

# STETSON SHOWCASE XXI: THE RITES OF PASSAGE

## APRIL 16, 2019

### *A Celebration of Achievement at Stetson University*

#### **About the Undergraduate Research and Creative Arts Symposium Showcase:**

Welcome to the twenty-first anniversary of Stetson Showcase. This event, with its debut in 1999 and former names of Undergraduate Scholarship and Performance Day (USAPD) and later Undergraduate Scholarship Day (USD) and Stetson Undergraduate Research and Creative Arts Symposium (SURCAS), has grown to be one of the oldest and most distinctive comprehensive Undergraduate Research Days in the United States. Our theme this year, The Rites of Passage, celebrates our coming of age at twenty-one years by looking at the intellectual journeys our students make to get to Showcase. It also celebrates the life and work of Dr. Charles Vedder, former Professor of Sociology, who died in the summer of 2018 after a career of dedication to undergraduate excellence and an exploration of the human journey. You are free to go in and out of sessions all day, attend a music recital, see the art exhibit, and in the evening, listen to Dr. Lonn Lanza Kaduce, Professor of Law and Criminology at the University of Florida. Afterwards, take in Guitar on the Rocks to end an exciting day!

#### **JUDGING CRITERIA AND PRIZES:**

Each group of judges for each specific location will be deciding among themselves appropriate and consistent criteria that will help them decide which presentations were most effective. In general, students are asked to discuss their projects at a level that anyone not knowing the area can understand. Part of an effective presentation is effective communication, and the judges keep this as consistent criteria for choosing the best presentation for all involved. The winners of each of the locations or poster sessions will receive a Maris Prize of \$200 and a certificate of excellence. Eligible pre-selected candidates will also be judged for the Dr. Leonard Nance Award for Excellence in Social Justice Research.

#### **ARTWORK AND PHOTOGRAPHY**

*Class of 1892*



The cover art, *Rites of Passage*, was created by Colette Cacciola ('19) after a 1925 Stetson Yearbook watercolor. The poem on the back cover celebrates the class of '19 – albeit 1919. The photographs through the program come from the Stetson archives and yearbooks. They remind us that generations of Stetson students have gone through the same rites of passage, and that the ghosts of those students in many ways still haunt the classrooms, the books, the labs, and the performance halls. Help us

celebrate those students of 2019 who will add their memories and their presence to the academic journeys made by other students at Stetson through the decades.

## THE 2018 JUDGING PANEL AND ALTERNATES:

Oluwaseun Ademoye, 3D Modeler, University of Central Florida  
Dr. Elizabeth Boggs, Director of Career and Professional Development  
Dr. Isabel C. Botero, Assistant Professor of Family Enterprise and Entrepreneurship  
Jennifer Certo, Executive Assistant to the Vice President of Campus Life & Student Success  
Dengke Chen, Assistant Professor of Digital Arts  
Jennifer Corbin, Library Director of Public Services and Assistant Professor  
Barbara Costello, Associate Professor/Government Information & Research Librarian  
Dr. Laura Crysel, Assistant Professor of Psychology  
Dr. Michael Eskenazi, Assistant. Professor of Psychology  
Dr. Christopher Ferguson, Professor of Psychology  
Dr. Sarah Garcia, Assistant. Prof of Psychology  
Dr. Torrence Gill, Visiting Assistant Professor of Biology  
Dr. Antonio Golan, Visiting Assistant Professor of Communication and Media Studies?  
Terry Grieb, Assoc. Professor Emeritus of Instructional Media  
Dr. Lua Hancock, Vice President, Campus Life and Student Success  
Dr. Resche Hines, Assistant Vice President of Institutional Research & Effectiveness,  
Dr. John Horn, Vice-President (ret.) for Research & Development, 3M  
Laura Kirkland, Associate Professor, Catalog Librarian  
Dr. Holley Lynch, Assistant Professor of Physics  
Chris Roda, FIEA Technical Art Director, University of Central Florida  
Dr. Kirk Roberson, Brown Visiting Assistant Professor of Health Science  
Dr. Rajni Shankar-Brown, Associate Professor and Jessie Ball duPont Chair of Social Justice Education  
Dr. Peter Smucker, Assistant Professor of Music Theory  
Dr. Ram Subramanian, Professor of Leadership  
Dr. Benjamin Tanner, Assistant Professor of Environmental Science and Studies  
Dr. Ranjini Thaver, Professor of Economics  
Dr. Areti Vogel, Visiting Assistant Professor of Management  
Dr. Jessica West, Assistant Professor of Finance  
Dr. John Wilton, Artist, Stetson Street Studio  
Dr. Daniil Zavulunov, Assistant Professor of Music History

**Cultural Credit:** A maximum of three cultural credits can be earned for the symposium event. At each venue, Showcase tickets must be stamped by the symposium representative after each talk. In addition, full cultural credit can be earned at the Evening Keynote Address and the evening Guitar on the Rocks concert.

