottish Identity

History

Graduate

William Wallace, by his role in and legacy following the First War of Scottish Independence, forged the conglomerate of Scots into a monoculture, which guaranteed the permanence of a Scottish collective destiny. To the present, scholars dispute the role of Sir Wallace in Scotland's first struggle for independence. Folklore and popular culture, as recently as Mel Gibson's Braveheart, have recaptured the lay imagination of Wallace's tale, often in historically inaccurate ways that scholars rightly criticize; fiction conjured by Hollywood or any other source should never supplant truth. However, it should be heresy to undermine the significance of Sir Wallace's role in the struggle. After all, histories belong to cultures, and cultures belong to peoples. Similarly, Scotland's national narrative, of which Sir Wallace has become an integral part (for right or wrong), belongs to the Scottish people. Therefore, exploring Sir Wallace's role in the struggle for Scottish independence requires Heidegger's hermeneutic approach, wherein the student of history attentively remembers that Sir Wallace's history is the history of the Scottish people: a history confined to a specific British geography, Medieval temporality, and Scottish culture. This project aims to authentically depict the Scottish narrative of Sir Wallace, while appropriately researching its historical context, including primary and secondary narratives of Europe, England, and Scotland from 1217 to 1328.

MULLINS, LOGAN 53

Faculty Mentor: Ali Green

Certifications and Emotional Intelligence: The Importance for Hospitality Graduates in the Florida Panhandle

Hospitality and Tourism Management

Undergraduate

Kugelman Honors Program

Intro: This study investigates the local hospitality industry in the Florida Panhandle and will look at what job competencies hiring managers expect from students graduating from a 4-year institution with a Bachelor's degree in hospitality/tourism. In addition, the aim is to investigate perceptions towards the importance of Emotional intelligence (EQ) in the

workplace.

Literature Review: Hospitality Education/Certifications Basic underlying principles are similar in most hospitality/tourism programs which includes preparing students for a management level position in the industry after graduation (Alhelalat, 2015). Hospitality specific certifications are numerous in the F&B, hotel, and event management (Damitio & Schmidgall, 2001).

Emotional Intelligence: EQ is the ability to discern between one's own and others emotions, then use them to determine actions (Goleman, 2005). Studies have investigated the effects of EQ as it translates into the workplace culture (Agrusa, 2010), turnover (Lee, 2012), and hiring (Chang, 2015).

Methods: The study will use both qualitative and quantitative methods. For the quantitative data, an online survey will be implemented by email link to the local hospitality community, and then data will be analyzed in SPSS. Qualitative data will be gathered by conducting 4 focus groups, 2 from the hotel/resort/lodging industry, and 2 from the F&B industry.

Conclusion: Overall, this study aims to look at perceptions towards new graduates of hospitality programs. This should give insight into how hospitality programs in the area can restructure their curriculum into one that will meet the needs of both graduates and the industry.

BYERS, ANGELIA; NANCY B. HASTINGS 62

Faculty Mentor: Nancy B. Hastings

Higher Education Faculty Leadership Styles and their Influence on Classroom Management and Instructional Strategy Choices

Instructional, Workforce and Applied Technology

Doctoral

Graduate Travel Award

Throughout the 20th century and moving forward to today, leadership has played a prominent role in both business and education. In business, a manager takes on the responsibility of leadership, but in the classroom, the instructor becomes the manager or leader and develops some style of leadership (Barbuto, 2000). Past leadership research in education has focused on how faculty perceive administrators (Batech & Heyliger, 2014) or how students view faculty (Bolkan & Goodboy, 2009), but little research has focused on faculty self-perception of leadership style within higher education. The purpose of this study was to expand leadership research, considering how instructors' leadership styles affect classroom management and the selection of instructional strategies. Full-time faculty teaching undergraduate, face-to-face classes at a regional comprehensive university in Florida responded to a survey measuring leadership styles using the Full-range leadership model developed by Bass and Avolio (Bass, 2000). Full-range leadership was measured using the self-rating Multifactor Leadership Questionnaire (MLQ) Form 5X Short. The MLQ was used to determine which leadership style is most prevalent among the instructors responding to the survey. Additional questions were added

to the survey to determine whether there is a relationship between leadership styles and classroom management techniques and instructional strategies. Study findings indicate a significant relationship between some leadership styles and some classroom management techniques. However, there was no significant relationship between instructional strategy choices and leadership styles. The implication of these findings support future research into whether there is an indirect correlation between leadership style and instructional strategies.

FISHER, BRITNEE; BRANDI PRATHER-LEMING 63

Faculty Mentor: Nancy B. Hastings

Mapping Your Way Through Exams

Instructional, Workforce and Applied Technology

Doctoral

Preparing for comprehensive graduate preliminary exams can be a daunting and exhaustive task for students. How can numerous varying concepts, theories, and models be organized in a clear and helpful manner? How can students enrolled in a distance education program who live thousands of miles apart study collaboratively for preliminary exams? This session will explain the steps taken by two students enrolled in the University of West Florida's Ed.D. in Curriculum and Instruction, Instructional Technology program that allowed them to successfully organize and study collaboratively for their preliminary exams. The dual-coding theory suggests that information is processed and stored using linguistic and nonlinguistic forms, which means both words and pictures play a part in the way our brains process knowledge. Concept maps organize the words, thoughts, concepts, and ideas into visual concepts. These maps can highlight relationships, and provide a big picture visual map of a knowledge base. Concept mapping imposes no limits on how many ideas can be included in an individual map. A concept map can be as simple or complex as the creator would like, and there really are no boundaries to what knowledge can be diagramed using this strategy

BARRETT, ELIZABETH 64

Faculty Mentor: Chasidy Hobbs; Jane Halonen

The Need for Psychologists in the Field of First Responders in Response to Nuclear Disasters

Legal Studies

Undergraduate

OUR NCUR 2017 Participant

In April 1986 and March 2011, our world was scarred by the Chernobyl and Fukushima nuclear disasters. In both disasters, the physical health of those involved took priority over their mental stability. This method of recovering those in danger held true until recently. In studies about these disasters, it has been proven that there were some mental illnesses that eventually developed because of the disasters. For example, in a study conducted on the cleanup workers of Chernobyl, it was found that those who stayed longer than a week, nonconsecutively, had a higher risk of committing suicide

than those who didn't stay as long. This study makes studying this phenomenon vital to protecting those around nuclear power plants as nuclear energy becomes more widespread. By studying these disasters, it becomes obvious that there is a need for a psychological response at all nuclear disasters to prevent the development of more mental illness in the future. By adding a psychologically trained professional to the list of first responders to nuclear disasters should be helpful in preventing more mental illness. However, since everyone responds differently to nuclear disasters, it is also necessary to create a system that can be catered to individuals to measure individual levels of distress. By implementing these measures, it would be more likely that we can prevent the outbreak of new mental illnesses in response to nuclear disasters in the future.

DRUDE, ASPEN; KRISTIE ANTHONY; FERNANDA AMAROL 46

Faculty Mentor: Kristie Abston

The Society of Human Resource Management National Conference

Management and MIS

Undergraduate

OUR Travel Award

OUR funding allowed us to fly to Washington D.C. this summer for the conference of a lifetime. We won first place in a student case competition that allowed for us to get free entry into the national conference. We were recognized in front of 15,000 human resource professionals for the work that we did. We were given a case in which we had five days to complete an executive summary and a PowerPoint presentation. We then presented our findings to a panel in Atlanta two weeks later at a student conference. We were chosen to be in the top two and presented to five HR professionals and 100 plus students. We were chosen as the winners, and OUR funding helped us get to our final end goal: nationals!

GARABEDIAN, CHRISTIAN 141

Faculty Mentor: Cameron Smith; John Batchelor

Practical Online Marketing for Startups

Management and MIS

Graduate

Graduate Travel Award

Entrepreneurship is often referred to as the parent of innovation (Meyers, 1986) because it serves as an innovative change agent that moves organization and society forward (McClelland, 1976). Entrepreneurial orientation is usually defined as a multidimensional construct, applied at the organizational level, which characterizes firm's entrepreneurial behavior and includes one or several of these three dimensions: risk-taking, innovativeness and pro-activeness (lexicon, n.d.) Entrepreneurial orientation is directly linked to marketing competency and organizational performance. Entrepreneurial orientation is key for company's success now and in the future.

Building upon this theory, we outline now a new venture with entrepreneurial orientation and utilize online

marketing to identify the most efficient way to support the aggressive, proactive, innovative nature and needs of startup entrepreneurs. Using this theory, we outline specific steps an entrepreneurial can engage in quick and efficient methods to boost their online presence.

Reregistering an online domain is crucial for startup companies to grow their online presence. Startups should also utilize social media outlets such as facebook, twitter, and linkedin. There are other tools such as MOZ and SoHo which also help startups manage their online presence and improve company awareness.

Search engine optimization (SEO) is a methodology of strategies, techniques and tactics used to increase the amount of visitors to a website by obtaining a high-ranking placement in the search results page of a search engine (SERP), including Google, Bing, Yahoo and other search engines (Beal, 2016). Without SEO, it is exceedingly difficult for consumers to locate a startup using a traditional search engine. Many consumers use Google, Bing, and Yahoo to search for goods and services online. SEO is the tool that allows individuals to find these companies.

Companies should perform organizational activities which relate to their core competencies, outsourcing any non-related activities. For example, an IT startup firm should not focus its resources on accounting, marketing, or finance. Because this is a stretch from their core competency, it should be outsourced to firms who have these disciplines as core competencies.

SAUER, JOSHUA; WILLIAM BURGER 142

Faculty Mentor: Jocelyn Evans

Place Familiarity and Fear of Crime

Management and MIS

Undergraduate

Kugelman Honors Program; Criminology and Criminal Justice Department

Literature from neighborhood research suggests that place familiarity reduces fear of crime. Using survey data collected at five public parks in Pensacola, Florida, during the Spring of 2017, we test this relationship. We anticipate the following statistical correlations. If survey respondents live within a mile of the park, they will demonstrate lower fear of crime on average than respondents who live more than a mile away from the park. Also participants who visit parks upwards of 5 times per year will exhibit lower fear of crime than people who go to parks less than 5 times per year.

SOTER, HELEN; LISA SCHOTTENHAMEL 48

Grammar Games in the Business Writing Classroom

Management and MIS

Faculty

Faculty Support; OUR Travel Award

This paper describes a grammar game used to teach business students grammar rules in a way that reduces anxiety and motivates learning. Grammar instruction is often filled with terminology that intimidates many students, so it is important

to explain grammar and writing issues using simple language rather than the complex jargon understood only by English majors. These games also enhance metacognition as students rely on one another, rather than just solely relying on the instructor, for explanations and answers to challenging problems. Students become aware of their own strengths and weaknesses and can transfer this knowledge to writing assignments in other classes and in the business world. Making the games competitive also keeps students engaged and focused on the lesson in a way that lectures and worksheets cannot; therefore, these games can be an alternative to the traditional grammar lessons.

SMITH, CAMERON; CHRISTIAN GARABEDIAN 45

Faculty Mentor: John Batchelor

Practical Online Marketing for Startups

Management and MIS

Entrepreneurship is often referred to as the parent of innovation (Meyers, 1986) because it serves as an innovative change agent that moves organization and society forward (McClelland, 1976). Entrepreneurial orientation is usually defined as a multidimensional construct, applied at the organizational level, which characterizes firm's entrepreneurial behavior and includes one or several of these three dimensions: risk-taking, innovativeness and pro-activeness (lexicon, n.d.) Entrepreneurial orientation is directly linked to marketing competency and organizational performance. Entrepreneurial orientation is key for company's success now and in the future. Building upon this theory, we outline now a new venture with entrepreneurial orientation and utilize online marketing to identify the most efficient way to support the aggressive, proactive, innovative nature and needs of startup entrepreneurs. Using this theory, we outline specific steps an entrepreneurial can engage in quick and efficient methods to boost their online presence. Reregistering an online domain is crucial for startup companies to grow their online presence. Startups should also utilize social media outlets such as facebook, twitter, and linkedin. There are other tools such as MOZ and SoHo which also help startups manage their online presence and improve company awareness. Search engine optimization (SEO) is a methodology of strategies, techniques and tactics used to increase the amount of visitors to a website by obtaining a high-ranking placement in the search results page of a search engine (SERP), including Google, Bing, Yahoo and other search engines (Beal, 2016). Without SEO, it is exceedingly difficult for consumers to locate a startup using a traditional search engine. Many consumers use Google, Bing, and Yahoo to search for goods and services online. SEO is the tool that allows individuals to find these companies. Companies should perform organizational activities which relate to their core competencies, outsourcing any non-related activities. For example, an IT startup firm should not focus its resources on accounting, marketing, or finance. Because this is a stretch from their core competency, it should be outsourced to firms who have these disciplines as core competencies.

VUONG, JIMMY 47

Faculty Mentor: Kristie Abston

Training and Development: A Live Case Project

Management and MIS

Graduate

Graduate Travel Award

This paper describes a live case project that was used in two sections of a training and development course. The project is explained along with lessons learned from the professor's perspective. In-depth insights from a former student are included, and feedback from client organizations will be shared at the conference.

**BAGUI, SUBHASH; SUDHIR PAUL;
SBHISHEK SAHA; SUBHAMOY PAL 125**

Testing for the Significance of the Intraclass

Correlation in the Analysis of Family Data

Mathematics and Statistics

Faculty

Abstract: The primary aim of the analysis of familial data is to estimate the degree of resemblance among family members with respect to some biological or psychological attribute, such as blood pressure level or IQ. A lot of studies have been done in this area in the past. The purpose of this study is to fill up a gap in the literature, namely, to develop three large sample Tests for the Significance of the Intraclass Correlation in the Analysis of Family Data. These tests are compared for empirical size and power using simulations.

BEJARANO, BLAEC 127

Faculty Mentor: Cody Lorton

Modeling Convection-Diffusion Utilizing the Finite Element

Method and Partial Differential Equation Solver FreeFEM++

Mathematics and History

Undergraduate

Mathematics Proseminar

This project is an introduction to solving the convection-diffusion equation by utilizing the Finite Element Method (FEM) and the partial differential equation solving software FreeFem++. Applications of the convection-diffusion model to simulating airborne and water-borne pollutant dispersal are the subject of ongoing research and are prevalent in the supporting literature. Pollutant dispersion models help environmental authorities properly employ regulations to stave off potential disasters, and provide real-time decision support when severe environmental impacts occur. This project examines the derivation of the convection-diffusion equation's weak formulation and incorporates the basics of the finite element method. This includes defining the spatial domain's mesh, defining the FEM space, and providing both the semi and fully discretized equations respectively. FreeFem++ is thereby utilized to numerically solve the convection-diffusion equation via its weak formulation and visually outputs the resulting dispersion behaviors of particle concentrations through processes of pure diffusion and low/moderate convection-diffusion.

**DICKINSON, ROSS;
SUSAN PERRY; SUBHASH BAGUI 126**

Using Rotation Transformations to Maximize the Co-efficient of Determination in Simple linear Regression Models

Mathematics and Statistics

Faculty

Excessive variation in observed data limits the utility of simple linear regression. We show that a simple rotation of the coordinate axis about the origin reduces the observed variance in the data, improves estimates of the slope, and increases the coefficient of determination. A modified version of the basic regression model that accommodates a rotation angle and a method for determining the angle that maximizes the coefficient of determination are provided. We illustrate this via an example.

GAVILAN, AYMEE 128

Faculty Mentor: Anthony Okafor

County-Level Determinants of Domestic Migration in Florida: Do Economic and Non-Economic Factors Matter?

Mathematics and Statistics

Undergraduate

This study examined the effect of economic and non-economic factors on county net domestic migration rates for the 67 counties within the state of Florida over the period 2010-2015. Firstly, regression analysis was used to identify significant determinants and to explain the proportion of the variation in net migration rates within the state of Florida during the period under study. Additionally, cluster analysis was employed to look for groups of counties that present similar determinants of migration. Our regression model indicated that the net county migration rate was a decreasing function of poverty levels, while being an increasing function of the percentage of residents over the age of 65, the previous-period employment growth rate, the percentage change in military occupations, and the residents' educational attainment. The clustering method identified four distinct county groups, which revealed that although both economic and non-economic factors contributed to the explanation of the migration flows that occurred in the state during the studied period, the factors behind the migration flows differed among the group of counties.

**HARRELL, SHAWN; JOSEPH KENNEDY;
TALIA BARRACO; STACEY BURCHETTE 118**

Faculty Mentor: Anthony Okafor

Baseball Analytics: Determining an Optimal Play Schedule

Mathematics and Statistics

Graduate

Graduate Travel Award

Historically in the professional sports, antiquated techniques have been employed to determine the schedules of play. A host of benefits stands to be gained in determining an optimal schedule including, but not limited to, minimal travel distance, reduced travel costs, as well as decreased physical and psychological stresses on players. Using binary linear

programming and incorporating weighted directed graphs to model a season of play, we obtained, through the branch and bound method, a means of determining a minimum total travel distance. We represent the schedule as a set of sequences, each having terms indicating the location of the respective team and whether or not they play a game. We further explored the effect on the schedule by adjusting the bounds on the number of away games played, and the number of opponents a team competes against. Results obtained can be used to inform scheduling and managerial personnel. Additionally, the results can be implemented in time, personnel, financial assets, and other resource-saving measures to improve upon current practices.

**KENNEDY, JOSEPH; TALIA BARRACO; STACEY BURCHETTE;
SHAWN HARRELL; MURPHY POWELL 119**

Faculty Mentor: Anthony Okafor

Analysis and Implications of New Pitch Tunneling Data for the MLB

Mathematics and Statistics

Graduate

Graduate Travel Award

In the Diamond Dollars Case Competition, Graduate and Undergraduate teams are posed with a problem which a MLB front office may be presented with, and are asked to perform some analysis and provide recommendations to solve the problem at hand. We as members of the University of West Florida Sports Analytics Team we are posed with an exploratory and relatively new issue in baseball, tunneling. Tunneling is the pitcher's ability to mask the type of pitch (fastball, curve ball, slider etc). in the early stages of the pitch so that the batter cannot differentiate the pitches making it harder to swing effectively. Baseball prospectus released data on tunneling for MLB pitchers, and we were asked to tease out the actionable information from these data sets. We began our analysis with deconstructing the meaning of tunneling and extracted the data fields pertinent to measuring a pitcher's tunneling ability. We then formed a metric off the data, evaluated its merit as an indicator of existing pitching metrics to justify our formulation, and made some comparisons as to which pitchers are effective tunnellers. Then we posed the following questions: How may batters leverage this data? How may front office decision makers leverage this data? For the latter we devolved a pregame report for a team's batting line up, detailing the probability of a certain pitch sequence and the tunneling metric for said pitching sequences. This gives the batter knowledge of what to expect in the absence of being able to read a pitch. For the former we used regression to compare tunneling ability to Wins Over Replacement(WAR), this allows front office executives to value a pitcher on how many wins his tunneling ability adds to the teams.

KIMM, MATTHEW

123

Faculty Mentor: Jaromy Kuhl

Smallest Possible Additive-Multiplicative Magic Square

Mathematics and Statistics

Undergraduate

Mathematics Proseminar

The purpose of this research is to attempt to answer the currently open question regarding the least order for which an additive-multiplicative magic square exists. A simple genetic algorithm written in Pascal will be the method by which we will attempt to answer this question. Further, improvements to this simple genetic algorithm will be considered based on observed results, and the scope of the problem. The intended result is the discovery of an additive-multiplicative magic square of order five or six effectively solving the problem or achieving a result that narrows the problem. The importance of this research includes the examination of optimization using genetic algorithms, and the potential to solve an interesting and seemingly difficult problem.

MOORE, AUDREY; TONY MOORE

124

Faculty Mentor: Tony Moore; Anthony Okafor; Justice Mbizo

Modelling Dental Services Among Adults with Diabetes and Hypertension: Results from a National Probability Survey

Mathematics and Statistics

Graduate

Objectives: Oral health has been shown to have a great impact on the general health and the overall quality of life of an individual. Individuals who lose teeth generally have a compromised nutritional intake. Further, studies have shown disparities in psychosocial impact of oral health. The problem is exacerbated in diabetic patients who lack proper management of the disease. The presence of diabetes in an individual also increases the risk of the periodontal disease problem. Dental services use is measured by whether the patient had used dental services in the 12-month period preceding the interview. We estimate the odds of dental services use among hypertensive and diabetic adults in the US. Methods: Data for adult Americans from the 2012 National Health Interview Survey (n=12,235) were analyzed using STATA 12 software package for windows. Descriptive statistics, bivariate analysis were performed to determine association between the covariates and loss of teeth. Further, we examine the interaction between diabetes and hypertension and the odds of dental services use. Results: Overall 55% (vs 45%) of the sample reported use of dental services, and 18.7% had dental insurance. Preliminary results suggest that gender, age, marital status, race, education, income, alcohol intake, overweight, cigarette smoking, insurance, and region of residence are significantly associated with dental service use ($p < 0.05$). The interaction of diabetes and high blood pressure is also significantly associated with increased odds of dental service use ($p = 0.000$). Conclusion: Strategies for increasing dental services use will be discussed along with detailed results of the regression analysis.