One oral or art presentation = 1/3 credit

Twenty minutes in posters = 1/3 credit

1 music recital = 1/3 credit

One honors I session = 1 credit

**For credit, please take your stamped card to first floor Elizabeth Hall 1-4 pm on April 16 or 10 am-12 pm on April 17 or 18. Cards are available at all venues. Your ID is required to earn credit.**

# PROGRAM

## POSTER PRESENTATIONS

### Rinker Fieldhouse, Hollis Center

Dr. Kevin Riggs and Dr. John York, morning session chairs

Dr. Melissa Gibbs, afternoon session chair

### Judges

Morning Rinker I: Dr. Laura Crysel, Dr. Denge Chen

Morning Rinker II: Dr. Kirk Roberson, Dr. Chris Ferguson

Afternoon Rinker I: Dr. Ranjini Thaver, Dr. Sarah Garcia

Afternoon Allen: Barbara Costello, Dr. Benjamin Tanner

### Morning I (9 a.m. – 12 p.m. )

*Biology Class 1950's*

**P-1 Mary Anampa** Optimizing RNA extraction from adult *Ciona intestinalis* cardiac tissues

**P-2 Riley Bibaud** Scleractinian Disease Prevalence in Relation to Marine Park Boundaries

**P-3 Tara Breeden** The Effects of tDCS and Meditation on Anxiety and Attention

**P-4 Jessica Chamberlin** Soil Cores Suggest Recent Establishment of Black Mangrove (*Avicennia Germinans*) Stands Within Salt Marshes in St. Augustine, Florida

**P-5 Elizabeth Dealy** The Relationship Between Academic Gender Stereotypes, Academic Achievement, and Academic Self-Efficacy

**P-6 Shrina Desai** The effect of exogenous Fibroblast Growth Factor 6 on heart development in *Ciona intestinalis*

**P-7 Kaleigh Fidaleo** Predicting Criminal Behavior with HEXACO and Dark Triad Personality Traits

**P-8 Julian Diaz** Analyzing Mosquito Abundance Rates Between Various Species in Urban and Rural Areas Throughout Miami-Dade County



**P-9 Maxmillian Friederich** Privatization's Effect on Economic Growth within Developing Countries

**P-10 Alexander Dombeck** Sediment Archive of Seagrass Dynamics in Northern Indian River Lagoon, FL

**P-11 David Hall** Moral Demand, Moral Identity, and the Empathy-Altruism Relationship

**P-12 Veoletta Eolyan** Pre-exposure to sweet taste does not alter behavioral responses to intra-oral infusion to sucrose in rats

**P-13 Daniel Jordan** Analyzing the Acoustic Absorption Properties of Various Insulating Materials

**P-14 Samantha Fink** Full-thickness Macular Hole Formation after Repair of Rhegmatogenous and Tractional Retinal Detachment

**P-15 George Ridgeway** How initial explant size affects spreading rate of tissue explants from Axolotl embryos

**P-16 Christopher A. Guerra and Alisa M. Goldstein** Sodium Restriction Alters Behavioral and Cortical Responses to Intra-Oral Infusion of NaCl in Conscious Rats

**P-17 Ci'erra Larsen** Nutritional Outcomes for Market Children in Ecuador

**P-18 Thomas Hassler** Prey Interaction in *Liodytes alleni* and *Liodytes rigida*

**P-19 Erin Avers** The Effect of Nicotine Administration During Late Larval, and Juvenile Stages on *Ciona Intestinalis* Development and Heart Rate

## **Morning II (9 a.m. 12 p.m.)**

**P-20 Riley Reynolds** Tissue Spreading Rate Dependence on Extracellular Matrix Concentration

**P-21 MacKenzie Brown et al** PDMS Sponge for Remediation of Endocrine Disruptors and Pharmaceuticals in Water Samples from South Florida

**P-22 Kendall Coakley** Determination of Vitamin C in organic and conventionally grown produce and the effect cooking conditions have on produce maintaining its nutritional value

**P-23 Stephen Gianuzzi** An Econometric Analysis of the Determinants of Security Prices of the Standard & Poor's 500 index from 1999 to 2019