GALLAMORE, KRISTINE 39

Faculty Mentor: Julie Ann Stuart Williams

Assessment of Multiple Sources of Feedback for Memorandum Writing in an Operations Management Course

Masters of Business Administration Program

Graduate

Quality Enhancement Program

A sample of seven operations management textbooks revealed a lack of professional memorandum examples in the context of problem solving. This poster presents research focused on addressing this gap in operations management. We assessed the memorandum writing skills of UWF operations management students. Specifically, we assessed recipient identification, problem statement, follow-up request, and language mechanics. We administered the assessments at the beginning, quarter point, midpoint, and end of fall 2016. Prior to the quarter point, students took the UWF Writing Diagnostic Test and were encouraged to attend writing lab tutoring sessions. We added an in-class memorandum writing exercise that required two follow-up assignments in which peers provided feedback on strengths and weaknesses for writing revisions. Prior to the midpoint, students received an instructor assessment with detailed feedback on their writing as well as multiple memorandum examples with emphasis on the recipient, problem statement, and clear request components. It appears that the memorandum writing feedback students received was most effective in raising awareness of selection of an appropriate recipient, writing clear requests, and using correct punctuation.

**VAUGHAN, EMILY; T’KARA MULLINS;
MEGAN SWEENEY 192**

Faculty Mentor: Rodney Guttman

Novel Alzheimer’s Disease Biomarker Development in Blood and Cerebrospinal Fluid

Medical Lab Sciences

Undergraduate

Florida Department of Health RPG

Alzheimer’s disease (AD) affects nearly 5.4 million Americans and as the population gets older, this number is expected to double by 2050. With no treatment or cure, the need to more accurately test individuals for AD as early as possible is vital. Currently there are limited screening or diagnostic tools to establish the presence of AD. To address this problem, the main goal of this study is to identify phage-based probes to novel pathologically relevant metabolites found in human blood or CSF of clinically diagnosed subjects. The general approach is designed around a phage-based ELISA method that is capable of detecting target molecules at near the single particle level. With preliminary data showing feasibility of the phage- display approach, we propose to expand the assessment to screen human subjects in a non-biased approach to seek novel biomarker targets. The end goal is to use take advantage of the rapid procedures of phage display, the sensitive quantitation methods of phage assay, and the potential of phage to recognize non-immunogenic domains target molecules to develop a robust analytical method for the early diagnosis of AD and other related dementias.

BENJAMIN, JENNIFER 38

Melissa Brode

A Study on the Correlation between Instructor and Peer-Reviewed Scores in a Graduate Business Course

Masters of Business Administration

Graduate

Graduate Travel Award

Anecdotal evidence of online versus face-to-face classes led instructors to conclude that students were being harsher on student peer reviews in virtual classes. Speculation was that the anonymity of the online review led to deindividuation and freed the students to behave in ways they would not without anonymity (Chang, 2008). Using an interactive online teaching platform that allows for video peer-to-peer feedback and customized rubrics, the instructors are creating a virtual learning environment that more closely simulates a face-to-face class. This approach can potentially re-define face-to-face learning in the context of a virtual environment. Statistical studies are being conducted to confirm hypothesis.

NEGRON, SAMANTHA 57

Faculty Mentor: Leonid Yanovskiy

Injury Prevention for Musicians: Strategies for Music Educators to Implement Injury-Prevention Awareness in Secondary School String Classrooms

Music

Undergraduate

Kugelman Honors Program

Music programs, such as band, orchestra, and choir, are becoming more common in schools as the benefits associated with student participation in fine arts programs are recognized. However, many do not realize that performing an instrument places a physical demand on the body. Awkward postures combined with long amounts of time spent playing, bad technique, and lack of knowledge about musician wellness can often lead to injuries. Studies by the National Association for Music Education show that injuries are becoming increasingly prominent in music students. String players are among those most commonly injured. Music educators are in an ideal position to help prevent injuries in their students. Therefore, the objective of this study is to examine what music teachers can do to prevent music-related injuries in secondary school classrooms. To determine this, I researched the types of injuries string musicians commonly face and strategies to prevent those injuries. This information was synthesized into a lesson plan that was tested out on secondary school string students enrolled in public school orchestra classes. These lessons included surveys, diagnostic and summative assessments, information on musician wellness, and guidelines to prevent injury. After completing this study, I aggregated the data gathered and completed a reflection that concluded the effectiveness of the study and discussed the practicality of teaching injury prevention strategies in an ensemble-based classroom.

BUSH, JAKE; DIANE JENNETTE;**DEBORAH POWELL****145**

Faculty Mentor: Brandy Strahan

The Effects of an International Clinical Immersion Experience on Undergraduate Nursing Students' Learning Perceptions

Nursing

Graduate

SCAC

Securing national clinical sites is competitive due to availability. International service learning can help fill this need, has been proven to be a valuable experience for nursing students, and could also provide a unique opportunity to teach culturally congruent care considering our ever-increasing diverse population. The purpose of this research was to determine if there was a benefit to utilizing international service learning as a clinical site, that was evidenced by undergraduate nursing students' perception of their learning in an international service learning environment. Purnell's Model for Cultural Competence and Gestalt's Theory were chosen as theoretical frameworks for this study. Purnell's Model highlights the importance of global awareness and learning how to work with diverse populations. Gestalt's Theory supports the investigation of individual student perceptions on achievement of clinical objectives. This study employed the use of subjective and objective measures via journals, focus groups, and surveys. Overall, this study concluded that the international service learning experience was beneficial in expanding the students' perspectives and their ability to apply clinical concepts to diverse patient populations.

COOMBS, MELISSA**146**

Faculty Mentor: Brandy Strahan

The Efficacy of the University of West Florida's Interventions on Behalf of Male Victims of Abuse

Nursing

Undergraduate

Kugelman Honors Program

Per the CDC, approximately one in four men have experienced rape, physical violence, or stalking by an intimate partner. Although this number is alarming, male victimization is underreported, necessitating interventions be tailored for this population. My aim is to study the efficacy of the University of West Florida's (UWF) interventions on behalf of male victims of violence among the student body and to develop a plan in accordance with the steps outlined by the Centers for Disease Control and the World Health Organization. Due to the nature of the topic, secondary data analysis will be used. The Student Health and Wellness Center on the main UWF campus will provide information on practices for combating male victimization. Data from the National College Health Assessment will be used to determine the impact of interventions at UWF compared to the national reference group.

FRANKLIN, CHEYANNE**147**

Faculty Mentor: Crystal Bennett

Line Dancing to Improve Balance in Older Adults with Mobility Difficulty

Nursing

Undergraduate

OUR Works! Program

Introduction: Older adults with mobility difficulty are at greater risk for decline in balance that places them at risk for falls. Line dancing is a popular form of exercise that can be modified, thus feasible for older adults with mobility difficulty. The purpose of this study was to evaluate the effects of line dancing on balance in community dwelling older adults with mobility difficulty from baseline to 8 weeks compared to those who did not receive the intervention. Method(s): An experimental design was used with randomly assigned older adults to either an 8-week line dancing or usual care group. The convenience sample consisted of 23 participants with mobility difficulty, ages ranged 65-93. The intervention used simple routines that are used in beginner line dance classes. At baseline and at measures of 8 weeks, measures of balance were completed. Results: From pretest to post-test, the dance group had increased times for maintaining semi-tandem (+6.8%) and tandem (+15.2%) balance stances. While, the control group had reduced times for semi-tandem (-5.6%) and tandem (-13.5%) balance stances. The dance group had higher Berg Balance Scale (BBS) scores from pre to post-test (+4.86%) compared with lower scores for the control group (-3.29%). In addition, the 2 point mean increase in BBS scores for the dance group approached clinical meaningfulness. Discussion & Conclusions: These findings suggest line dancing may be an effective intervention to improve balance. Further research is needed with a larger sample size to increase generalizability of the findings.

HOSSLER, MEGAN; SAMANTHA CRAFT;**LINORCHE DELOUIS; GUSTAVO ULLOA****148**

Faculty Mentor: Jill Van Der Like; Eric Greska

Applying the Social Readjustment Rating Scale (SRRS) to Nursing Simulations

Nursing

Undergraduate

OUR Works! Program

The purpose of this study is to analyze the relationship between stress associated with nursing simulations and stress levels according to the Social Readjustment Rating Scale (SRRS). Previous research has demonstrated the stress brought upon by simulations, therefore this research will be used to identify a correlation between external, personal stressors of nursing students and their stress during simulation. Studies have shown a relationship between high scoring SRRS scores and decline in academic performance and increased absences from the workplace. Due to the high stress of both personal factors and simulation, it is our hypothesis that nursing students with higher SRRS scores

will show higher physiological stress responses compared to those with lower SRRS scores. Students will take the SRRS prior to simulation and will then be monitored using Zephyr bioharnesses during simulation. Heart rate, stress level, and respiratory rate will be recorded. The data collected during simulation will be compared with the SRRS scores of each individual and analyzed for any relationships between personal and simulation-induced stress.

JOHNSON, ALYSSA; LU WANG; RYANNE WILKES 143

Faculty Mentor: Cynthia Smith Peters

The Effects of Mindfulness Meditation on Stress Levels in Nursing Students

Nursing

Undergraduate

Faculty Support

The Department for Professional Employees has suggested that stress may be a leading factor in nursing burnout, poor job satisfaction, and high turnover rate. Alternative therapies, such as utilizing mindfulness meditation can be used to promote self-care among nurses and have been proven to have significant positive effects on the outcomes of nurses' work performance. Decreased stress levels, increased mindfulness, improved self-compassion, and improved job satisfaction have been associated with the use of 5-minute mindfulness meditation sessions prior to the start of the nurses' shift. Combating burnout by teaching tools to shape future nurses' emotional well-being, stress level, and retention begins during the educational experience. It is crucial that nursing students are able to develop and use practical interventions to decrease levels of stress and feelings of burnout. The proposed research question for this research project is: In Bachelor of Science (BSN) nursing students, how does participating in a 5-minute mindfulness meditation session with music therapy before the start of simulated lab clinical time, compared to only listening to 5-minutes of music therapy, affect stress levels? The purpose of this research project is to utilize a quick, simple activity that can easily be incorporated into a nursing student's day to help reduce stress levels. The results for this study will be measured using the Positive and Negative Affect Schedule (PANAS) tool.

WIGGINS, MELANIE;

BRETT CALKINS; AMY WEGENER 144

Faculty Mentor: Cynthia Smith Peters

Improving Utilization of Palliative Care: A Survey of Nurse Knowledge and Fears

Nursing

Undergraduate

OUR NCUR 2017 Participant

Palliative care is a unique branch of medicine focused on the relief of the physiological and psychosocial effects of living with a severe illness. The purpose of this study is to assess barriers to the utilization of palliative care programs. In the United States, studies have shown that palliative care

programs are widely underutilized. Patients either do not receive palliative care or receive it too late in the progression of their illness. Lack of nurse knowledge and negative perceptions related to death and dying correlate with the underuse of palliative care. Research methodology consists of a cross-sectional, qualitative study examining the knowledge and fears of nurses in a large hospital in the Southeastern United States. Data collection will include the use of two surveys: the palliative care quiz for nurses and a Likert scale questionnaire to measure fears of death and dying. Expected results include a knowledge deficiency in palliative care and a fear of death among nurses, which hinder timely access to palliative care. Previous research has shown misconceptions among nurses regarding the definition of palliative care and other variables related to care of the chronically ill patient. Similar results are expected from this study.

PUGH, KYLIE

110

Faculty Mentor: Raina B. Garrett

The Rhetorics of Public Breastfeeding

Philosophy

Undergraduate

In this poster presentation, the speaker will present a visual argument of the rhetorical context of public breastfeeding in contemporary US culture. What sort of statement or audience response does public breastfeeding incite, and why has something seemingly so innocent become a spectacle? American culture is currently at a crossroads with public breastfeeding as a central argument. Public breastfeeding in a public space seem to be polarized between advocates of the movement and those against it. As Amy Koerber (2013) and other researchers note, those who breastfeed in public encounter "a great deal of fear and trepidation about breastfeeding because they expected to encounter many obstacles" (25). Middle ground seems hard to attain. Nursing rooms, or private spaces for breastfeeding, attempt to meet stakeholders in the middle; however, privatized spaces are not a goal of public breastfeeding advocates. Creating private spaces for breastfeeding still suggests that publicly doing so is wrong, while things such as the Victoria's Secret Fashion Show gain in popularity. Why is the public display of breasts acceptable in contexts that profit off the sexualization of breasts, yet public nursing is so adamantly criticized - even to the point of violence? What are researchers and activists doing to aid breastfeeding mothers in their breastfeeding journey if sexualized breasts are the only types of breasts with positive connotations?

AMOS, JAMES; TREVOR OLSSON 102

Faculty Mentor: Laszlo Ujj

Complete Spectral and Compositional Analysis of Calcium Carbonate Structures Utilizing Nanoparticle Enhanced LIBS and Raman Spectroscopy

Physics

Undergraduate

OUR Project Award; OUR NCUR 2017 Participant

We have utilized two spectroscopic techniques: Laser Induced Breakdown Spectroscopy and Raman spectroscopy to perform a complete spectral and compositional analysis of calcium carbonate structures, in our case a Stripe Bittersweet seashell (*Glycymeris Americana*). We measured the LIBS emission spectra and Raman spectra with 532 nm laser pulse excitations. We have identified both the atomic and molecular makeup of the material. Using both methods we have also investigated the nanoparticle initiated enhancement for LIBS and Raman scattering by depositing silver nanoparticles on the surface of the shell. Detailed analysis and advantages of the effect of the nanoparticles on the surface of selected seashells will be discussed as well as the spectral and compositional make-up of the Stripe Bittersweet seashell

CAMPBELL, BETHANY 103

Faculty Mentor: Aaron Wade; Christopher Varney

Exploring K-12 Mathematics Course Progression: Implications for Collegiate Success in Florida

Physics

Undergraduate

Increasingly, Florida college students are pressured to change their major as few times as possible and take only required classes, all in order to “Finish in Four, Save More” [1]. If they fail to do so, they may be subject to penalties such as Excess Hour Fees. Partially as a result of this, students wishing to study STEM are at a significant disadvantage if they enter college unprepared to take calculus their first semester. We explore the various “paths to success” to STEM degrees, defined by entering college having taken calculus in high school [2], starting from fifth grade onwards.

[1] Governor Rick Scott Issues “Finish in Four, Save More” Challenge to Universities and Colleges. (2016, May 25) <http://www.flgov.com/>.

[2] Tyson W., et al.; Science, Technology, Engineering, and Mathematics (STEM) Pathways: High School Science and Math Coursework and Postsecondary Degree Attainment. *Journal of Education for Students Placed at Risk (JESPAR)*, 12(3), 243-270 (2007)

FOWLER, PATRICK; TYLER MILKERIS 104

Faculty Mentor: Aaron Wade; Chandra Prayaga

Cost Efficient Fabrication of a Brewster Angle Microscope Using 3D Printing

Physics

Undergraduate

OUR Project Award

Brewster Angle Microscopes (BAM) are used to study thin films formed at an interface, such as Langmuir Films, and cost around \$93,000. We present a low-cost alternative to commercial BAMs by using 3D printing that allows for flexibility and quick customization depending on the scientific needs. 3D printing allows for a cheap but stable product, and allows for quick modifications. In addition, if one of the pieces of microscopes breaks, a replacement part can quickly and inexpensively be printed. A BAM setup consists of a laser, the beam from which is reflected off the surface under investigation, and a camera to photograph the reflected beam. The laser is mounted in a holder, which is attached to a motor that is controlled by an Arduino board that changes the angle of incidence. If the incoming beam is p-polarized and incident at the Brewster angle of water, light is not reflected from the water's surface but will be from a sample placed on the surface. A laser holder, camera holder, and motor holder are the 3D printed components of this project. The motor itself is attached to the motor holder and positioned on the Langmuir trough for an optimal laser path. A camera is placed on the other side of the Langmuir trough to collect any polarized reflected light. By 3D printing and ordering components, this has allowed us to produce a Brewster Angle Microscope for only \$600.

FRANCIS, KEVIN 106

Faculty Mentor: Christopher Varney; Hikmat BC

DFT Investigation for Low-Energy Structures of 22-atom and 23-atom Boron Clusters

Physics

Undergraduate

OUR Travel Award

Using density functional theory, we investigate low-energy structures of B₂₂ and B₂₃ clusters. Our study shows that a 22-atom boron cluster prefers a three-dimensional double ring structure for all of its charged states where as the 23-atom boron cluster prefers a planar structure. It is found that boron clusters with an odd number of atoms in this size regime tend to form planar structures, while clusters with an even number of atoms prefer three-dimensional ring structures. We have also studied several isomers of cationic and anionic B₂₂ and B₂₃ clusters.

LEEPER, SPENCER; DAVID SMITH 107

Faculty Mentor: Christopher Varney

Profiling of OpenMP Parallelization in Exact Diagonalization

Physics

Undergraduate

SURP Program; OUR Travel Award; OUR 2017 NCUR Participant

Exact diagonalization is an essential tool for determining the ground and excited states of quantum systems. This is particularly important for models where other techniques break down, such as the quantum Monte Carlo sign problem on frustrated magnetic systems. As the size of the Hamiltonian matrix scales exponentially with the system size, utilizing symmetries inherent in either the model or geometry is essential for block-diagonalizing the matrix to minimize the memory requirements. Subsequent improvements can be obtained using OpenMP parallelization to efficiently utilize the computational resources. Here we analyze the impact of parallelization on different aspects of the Lanczos algorithm for a two-dimensional Heisenberg model.

OLSSON, TREVOR 101

Faculty Mentor: Laszlo Ujj

Investigation of Laser Ignited Plasma of LiCoO₂ on the Spectral and Time Domain

Physics

Undergraduate

OUR Project Award; OUR 2017 NCUR Participant

Among a variety of atomic emission spectroscopy methods Laser-induced breakdown spectroscopy (LIBS) is the one that can analyze any solid, liquid or gas sample. The elemental composition and the relative abundance of the constituent elements in the samples can be determined when the emission spectra of short laser pulses igniting plasma is then recorded and analyzed. We have extended our former studies of the physical properties of the plasma by correlating the temporal evolution of the expanding plasma fume to the observed spectral changes. It is recognized and measured that the initial atomic excitation by UV laser pulses is followed by the electron atom collisions re-exciting the propagating atoms in the plasma. It is with this data that we were able to quantify properties of the plasma.

SMITH, DAVID; SPENCER LEEPER 108

Faculty Mentor: Christopher Varney

Phase Diagram of a Quantum XXZ Model with Long-Range Interactions

Physics

Undergraduate

OUR Travel Award; OUR 2017 NCUR Participant

Advancements in utilizing ultra-cold gases as quantum spin simulators are allowing for the exploration of frustrated networks in two-dimensional spin-1/2 systems. Frustrated exchange interactions can result in exotic states and excitations, such as quantum spin liquids and spin glasses.

Here we investigate the effect of long-range interactions in the quantum XXZ model on a square lattice. The complete phase diagram of the model is obtained utilizing exact diagonalization and the stability of all phases is discussed.

TAYLOR MICHAEL; TWYMUN SAFFORD 138

Faculty Mentor: Laszlo Ujj

Construction and Characterization of a Nanosecond Dye Laser Pumped by Nd:YAG Laser Beam

Physics

Undergraduate

OUR Support

We have constructed and characterized a nanosecond pulsed dye laser. It is pumped by the second harmonic radiation of a Nd:YAG laser. The design of the laser cavity consisted of a Rhodamine 610 dye/ ethanol solution in a rectangular cell, a beam expander, diffraction grating, and an output coupler. A cylindrical focusing lens was used to focus the 532 nm pump laser beam into the dye cell and generate a 10mm x 300 m x 300 μ m amplifying medium. Characterization of the laser followed: after measuring the fluorescence spectrum of the dye solution, the laser output spectrum was recorded. Littrow configuration of the optical grating was used to make the laser tunable. The temporal behavior of the laser pulses and the output power as function of the pump power was studied and the slope efficiency of the laser was calculated. The dye laser will be used for spectroscopy investigations in the future if specific excitation wavelengths are needed.

TRUMAN, ANDREW;**GRANT WELCH; TREVOR BESTOR 105**

Faculty Mentor: Aason Wade; Chandra Prayaga

Using Artificial Sea Water as a Subphase to Create Ultrathin Langmuir and Langmuir-Blodgett Films of Fatty Acids

Physics

Undergraduate

Faculty Support

This project presents the use of artificial sea water (ASW) as an aqueous subphase to create stable Langmuir films of fatty acids. Isotherms of the fatty acids show a significant change in the film stability when the ratios of ASW to pure water are altered, and when the pH is adjusted. We compare the formation of multilayer films by using the extraction technique of Langmuir-Blodgett and measuring the transfer ratios. The extracted films are further analyzed through X-Ray Diffraction (XRD) to determine layer spacing and tilt angle.

LANGSTON, KELSEY 117

Faculty Mentor: Christopher Wirth

Teaching Styles A-E

Physical Education

Graduate

Graduate Travel Award

ENFINGER, CONSTANCE; ELISABETH URBAEZ 269***The Correlation Between Health/Diet and Geographical Location***

Psychology

Undergraduate

Kugelman Honors Program

This research examines the relationship between a person's health and their diet in correlation to the area they live. This data is drawing from survey research at parks in Pensacola, Milton, and Pace, Florida. We expect to find a strong correlation between low income areas and poor health\diet. This proposal has been submitted to the IRB for approval.

SCHANG, BROOKE 270

Faculty Mentor: Ronald Belter

Peace Through Violence: The Prevailing Myth

Psychology

Undergraduate

Kugelman Honors Program; OUR Travel Award

As the destructive power of ballistic weaponry increased from artillery cannons that could sink nothing larger than a single warship tens of miles away to nuclear-tipped missiles that can annihilate multiple city targets thousands of miles away, there has been an parallel increase in the need to analyze the effectiveness of using violence to achieve peace. The lasting devastation that results from the use of nuclear weapons underscores the deep consequences that have emerged for both the planet and countries' welfare were nuclear war to erupt. An understanding of how violence can be used effectively to cause peace might lead to better alternatives or improved preparation by civilians those who are most likely to be seen as ancillary damage --to react to the societal taxations of war. My project will analyze attempts to achieve peace through violence in a variety of texts, including histories, current events, graphic novels, and other relevant literatures. My argument is that it is futile to attempt to achieve peace through violence by examining the following works of literature: The Aeneid, Marvel's Civil War, Watchmen, and others, and will also include a survey of past events and current events like World War I and World War II and the war in Afghanistan. My goal is to demonstrate that non-violence (what happens after the violence stops and agreements are reached) is not truly peace. The implications of these arguments will be explored.

MULLINS, T'KARA 171

Faculty Mentor: Vanessa Rainey; Carolyn Pritchett

Validation of a New Child-Friendly Modified***Stroop Task Using Event-Related Potentials***

Psychology

Graduate

RSP SCAC Award

Executive function (EF) refers to cognitive processes which allow an individual to voluntarily orient attention to perform intentional behaviors. Due to the pervasiveness of EF dysfunction in psychopathology, EF dysfunction has recently

been suggested as a trans-diagnostic intermediate phenotype, or risk factor, for a spectrum of disorders. Our understanding of the role of EF impairments in the manifestation of specific disorders is limited, however, as a consequence of the inability to use various EF tasks within clinical and child populations. One of the main challenges is due to task reliance on skills which are often underdeveloped or compromised. In response to these constraints, researchers have begun to create tasks which are intended to tap the same EF constructs while removing specific limiting variables. The focus of the present study is on a modified and child-friendly measure of interference suppression (e.g., self-control), the Stroop task. This modified Stroop replaces color words with animal pictures in an attempt to eliminate the language constraints of the traditional Stroop. The purpose of the present study was to use electroencephalography (EEG) to provide event-related potential (ERP) data to investigate the differences and similarities between the traditional and modified Stroop tasks in order to assess the reliability of the modified task as a true measure of interference suppression.

**NORTH, CAITLIN; T'KARA MULLINS;
OLIVIA BROCK 154**

Faculty Mentor: Rodney Guttman

Novel Alzheimer's Disease Biomarker Development in Blood and Cerebrospinal Fluid

Psychology

Undergraduate

OUR Works! Program

Alzheimer's disease affects nearly 5.4 million Americans and as the population gets older, this number is expected to double by 2050. With no treatment or cure, the need to more accurately test individuals for AD as early as possible is vital. Currently there are limited screening or diagnostic tools to establish the presence of AD. To address this problem, the main goal of this study is to identify phage-based probes to novel pathologically relevant metabolites found in human blood or CSF of clinically diagnosed subjects. The general approach here is designed around a phage-based ELISA method that is capable of detecting target molecules at the near single particle level. With preliminary data showing feasibility of the phage-display approach, we propose to expand the assessment to screen human subjects in a non-biased approach to seek novel biomarker targets. The end goal is to use these rapid procedures of phage display, the sensitive quantitation methods of phage assay, and the potential of phage to recognize non-immunogenic domains target molecules to develop a robust analytical method for the early diagnosis of AD and other related dementias.

**NORTH, CAITLIN; MICHELLE BELLANOVA;
KELYN HURLEY 155**

Faculty Mentor: Susan Walch

***Gender Differences in Online Dating Attitudes
and Behaviors Among College Students***

Psychology

Undergraduate

Faculty Support

Online dating has gained much momentum within the past few years as computer and phone usage became integral parts to modern society. The purpose of this study is to measure men and women's attitudes and behaviors toward online dating. Questionnaires were administered to collect data regarding online dating usage and views from a convenience sample of individuals at the University of West Florida (UWF). All participation in this study was voluntary and anonymous, although some demographic information such as age and gender identity were collected for comparison purposes. It is predicted that men, in most cases, will be the initiator of a potential relationship with an individual online. It is also speculated that men will be more likely to use online dating services for casual purposes as opposed to serious, long-term relationship seeking pursuits. Through statistical analysis, it was found that no significant differences occur between men and women based on attitudes and beliefs towards online dating. Since no significant difference was found, this indicates problems with our measure resulting in a need to reformulate the items to defend both sides of our hypothesis.

NYENHUIS, RACHEL 163

Faculty Mentor: Carolyn Pritchett

***The Effect of Lactobacillus plantarum on
Human Metabolism and Food Craving***

Psychology

Undergraduate

OUR Project Award

Previous studies on the effects of the consumption of Lactobacillus plantarum have demonstrated significant weight loss in overweight animals. Other research has shown significantly reduced plasma LDL cholesterol and fibrinogen concentrations in human participants with hypercholesterolemia. Additionally, combined L. plantarum and L. curvatus supplements have been shown to decrease adiposity in overweight human participants. The purpose of this study is to assess what effect the consumption of Lactobacillus plantarum 299 has on body composition, fasting blood glucose and lipid levels, C-reactive protein, and reported food cravings in healthy human participants. Approximately 70 participants' body compositions will be measured after a fasting period via bioelectric impedance analysis, skinfold analysis, and BMI computation. Participants will have a sample of blood drawn for blood panel analysis. Following this, participants will eat a snack and complete two food craving questionnaires. Participants will be blindly assigned to the experimental (L. plantarum) condition or the placebo condition and will take one pill every day for three weeks. Following this period, the procedure described above will be performed again for each participant. We expect our study to

demonstrate decreased body fat content in the experimental group, and decreased plasma lipid, glucose, and C-reactive protein levels. We expect the experimental participants to report fewer food cravings; however, appetite has not been directly studied in L. plantarum research, so this prediction is speculative. If these predictions are accurate, this study will have strong implications for the management of obesity and persistent food cravings.

POWERS, ELIZABETH 152

Faculty Mentor: Lisa VanWormer; Lisa Blalock

***The Effects of Survival Relevance on Change Detection In Real-World
Objects***

Psychology

Graduate

OUR Project Award

Large changes in a visual scene often go unnoticed by observers, a phenomenon known as change blindness (Rensink, 2001). This two-part experiment examined the role of survival relevance and its effects on a change detection task. Objects rated as either high in survival relevance or low in survival relevance were utilized in a change detection task. It was hypothesized that due to the survival processing effect (Nairne, Thompson, & Pandeirada, 2007) individuals would show increased performance when detecting changes in survival relevant objects than objects rated low in survival relevance. Results of Experiment 1 indicate the opposite effect, likely due to the perceptual distinctiveness of the low survival relevance objects (Konkle, Brady, Alvarez, & Oliva, 2010). The results of Experiment 2 show that individuals were significantly better at detecting changes in highly survival relevant objects than low survival relevant objects when perceptual distinctiveness was equal between groups and a change was present in every trial.

**RAMEY, ARIELLE; PREYA RAMEY;
KARLI REEVES; KRISTEN D'ANGELO 172**

Faculty Mentor: Vanessa Rainey

That's Not Medically Necessary: Insurance Coverage of Autism Therapies

Psychology

Graduate

Individuals who fall on the autism spectrum tend to need personalized treatment due to the wide variety of symptoms. The DSM-5 requires autism spectrum diagnoses to be further specified to aid in this individualized approach. These specifiers provide further distinction, such as with intellectual impairment, with language impairment, and so on. Types of treatments include applied behavior analysis (ABA), occupational therapy, speech therapy, and sensory integration therapy. The purpose of this study is to investigate insurance coverage of autism spectrum disorder therapies in the state of Florida and family perspectives on the topic. Knowing what services are provided, what is deemed medically necessary, and other specifics of health insurance coverage can help to guide family members through the ambiguities of spectrum diagnoses. Moreover, this study has implications for future directions in health insurance coverage.

**SALISBURY, LARISA; BRUCE BECKETT;
GAYNELLE WOODS; SHELBY MAY; CHANDLER BALL 168**

Faculty Mentor: Susan Walch

Attitudes Toward Infidelity Among College Students

Psychology

The following study describes the evaluation of attitudes men and women hold toward infidelity. Attending to prior research and evolutionary suggestions, we hypothesized that men would have increased tolerance of extradyadic involvement, and also that men would be more accepting of other men's extradyadic involvement. The attitudes were initially assessed using a twelve-item inventory: Attitudes Toward Infidelity Scale (ATIS). This inventory consists of a 7-point Likert-type scale ranging from strongly agree to strongly disagree in response to statements about behaviors deemed as infidelity. Following the ATIS, in order to further capture the gender differences in absolution of extradyadic involvement, two different scenarios capturing either a female or male cheater were created; the scenarios were followed by a 5-point Likert-type scale evaluating the absolution of the cheating behavior ranging from completely unforgivable to completely forgivable. The preliminary survey items were administered to a representative sample of 98 college-aged students, 54 women and 44 men, predominantly white, cisgender, and heterosexual. As hypothesized the preliminary results of our survey showed significant differences between men and women on the ATIS. Although we did not find a significant difference in the cheating scenarios, a main effect was shown and we are currently increasing our sample size in hopes to show a significant difference.

SCHANG, BROOKE 170

Faculty Mentor: Gregory Lanier

Cyberbullying at the University of West Florida

Psychology

Undergraduate

Kugelmann Honors Program

The increase in technology use in adolescents and adults in the last ten years has created a need for research on the prevalence and awareness people have of cyberbullying as this is a relatively new phenomenon. Previous research, however, looked more at adolescent populations than emerging adults and other adults. In this study, we investigated the prevalence of cyberbullying at a college campus as well as the awareness students have of the policies and resources the university has or does not have in regards to cyberbullying. Participants were given a survey to fill out that evaluated the previously mentioned subjects as well as identified students that are currently experiencing cyberbullying for an optional second phase that recorded these experiences as they occur. Some of the findings showed an overestimation of policies available to students and indicated that students were not sure how to access resources on campus

**SCHNEIDER, SHERRY; CHANICE ALEXANDER;
RACHEL MOORE; DALLAS SMITH 169**

Effects of Collective Identity on Individuals' Decisions to Delay Treatment to Prevent Antibiotic Resistance

Psychology

Undergraduate

Faculty Support

Current overuse of antibiotics contributes to antibiotic resistance of future generations. Such self-interest at odds with the collective good creates a social dilemma. Since antibiotic consumption is the main driver of the development of antibiotic resistance, behavior change is urgently needed (Hollis & Maybarduk, 2015). Research has found priming collective identity increases cooperation in social dilemmas (e.g. Van Lange, Joireman, Parks, & Van Dijk, 2013). The aim of this research is to compare the effects of interdependent and intergenerational primes of identity to a neutral prime on the willingness to delay antibiotic treatment. We will use a between-subjects experimental design with hypothetical vignettes (Ronnerstrand & Andersson Sundell, 2015). To prime identity, the participants will read paragraphs discussing global warming (an environmental social dilemma) from different points of view. A third prime will serve as a control. Next, participants will read a scenario in which a doctor prescribed antibiotics, but recommends postponing antibiotic treatment to see if the disease will resolve itself. After participants decide if and how long to delay treatment, participants will complete a questionnaire including demographic questions and measures of consideration of future consequences (CFC), and Social Value Orientation (SVO). We hypothesize participants primed with either collective identity will agree to delay antibiotic treatment longer compared to those receiving a neutral prime. We expect the intergenerational prime to have greatest impact. Age, parenthood, perceptions of health, CFO, and SVO are predicted to positively correlate with the decision to delay treatment, and may moderate the effects of the primes.

**SCHWYZER, LAURA; GERALDO DESOUZA;
BRANDON HENDERSON; VALERIE MORGANSON 157**

Faculty Mentor: Valerie Morganson

Does Leadership Style and Gender Influence

Perceived Leadership Effectiveness of Head Coaches?

Psychology

Undergraduate

OUR Project Award

This research study seeks to determine if leadership style and gender influence perceived effectiveness of head coaches. The study seeks to replicate and build upon prior research conducted with intercollegiate athletic administrators. In this quasi-experimental study, participants will be assigned to one of four study conditions (2x2 design). We will employ video clips followed by an online survey. The videos will present a head coach (male or female) demonstrating different leadership styles (transformational or transactional). The dependent variables of interest are perceived extra effort of the

leader, perceived effectiveness of the leader, and satisfaction with the leader. We expect an interaction between gender and leadership style such that male transactional leaders will be rated as (a) showing extra effort, (b) being more effective, and (c) being more satisfactory compared to all other conditions. We also expect main effects for gender and leadership styles. Participants will be approximately 325 undergraduate psychology students from the University of West Florida. The proposed research project would help address lack of experimental research on underrepresentation of women in sport. Moreover, the study intends to address a lack in the literature on the gendered perceptions of leadership within sport. This is important because these gendered perceptions likely influence which leaders are selected and whether future women are drawn to become athletic leaders.

SMITH, DALLAS; KAHLA DAVIS 158

Faculty Mentor: Valerie Morganson

Teacher-Student Supportive Behaviors and Gendered Norms: Backlash Against Unsupportive Female Teachers

Psychology

Graduate

The work-family conflict literature has identified family supportive supervisor behaviors (FSSBs) as behaviors that are supportive of employees' balance of the work and family domains. FSSBs have been linked with lower work-family conflict as well as employee perceptions of their supervisors. Recent research has translated FSSBs from the work domain to the school domain; teacher-student supportive behaviors (TSSBs) are supportive of students' balance of school and work domains. The proposed study is a 2 (sex of instructor) x 2 (presence of TSSBs: supportive/unsupportive) mixed factorial design aiming to determine the effects of teachers' sex and behavior on subsequent evaluations. Undergraduate participants will watch two videos of a teacher of one sex (male or female) exhibiting both TSSBs and unsupportive behaviors. They will then be asked to rate the masculinity/femininity of the instructor as well as their perceived competence and likability. We propose that engagement of instructors (particularly females) in unsupportive behaviors will be rated as more masculine and more competent but potentially less likable. In contrast, we expect that instructors (particularly females) engaging in supportive behaviors will be perceived as more feminine, less competent, and more likable based on adherence to gendered norms of women as communal. The present study is among very few in the work-family literature employing an experimental design. It may provide valuable insight into a subtle form of gendered bias related to instructor evaluations.

STREBECK, MARISSA 153

Faculty Mentor: Robert Rotunda

Intimate Partner Violence Victimization and Mental Health

Psychology

Undergraduate

Kugelman Honors Program

Previous research shows that victims of intimate partner violence (IPV) are at a heightened risk of experiencing symptoms of psychological distress. While symptoms of PTSD, depression, and anxiety have been thoroughly studied in this population, few studies have examined whether IPV victimization is associated with obsessive-compulsive symptoms, somatization, hostility, phobic anxiety, paranoid ideation, or psychoticism. A study was conducted to examine the psychological symptom profiles of victims of IPV, and how these profiles relate to the severity, temporal length, recency, and frequency of the abuse they experienced. Researchers recruited female victims of IPV from a domestic violence counseling center to participate in this study. Participants completed a series of questionnaires assessing the severity of the abuse they experienced, symptoms of posttraumatic stress disorder (PTSD), symptoms of depression, and other symptoms of psychological distress. Data collected from participants was analyzed using descriptive and correlational statistics. Results showed that victims of IPV experienced significantly more symptoms of psychological distress than normative samples, and that greater severity and frequency of IPV are associated with increased symptoms of psychological distress. Future research may aim to provide support for these findings using improved measures and sampling techniques, or it may aim to establish causation using a longitudinal study design.

BUCHANAN, SAM; HADIYA CROCKER; REGINA OLIVER;

JESSIKKA GAINEY; ASHLEY LEE 156

Faculty Mentor: Susan Walch

Attitudes Towards Contraceptive Use Among UWF Students

Psychology

Undergraduate

Faculty Support

Contraceptives are frequently used among men and women for sexual intercourse in the US. Several factors may influence an individual's attitudes regarding contraceptives and these may vary between men and women. A sample total of 104 university students, 51 men and 53 women, were gathered and asked for complete a survey regarding their feelings, knowledge, insistence on use, reasons for usage, reasons for non-usage, and whether the government should fund Planned Parenthood. The results of the data collected showed that while men and women did not differ significantly between perceived knowledge, insistence on use, reasons for usage, reasons for non-usage, there was significant difference found between men and women regarding feelings. A majority of participants, roughly 60%, showed agreement towards the government funding of Planned Parenthood. While most sub-scales showed no significant difference, men did show more

negativity regarding contraceptives compared to women, this result being paralleled in similar studies.

**CAUSSEAU, EMBERLY; SHANNON DOVER; ACE HUME;
MEREDITH SPRADLING; ALLISON MCDOWELL 161**

Faculty Mentor: Susan Walch

***Gender Differences on Knowledge about
Mutual Sexual Consent Among College Students***

Psychology
Undergraduate
Faculty Support

Previous studies have focused on sexual assault, but the conceptualization of consent has remained greatly unstudied. This study researched the gender differences on knowledge of sexual consent. Our participants included 52 men and 63 women, and no data was omitted from the final analysis. Participants were surveyed in public areas such as classrooms and the library, and each time they were given a double-sided questionnaire consisting of eight scenarios based items with a clear “yes” or “no” answer. The results showed an overall score of approximately seven; with women collectively receiving a score of 7.28 out of 8 where men correctly answered 7.04 out of 8 sexual interaction scenarios. As there was no statistical significance in the difference between gender on sexual consent, our hypothesis was disproven. However, the comparison of individual tested items revealed a difference greater than what was represented in the overall results. Considering that men and women scored closely, it implies that the knowledge of sexual consent of men and women over the age of 18 is relatively equal.

**CINTRON, GABRIELA; ALISON SALLOUM;
ZOE-BLAIR-ANDREWS; ERIC STORCH 150**

Faculty Mentor: Jane Halonen

***Parents' Descriptions of Young Children's
Dissociative Reactions after Trauma***

Psychology
Undergraduate
OUR Travel Award

There is limited research on the phenomenology of how young children who have been exposed to trauma express the intrusive symptom of dissociative reactions. The current qualitative study utilized interviews from a semi-structured diagnostic clinical interview with 74 caregivers of young children (age 3 to 7) who were exposed to trauma to identify parents' descriptions of their children's dissociative reactions. Based on results from the interview, 45.9% of the children had dissociative reactions (8.5% had flashbacks and 41.9% had dissociative episodes). Interviews were transcribed to identify themes of dissociative reactions in young children. Common themes to flashbacks and dissociative episodes included being triggered, being psychologically in their own world, and displaying visible signs. For flashbacks, caregivers reported that it seemed as if the child was re-experiencing the trauma. For dissociative episodes, caregivers noted that the

child not only seemed psychologically somewhere else but also would be physically positioned somewhere else. Caregivers also expressed their own reactions to the child's dissociative episode and trying to interrupt the occurrences. Themes, descriptions and phrases to describe dissociative reactions in young children after trauma can be used to help parents and professionals more accurately identify occurrences of dissociative reactions.