**P-24 Allison Hellwege** The effects of therapeutic vitamin A on *Ambystoma mexicanum* embryonic development

**P-25 Samantha Kaye, Robert Brinson, Dale Peterson, Parker Webb, Amy Sheffield, Nathan Wyche, Bailey Kleindienst and Morgan Parker** Sorry Not Sorry: A Textual Analysis of Corporate Apologies

**P-26 Chelsea Forrer** Determining the Prevalence of Lyme Disease in Thirteen-lined Ground Squirrels and Jumping Mice

**P-27 Marianne Levy Marquez** Sex as a Moderator Between Color Manipulation and Consumer Behavior

**P-28 Briel Hay** Old yaupon holly (*Ilex vomitoria*) extract increases cell viability in human lung fibroblasts

**P-29 Rachel Bogart** Where the Ghost Crabs Are: Factors Affecting *Ocypode quadrata* Burrow Locations

**P-30 Justin Holley** Prevalence of *B. burgdorferi* based on life stages of *I. scapularis* and *D. variabilis* in the midwestern United States

**P-31 Liz Lorenzo** The Effect of Trump Tweets on the Foreign Exchange Market

**P-32 Erica McCaughey** Assessment of macroinvertebrate richness and abundance between spikerush (*Elocharus palustris*), cattail (*Typha sp.*), and cordgrass (*Spartina sp.*) at Lake Woodruff NWR

**P-33 MacKenzie Nalven** The Effect of Limiting Email Usage on Job Productivity

**P-34 Hallie Kimbrel** Comparison of the distribution of southern rays, *Hypanus americanus*, and bluntnose rays, *Hypanus say*, in Pinellas County, FL

**P-35 Bailey Nix** The Interaction of Moral Foundations and Ideology on Activism

**P-36 Steven Staudt** Greater Variation and Abundance of Mosquito Species in a Rural Environment rather than an Urban Environment

**P-37 Garland Woodruff** The Continued Observation of Fish Diversity and Assemblages in the St Johns River Springs

**P-38 Robert Makky** Effect of Social Media on Traditional TV

## Afternoon I (1 p.m.-4 p.m.)

**P-39 Brianna Burrowes** Quit Yelling at Me: The Impact of Verbal Aggression on Receivers

**P-40 Danielle Conti** Evaluation of Species-specific Genes *ospA*, *p66* and *flaB* to Detect *Borrelia burgdorferi* in Bird Blood Through PCR

**P-41 Vlad Luta** Building a LIDAR Based Autonomous Car Using a Raspberry Pi

*Annual Board, 1908*



**P-42 Lauren Durham** The Effect of Movement on Water Loss in Neonatal Pygmy Rattlesnakes (*Sistrurus miliarius*)

**P-43 Aolani Mayo** The Effect of Cell Phone Encouragement on Step Count Over Time

**P-44 Munashe Holloman** *Alpinia zerumbet* has no Significant Effect on ATP Production and Cell Viability in Normal Human Fibroblasts

**P-45 Sofia Poulos** Repairing Reputations: How SeaWorld Responded to Negative Publicity

**P-46 Breanna McDermott** Survivability of tardigrades, *Hypsibius dujardini*, shows opposing trends in extreme heat and freezing temperature exposure

**P-47 Mia Bishop** The Relationship Between Parenting, Substance Use and Depression

**P-48 Brent Meister** There are Two Sides to Every Jetty: A comparison of benthic, fouling organisms on the North and South side of the North Ponce Inlet Jetty

**P-49 Katherine Scott** Keep Calm and Pray On: The Exploration of How Religious Involvement Predicts Anxiety Levels

**P-50 Mike Requeno** The Difference between Morning, Afternoon, and Evening Video Surveys on the Fish Assemblage of Blue Spring State Park, Florida