DENOIA, MICHAEL; VALERIE J. MORGANSON 159

Faculty Mentor: Valerie J. Morganson

***Extending a Work-Family Enrichment Measure
to the Work-School Interface***

Psychology
Graduate
Graduate Student Travel Award

It is common for students to work while taking courses. In 2011, 72% of undergraduate and 82% of graduate students also worked (Davis, 2012). Enrichment refers to how participation in one role results in improved participation in the other role (Greenhaus & Powell, 2006). The present study aimed to adapt and test an established measure of enrichment to be used in student populations. A sample of 142 college students completed an online survey containing measures of enrichment and conflict between work and school roles. Confirmatory factor analysis (AMOS 22) was used to assess the structural properties of the adapted work-school enrichment model containing six factors. The model fit the data well: $\chi^2(121) = 263.41, p = .000$; CFI = .93; SRMR = .08; RMSEA = .09. Cronbach's alpha coefficients for the dimensions ranged from $\hat{\alpha} \pm = .80$ to .93. The results of this study are promising and they provide initial validity evidence for an adapted measure of WSE. To build upon this work, we offer two recommendations: Refine the school-to-work efficiency dimension. Wording the items differently or even redefining the entire efficiency dimension might improve the overall model. Provide greater evidence for the reliability and validity of the measure. A second study can examine if WSE relates to antecedents and consequences (e.g., role demand, school satisfaction) of work-school involvement in theoretically expected ways.

**DETEROW, RACHEL;
SARAH WILLIAMSON; MATTHEW ESSER;
ELISABTH MARQUARDT; MANDY NEAL 167**

Faculty Mentor: Susan Walch

***Gender Differences in Perceptions of Recreational
Drug Use Among Male and Female College Students***

Psychology
Undergraduate
Faculty Support

Perceptions of males and females vary regarding drug use, however, as a whole acceptability is higher for males and lower for females. Drug dependence also varies based on gender, which may be attributed to views of acceptability. This study

PSYCHOLOGY

analyzes the perceptions of drug use by both male and females among college students. A sample of college students (n = 110) were used from the University of West Florida. Surveys were conducted on the perception of acceptability of recreational drug use among both males and females. Each participant answered a series of questions regarding the acceptability of alcohol, cocaine, tobacco, marijuana and Adderall as well as questions on personal use of those five substances. Results showed a positive correlation among drug use and drug acceptability as well as an overall greater acceptance by males for both males and females regarding recreational drug.

HAVEN, LEVI; HEATHER LIU 164

Faculty Mentor: Darren Bernal; Carolyn Pritchett

Influence of Stress-Reduction on Physiological Stress and Performance

Psychology

Undergraduate

OUR Project Award

Scholarly research has demonstrated attention-regulation processes such as mindfulness-based meditation, to be fruitful practices for both immediate and long-term stress reduction and improved cognitive abilities (Chiesa, et al., (2009), *J Alt Comp Med*, 15, 593-600; Mohan, et al., (2011), *J Alt Comp Med*, 17, 207-212). These methods have also been shown to be effective alternative treatments for depression, pain regulation, and trauma and anxiety disorders (among others) (Grossman, et al., (2004), *J Psychosom Res*, 57, 35-43). As such, recent research is attempting to elucidate the neural mechanisms associated with this potentially beneficial, noninvasive and inexpensive way to improve one's mental and physical health. While the field is advancing (Jo, et al., (2016), *Int J Psychophys*, 99, 33-39; Atchley, et al., (2016), *Neuroscience*, 320, 83-92), research on mindfulness meditation utilizing physiological measurements is important to increase our understanding of this popular technique. Specifically, there is a lack of research quantifying the potential of mindfulness to buffer the effects of stress during physical and attentional performance. This study aims to further the knowledge of the relationship between mindfulness, stress, and performance by taking a comprehensive battery of relevant physiological measures before and after participants engage in mindfulness meditation and performance tasks.

MOORE, RACHEL 162

Faculty Mentor: Steven Kass

Induced Cell Phone Dependence and Implications on Reaction Time While Driving

Psychology

Abstract

Undergraduate

The purpose of the present study is to examine the effects of mobile phone dependency and mind wandering on reaction time while driving. Participants will take the Day Dreaming Frequency Scale to assess their proclivity to mind wander (Stawarczyk, Majerus, Van der Linden, & D'Argembeau, 2012). If in the experimental group, participants will believe that

they were entered into a poll that could win them a prize. If a text is sent, winning the prize will be contingent on how fast they respond to the text. A phone is placed on a stool next to participant, and participants will drive through an urban scenario in a high-fidelity driving simulator. The scenario contains a reaction time event that will display a stop sign on the screen at three different intervals requiring the participant to come to a complete stop. Almost instantly after the stop sign disappears, a question will pop up asking the participant what they are currently thinking about in an attempt to assess mind wandering. Prior research (Strayer, Turrill, Cooper, Coleman, & Hopman, 2015), demonstrated that the mere presence of a mobile phone notification provides a cognitive distraction. Specifically, we hypothesize that as mobile phone distraction increases, reaction time will also increase, and that mind wandering is associated with slower reaction times. The results of this study could provide a deeper understanding of the residual costs of mobile phone use as well as implications for future legislation regarding mobile phone use while driving.

VAN DAM, JARED 160

Faculty Mentor: Steven Kass; Lisa VanWormer

Cell Phone Dependency as a Moderator for the Relationship Between Passive Cell Phone Interaction and Situation Awareness

Psychology

Graduate

Faculty Support

The purpose of the present study is to examine the effects of mobile phone (MP) dependency and passive MP interference on situation awareness, driving performance, and visual attention. Participants were categorized into MP dependency categories based on their scores on the Mobile Phone Dependency Questionnaire (Toda, Monden, Kubo, & Morimoto, 2004). Participants then drove through an urban scenario in a high-fidelity driving simulator during which time they received a text message of which they were unable to respond (their phone was out of reach but audible and visible). After receiving the text message, participants' situation awareness (SA) was assessed via the Situation Awareness Global Assessment Technique (SAGAT; Endsley, 1995). SAGAT probes occurred at both 30s and 10s after the text message was delivered to determine the length of time that receipt of the text message impacted SA. In addition to SA, the number of traffic violations and off-road glances were measured. Prior research (Cheever, Rosen, Carrier, and Chavez, 2014) demonstrated that heavy to moderate users of MPs experienced greater anxiety when their phones were taken away from them for a period of 20 minutes. We hypothesize that high MP dependent drivers are affected more so by passive phone interference in terms of being visually distracted, experiencing reduced situation awareness, and committing driving violations than those drivers less dependent on their phones. The results of this experiment could have implications for future legislation regarding automobile design and in-cab technology as well as legislation regarding mobile phone use while driving.

YAZEJIAN, AMANDA; KAREN VALAITIS 151

Faculty Mentor: Karen Valaitis

Best Practices for Engaging Team Projects

Psychology

Graduate

Graduate Travel

Enrollment growth in online education has prompted research regarding its overall effectiveness, especially in terms of collaborative learning. Exploring which online learning strategies are most effective for team projects has implications for instructors, students, and educational institutions. This project addresses the many challenges associated with designing and implementing team projects in the online environment. An existing undergraduate team project using Wikispaces technology was redesigned based on cross-disciplinary best practices as identified in the literature. In order to enhance student learning, a previously designed project was expanded to incorporate best practices. As a result, critical steps were added to the team project. First, an individual project was assigned to introduce students to the technology. After the individual project, teams were assigned and students participated in a preparatory discussion that prompted information sharing in two areas: individual attributes and team role preferences (e.g., facilitator/moderator, researcher/innovator, professional writer/quality assurance). Once students were familiar with the technology and had completed the preparatory discussion, they were ready to engage in the team project. Following its completion, a survey was distributed to assess the following areas: self, team members, and Wikispaces technology. Best practices, project redesign, and preliminary survey results will be presented.

YOUNT, ZACHARY; DESIREE VELASQUEZ 149

Faculty Mentor: Hui Ya Han

The Impact of Altered Emotion Due to***Sleep Deprivation on Risky Driving Behavior***

Psychology

Undergraduate

OUR Project Award

Introduction: The present study will examine the influence of altered emotional states resulting from sleep deprivation on risky driving behaviors. Emotions, sleep deprivation, and driving, have been shown to be interconnected. Past studies have shown that sleep deprivation alters emotions and reduces driving performance. However, no studies have examined effects of emotional states altered by sleep deprivation on driving. We hypothesize that the altered emotions resulting from sleep deprivation will increase risky driving behaviors.

Methodology: Between subject design will be adopted. Forty participants will be randomly assigned to either sleep deprivation or normal sleep. Participants will also be assigned to experience either anger induction or happiness induction. Participants will be instructed to stabilize their sleep pattern during the first lab visit. Stabilization will consist

of at least three nights. Participants in the sleep deprivation condition will experience 27-32hr of total wake time following stabilization. Participants will keep a sleep journal and wear a wrist actigraph between the first and second lab visit. During the second lab visit participants will complete three simulated driving sessions: one 3-minute practice drive, one 5-minute practice session and false feedback emotion induction procedure, and a 10-minute simulated drive during which data will be collected.

Expected results: We expect to find greater incidences of risky driving from (1) Sleep-deprived participants as compared to participants who are rested; (2) Angry sleep-deprived participants as compared to rested participants under any other condition; (3) Happy sleep-deprived participants as compared to happy, normal sleep group participants.

HILL, AARON; TRISTI AH MU 97

Faculty Mentor: Tristi Ah Mu; Justice Mbizo; Peter Memiah; Anthony Okafor

Unmet Dental Care Needs: Children with Special Health Care Needs

Public Health

Graduate

Background: Children with special health have many challenges that impact the quality of life and socialization. During this critical development stages, it is critical that children with special circumstances have their health care needs met. The purpose of the study is to examine the prevalence and correlates of dental services utilization among children with special health care needs. Methods: The National Survey of Children's Health (NSCH) is a national probability survey of children that includes the physical and mental health status, access to quality health care, including information on the child's family, neighborhood and social context. Data for 5, 503 children with a diagnosis of depression, developmental disability or autism spectrum disorders were weighted and analyzed using STATA 12.0 for Windows. Alpha of 0.05 was used for all significance levels. Results: The sample mean age was 10.9 (SD =4.39); 36.8% were female, of whom 34.8% had dental care compared to 50.2% males; 68.3% White, 15.6% African American and 16.1% Other racial groups. At the multivariate general model, African American children were 57% less than white children to have dental care (OR=0.43; 95% CI: 0.23 -0.80; p<0.01). Among whites, race (OR=2.7; p <0.02). Parental social support (OR=2.6; p<0.001) and having autism (OR=5.6; p<0.02) among African American is associated with increased use of dental services. Having insurance was significantly associated with high dental use. Conclusions: Implications for public health policy and practice will be discussed among with further results of stratified analysis.

HILL, AARON; MONIKA HAUKE; CAROLINE KINGORI

Faculty Mentor: Justice Mbizo; Peter Memiah

Partner Age, Early Sexual Debut, Multiple Sex Partners and Intimate Partner Violence in Kenya: Findings from A National Health Survey

Public Health/Health Sciences

Graduate

Graduate Travel Award

Intimate Partner Violence (IPV) is a significant problem with significant social and economic impact, and pose great risk to women including mortality. This is especially critical in resource poor countries where the majority of women lack economic independence and there is a high prevalence of HIV/AIDS. Our analysis aimed at identifying factors associated with IPV among women between ages of 15-49 years. Methods: Data from the 2014 Demographic and Health Survey conducted in Kenya was used to estimate IPV. IPV was classified as a composite variable of emotional, physical and sexual violence. Data were weighted and analyzed using Stata 12 for Windows. Results: The prevalence of intimate partner violence was 51% (n=1,531). The mean age of the women was 30.4 (SD: 8.7). Variables strongly associated with the outcome rural residence (OR=1.2); increased number of sexual partners (OR=1.6); recent sexually transmitted disease in the past year (OR=1.6); fever terminated a pregnancy (OR=1.3); HIV Knowledge (OR=1.6); forced sexual acts (OR=2.7); early sexual debut (OR=1.5) and receiving sex for cash (OR=1.7). The findings highlight a need to develop effective interventions aimed at eliminating IPV to decrease the disproportionate burden of social and health outcomes, including STIs and potentially HIV infections among women. A high prevalence of intimate partner violence in the community emerges as an important finding, indicating the need for care in prevention and the overall health of this population.

HILL, AARON; PETER MEMIAH; JUSTICE MBIZO; PATIENCE KOMBA; EUPHRASIA TELWA; SEKELA MWAKYUSA; ABU MAGHIMBI; MARINE ETIENNE; AIMEE PHILLIPS; COURTNEY SWAIN; CONSTANCE SHUMBA; SIBHATU BIADGILIGN

Faculty Mentor: Peter Memiah; Justice Mbizo

Early Versus Delayed Mortality among HIV Infected Patients Initiating Highly Active Antiretroviral Therapy in Tanzania

Public Health/Health Sciences

Graduate

Development of HAART has revolutionized the treatment of HIV-infected patients and reduced HIV associated morbidity and mortality. However, recent studies suggest a higher risk for early mortality in adults receiving ART in low-income countries than those in high-income countries. The objective is to describe the burden and correlation between early vs. delayed mortality associated with HIV/AIDS in resource-poor settings using data from Tanzania in East Africa. We performed a cross-sectional evaluation of routinely collected program data for 991 HIV-positive deceased adult patients who were placed on ART treatment. Bivariate and multivariate regression models were used to identify independent predictors of mortality and to calculate odds ratios. Early

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deaths (within 3 months of ART initiation) occurred in 359 of the 991 cases (36.2%); while delayed deaths (after 3 months of ART initiation) occurred in 632 of 991 (63.8%). Average time to death within 3 months was 1 month compared to 22 months at > 3 months since initiation of ARV. In multivariate analysis, patients who were on WHO stage IV, had fever and cough symptoms at 6 months prior to death and patients with 0-1, 2-3, and 4-6 clinic visits had a higher risk of death in the first 3 months. Where possible, healthcare providers should do more to monitor patients before starting them on ART for better outcomes. Additionally, public health efforts to encourage early testing and entry into treatment must be scaled up in resource-poor countries to gain some lead-time, sustain immune function, and delay onset of opportunistic infections.

MU, TRISTI; MUS TRISTI; PETER MEMIAH; JUSTICE MBIZO; KEVIN OWUOR; JEREMY PENNER

Faculty Mentor: Peter Memiah

Implementation and Evaluation of Capacity**Building Programs for Healthcare Workers in East Africa**

Public Health

Graduate

Faculty Support

93

Background: Although African researchers doubled their production of publications between the years 2003 and 2012, the continent produces a mere 1% of total world research. However, capacity building can strengthen skillsets and self-efficacy regarding data analysis among healthcare professionals. We were interested in conducting capacity building workshops in eastern African countries (specifically Kenya and Tanzania) and evaluating their effectiveness among healthcare providers who deliver services to over 200 healthcare facilities within their countries.

Methods: We specifically wanted to evaluate whether or not the training increased participants' self-efficacy in regard to data analysis and conceptual understanding and if the training resulted in participants applying skills learned during training for scientific dissemination. Prior to the training, a pre-test was distributed to participants in the format of a questionnaire using a Likert-type response. Post-training, a post-test was emailed to all participants asking the same questions as the pre-test along with a collection of qualitative data questions.

Results: The post-test revealed statistically significant differences when compared to pre-test results (0.05 alpha). Participants were confident in their ability to understand data analysis. Qualitative data results gave positive feedback for the training including, I feel more confident in scientific dissemination and [the training] reinforced my ability to read journals.

Conclusion: There is a dire need for advances in research production within Africa. Continued education for sustainable dissemination practices among healthcare professionals should prevail until self-efficacy in data analysis is commonplace. These skills can then be translated into research efforts in healthcare for their respective countries.

**STEWART, GEORGE; KRIS, BEHAN;
AUDREY BLUE; ANOTHY GUILLORY** 95

Parasite-Induced Changes in Mice Infected with the Larval Stage of the Tapeworm Taenia crassiceps

Public Health

Faculty

OUR Project Award

Blood chemistry was analyzed in mice infected with the larval tapeworm *Taenia crassiceps*. Fourteen blood chemical components were examined weekly over the first 18 weeks of infection and at 31 weeks postinfection (PI). Two of the blood parameters among 14 examined over this period showed significant deviation from levels seen in uninfected mice. Two key liver enzymes began to rise in infected mice after 10 weeks PI and reached a peak at 31 weeks PI at 162% above normal for aspartate aminotransferase and 243% above normal for alanine aminotransferase. Infection of mice is accomplished by intraperitoneal injection of 10 larval stages of the parasite. By 31 weeks postinfection the parasite burden had grown through asexual budding to between 8,000 and 10,000 larval stages and the body weights of mice had increased to 181% above that for uninfected mice. OUR support has allowed us to expand this study to include analysis of white blood cell counts in the peripheral blood, mouse body weights and parasite burden (counts and weight) separately, and changes in the weights of liver, spleen, kidneys and heart in infected mice. These studies are ongoing. We gratefully acknowledge that support for this project has come in part from the Office of Undergraduate Research.

THOMPSON, PAIGE 94

Faculty Mentor: Peter Memiah

Establishing Nationwide Consultation Processes: Elimination of Syphilis and Mother to Child Transmission of HIV

Public Health

Graduate

Establishing Nationwide Consultation Processes: Elimination of Syphilis and Mother to Child Transmission of HIV
Background: Kenya is one of 22 priority countries in the Global Plan for Elimination of Mother-to-Child Transmission of HIV (eMTCT). Our presentation will describe the process undertaken to develop a framework for the elimination of HIV MTCT and syphilis.

Description: Several meetings were convened by the Ministry of Health (MoH) between July and November 2016. All counties were invited to aid the development of action plans regarding joint program planning.

Meeting objectives included:

- Identifying how efforts can support existing priorities
- Reviewing goals, targets, and indicators for monitoring and evaluating efforts
- Developing immediate eMTCT action plans through ante-natal care (ANC) services
- Reviewing and strengthening national coordination

mechanisms

- Identifying how participating county experiences can aid in the development of a similar framework in Kenya

Those present were experts in reproductive health and included participants from MoH, WHO, partner agencies, and other UN Programs.

Conclusions: A framework for eliminating syphilis and mother to child HIV transmission was developed, and successes/ challenges of this framework development process were identified. Improving ANC services, introducing and improving testing, developing monitoring targets and indicators, increasing advocacy with partners, and creating a supportive policy environment were all part of the actions taken. This integrated process will serve to set targets, identify resources, and strengthen systems for monitoring and maintaining EMTCT of HIV and syphilis in Kenya. It will be used to highlight issues and debates in developing similar frameworks in other Sub-Saharan African countries.

TSHISWAKA, DAUDET; CRYSTAL BENNETT;

CHEYANNE FRANKLIN 96

Effects of Walking Training on Physical Functioning among Stroke Survivors in the U.S: A Systematic Review

Public Health

Faculty

OUR Works! Program

Objective: Physical functioning is often compromised as a result of stroke event. While interventions propose different strategies that seek to improve stroke survivors' physical functioning, a need remains to evaluate walking training studies aimed at improving such physical functioning. The purpose of this review was to assess available literature that highlights the impact of walking training on enhancing physical functioning for stroke survivors.

Methods: We conducted a systematic literature review of online databases' Google Scholar, PubMed, Cochrane Library, CINAHL, Scopus, and EBSCO€"with the following inclusion criteria: manuscript published from 2005-2017, written in English, with treatment and control groups, for walking training studies aimed at improving physical functioning among stroke survivors.

Results: Findings indicated that walking speed, walking distance, and gait speed were the most used outcome variables for measuring improved physical functioning among stroke survivors. Importantly, proposed interventions involved either over-ground or treadmill walking training, if not both. Preserved loco-motor improvements were noted in most interventions at follow up. Some interventions that used walking treadmill training augmented by auditory stimulation reported significant improvements of physical functioning compared to over-ground walking training augmented by auditory stimulation.

RESEARCH AND ADVANCED STUDIES

Conclusion: The imperative to improve physical functioning among stroke survivors with physical impairment not only allows survivors to be socially, emotionally, and physically more independent but also improves public health. In general, we note an insufficiency of research on the interaction between physical functioning and socialization among stroke survivors.

BORETSKY, JULIANNE 139

Faculty Mentor: Susan Jans-Thomas

The American Dream: Attracting Latin American Immigrants to the Land of Opportunity

Research and Advanced Studies

Doctoral

Faculty Support

The American Dream is an idea that has infused the United States since before its establishment. The definition of it and the audience to whom it appeals has changed over time. Most recently, Latin American immigrants have strongly supported the American Dream due to its offer of opportunity through the potential for personal success and its offer of freedom from repressive regimes. The combination of these factors attracts ever increasing numbers of immigrants to the United States each year.

DELWARE, WESLEY, II 140

Faculty Mentor: Susan Jans-Thomas

Ensign Jesse LeRoy Brown - U.S. Navy's First African American Aviator

Research and Advanced Studies

Doctoral

STRICKLAND, ROBYN 69

Faculty Mentor: Susan Jans-Thomas

The Casket Girls: Vampire Folklore in French Quarter New Orleans

Research and Advanced Studies

Doctoral

Faculty Support

According to New Orleans folklore, the casket girls, young maidens brought over from France to marry men of nobility to the French quarter, were said to have brought the original vampires to New Orleans. This poster presentation illustrates how the casket girls influence the vampire culture and folklore in the French Quarter. The purpose of this presentation is to show the process of the qualitative research strategy historiography reveals historical writing. A major component of this historiographical research was to conduct a project utilizing the six steps found in the children's book *Ain't Nothing But a Man* by Scott R. Nelson (2008). The author utilizes a process of evaluating history developed by Marc Aronson that guides the future historiographer and was a model for the project. This presentation maps the process taken to answer the question, "What role do the casket girls have on French Quarter vampire folklore?"

THOMAS, SUSAN ; JULIANNE BORETSKY; ROBYN STRICKLAND; WESLEY DELWARE; RUSTAIN PHELPS; JOHN WOODS 71

A Narrative in Black Lives Matter:

Research, Teaching, and Contemporary Discord

Research and Advanced Studies

Faculty

Narrative Inquiry is a qualitative research strategy that allows researchers to tell the story of people, places, or events using experiences and words of others. It allows the blending of personal life events with historical events to create narrative based upon memory and experience. This research tells the story of doctoral students enrolled in a Narrative Inquiry class while rioting broke out across the nation as they attempted to answer the question: "Why do Black lives matter?" Inclusiveness of history, ideas, race, and socio-economic status filter discussion and research findings.

THOMAS, SUSAN; LAUREN ANZALDO; LESLIE CUYUCH; RACHEL CONWAY; RACHEL HENDRIX 72

Altered Books: Lessons in Censorship and Collage Inquiry

Research and Advanced Studies

Faculty

Censorship is a practice designed to rid society of an idea, book, art form, or viewpoint. When an idea is unacceptable to some, a challenge can ensue. These challenges can be based upon morality, sexuality, language, religion, fantasy, or an individual authors' body of work. The First Amendment affords freedom of speech and freedom of the press. The brilliance of the First Amendment is it protects both sides of the censorship issue. In other words, an individual may challenge a book using one's First Amendment rights; and one may defend a book's right to exist using one's First Amendment rights. "Censorship is often an act born of fear" (Jans-Thomas, 1999, p. 24).

Collage Inquiry requires researchers to create visual representation of their research findings (Butler-Krisber, 2007, 2008; Williams, 2000; Heid, 2008; Egan, 2005). Altered Books are an art form whereby an artist takes an existing book and alters it to create a new book that becomes a piece of art (Jans-Thomas, 2012). In this research, students altered books to visually demonstrate censorship. Physically altering a book to report research findings supports understanding the act of censorship. Physically altering a book, figuratively breaks the hold censorship maintains on some people, while literally changing the book's message. According to Cary (1998) "Aesthetic knowledge (is) dangerous knowledge" (p. 303). Aesthetics requires persons to make value judgments, appreciate experiences, and share feelings with others. This presentation is an exhibit of Altered Books created to present research related to a censored literary theme.

WOODS, JOHN**70**

Faculty Mentor: Susan Jans-Thomas

Intersecting the National Council of the Social Studies College, Career, and Civic Life Framework and Foucault's philosophy of power: An interdisciplinary curricular analysis of the 1959-1963 Fayette County, Tennessee, Tent City

Research and Advanced Studies

Doctoral

In 1960, Black sharecroppers were evicted in Fayette County, Tennessee, for registering to vote. The home evictions prompted a need for immediate shelter for the families of the sharecroppers. A tent city was established to house the evicted families. This qualitative research project examined the 1959-1963 Fayette County, Tennessee tent city employing the National Council for the Social Studies (NCSS) C3 Framework and Foucault's philosophy of power as the conceptual framework. The study incorporated the research methodologies of historical, archival, and new historicism. The analysis identified themes connected to the song "Fayette County" by Pete Seeger, lyrics by Agnes Cunningham, and the Fayette County tent city archives located at the University of Memphis. Themes were classified in relationship to the NCSS C3 Framework disciplines of history, civics, economics, and geography, as well as, the concepts of Foucault's philosophy of power. A comparison of the themes was conducted to ascertain intersections between the NCSS C3 Framework and Foucault's philosophy of power. The purpose of examining the intersections were to identify the points in which the exercise of power might have influenced the historical, civic, economical, and geographical foundations of the Fayette County tent city.

CUMBIE, VICKIE**255**

Faculty Mentor: Dione King

College-Focused Bystander Intervention Programs that Effectively Aid in Prevention and Intervention of Dating Violence and Sexual Assault

Social Work

Undergraduate

OUR Works! Program

Dating violence and sexual assault are complex and real problems on college campuses. Bystander intervention is being explored as a prevention strategy for addressing the issues of dating violence and sexual assault occurring on college campuses. Dating violence is a term that includes any form of violence or threat of violence that occurs between two people in the context of an ongoing romantic relationship (Zimmer, 2015). Sexual assault can occur in an intimate relationship or occur between strangers and is defined as oral, vaginal, or anal penetration without consent (Katz, Paziena, Olin, & Rich, 2015). The bystander approach to prevention focuses on utilizing peers and community members to address situations on three different levels, primary, secondary, or tertiary violence (McMahon & Banyard, 2013). Bystanders are identified as third party witnesses to situations where there is a high risk of sexual violence [that can] make the situation better by intervening in prosocial ways (McMahon & Banyard, 2013). College students are diverse in age, gender, religion,

prior education and many other factors that can be influential in a bystander's recognition of needed intervention, the choice of a bystander to intervene, and the type of intervention the bystander is willing to provide. In exploring bystander intervention, this research will identify current college focused bystander programs and curriculum details. The results of this research can be utilized to assist in the development of curricula that effectively addresses college bystander intervention programs.

CURRINGTON, HAILEY**254**

Faculty Mentor: Daniel Durkin

The Relation Between Stress and Depression in Caregivers of Older Adults

Social Work

Undergraduate

OUR Works! Program

Most of the research on caregivers for older adults focuses on the stress or burden associated with the caregiver role and does not examine other perceived stressors or (even less so) stressors throughout the life course and how these stressors might affect the caregiver's emotional well-being. In this study, we explored the relation between stress that was not related to the caregiving role and depression. In particular, we examined whether the caregiver's spirituality might mediate this relation. Using secondary data from the Family Relations in Late Life II (FRILL II) study we examined the relation between depression and two measures of stress (life events stress and perceived stress) in 258 caregivers of older adults when controlling for sex, age, ethnicity, dementia diagnosis, income adequacy, length of caregiving, religious/spiritual coping and instrumental support. Regression analysis revealed that perceived stress and instrumental support at time 1 predicted depression at time 2. Participants who reported higher perceived stress reported higher depression and those who reported higher instrumental support reported lower depression. Religious/spiritual coping was not significant. In addition, men were more likely to report lower depression scores than women. Stress throughout the life course and stress not related to caregiving appears to affect the emotional well-being of caregivers over time and this relationship is mediated by the support the caregiver receives from others. Future research should look at the relation between stress and other well-being variables and what other variables may affect this relation.

EMERSON MEGAN; JANA BARFIELD; LOLITA LANDAU**65**

Faculty Mentor: Paula Rappe

Comparing Substance Abuse from the United States of America to Japan

Social Work

Undergraduate

OUR Travel Award

The purpose of this study was to assess and compare substance abuse laws, prevention and treatment in the United States those in Japan. This cross-cultural study was faculty-led and took place over a twelve-day period wherein U.S. multi-

SOCIAL WORK

discipline foreign exchange student researchers visited Japanese substance abuse treatment facilities/agencies and participated in a cross-cultural substance abuse policy seminar alongside Japanese student peer hosts. U.S. students explored and assessed similarities and differences between cultures in policies, prevention and treatment. Preliminary findings will be presented which suggest that the particular Japanese facilities visited by U.S. students during this study utilized a largely holistic approach in both prevention efforts and treatment strategies for individuals struggling with substance abuse. Substance abuse clients in these facilities appeared to be provided with an abundance of social supports or “scaffolding” to help them successfully transition into healthy life activities and routines at the conclusion of the intensive treatment phase. Cross-cultural similarities and differences in the law, prevention, and treatment will be described.

JAGOE, STACI 256

Faculty Mentor: Dione King

Incorporating Research into the Curriculum that Engages and Prepares Students for Practice

Social Work

Graduate

Graduate Travel Award

Dating violence and stalking risks have become a well-documented phenomenon among college student populations (Casey & Lindhorst, 2009; Margolin, Ramos, Baucom, Bennett, & Guran, 2013; McNamara & Marsil, 2012; Shorey, Cornelius, & Strauss, 2015). Despite the common occurrence of these behaviors, peers remain hesitant to provide bystander support when incidents occur (Cares, Banyard, Moynihan, Williams, Potter, & Stapleton, 2015). The University National College Health Assessment (NCHA) survey, conducted at UWF during Spring 2013, identified areas of critical student concern related to stalking, emotional and verbal abuse, and sexual abuse. (NCHA, 2013). The addition of student research in a Domestic Violence course fostered a greater understanding of the role of research in social work. Students administered a Qualtrics survey across campus in our effort to gauge the student population’s understanding of dating violence, sexual assault, and the subsequent use of bystander intervention strategies. This project was conducted in collaboration with the University Counseling and Wellness (UCAW) department and provided additional opportunities for student engagement outside of the classroom. Students were also provided opportunities to analyze data for individual research projects. Data was collected over a three-week period after the awareness intervention, the Red Flag Campaign, was introduced to campus. The student respondents (N=288) included 92% undergraduate and 8% graduate students and indicated a diverse representation of the university’s population. Results indicated 28% of students had previous experiences with the subject matter of the survey. Half of respondents thought they could do something about stalking, 56% dating violence, and 66% sexual violence.

JOHNSON, K'YONE 257

Faculty Mentor: Dione King

Examining Adverse Childhood Experiences and Student Perceptions of Domestic Violence Perpetrators

Social Work

Graduate

Graduate Travel Award

The Adverse Childhood Experiences (ACE) survey is used to explore perceptions of domestic violence perpetrators among college students. Results from a cross-sectional study will examine the descriptive and correlational variables of students in helping professions were surveyed about their beliefs regarding domestic violence perpetrators. This study provides opportunities for dialogue with students from helping professions to assess their thoughts, feelings, and beliefs about perpetrators of domestic violence.

STEEN, BRITTANIE 271

Normalizing Breastfeeding

Social Work

Undergraduate

This study utilizes an inductive research method to complete a qualitative research study on the experiences of new mothers who breastfeed their baby. Breastfeeding is a natural and vital way for new mothers to nourish and bond with their little bundles of joy. Breastfeeding offers multiple physical, emotional, and psychological benefits for both baby and mother. Using a mixed phenomenological and grounded theory research design, the study discusses experiences of breastfeeding mothers in today’s society. Mother’s experiences at work, school, and the public in general are approached and examined. The study evaluates questionnaire and interview responses in order to gather information. This study is dedicated to the movement in normalizing breastfeeding. Proposals on what can be done in order to normalize breastfeeding conclude this study.

SUTTON, TAMMY 258

Faculty Mentor: Dione King

Barriers that Impact Bystander Intervention Behaviors Among College Students

Social Work

Undergraduate

OUR Works! Program

Due to the high risk of sexual assault on college campuses, preventative programs have been put in place to raise awareness about sexual assault. Programs are being added to educate and encourage everyone to take responsibility and intervene when potential risk is present. Bystander intervention programs are shifting the focus towards those who may witness potential danger as opposed to victims and perpetrators with the goal of reducing sexual victimization. Studies support the importance of bystander intervention as a means to prevent sexual assault on college campuses (Casey and Olher, 2012; CDC, 2010). Bystanders are third

party witnesses to a potential assault, and with adequate and effective training, a bystander can intervene to assist a potential victim and help in reducing sexual assault among college students. The purpose of this research is to examine the literature to determine primary barriers that may hinder college students from intervening as it relates to sexual assault. Preliminary findings support barriers such as acceptance of rape myths, deficit in skills, influence of alcohol, personal safety and risk, peer and social norms. Study results will explore identified barriers in greater detail to aid in knowledge dissemination. The results from this research project can be used to strengthen future campus prevention and intervention programs that focus on increasing bystander's willingness to intervene.

BENWARE, SHARON 264

Faculty Mentor: Tugce Gul; John Pecore

Integrating Social Studies and Language Arts in Elementary Education

Teacher Education and Educational Leadership

Undergraduate

I am interested in creating a classroom where children are able to learn required content about Language Arts that also makes connections to real world Social studies lessons in a creative and fun learning environment. Social studies is an often-neglected subject in elementary school because it isn't generally assessed on the state standardized tests that young children take. Integrating social studies with language arts will help students with the comprehensions skills that they will be assessed on the state standardized tests.

DAVIS, WYNTER; MYEISHA PITTS 265

Faculty Mentor: Tugce Gul; John Pecore

Education & The Effects of Poverty

Teacher Education and Educational Leadership

Undergraduate

FRALICK, MICHAEL; MARIO TOBAR 260

Faculty Mentor: Giang- Nguyen Nguyen

An Introduction to Mathematical Modeling and Open Ended Questions for Pre-Service Teachers

Teacher Education and Educational Leadership

Undergraduate

OUR Works! Program

Traditionally mathematics instruction consisted of students listening to lectures, completing worksheets, memorizing formulas, and providing correct answers to closed questions on timed tests. This teacher centered environment of replication and practice did little to inspire enthusiasm, creativity, or higher level critical thinking skills. Students often lost motivation, and low test scores led students to believe they can't do math or they aren't good at math. The Common Core State Standards of Mathematics (CCSSM, 2010) initiative was designed to help combat this issue by providing mathematical practices to help students become mathematically efficient. Emphasis is placed on student creativity, collaboration, communication, and critical thinking. To help increase

students flexibility in thought process, they are encouraged to come up with their own solution strategies and multiple solutions are allowed to exist. Comparisons and discussions are recommended to explore not only what works but why it worked. Mathematical modeling concepts emphasized heavily in higher level undergraduate mathematics are now introduced in grade school. This approach is intended to improve student motivation while increasing their comprehension and understanding of the ideas and applications of mathematics. However preservice teachers were not taught in this environment and may have little or no prior experience or training in the new CCSSM methods of mathematical instruction. This poster presents some typical elementary math open ended questions and the iterative process of mathematical modeling, and it is part of a larger ongoing research project focused on pre-service teachers' reactions as they are introduced to mathematical modeling.

GUL, TUGCE 268

Faculty Mentor: John Pecore; Karen Evans

Teaching to Avatars: An Innovative Teste in Teacher Preparation

Teacher Education and Educational Leadership

Faculty

CREO

There is an increasing need and demand for pre-service teachers to develop a professional (teacher) identity that resonates with pedagogical practices that engage and connect with students in a positive and productive way (Nykqvist & Mukherjee, 2016, p. 851). The virtual environment technology supports teacher practice in pedagogy and content with the benefit of facilitating teacher development without possible harmful effects on students (Dieker, Hynes, Stapleton, & Hughes, 2007). The purpose of our pilot project was to provide an enrichment opportunity during the practicum course via simulations/avatar students to pre-service teachers that supports their professional identity development. During the enrichment simulation, students practice their lessons (teaching skills and pedagogy/content knowledge) to avatar students in the virtual-reality simulator prior to teaching in the field. The research data includes semi-structured interviews with pre-service teachers, reflections on the discussion board, observation during simulative teaching, and survey about participant perceptions on teacher identity development. Based on collected data, feedback is provided to the pre-service teachers by the course instructor. The preliminary findings and implications will be discussed. It is expected that the results will provide practical suggestions to instructors and faculty for innovative formation of not only teacher preparation programs but also other programs, which consider increasing and enriching students' practices.

HOFFMAN, SHIRALEE 262

Faculty Mentor: Tugce Gul; John Pecore

Children's Literature and the Community: How Children's Literature Can Teach Various Cultural Backgrounds Among the Community.

Teacher Education and Educational Leadership

Undergraduate

OUR NCURE 2017 Participant

The purpose of this project is to examine how Children's Literature and interactions with the community can help children become inform about different cultures. I will write a paper using Library Database, Google Scholar, and journals to search scholarly reviewed and researched based articles to present the salient points at the UWF Symposium. This project will explain: (a) how children's stories educate children to varies cultures and traditions, (b) why it is important to teach children about diverse cultures, and (c) how providing community events or festivals that could further stimulate children's knowledge on different cultural backgrounds. Conclusion and implications will be discussed to provide an idea to teachers to promote cultural awareness projects in the classrooms.

**LIVINGSTON, BONNIE; KENNEDY HAND; JESSICA RAO;
SAMANTHA COOK; KAYCE JOHNSEN 263**

Faculty Mentor: Karen Evans

Every Individual Counts by The International Social Justice Club

Teacher Education and Educational Leadership

Graduate

Graduate Travel Award; CREO

In the Fall 2016 semester, the University of West Florida's International Social Justice Club partnered with a fifth grade class at Pea Ridge Elementary school in Pace, FL with an impactful goal in mind. The club worked to develop seven-week unit plan to be implemented in the fifth grade classroom once weekly. The plan included lesson plans with benchmark goals, state standards, and the United Nations Sustainable Goals. The club's big idea for the overall plan was: Every Individual Counts. The plan's compelling question was: how can you make a difference? The International Justice Club connected with an orphanage in Togo, West Africa. The fifth grade students researched the area and the United Nations goals before connecting with the students at the orphanage. They then began to compare cultures, schools, societies, and environments using technology and hands-on lessons in class. Each fifth grader was given a pen pal from the orphanage. The students began to write letters. The fifth graders brainstormed many ideas in regards to "how can you help?" After many ideas, the class voted to send care packages to Togo to help the children at the orphanage. The students raised funds for postage by hosting a penny war at Pea Ridge Elementary. They made posters and fliers to raise awareness and to collect items to place in the care packages. The project was a huge success with a heartfelt impact. The club participated in a poster presentation in Washington, D.C. at the 2016 NCSS Conference.

PITTS, MYEISHA; WYNTER DAVIS 267

Faculty Mentor: Tugce Gul; John Pecore

Teaching & Learning with Children in Poverty

Teacher Education and Educational Leadership

Undergraduate

Directed Study

The purpose of this project is to break down and show the effect that poverty has on education in our county and nationwide. The challenges that students and teachers face each day while dealing with poverty in the classroom. Our aim is to identify some of the correlations that exist with poverty and education. The project has been divided into three categories. The first category allows us the opportunity to go out into the field and spend some time in a Title I school. This will allow us the opportunity to see first-hand how poverty can have an adverse effect out education. The second category is the core of our research. This category is where we plan to answer questions such as: What is the cycle of poverty and how it intertwines with education? What is the connection between social skills and poverty? Why do children in poverty need a quality education? How does poverty affect behavior and academic performance? The third category will be where we provide some research-based interventions to help with the poverty and education epidemic. The project is worthy of doing because locally about youth in Escambia county live in poverty. This averages to about 15 million children nationwide. (National Center Children in Poverty). Our ending goal would be to provide some data to help teachers, parents, and administrators help economically challenged students to succeed academically.

STILSON, KIMBERLY; KELI KEARNEY 261

Faculty Mentor: Giang-Nguyen; Thi Nguyen

The Unknown: Teaching Students to Use Variables

Teacher Education and Educational Leadership

Undergraduate

The only way to understand the unknown is to make it known. In mathematics, variables are the unknown that represent a thing or quantity that may change depending on the context of a mathematical problem. Variables are symbols, including letters and shapes, that represent a variety of numbers. In order for students to truly understand variables, they must discover the purpose and meaning of variables. Students learning about variables for the first time often ask questions such as: Why is x in this problem? What is this problem saying? and What number does this variable represent? because they are confused. In this presentation, we will explore students misconceptions about variables and suggest some instructional strategies for introducing and teaching the concept of variables.