**P-51 Chelsea Seaver** The Wright Building Recognition Project

**P-52 Leslie Sanches** Effects of Amoxicillin Levels on the Embryonic Development of *Ambystoma mexicanum*

**P-53 Anthony Bonilla** *Alpinia zerumbet* Seed Extract Reduces Jurkat Leukemia Cell Viability

**P-54 Lyneska Cruz Laureano** Perceptions of Agency in Mentally Ill Suspects: Variations in Insanity Defense Outcomes

**P-55 Michael Denton** Effects of algal wrack on leaf growth and biomass accumulation of *Uniola paniculata*

*Lab time, 1910*

**P-56 Nathan Monsanto** Effect of Creatine-Monohydrate on Cognitive Function in Healthy Male and Female Subjects

**P-57 Shilpa Ravoory** Vibrational Analysis of a Viola using Time Average Holography



## **Afternoon II (1 p.m.-4 p.m.)**

**P-58 Samantha McPherson** Assessing the metabolic cost of pregnancy in pygmy rattlesnakes (*Sistrurus miliarius*)

**P-59 Jacob Koos** Infrared Thermal Imaging: The Effects of Emissivity on Thermal Radiation

**P-60 Michael Morello** Effects of *Alpinia zerumbet* seed extract on normal human lung fibroblasts

**P-61 Madaline Roop** Skeletal: The Serial Killer Board Game

**P-62 Mason Mulford** The Golden Age of Science Fiction: The Impact of the Space Race on the Transition to Television

**P-63 Brianna Shi** Comparative study for the Lane-Emden Equation to its Higher order Dynamics

**P-64 Jasmine Segovia** The Effect of Different Watersheds on the Body Fineness Ratio of *Micropterus salmoides* in Florida Springs

**P-65 Brittany Thomas** Executive Function and Utilitarianism: Higher Empathy Changes the Track

**P-66 Rachael Shaw** The Effects of Specifically Immunized Egg Powder and Probiotics on the Microbial Diversity of the Gastrointestinal Tract in a Subclinical Population

**P-67 Dajah Torres** What Effect Does Food Access Have on School Performance?

**P-68 Rachel Wexler** The Anti-Cancer Effect of *Alpinia zerumbet* Seed Covering Extract on Jurkat Leukemia

**P-69 Caroline Weickel, K. Smith and J. Peterson** Effect of Creatine-Monohydrate on Cognitive Function in Subjects Who Differ in Dietary Meat Consumption

**P-70 Katherine Trettel** Sexual Asymmetry in Avian Mobbing Behavior: Males Mobbed More Often than Females in Northeast Ohio, Summer of 2018

**P-71 Cynthia Lu** Data Analyses of Quantum Dots & Au Nanoparticles

**P-72 Alexandra Wagner** A Comparative Study of the Relationship between Sediment Content and Fish Diversity, Richness and Abundance in Florida Springs

**P-73 William Parker Webb Samantha Kaye, Robert Brinson, Dale Peterson, Amy Sheffield, Nathan Wyche, Bailey Kleindienst and Morgan Parker** Is This a Good Idea? How Follower Perception of Leaders Influences Endorsement or Rejection of Leader Ideas

**P-74 Alvin Lin** Parasitic Infection of *Raillietiella orientalis* through Intermediate Hosts

**P-75 Ryan Pernell** Greater Variation and Abundance of Mosquito Species in an Urban Environment vs. Rural Environment





*Friends, 1910*

## ART AND DIGITAL ARTS PRESENTATIONS AND EXHIBITIONS

**Homer and Dolly Hand Art Center**

*9:00 am-4:00 pm*

*Dr. Lynn Kee,, Morning Session Chair*

*Dr. Mayhill Fowler, afternoon session chair*

*Judges: Jennifer Certo, John Wilton, Oluwaseun*

*Ademoye, Chris Roda*

### HAND ART CENTER GALLERY

**ART-1 9:00-9:15 Sophie Hofstetter** Three Card Readings

**ART-2 9:20-9:35 Olivia Valiante** Inside the Box

**ART-3 9:40-9:55 Geraldine Diaz** Home

**ART-4 10:00-10:15 Hali Pollard** Layers

**ART-5 10:20-10:35 Joclyn Pelfresne** Sunsette

**ART-6 10:40-10:55 Sandra Stephan** (A)ligned

**ART-7 11:00-11:15 Sarah Hargest** Filtered

**ART-8 11:20-11:35 Ysabel Flores** 'Life as We Know It'



*Between classes, 1920's*

### 11:35-12:35 Lunch

#### HAND ART CENTER SEMINAR ROOM

**ART-9 12:35-12:55 Solomon Nehrig** Harmonic Levels

**ART-10 1:00-1:20 Jennifer Algieri** Fact Arr Fiction

**ART-11 1:25-1:45 Taylor Hamilton** Personal Patterns

**ART-12 1:50-2:10 Jordan King** Immunity: Videogames as an Educational Tool

**2:10-2:20 Break**

**ART-13** 2:20-2:40 **Yolanda Patino** Dine 'n Dash

**ART 14** 2:45-3:05 **Cynthia Puckett** Oak: Choosing Survival

**ART-15** 3:10-3:30 **Ngaio Warrington** Taste and See

**ART-16** 3:35-3:55 **Bianca Mari Santimaw** "Under the Same Moon" - 3D Animation & Virtual Reality

## **JUNIOR MUSIC RECITALS**

**Lee Chapel, Elizabeth Hall**

*9:00 am-4:00 pm*

*Judges: Dr. Daniil Zavlunov, Dr. Peter Smucker*

*Repertoires are to be found in Abstracts (long program), or at end of Short Program*