MITCHELL, DEBRA

61

Faculty Mentor: Byron Havard, Holly Ellis, Diane Bagwell

The Effects of a Nutritional Educational Video Game on the Mental Imagery, Emotional Response, Attention, Nutritional Knowledge, and Nutritional Beliefs of High School Students

Instructional Workforce and Applied Technology

Doctoral

Graduate Travel Award

The problem that this study was designed to address was adolescent obesity in the school environment using a nutritional educational video game. This problem merits study because of the critical role schools play in the learning processes of obesity and the need for interventions to combat this serious psychosocial issue. Additionally, with the growing popularity of video games, it may be advantageous to employ a game in the health education curriculum. This research was a quasi-experimental study conducted to analyze the effects of a nutritional educational video game on high school students by employing a nonequivalent control group design. Pre-experimental equivalent samples did not exist in the experimental and control group. Preceding this study, groups or intact classes were established. The pretest/posttest, transportation scale, and rational belief scale were piloted prior to this study. The study consisted of six high school nutrition classes (approximately 180 students total). Three classes (approximately 30 students each) functioned as the control group and nutritional content was taught in the traditional manner typically conducted by their health education teacher. These three classes did not use the Alien Health video game as a component of the teaching strategy. The experimental group was taught the nutritional knowledge content by the same health education teacher by participating in the nutritional educational game Alien Health as well as the traditional teaching methods. All classes took a pretest and posttest on nutritional facts as well as a nutritional belief scale and a modified version of the transportation scale which included the three components mental imagery, emotional response, and attention. The treatment lasted approximately three weeks. Descriptive statistical procedures and analysis of covariance (ANCOVA) were used to analyze data gathered in this study.

“
Your work demonstrates the excellence that represents both CASSH and UWF. We hope you take pride in your successes and achievements and take time to celebrate your efforts.”

Steve Brown, Ph.D.
Dean of the College of Arts, Social Sciences and Humanities

II. 3-MINUTE ORAL PRESENTATIONS

First Author, Title, Department, and Presentation Time

NOLL, ANTHONY

Faculty Mentor: Jocelyn Evans

Redefining Community: Creating the Objective Public Space Index

Undergraduate

Kugleman Honors Program

In 2014, first-year students in the Kugleman Honors Program set out to begin the Pensacola Parks Project. After two years of data collection, the project has proven to be a great success within the Pensacola community. One of the data collection tools was the Public Space Index (PSI) designed by Vikas Mehta. Although it served its purpose in analyzing public spaces, there were two distinctions that called it into question. The PSI was geared towards larger metropolitan areas, such as Tampa, FL where it originated, and there were some subjective measures within the scoring. The research team removed the subjective and “large city” measures out of the current PSI to optimize it for small/medium-sized towns. Overall, this presentation is an example of how Honors students can make new meaning out of existing literatures, projects, and the communities in which they live in.

NOLL, ANTHONY

Enhancing National Golf Opportunities

for Members of The First Tee of Northwest Florida

Undergraduate

Kugleman Honors Program

This research is aimed at improving the opportunities available to members of The First Tee of Northwest Florida, a non-profit junior golf organization that promotes the development of core values while teaching golf skills. This chapter had not sent any participants to the First Tee Open in many years, though other chapters in Florida have sent numerous participants. Statistical analysis of student qualifications, programming, and coaches’ input was employed to determine factors that influence participant success at the national level. Quantitative and qualitative methods were employed. In the end, the First Tee of Northwest Florida was successful at addressing the problems with qualifying participants for the First Tee Open.

9:30 HONORS

BOLTE, CHRISTINA

Faculty Mentor: John Jensen

A Vast Blank Space: Sir John Franklin’s Arctic Maritime Frontier

Anthropology and Archaeology

Graduate

Graduate Travel Award

9:40 ANT

The 2014 discovery of H.M.S. Erebus by Parks Canada reignited interest in one of history’s most enduring mysteries. Spearheaded by the British Admiralty, arctic exploration and the search for a Northwest Passage lasted for more than 275 years. Between 1818 and 1845 the Admiralty sent numerous expeditions to the Arctic contributing to the charts of the region, though these were also riddled with misinformation. Sir John Franklin’s 1845 expedition, dispatched to complete the Passage, was the culmination of many years’ worth of effort, hardship, and sacrifice. In the 27 years before Franklin’s expedition, the arctic map had been expanded considerably, though much remained unknown. A vast blank space still comprised the Arctic’s center. This paper applies Jensen characteristics of maritime frontier in an analysis of Franklin’s 1845 expedition and its legacies. The Arctic offered a boundless and unexplored sea of opportunities appealing to individual and national agendas. A review of the charts, reports, and personal accounts of the Franklin Expedition and ensuing search efforts between 1845 and 1859 reveal the extent that the perceptions of the possibilities of discovering a Northwest Passage far exceeded the availability of geographic, cultural, and environmental knowledge. Drawing on these sources, this paper explores how the Arctic’s frontier characteristics condemned the Franklin expedition and contributed to the failure of the rescue efforts.

BOREN, COURTNEY

Faculty Mentor: Ramie Gougeon

And the Land Is Not Well Populated:

The End of Prehistory on Pensacola Bay

Anthropology and Archaeology

Graduate

Graduate Travel Award

9:45 ANT

The sixteenth century was marked by Spanish expeditions that brought the prehistoric lifeways along Pensacola Bay to an end. Accounts from the 1559 Luna expedition indicate a meager population of Indian fishermen lived along the bay of Ochuse. Collectively, this and subsequent documentary evidence illustrates movements of people in and out of the region and hints at the dramatic cultural changes already underway. Interestingly, archaeological evidence supports the idea that the native populations of west Florida were not the same as those who came to live in association with Pensacola’s later

Spanish forts and missions. Who were these last prehistoric Indians and how did they fit into the broader cultural patterns of the central Gulf Coast? This paper summarizes our current approaches to understanding Pensacola's prehistory and outlines several lines of evidence being brought to bear on questions of identity, lifeways, and responses to colonialism.

DVORCAK, CHRISTOPHER 9:50 ANT

The Columbia - A New Discovery on the Blackwater

Anthropology and Archaeology

Graduate

Graduate Travel Award; SGA

As the University of West Florida continues to survey Pensacola waterways, many new anomalies have been discovered. One of the most significant is a 105 long sidewheel steamer, which was located in the Blackwater River using side-scan sonar. The shipwreck's three distinct sections the bow, boiler, and propulsion-related machinery in the stern remain mostly intact. The most indicative of the artifacts examined are bricks associated with the boiler that have the name "KILLIAN" impressed on them. After further historical research, the wreck is believed to be the Columbia. Built in Pensacola in 1900, she was used by the W.B. Wright Lumber Company and also operated as an excursion vessel. A fire of unknown origin caused her to sink in 1911. This project focuses on the life history of the Columbia, why she was built, how she sank, and the role she played in the economy of the region.

JAMES, REBEKAH 9:55 ART

Faculty Mentor: Barbara Larson

Portals of the Damned: The Gates of Hell in Fin-de-Siecle France

Art

Undergraduate

NCUR 2017 Participant

Art historical scholarship favors the dark elements of the Rodin's Gates of Hell and generally understands them as a portrayal of human anguish and eternal torment. However, the misery of the human condition may not have been the only focus of the Gates of Hell. In the midst of its darkness, the Gates may possess a more hopeful theme. As part of the French reconstruction after the Franco-Prussian war and Paris Commune, the Gates could have been conceived as a tool to dissuade France from further decay. This essay evaluates the place of the Gates in contemporary dialogue about the decadence of urban society. Through primary texts on degeneration, crowd theory, and Rodin, I examine the possible influence of contemporary literature and political philosophy on the Gates of Hell. To further supplement my research, there is a broad selection of secondary resources' including texts on fin de siècle France, the separation of Church and state, and the nationalism of cathedrals (an inspiration for the Gates of Hell). The seemingly endless evolution of the Gates could have been in correspondence to how Rodin

perceived the cathedral (with its Last Judgment scenes used to dissuade "sinners" By examining the themes of estrangement, damnation, and spiritual reconciliation in the Gates of Hell, I maintain it exists as both a manifestation of the pessimism of war torn France and its longing to rise above the stigma of degeneration.

MURPHY, MADISON 10:00 ART

Faculty Mentor: Barbara Larson

Remembering the Women of the Bauhaus:

Gender Inequality in a Self-Proclaimed Equal School

Art

Undergraduate

NCUR 2017 Participant

In the early 20th century the Bauhaus school formed and quickly earned a reputation for progressive and modern methods. While it enrolled women in high numbers and claimed gender equality, the school was sexist in many ways. Women were steered into the Weaving Workshop and virtually excluded from all other mediums. Very few managed to force their way into the other departments. Even those who excelled in weaving and other artistic endeavors did not receive the same level of acclaim their male counterparts enjoyed. This paper focuses on the lives of seven of the extraordinary women to matriculate through the school and their efforts against marginalization. Gunta Stolz, Benita Koch-Otte, Marguerite Friedlaender-Wildenhain, Anni Albers, Gertrud Arndt, Marianna Brandt, and Otti Berger are only a small sample of the women who have gone overlooked, undervalued, or only thought of in connection to their husbands in the canon of art history. Research into this subject is ongoing and the presentation will also touch on my future plans and goals for it.

YAMAGUCHI, TABITHA 10:05 COMM ARTS

Faculty Mentor: Bre Garrett

Are Body Standards for Models Realistic?

Communication Arts

Undergraduate

During the Spring 2017 semester, I decided to research female and male beauty standards (e.g., weight and height) in the fashion industry for the U.S. These standards were then compared with statistics of the average American man and woman. To find answers, I dug through secondary research by use of online articles. Much like my hypotheses, research showed that there is a significant difference between models and regular people. To showcase my findings, I decided to create a series of infographics via Adobe Illustrator and InDesign. This method makes the data more compelling to read and easier to comprehend versus writing a research report with quotes and numbers. The purpose of this project is to illustrate how the fashion industry portrays how people and what the reality is. At the same time, this project was devised to help create awareness about this issue.

KELLETT, ABBIE**10:10 COMM ARTS**

Faculty Mentor: Kelly Carr; Patricia Gleich

Gender, Leadership, and the 2016 Presidential Election

Communication Arts

Undergraduate

Kugleman Honors Program

The 2016 Presidential election was the first time in the history of the US that a woman was the nominee of a major political party. This produced a fascinating situation a woman was competing with a man who imaged himself a strong masculine presence.

Gender played a key part in each role that the candidates embodied in their race to the White House. How they used masculinity/femininity to promote and emphasize their perceived leadership abilities is apparent in their use of social media, interpersonal communication, and smear campaigns. Trump's use of hegemonic masculinity and sexism undermined much of the legitimacy and competence attributed to Clinton and based on her political experience and proven leadership abilities. The discrepancy between leadership characteristics and feminine characteristics require that females in positions of power or applying for powerful positions, as was the case with Hillary Clinton, enact masculine qualities that satisfy perceived leadership competence while simultaneously upholding socially acceptable feminine nature. The context will also be considered as it sets the stage for women to enter politics at this particular point in time, but not necessarily succeed and receive equal opportunities and acceptance from male opponents, peers, and the voting public. This analysis examines the roles and characteristics embodied at specific times to strategically accomplish goals. It investigates the parallels between masculinity and leadership and the gender gap that Clinton faced as she applied for the position of commander and chief.

HAMMOCK, BRITTANY**10:15 ENG**

Faculty Mentor: David Earle

In the Wasteland of Desire: Sex, Degeneration, and Homosocial Myth at the Fin de Siecle in Dracula

English

Undergraduate

OUR Travel Award

In *Dracula*, Bram Stoker's vampire as a mythic regeneration of the archetypal Devil evokes the Victorian fears of retributive expropriation and moral degeneration and produces an abject terror that "shocks not because it is alien, but because it is too familiar." Stoker's blurring of the lines between the mythic and the real reflects the phenomenological indeterminacy of identity, imperialism, and sexuality in Victorian society. Effectively, Stoker recapitulates the colonial narrative of the Victorian period into a fin de siècle, Gothic myth in which the locus of fear is in the potential for foreign contamination of the English body. However, the reflexivity with which Stoker portrays the inversion by the liminal Other as inevitable suggests a growing complacency in Victorian society that contributed to the degeneration of English hegemony and masculine identity.

My paper focuses on the sub-textual threat to English masculinity that manifests in the periphery of consciousness and hypnagogic states, between fear and desire, and on the waning borders between the public and the domestic spheres, and how, ultimately, this anxiety must be sublimated and desexualized so that a rearticulated masculinity can emerge. By focusing on the masculine plot in *Dracula* and the contemporaneity of the homosocial sphere and narrative myth in the English literary tradition, I will further explore how this text offers a reconceptualization of Victorian masculinity that mitigates the double-bind fears and anxieties associated with colonization and burgeoning female sexuality at the fin de siècle.

MANNING, KAREN**10:20 ENG**

Faculty Mentor: Jonathan Fink

Mapping the Virgin Mary in Clarissa Pinkola Estes's Untie the Strong Woman

English

Graduate

Graduate Travel Award

The Virgin Mary represents ways of knowing and mapping that are immensely valuable in modern times, where achieving a sense of solidarity associated with the concept of "home" is increasingly difficult. When the image of Guadalupe first surfaced in the sixteenth century, "Nahuas diaspora in their own land" mapped themselves in the cartography of the Virgin's rose-colored dress and in her mestiza face, seeing in her a space in which they could situate themselves. Both then and now, the Virgin Mary stands as a continuing site of resistance, representing a means to confront spaces of non-belonging. As diaspora populations increase, Mary serves as a way by which people pinpoint, not only their own personal meanings, but also their physical spaces. Devotees sing to her, walk with her, and kneel before her. She is mother and mother is a location: home. In *Untie the Strong Women*, Clarissa Pinkola Este's continues ancestral devotion begun by the Nahuas, dancing, singing, and journeying, as she maps herself in the folds of the mantle of the Virgin of Guadalupe. Este's demonstrates via story-telling, poetry, and art, that the raw substance of everyday life is fertile ground for discovery of the sacred when it is traversed with the mother. Este's literary art is a contemporary example of the devotional cartography that has ensued for almost five centuries, situating home in the embodied everyday movements and toil that are undertaken with the Virgin Mary.

GRINER, TERRY**10:25 ENG**

Faculty Mentor: Katherine Romack

Responding to Love: Passion and Wrath in Milton's Samson Agonistes

English

Graduate

Graduate Travel Award

In her *Tales of Love*, Julia Kristeva points to the prevalent theories of Neoplatonic love that appear in European literature. Yet John Milton's participation within such a discourse and his negotiation between Neoplatonic love and the terror of God's wrath receives from critics almost no attention in his final published text *Samson Agonistes*. While critics as early as Samuel Johnson and as recent as John Carey explicate the bigotry or terrorism that the text seems to support, my paper will reveal the significance of Neoplatonic discourse in understanding *Samson*. Erotic desire is in this discourse a foundational impetus for discovering a love for God since it is by the violent removal of erotic passion that one purges the impetuous passions of the flesh. I will attend to the importance of sight in this discourse and the dangers of idolatrous looking in which *Samson* engages with Dalilah. Like Stanly Fish and Sharon Achinstein, I will reveal Milton's evasion of a model that would impose a definite and limited explanation, yet I will go further and demonstrate the text's struggle to use a Neoplatonic foundation of idolatrous passion to purify *Samson* and the reader for a higher love with a God whose justice is for Milton indicative of His divine authority.

GERBER, MEREDITH**10:45 GOV**

Faculty Mentor: David Ramsey

Democracy in Plato's Republic and Aristotle's Politics

Government

Undergraduate

2017 NCUR Participant

This paper examines the portrayal of democracy in Plato's *Republic* and Aristotle's *Politics*. Both philosophers' works feature discussions about the varying types of government a polity adopts, and each defines democracy in a different manner in his classification of regimes. Plato describes democracy as being the political manifestation of a freedom of desires and a loss of rational control. This description shares certain similarities with that of Aristotle's in *Politics*, which portrays democracy as an unfair monopoly of power by the poor. However, Plato's more precise definition places democracy as the irrevocable second worst regime, while Aristotle's more flexible view of government claims that there is an infinite variety of regimes which can exhibit democratic traits while remaining an adequate system of governance. An important difference between the two theories is that the central focus of Plato's democracy is the disorder and unbridled desires that take over the city, whereas the focus of Aristotle's is the consequences of the poor balance of the city's factions. In this comparison, it is necessary to note that Plato's classification of regimes is a tool for examining the human soul, whereas Aristotle's analysis has the purpose of determining not only the best regime but also the one that is the simplest and most attainable.

PEARCE, ELEANOR**10:50 GOV**

Faculty Mentor: David Ramsey

Liberty and Equality: Application of Rousseau and Tocqueville

Government

Undergraduate

OUR Travel Award; Kugelman Honors Program

How did political society develop out of the state of nature? Why did inequality develop and begin to define the human condition? Why have some societies ended up in despotism? Is there a chance to reconcile equality and at what cost?

Jean-Jacques Rousseau sought to answer these questions in his theory following a parallel to Christianity: peace and perfection, the Fall, and redemption. In the *Second Discourse: Discourse on the Origin and Foundation of Inequality Among Mankind*, Rousseau developed his theory of human life of peace before the foundation of society, termed the state of nature. He believed that all people were equal because they lived alone without dependence on others. In *Emile*, he describes this state of pure freedom and believes "only in this original state are power and desire in equilibrium and man is not unhappy" (p. 80). Rousseau believed "the first man who, having enclosed a piece of ground, bethought himself of saying this is mine, and found people simple enough to believe him, was the real founder of civil society" (*Second Discourse*, p. 113). This foundation of civil society was "the Fall" from which people began to be unequal. According to Viroli and Hanson, "life in society spontaneously gives rise to different forms of moral inequality and is the source of desire for preferment" (p. 4). If this is the case, is inequality reconcilable in society? In his *Social Contract*, Rousseau attempted to find a resolution for inequality. "Man was born free, and everywhere he is in chains. Many a one believes himself the master of others, and yet he is greater slave than they" (*SC*, p. 41). In the *Social Contract*, Rousseau sees equality as attainable if everyone concurs with the General Will "which tends always to the preservation and welfare of the whole and of every part, and is the source of the laws" (*Political Economy*, p. 6). Although in the state of nature solitude lead to freedom, he believed that to reconcile equality people must depend on each other and identify as part of the community.

Rousseau saw this redemptive society where "every citizen may be perfectly independent of all the rest, and in absolute dependence on the State" (*SC*, p. 191). Would this social contract really lead to liberty and equality? This quote seems to nod to Tocqueville's idea of soft despotism:

After having thus taken each individual one by one into its powerful hands, and having molded him as it pleases, the sovereign power extends its arms over the entire society; it covers the surface of society with a network of small, complicated, minute, and uniform rules, which the most original minds and the most vigorous souls cannot break through to go beyond the crowd; it does not break wills, but it softens them, bends them and directs them; it rarely forces action, but it constantly opposes your acting; it does not destroy, it prevents birth; it does not tyrannize, it hinders, it represses, it enervates, it extinguishes, it stupefies, and finally it reduces each nation to being nothing

3-MINUTE ORAL PRESENTATIONS

more than a flock of timid and industrious animals, of which the government is the shepherd (Tocqueville).

Tocqueville was concerned with the democratic tendencies of individualism which led to soft despotism as people were so concerned with their inner circle that they did not actively participate in society. In Rousseau's State of War he argues "so long as there is common will to observe the social pact and the laws, this pact continues to subsist, and so long as this will manifests itself in outward acts, the State is not annihilated" (p. 170). Although Rousseau talked about dedication to the General Will more so than civic participation, Tocqueville seemed to suggest that the awareness of individual freedoms and devotion to community together is what led to a greater society. Rousseau did believe in sovereignty of the people and that "the people, being subjected to the laws, should be the authors of them" (SC, p. 179). His belief of sovereignty and consent of the government was certainly in mind when the Constitution was ratified and begun with "We the People", but is it possible to be in such a society that everyone consents to the General Will?

As we look to Democracy today and the inequalities that still are apparent, it is necessary to look to theories by great thinkers such as Rousseau and Tocqueville as an attempt to reconcile these issues. Is it possible to have both liberty and equality? Will societies inevitably end in despotism? Is there a way to reconcile inequality in America? I will examine the works of Rousseau and Tocqueville as they relate to liberty and equality. With a growing interest in questions of inequality in America and the limits of American democracy, I hope to discover the possible causes of these inequalities as well as whether or not there is a possibility for reconciliation in these areas.

WRIGHT, JAMIE

10:55 GOV

Faculty Mentor: Jacob Shively

The United States and International Religious Freedom: A Steady Hard Power Advocate or Contingent on the Oval Office?

Government

Graduate

Faculty Support

The question that this paper focuses on is how the policy recommendations for the countries of particular concern (CPCs) by the US Commission on International Religious Freedom in their annual reports have changed between 2003-2016. It also seeks to determine whether there is a relationship between such changes, the president in office, and the president's religiosity. In other words, this paper seeks to analyze the relationship between a president/s relative religiosity and his policy stance taken against CPCs and their level of recommendation given to such countries. This paper predicts that as more explicitly religious presidents are in charge (i.e. religious President Bush vs. less religious President Obama), one would expect to see more intense policies and recommendations/actions taken toward violators of religious freedom, especially those persecuting Christianity. In accordance with the Toft et al (2011) model, this paper finds that the transition from the Bush administration with

more open religiosity to that of the Obama administration with less religiosity offered a correlative change in the type of persuasion and USCIRF recommendation level used to encourage international religious freedom overseas. This occurred generally through hard power economic sanctions toward CPCs under Bush and later soft power sanctions of democracy promotion and civic education toward CPCs under Obama. These findings fit with the Toft et al. (2011) theory, which predicts that different political theologies and varying degrees of religious interest group power can shape the presidents' foreign policy and the United States' actions abroad.

COTE, REBECCA

11:00 GOV

Elbridge Gerry--A Man of Compromise

Government

Undergraduate

2017 NCUR Participant

Elbridge Gerry was a delegate from Massachusetts at the 1787 Constitutional Convention in Philadelphia. Our American history courses do not often refer to the role played by Gerry in shaping the Great Compromise. Roger Sherman is usually accredited with the genius of the bicameral national legislature that holds equal representation in the Senate and proportional representation in the House. I argue that there are those who put forth great ideas and those who lead others to compromise in order to reap the success of a great idea. Gerry was an persuasive advocate for the necessity of compromise. When Gerry was the last delegate in the room to speak during the representation deliberations, the vote followed by passing in his favor. It is noteworthy to recognize the uniquely effective leadership style of Elbridge Gerry during the Constitutional Convention because it exhibits that being the last voice to debate is more influential to others than being the first to get a point across. For this topic, I have addressed the notes of James Madison and Robert Yates on the Constitutional Convention of 1787 in volume I of Farrand (1966).

HARRIS, KRISTINA

11:05 HIS

Faculty Mentor: Derek Zumbro

The U.S. Intervention in Closed Door Japan: The Lasting Effects

History

Undergraduate

Kugelman Honors Program

Through the convention of Kanagawa, established under Townsend Harris and Commodore Perry, a drastic change altered Japan's sociopolitical framework as well as opened the nation to the world once again. At the intervention of the United States, Japan changed socially, politically, in its international relations, culturally, and economically in a way that had a long lasting impact which still prevails today. The influence of the United States during this time, directly lead to the decline of the existing Tokugawa Bakufu and the rise of the Meiji Emperor. Under the influence of the west, the Meiji government abolished many class distinctions such as the Samurai and Daimyo. Once the new government abolished the closed door policies of its predecessor, Japan began a campaign of empire building and felt a strong surge

of nationalism. Interesting cultural changes arose from western intermingling such as the rise in popularity of facial hair, especially muttonchops, and in a national resurgence of nativist culture. The effects of American influence can be clearly seen in the mutually dependent nature of their economies, as well as the rapid push towards industrialism. These factors combined lead to a dramatic and prevailing change in Japan as a nation.

CRAGG, JESSIE**11:10 HIS**

Faculty Mentor: John Jensen

Studies in Storytelling

History

Graduate

Graduate Travel Award

“Studies in Storytelling” explores the opportunities and challenges of interpreting the historic landscape of Pensacola, Florida. Pensacola’s strategic location on the Florida Panhandle, its deep natural harbor, and rich natural resources have made the city a valuable but politically contested space for nearly 450 years. Embracing local popular historic identities as “America’s First Settlement” and the “City of Five Flags” Twenty-First Century Pensacola is a modest sized and vibrant Gulf Coast city with a strong recreation and tourism sector, a diversified economy, and well developed higher education infrastructure that includes both a state college and a state university. A unique feature of Pensacola’s heritage is the large historic district and system of museums owned by the University of Florida and managed by the not-for-profit Historic Trust. Heritage tourism poses a challenge for public historians in the area as it requires engaging visitors with Pensacola’s extensive past while simultaneously providing a positive experience that keeps tourists coming back year after year. By utilizing storytelling methodology, public historians are better able to connect with their audience, get them interested in local history, and foster an environment for learning.

GORMLEY, JANELLE**11:20 PHIL**

Faculty Mentor: Sally Ferguson

Contentions on Moral Responsibility:***Ayer and Frankfurt’s Diverging Views***

Philosophy

Undergraduate

OUR Travel Award

Compatibilism is a metaphysical position that posits the possibility of a determined universe with agents that act freely. Two proponents of compatibilism are A.J Ayer and Harry G. Frankfurt, This paper details the diverging views of both philosophers, in the context of moral responsibility, by using two papers: “Freedom and Necessity” by Ayer and “Freedom of the Will and the Concept of a person” by Frankfurt. In this paper, I will outline Ayer’s views on compatibilism, Frankfurt’s views on compatibilism, the traditional conditions of moral responsibility, and point out the contrasting perspectives of each philosopher.

ARDIS, SARAH**11:25 CRIM**

Faculty Mentor: Richard Hough

Filling in the Gaps of Civic Engagement Research: Accounting for Informal Behaviors

Criminology and Criminal Justice

Graduate

Graduate Travel Award

Civic engagement is a variable related to collective efficacy and other neighborhood-level resident dynamics relevant to sociology, political science, criminal justice, and criminological theories. A number of theories in criminology and criminal justice encompass a variety of formal and informal behaviors that contribute to collective efficacy and neighborhood characteristics, but there is a lack of survey data in these various fields relating to informal civic engagement behaviors. This is especially significant, as not every civic engagement behavior can be measured in donation amounts or hour counts. Additionally, there is a pervasive stereotype in collective efficacy, social capital, and civic engagement research that minorities do not participate as often in formal volunteering behaviors (dollars and hours with a 501(c) (3) organization), but a number of surveys have revealed that they trend towards less formal activities (e.g. cooking for a neighbor, helping an elderly resident with groceries, promoting a community gathering).

This research proposes a spectrum method of categorizing various types of civic engagement behaviors based on formality, personal burden, and network diffusion/public recognition of behavior. With a new measurement tool, the goal is to develop and execute a survey instrument that fills this gap in a variety of fields, such that theories can account for behaviors that certainly benefit the community but had previously been overlooked in other surveys. Perhaps these informal behaviors have a significant collective efficacy impact that can correlate with other variables relevant to criminological and criminal justice theories and measurements.

CALLOWAY, JOC**11:30 RAS**

Faculty Mentor: Susan Jans-Thomas

Women’s Perspectives of Florida’s College Math Curriculum: An Exploration of MacKinnon’s Critical Feminist Theory

Research and Advanced Studies

Doctoral

In 2013, with the passing of Florida Senate Bill SB1720, changes to Florida Statute 1008.30(4)(a) and State Board of Education Rule 6A-10.0315 regarding college developmental education requirements, provide qualifying students the opportunity to opt-out of developmental math courses and register for Intermediate Algebra without demonstrating college-readiness skills. Educational stakeholders view this reform measure as a means to decrease the cost of attendance and improve completion rates by allowing qualified students the option to bypass developmental courses. However, there are personal and social factors female college students encounter as they complete their math requirements at a two-year college. This study analyzes female college students’

3-MINUTE ORAL PRESENTATIONS

perspectives of Florida's college math curriculum using MacKinnon's (1982) Critical Feminist Theory, as students complete their mathematics requirement at a rural two-year Florida college. The participants provided a unique voice to their narrative as they described personal experiences from a historical and contemporary viewpoint for each emergent theme. In using a qualitative case study framework, Critical Feminist Theory themes emerged from the data collection related to historical gender oppression and contemporary societal viewpoints, advising and math course selections, the changing gender role expectations and STEM, and the perseverance of women and college math courses. The findings may lead to further research related to the role of women in STEM education.

CHASTEEN, MARK

Faculty Mentor: Matthew Ruckman

Fans Awareness and Effectiveness of Commercial Promotions in NCAA D-II Inaugural Season Games

Sport Management

Undergraduate

OUR Project Award

The Effectiveness of advertisements and Commercial Promotions has been assessed in a variety of sport settings, such as major college football games (Dees, Bennett, & Villegas 2008), college women's basketball games (Maxwell & Lough 2009), the Superbowl (O'Rilly, Lyberger, McCarthy & Seguin 2008), and some grassroots sports events (Miloch & Lambrecht 2006). However, the efficacy of Commercial Promotions of any other sport games has not been published.

The setting for the current study is the inaugural season of a NCAA D-II football team.

VIDRINE, ERIC

Faculty Mentor: Matthew Ruckman

Factors Influencing Spectator Satisfaction with Inaugural College Football Season Experience

Sports Management

Undergraduate

OUR Works!

Sport service organizations must be increasingly aware of the notion of customer satisfaction. Despite the popularity of college football and the excitement generated from something as substantial as an inaugural season, assessing the spectator or customer experience is essential to the success of any organization offering a service product. College football has traditionally relied on fandom or fanaticism to drive product or team identification and repurchase intent. The present study examined the effects of team and organization identification factors, as well as factors related directly to the service experience on spectator's overall satisfaction. Specifically, the research focused on the influence of the spectator's relationship to the university (team identification); the influence of core event satisfaction (team performance) on satisfaction; and the influence of peripheral spectator satisfaction (promotions, facilities, and additional service

products) on spectator satisfaction. The results of the study support the extant literature that each of these psychological dimensions influences overall fan satisfaction.

WALKER, VICTORIA

Faculty Mentor: Xuan Tran

Effects of Service Quality on Hotel Class

Global Hospitality and Tourism

Undergraduate

OUR Travel Award

12:15 HOSP

Although the service quality of a hotel has been studied for management, the market quality has not been studied to apply in the hotel industry. Would each hotel class be associated with its hotel service quality dimension? If yes, would the service quality dimension of majority hotel class be associated with the market service quality? The purpose of this study is to compare the growth rate of a certain service quality with its average daily rate (ADR) and revenue per available room (RevPAR) in order to characterize market quality. A survey of 14,000 comments of hotels in the Online Travel Agents websites. Linguistic Inquiry and Word Count (LIWC) has been used to measure service quality through drives. Findings indicate that (1) Luxury with Responsiveness, (2) Upper upscale with Assurance, (3) Upscale with Tangibles, (4) Upper Midscale and Midscale with Empathy, and (5) Economy with Non-Reliability

ANDERSON, RACHEL

Faculty Mentor: Xuan Tran

Hotel Price Competition between Fort Walton and Pensacola

Global Hospitality and Tourism Management

Undergraduate

Faculty Support

12:20 HOSP

The purpose of this project is help hoteliers in the market segment of Fort Walton Beach, Florida maximize revenue over their comp set; Pensacola, Florida based off the past 10 years of data taken from Smith Travel Research. Fort Walton Beach is located on the Emerald Coast alongside the Gulf of Mexico and currently has 71 operating hotels. The following sets of rates or percent changes will reflect the years 2005-2015. All the information gathered was used from averaging the occupancy percent change, the average daily rates, RevPAR, supply, and demand. The average occupancy percent change for Fort Walton Beach was 54.5%. The average daily rate was \$128.13 and the RevPAR was \$69.87. The average room supply was 3498390.33, with a 0.8% change and the average demand for rooms was 1906007.01 with a 0.5% change. These numbers will be further explained in the report and compared with the comp set region to better evaluate our market's performance. The Game Theory Matrix will be defined and used to see which market has a better standing from an average daily rate and RevPAR perspective. Based on the data we have analyzed; our team has produced recommendations for the hoteliers of Fort Walton Beach to help increase their revenue.

SPARKS, JIM**12:25 MBA**

Faculty Mentor: Blaine Lawlor

Lamar Outdoor Advertising: A Bright Future for Digital Billboards? A Case Study

Masters of Business Administration

Graduate

Graduate Travel Award

This is a Strategic Management Case Study that is appropriate for undergraduate and graduate level Strategic Management classes. The primary focus of the case is on strategy and implementation with the use of company culture as the main lever to achieve desired organizational behaviors.

The case can be presented as a stand-alone project for students to understand the importance of strategic planning and company culture in a real world scenario. The case relates to disruptive changes in technology that have impacted product strategy, pricing strategy, and the regulatory environment. The case also can be used to discuss the importance of company culture as a tool to achieve desirable behaviors that lead to long-term success. Additionally, the case can be used as a tool to teach about long-term strategic planning.

The company that is highlighted in this case is Lamar Advertising, one of the top outdoor advertising firms in the United States, which has a local presence in Pensacola, Florida.

DELOUIS, LINORCHE**12:30 NUR**

Faculty Mentor: Eric Greska, Jill Van Der Like

Stress Levels of Nursing Students in Simulated Care

Nursing

Undergraduate

OUR Works!

The purpose of this study is to observe the nursing students' stress response levels in various simulated care scenarios. We then analyze the data collected to discover which simulated scenario elicited a higher stress response. The participants for the study are some of the junior and senior-year nursing students at the University of West Florida. Bio-harnesses will collect the biofeedback of the students in the simulations.

We hypothesize that the cardiac emergency simulations will elicit a high stress response from the students because of the various aspects of care that need be monitored, along with the chance of the patient of going into cardiac arrest. We will look at the various data and compare the physiological responses such as heart rate, respiration, and heart rate variability. We are observing, and watching for obvious spikes in the data in response to the students becoming very stressed in the simulations.

MU, TRISTI**12:35 PUB HLTH**

Faculty Mentor: Peter Memiah; Justice Mbizo

High Adolescent Fertility Rates Linked to Child Marriage and Low Contraception Rates in Africa

Public Health

Graduate

Faculty Support

Background: Adolescent girls ages 15-19 are a vulnerable population, especially in regions where they are subjected to child marriage. In these countries, contraceptive use among adolescent girls is low. Our aim is to determine the significance in adolescent girls between lack of contraceptive use coupled with marriage consequently resulting in the highest adolescent fertility rates anywhere in the world.

Methods: Using datasets, countries with available data were ranked on adolescent fertility rates from highest to lowest. From the top twenty-five countries, we noted their geographic location, minimum age marriage laws and adolescent marriages, and contraceptive use. Statistical analyses were conducted to test for significance between these variables.

Results: Significance (p 0.5) was linked between adolescent marriage age and low contraception usage to high adolescent fertility rates. The top twenty-five countries for highest fertility rates and lowest contraceptive usage rates were all in Africa (except the Dominican Republic). Western and Central Africa had the highest rates (15 of the 25 countries). Among countries with available data, we found the mean for each respective field: adolescent fertility rate (122.3), minimum marriage age (16.6%), mean contraceptive use (18%), and adolescent female marriages (28.8%).

Conclusion: There is an urgent need to break the cycle of child marriages especially in Western and Central Africa. Legislation should increase the minimum age for marriage to at least 18 years of age in all countries. Additionally, education and availability for contraceptives should be a priority of African nations in improving the well-being and health of adolescent girls.

AMITIE, CHRISTLENE**12:40 PUB HLTH**

Faculty Mentor: Peter Memiah

Enhancing Health Information Systems Through Data Reconstruction to Impact the Uptake of HIV Services Reporting in an Urban Setting in Kenya

Public Health

Undergraduate

OUR Explorers Program

Background: Though data-driven decision making is cost effective and key to improving delivery of HIV services, and HIV patient health outcomes, it is not optimally utilized in resource-limited settings. Shortage and poor capacity of medical records staff, incomplete patients' records, poor filling systems, and a lack of resources for a fully-fledged EMR system, impedes generation of reliable data to be utilized for evidence-based decision making in health facilities.

3-MINUTE ORAL PRESENTATIONS

Methods: A total of 10 data managers [based in 12 facilities medical records staff] underwent training sessions focused on data collection, generation of reports, identification and utilization of strategic indicators to provide information on patients' outcomes. Post-training on-site data reconstruction and migration of data from paper-based patient records to an electronic data management Information System occurred. The data reconstruction entailed assigning patients' unique identifiers, renumbering files to eliminate double counting, and segregating active patients from inactive ones. Recapturing information involved an MOH-approved data-capturing tool and submitting it to an electronic medical system.

Results: An increase in care and treatment performance indicators from 8 indicators using a paper-based M&E system to over 15 indicators using an EMR system in addition to a decrease in turnaround time of submitting reports from 8 to 2 days was noted.

Conclusion: In the era of economic crises, innovative and cost-effective strategies to improve service delivery and health outcomes must be explored and replicated especially in low resources countries, the major recipients of donor funding. Capacity building in data use for informed and strategic decision-making is effective and cost-efficient.

DAVIS, MATTHEW

12:45 BIO

Faculty Mentor: Toby Daly-Engel

Biogeographic Population Structure and Phylogenetics in Atlantic and Caribbean Sharpnose Sharks (Genus *rhizoprionodon*)

Biology

Graduate

Graduate Travel Award

Members of the genus *Rhizoprionodon* are small, requiem sharks that can be found in high abundance throughout coastal waters of the world. The Atlantic sharpnose shark (*Rhizoprionodon terraenovae*) is often exploited by artisanal fisheries throughout the Western Atlantic and Gulf of Mexico, though is considered of least concern to overfishing. Existing research has shown that the larger elasmobranch species display high vagility, or long range movements, whereas smaller sharks occupy small home ranges with significant genetic heterogeneity between regions. Despite this trend, previous research of *R. terraenovae* has not supported significant genetic heterogeneity within or between regions. We assess the genetic population structure of *R. terraenovae* throughout its range using a highly polymorphic mitochondrial marker with intensive sampling to determine if structure is present. In the process of assessing *R. terraenovae* phylogeography, several samples from South Carolina, Virginia, and northern Florida showed higher percent genetic identity to the outgroup species Caribbean sharpnose shark (*Rhizoprionodon porosus*) than to the other *R. terraenovae* samples. *R. terraenovae* and *R. porosus* have overlapping home ranges in the Gulf of Mexico and share similar appearances, though the home range of *R. porosus* is not known to extend

north past the Bahamas. To address these unknown samples we assess the nuclear ribosomal Internal Transcribed Spacer-2 (ITS2) gene to detect species identification and possible hybridization between *R. terraenovae* and *R. porosus*.

YOUNG, INDIA

12:50 EES

Faculty Mentor: Zhiyong Hu

Pensacola's Community Gardens

Earth & Environmental Sciences

Graduate

Community gardens are becoming an integral part of the urban landscape and now cities are faced with the question of delegating vacant land or otherwise underutilized properties to create more green spaces for urban farming. This project will assess the spatial distribution of community gardens in the city of Pensacola. It will further assess the economic benefits and costs associated with community gardens using Pensacola as a study site. Statistical analysis will include a regression model comparing property values within a certain range of community gardens over time. The hypothesis is that community gardens ultimately benefit the surrounding neighborhood by raising property values while also providing a social center for residents to gather and access fresh food. The access to local food in turn yields a lower carbon footprint and is a more cost effective way to supplement the weekly grocery need. Few studies have been done on the economic benefits of community gardens specifically. This project will be presented as a series of ArcGIS maps supplemented by antidotal data. I expect that we will see that Pensacola's community gardens have positive economic and social effects on nearby households as well as the overall urban food system.

III. SPECIAL SESSIONS

First Author, Title, Department, and Presentation Time

CONFERENCE ROOM A

CONFERENCE ROOM A 9:30 AM-1PM

THE OFFICE OF UNDERGRADUATE RESEARCH

Oral presentations
3-Minute Theses

CONFERENCE ROOM A 1-1:15 PM

ROBERT PERKINS

Oral presentations
Excellence in Market Research Award Recipient Presentations

Individuals and teams of students from the College of Business participated in a business pitch competition. As part of the competition, the two teams who best tailored their pitch with their customers in mind and based on customer research received the Excellence in Market Research Awards from the Office of Undergraduate Research. One of the two winning pitches will be presented as part of this session.

CONFERENCE ROOM A 1:30-3:30 PM

JUSTIN STURGEON

Oral presentations
ARH4930 Art History

These presentations will bring together the work each student is doing in their upper division art history seminar. 10 minute conference style presentations by art history students working on unique interdisciplinary research topics.

CONFERENCE ROOM B

CONFERENCE ROOM B 10-11 AM

CHASIDY HOBBS

Undergraduate Student Poster Presentations
GEO Earth & Environmental Sciences Senior Seminar Session 1

Seniors from the Earth and Environmental Sciences Department will present their Senior Seminar posters.

CONFERENCE ROOM B 11:15 AM -1:45 PM

GLORIA HORNING

Undergraduate Student Poster Presentations
MMC4990 Social Justice Movements

A presentation of projects and research completed by the students of the Social Justice Movements course. These projects each focused on a group of students' efforts to raise awareness for a given Social Justice issue.

CONFERENCE ROOM B 2-3:30 PM

CHASIDY HOBBS

Undergraduate Student Poster Presentations
GEO Earth & Environmental Sciences Senior Seminar Session 1

Seniors from the Earth and Environmental Sciences Department will present their Senior Seminar posters.

CONFERENCE ROOM C

CONFERENCE ROOM C 9:45-10:45 AM

JASARA NORTON

Undergraduate Student Panel
I Can Truth, and You Can Too: Locating Real News in a Fake World (ENC1102 English Composition II)

According to a recent Stanford study, most students are not able to differentiate between real and fake news. The study identifies this result as a lack of civic online reasoning, stemming, in part, from the modern phenomenon of relying on social media for news information. These news feeds are curated from a complex interweaving of algorithms, social bots, and self-customizations that require advanced digital knowledge and savvy – a challenge even digital natives find difficult to navigate.

Despite the ubiquity of technology, we are clearly underprepared to meet the problem of fake news, making this session topic especially meaningful. The goal of this project is to investigate the problem by answering the question, "What is real news?" through a series of rhetorical and genre analyses. Rhetorical and genre analysis asks readers to evaluate and respond to the use of rhetorical devices and determine whether those devices reflect genre conventions. Student findings reflect a nuanced understanding of genre expectations and demonstrate the kind of civic-online competency needed for an increasingly complex digital world.

SPECIAL SESSIONS

CONFERENCE ROOM C 11 AM - 12 PM

GREG LANIER

Undergraduate Student Panel
IDH4039 Honors Seminar

All Honors students are required to complete 2 interdisciplinary seminars in order to complete their Honors requirements; each seminar contains a significant research component. Two students who have completed or who are enrolled in three of the recent Honors seminars will present the methodology and findings that they employed in three very different learning environments. The wide range of differing approaches to research can be deduced from the spread of the focus in the three seminars. Honors Seminar 1: From Wastelands to Wetlands This seminar focuses explores different perspectives of coastal wetlands, including the relationship between early civilizations and wetlands, literature, legal decisions, and the ecology of wetlands. Are they mosquito infested, disease ridden wastelands or a vast shimmering expanse of grass and sky? Should coastal marshes be protected since they are highly productive areas that serve as nursery areas for many species including many commercially important fisheries. or should private property rights be ascendant? Honors Seminar 2: Staging Gender In this seminar Honors and Theatre students worked with a professional New York based playwright to create a new play, tentatively entitled “Your Wings Have Eyes” as part of the Farm Theater’s College Collaboration Project. The class investigated gender roles, stereotypes, and social interactions and how those differing behaviors conflict in social interactions. The seminar culminated in a full staging of the play’s draft script and the entire process was documented by one of the students in the class. Honors Seminar 3: Myth and Meaning in the Game of Thrones This seminar examines the belief systems, morality, politics, spirituality and philosophy depicted in the popular fantasy series, Game of Thrones and explores questions such as: How do we play the game? Who has authority and how do they keep it? How do symbols and myths define us as people? Where do we see ourselves in the Game of Thrones? The students will examine the moral, political and social issues depicted and how they impact our choices and will also examine how symbols, writings and personalities impact our belief systems through the use of creative arts.

CONFERENCE ROOM C 12:45-1:45 PM

JOCELYN EVANS

Undergraduate Student Panel
Pokemon Go: Augmented Reality and Collective Efficacy

CONFERENCE ROOM C 2-3:30 PM

JOCELYN EVANS

Undergraduate Student Panel
Pensacola Parks Project

CONFERENCE CENTER LOUNGE **(UPSTAIRS)**

CONFERENCE CENTER LOUNGE (UPSTAIRS)

9 AM-2pm Displays

10am-12pm Presentations

THOMAS ASMUTH

Undergraduate Visual Art Installation
ART3613C Digital Multimedia

During the Spring 2017 semester, the Art3613C (Digital Multimedia) course collaborated on a series of designs inspired by an interdisciplinary research that mixed botany, biophysics, sculpture, and architecture. Students studied design methods originally developed by Ms. Elizabeth Demaray MFA (Rutgers University), the Demaray Kotchoni (DK) Transpiration Collector, an open source design created by Elizabeth Demaray and Dr. Simeon Kotchoni, for a plant based H2O purification and transpired water collection. Transpiration is the process that plants use to secrete purified H2O on the undersides of their leaves – trading water for atmospheric gas (CO2) assimilation– during the photosynthesis process. Depending on environmental conditions, select species of plants may produce up to 10 times their own leaf-water content every day via transpiration. Guest lectures by Dr. Ted Fox (UWF) and Ms. Demaray provided foundations in botany, biophysics, and sculpture/fabrication methods for the whole class. The students of the course were broken into 5 teams to experiment with materials, draw prototypes, construct maquettes, and to develop project outlines and conceptual models. During the middle weeks of the course, the students quickly prototyped a fully functional apparatus to enclose a four foot peace lily for the STEAM2017 exhibition. During this period the plant was closely monitored and the measurements of the water collection were taken to study the prototype for effectiveness in the gallery environment. The last half of the course was devoted to utilizing CAD software and rapid prototyping methods to construct 5 separate Transpiration Collector designs that clearly address both scientific and aesthetic issues. This exhibition is collection of design studies and objects for that process. The exhibition will be open for the entire Symposium day. Representatives from each group will be on-hand to discuss their process from 10 to Noon the day of the symposium.

CONFERENCE CENTER LOUNGE (UPSTAIRS)

9 AM-2pm Displays

10am-12pm Presentations

NICHOLAS CROGHAN

Undergraduate Visual Art Installation

Irish Experience 2016 (Department of Art)

UWF's Irish Experience Program offered six art department students a chance to study abroad in Ireland during Summer 2016. The program included 6 credit hours; 3 credits in Irish Art History course, and 3 credits in Studio Art.

The six art students attended master classes, demos, and workshops taught by professional Irish Artists, such as David King and Jacinta Crowley-Long. The students were also given the opportunity to exhibit work at the prestigious VISUAL Centre for Contemporary Art, along with an exhibition in Carlow College during the 37th Carlow Arts Festival.

All six students did on-site drawings and watercolors, took photographs, and participated in weekly critiques. The six art students' and faculty mentor's artwork that was created abroad was displayed in The Irish Experience Exhibition at The Art Gallery, UWF, September 9th to October 1st, 2016. The show also included paintings, etchings, mixed-media work, and ceramics that were inspired by these travels and finished in the studio upon return.

Jasmine Bennett's photography captured private, subtle moments of everyday people she saw in Ireland. Jaime Diffe morphed Irish landscapes into secluded and serene human forms. Jasmine Holmes's illustrations were heavily influenced by traditional Irish folklore. Lyani Marie La Santa honed in on the variety of vivid colors of the Irish sky, water, and land. Oliva O'Hern was fascinated by the old, rugged Irish farmers and sailors. Morgan Walker took inspiration from a family of foxes that lived on the Carlow College campus.

CONFERENCE CENTER LOUNGE (UPSTAIRS)

9 AM-2pm Displays

10am-12pm Presentations

JOSEPH HERRING

Graphic Design Showcase

The Spring 2017 Graphic Design Graduation Show Catalog This upcoming Spring 2017 semester, the graduating seniors from the University of West Florida's graphic design program will produce a print catalog featuring the work of the Spring 2017 graduating class of graphic design students. This catalog will showcase our work while simultaneously providing both prospective employers and students the opportunity to examine what the program has to offer. It will feature works that emphasize the design and artistic skills of each individual designer. Ultimately, the catalog will act as a condensed group portfolio and allow visitors of the show to learn more about each designer. The catalogs are also a physical example of our collaborative work that attendees may take with them. Our catalog will be a fully executed publication design project that will go from concept to reality. We will take an

idea from start to finish, and we will create an identity and incorporate it throughout the catalog. We will work with the representation of artists and artwork in a print publication and gain real world experience in working with a professional print company to produce a multi-page publication, to design a published experience, designing the page layout, incorporating the graphic identity throughout our catalog, working on typography to produce a unified design and a professional publication experience.

CONFERENCE CENTER LOUNGE (UPSTAIRS)

9 AM-2pm Displays

10am-12pm Presentations

JOSEPH HERRING

Graphic Design Showcase

An Advertising Campaign for the Spring 2017 Graphic Design Graduation Exhibition

Our group of nineteen students from University of West Florida, will work together to design our graduation exhibition, entitled Ellipses. We are designing the advertising to promote this exhibition, a campaign that will bring this community to the museum. The ad campaign is taking place during the months leading up to the exhibition. We are focusing on targeting our audience, cross-platform advertisements to reach the widest audience, and using these platforms to define what is unique about the UWF design program and this class in particular. The goal of our research is to communicate to the community that our work is worth coming out to see, and success will be determined by the number of visitors to the exhibition. The exhibition is at the Pensacola Museum of Art, and the campaign is broadcasting valuable information to the downtown Pensacola area as well as the university community; where should they go, what time, and what should they expect. We are creating, sketching, perfecting, compositing, printing out, cutting out, and finally dispersing a series of advertising designs. A single postcard design will be created. Magnets for Ellipsis will also be designed. Buttons are being made. Giveaways as invitations and at the show's reception will be used to keep our work in the minds of the local design community, especially potential employers. We are creating a web presence through social media and online catalogs and advertisements. We are designing a six foot banner to be placed outside of the Pensacola Museum of Art during the exhibition to advertise it as well. Of all the diverse kinds advertisements, we are most importantly advertising our Identity as a graduating group of designers. Ellipses pushes past purely conceptual ideas to real design applications. By designing for a real show, we are learning how to interact with professional printers and advertisement situations. We are gaining real world knowledge and experience through the deployment of our identity across multiple medias.

SPECIAL SESSIONS

CONFERENCE CENTER LOUNGE (UPSTAIRS)

9 AM-2pm Displays

10am-12pm Presentations

JOSEPH HERRING

Graphic Design Showcase

Environment Design: Senior Graphic Design BFA Exhibition Spring 2017

UWF's class of 2017 has a total of 18 graduating graphic designer majors. This is the largest graduating class of graphic designers to date. The graduation exhibition for this class is a major stepping stone to aid the students in crossing the boundaries between college and the professional world. This exhibition, located at the Pensacola Museum of Art on April 25th through the 28th, offers the 18 students a chance to create an impression on potential employers from all over northwest Florida and southeast Alabama. In order to ensure that this impression is a good one, the students work together to design a professional environment in which to display examples of their work, both on the walls and in their portfolios. The students will design a cohesive exhibition that guides visitors through the space and considers how best to use proximity, juxtaposition, and scale to best represent both the individual and collective works. The exhibition is intended to showcase what is special about each individual designer, to show what is unique about this particular graduating design class, and to promote the quality of the work that comes out of program as a whole. The exhibition is also intended to educate the local design community about the UWF Graphic Design program through exhibiting both solo and collaborative projects, including the exhibition itself.

CONFERENCE CENTER LOUNGE (UPSTAIRS)

9 AM-2pm Displays

10am-12pm Presentations

CHARLES HOUGHTON

Undergraduate Presentations - Mixed Formats

Theatre Irish Experience

Summer 2016 was the third year of the Irish Experience, The Emerald Coast meets the Emerald Isle. The project started out as a Theatre Department study abroad program, and has grown to include Art and Music. The Theatre students performed a production of *Our Town* at the George Bernard Shaw Theatre, in Carlow. While in Ireland the group started rehearsals and research for two Irish One-Acts that were performed in the CFPA in September. In addition, the group had the opportunity to research the people and customs of Ireland while touring the southern coast, as well as through master classes with Carlow College.

ROOM 272

ROOM 272 10 - 11 AM

KELLY BUSHNELL

Student mixed media showcase

UWF Sigma Tau Delta English Honor Society

An exciting and eclectic showcase of work from the UWF Sigma Tau Delta English Honor Society which seeks to translate the critical and creative considerations of literary scholarship into visual, digital, and mixed-media forms.

ROOM 272 1-3 PM

LEONARD TER HAAR

Undergraduate Student Oral Presentations

CHM4611/CHM4930

Inorganic chemistry is a sub-discipline for the undergraduate chemistry major that spans all the elements of the periodic table; impacts an enormous range of sciences from astrochemistry and geology, to new pharmaceuticals and nanotechnology; and, requires methods of synthesis and fabrication that range from simple one-pot reactions to multi-million dollar machines. So what is Inorganic Chemistry? Some of this year's students of Inorganic will describe how they learned the foundations of thinking inorganically and took the sum total of their journey as a chemistry major to take an in-depth look into some of the current 'hot' areas of research.

ROOM 260

ROOM 260 9 - 10 AM

DAVID RAMSEY

Student Panel

Political Philosophy Panel

4-6 students will present their research in the field of political philosophy and take questions from the audience. Prof. Ramsey will chair the panel and serve as discussant. This is the standard presentation mode at academic conferences in the discipline.

ROOM 260 10:00 - 11:00 AM

KATHY ROMACK

Undergraduate Student Panel

ENL4224 Early Modern Literature

Students in this session will be presenting research papers based on Edmund Spenser's masterful romantic epic *The Faerie Queene*. The respective topics investigate English-Irish colonial tensions, the gendered implications of allegorical representation, and the cultural threat of female rule.

ROOM 260 11:00 AM - 12:00 PM**KATHY ROMACK**Undergraduate Student Panel
ENL4341 Milton

This panel focuses on the works of John Milton. Topics addressed include temporality in *Paradise Lost*, Cartesian duality in *A Masque*, and feminine order of reason in *Paradise Lost*.

ROOM 260 12:30-1:30 PM**JAMIN WELLS**

Graduate Student Panel

Defining our Coastal Heritage: Old Challenges and New Approaches

In this panel discussion, graduate students enrolled in the Historic and Heritage Preservation Seminar in Coastal and Maritime History and Heritage will address their efforts to develop a model coastal heritage survey of Escambia County. Eight students will present brief overview of their individual research followed by a general discussion of the challenges and opportunities associated with coastal heritage preservation.

ROOM 260 1:45-3:15 PM**ERIN STONE**

Graduate Student Panel

Pillars of Conquest: Examining the Patterns and Practices of Conquest in the Caribbean & the Gulf South

This panel investigates diverse elements of conquest, revealing the connections between spiritual, military, and political subjugation. Beginning in the 16th century, with the first Dominicans sent to the Americas by the Spanish Crown, McKibben's paper discusses the methods of evangelization employed by these early friars in their "spiritual conquest." He then digs deeper, investigating the resulting tensions between the Dominicans, indigenous of the Caribbean, and the Spanish secular colonists. Next, Perez will delve into the treatment of native peoples during the act of military conquest here in Florida. To do this she compares the expeditions of two famous conquistadors, Hernando de Soto and Pedro Menéndez de Avilés. Cragg continues to examine elements of the Spanish conquest, but focusing on the colonists venturing to the Americas. In particular, her paper studies the institution of the Inquisition, how it was transferred to the New World, and how it operated in the colonies and even on the high seas. Through the lens of *vistas de naos*, or inspection of ships by Inquisitors as they entered New World ports, the role of the Catholic Church in the colonial enterprise becomes clear. The final paper in the panel, by Arroyo, moves us forward several centuries to the conquest of Florida by Andrew Jackson. Her paper explores Jackson's motivation for conquering Pensacola, and then examines how his victory impacted both the Spaniards and indigenous peoples of the region. This panel then, investigates the diverse and complicated sides of conquest, from the 16th to the 19th centuries.

ROOM 260 3:15-3:30 PM**AMY MITCHELL-COOK**Graduate Student Film Screening
Frida Kahlo documentary

Documentary filmmaking has entered a new post-Ken Burns era praised for its innovative narrative and stylistic approaches but criticized for valuing entertainment over professional standards of historic research. This poster presentation details my effort to marry the professional standards of public history with the novel post-Ken Burns approach to documentary filmmaking through the production of two films. The poster will be complemented with an audio/visual component showing both films. The first, "Frida Kahlo: A Documentary," is in the traditional style that combines archival footage and voiceover to pique the interest of its audience to conduct their own research. The second, tentatively titled "Pensacola Punks," offers a comprehensive presentation of interviews, art, music, concert flyers, and zines collected during production. *Pensacola Punks* is different because, unlike most documentaries, all of the source material will be available to any researcher at Voices of Pensacola. This effort of open sourcing my research will decrease the possibility of narrative manipulation and increase the integrity by presenting a well-balanced history of an under-documented subculture.

PATIO**PATIO 9:00 AM - 12:00 PM****MOHAMED KHABOU**Undergraduate Student Show and Tell
Engineering Project Showcase

Showcase of completed projects by students in the Engineering Department. Such projects include a solar car, an autonomous boat, a high voltage transmission line inspection system, etc. Students will share their experience with the audience and highlight the value of their involvement in such activities.

IV. MUSIC HALL PERFORMANCES

Location - Center for Fine & Performing Arts (Building 82)

MORNING PERFORMANCES (AM)

10 – 10:15 AM

DANIEL THOMAS

Accompanist: Blake Riley

Piano

Piece: Piano Concerto in A minor, Op. 16, Edvard Grieg (1843–1907)

10:15 – 10:30 AM

RAMEL PRICE

Accompanist: Blake Riley

Violin

Piece: Violin Concerto No. 3, Op. 611. Allegro non troppo, Camille Saint-Saëns (1835–1921)

10:30 – 10:45 AM

D'ANDRE WELLS

Accompanist: Blake Riley

Trumpet

Piece: Trumpet Concerto in E flat Major, Johann Hummel (1778–1837)

10:45 – 11:00 AM

NYASHA BRICE

Accompanist: Strings

Harpichord

Piece: Harpsichord Concerto in F Minor, BWV 1056, Johann Sebastian Bach (1685–1750)

11:00 – 11:15 AM

CHRISTINA BURKETT PEARSE

Accompanist: Darlene Reed

Voice

Piece: Alleluia, from Exultate Jubilate, Wolfgang Amadeus Mozart (1756–1791)

11:15 – 11:30 AM

SAMUEL KLAUSS

Accompanist: Blake Riley

Piano

Piece: Piano Concerto in A minor, Op. 16, Edvard Grieg (1843–1907)

11:30 – 11:45 AM

DONOVAN BLACK

Accompanist: Blake Riley

Voice

Piece: "I Couldn't Hear Nobody Pray" Dr. Robin Williams

"Were You There" Moses Hogan (1957–2003)

"He Got the Whole World in His Hands" Moses Hogan (1957–2003)

AFTERNOON (PM)

11:45 – 12:00 PM

RYAN MURPHY

Accompanist: Blake Riley

Trumpet

Piece: Trumpet Concerto in F minor, Op. 18 Oskar Böhme (1870 – 1938)

1:00 – 1:15 PM

UWF CHAMBER CHOIR

Choral

Format: Lecture Recital

Title: Lauridsen's Lux Aeterna - a 20th century, chant-based composition

Piece: Lux Aeterna, Morten Lauridsen (b. 1943)

1:15 – 1:30 PM

MARGARET DUKE, BLAKE RILEY

Viola

Format: Lecture Recital

Title: Auf Wiedersehen to the British King (for viola and orchestra).

Piece: Trauermusik, for viola and string orchestra, Paul Hindemith (1895–1963)

1:30 – 1:45 PM

LYDIA HARRIS

Piano

Format: Paper Presentation

Title: "Music in Venice and the Shores of History"

1:45 – 2:00 PM

**AMBER COBLEY,
EASTON ELLENBERG**

Voice

Format: Lecture Recital

Title: "Musical and Poetic Components of Schubert's Lied, Ständchen"

Piece: Ständchen (Serenade), D. 957 Op. 4, Franz Schubert (1797–1828)

2:00 – 2:15 PM

KELLY RENFRON

Voice

Format: Lecture Recital

Title: "Music Education and the Quaver Curriculum"

2:15 – 2:30 PM**MORGAN SEIP**

Voice

Format: Lecture Recital

Title: “For Three Minutes and Fifty Seconds of Perfection...”**Piece: Du Bist die Ruh, Franz Schubert (1797-1828)****2:30 – 2:45 PM****AMBER COBLEY**

Voice

Format: Paper Presentation

Title: “Pythagoras and ‘Musicematics’”**2:45 – 3:00 PM****RAMEL PRICE**

Violin

Format: Lecture Recital

Title: “Beethoven’s ‘Spring’ Sonata and Other Fake News in the Context of the Classical Sonata Form”**Piece: Sonata for Violin and Piano, Op. 24, Ludwig van Beethoven (1770-1827)****3:00 – 3:15 PM****ASHLEY FAIRCLOTH**

Voice

Format: Lecture Recital

Title: “The In’s and Out’s of Michael Head” Lavender Pond, Michael Head (1900-1976)**Piece: Lavender Pond, Michael Head (1900-1976)**

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Supporting our
undergraduate and
graduate students
to participate in
research and creative
activities engages
their intellectual
curiosity, satisfies
their thirst for
discovery, and gives
them an outlet for
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Mark Roltsch, Ph.D.

*Assistant Vice President for Research & Director,
Research and Sponsored Programs*



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