**M-1** 9:00-9:30 **Maria Toledo**, Percussion

**M-2** 9:45 -10:15 **Hannah Faircloth**, Clarinet

**M-3** 10:30 -11:00 **Freddie Powell**, Flute

**M-4** 11:15-11:45 **Kat Kirby-Kopczynski**, Voice (Soprano)

**11:45-12:45 Lunch**

**M-5** 1:00-1:30 **Vanessa Moya**, Voice (Mezzo-Soprano)

**M-6** 1:45-2:15 **Joey Dies**, Trombone

**M-7** 2:30-3:00 **Deante Samples**, Voice (Tenor)

**M-8** 3:15-3:45 **Gabriella Martinez**, Violin



*Preparing for recital, 1965*

## ORAL PRESENTATIONS – SESSION A

25 Library Auditorium – Media Center

8:30 am-3:30 pm

*Dr. Ken McCoy, morning session chair*

*Grace Kaletsky, afternoon session chair*

*Judges: Dr. Lua Hancock, Laura Kirkland*



### ARS GRATIA ARTIS

*Student Theatre, 1958*

#### **A Liberal Core**

**A-1 8:30-8:45 Dakota Stitsinger** The Text, the Vision, the Creation: My Journey Through Directing *Circle Mirror Transformation*

**A-2 8:50-9:10 Claretta Holsey** Mouth Sound

**A-3 9:15- 9:30 Kayla MacPhee** The Ethical Issues Concerning the Conservation and Public Display of Artworks.

**A-4 9:30-9:50 Kathryn Renee Metcalf** Applying Transformational Theory to Rhythm in Taiko Drumming

9:50-10:00 **BREAK**

**A-5 9:55-10:10 Andrea Slouha** “The Sorting Hat Says” ....: An Ethnography Of Communication At The Wizarding World Of Harry Potter

**A-6,10:15- 10:30 Bailey Homa** A “Fairy Tale” Wedding: How Media Turns a Reality into Fantasy

**A-7 10:35-10:50 Lily Charbonneau** Paracelsus: The Alchemist Physician

**A-8 10:55-11:10 Robert Matyskiel** Sherlock Holmes vs. The Supernatural: The Hound of the Baskervilles and Sir Arthur Conan Doyle’s Fascination with the Paranormal

**A-9 11:10-11:25 James Parker** An American Force of Familial Violence Against An Esoteric, Fascist Threat: A Thematic and Mythic Interpretation of Star Wars The Force Awakens

**A-10 11:30- 11:45 Sarah Mullins** How to See Your Dragon: the Medieval English Dragon as a Political and Social Icon



*Class of 1921*

## **11:45-1:00 LUNCH**

**A-11 1:00-1:10 Cooper Hendrix** Theater: Who Cares?

**A-12 1:15-1:30 Rebecca Fellingham** Contextualizing Art: Tom Stoppard's Artist Descending a Staircase

**A-13 1:35-1:50**

**A-14 1:55-2:10 Sarah Hargest** Busted!: Research and Creation Processes of a Props Designer

2:10-2:20 **BREAK**

## **ON THE ROAD TO FARAWAY PLACES**

**A-15, 2:20-2:35 Patrick Sheridan** Good Roads and the Dixie Highway: Connecting Florida with the Rest of the Nation

**A-16 2:40-2:55 Kathrine Pullings** 19th Century London in 21st Century DeLand; Properties Design of *The Importance of Being Earnest*

**A-17 3:00-3:15 Kaitlyn Kocsis** Balancing the Best of the World: *National Geographic Traveler's* Rhetorical Presentation of Culture and Its Ideological Significance

**A-18 3:20-3:35 Porter Crapps** The Camino de Santiago: Meaning and Motivations in the Medieval and Post-Modern Periods

## **ORAL PRESENTATIONS - SESSION B**

**John E. Johns Room 315, Elizabeth Hall**

*Women's Choice 1910's*

9:00 am-3:30 pm

*Dr. Melissa Parks, morning session chair*

*Dr. Pamela Cappas-Toro, Afternoon Session Chair*

*Judges: Dr. Elizabeth Boggs, Dr. Rajni Shankar-Brown*

## **WOMEN'S STUDIES**

**B-1 9:00-9:15 Evan Cavallaro** Gender Rebellion, Class and the Thrill of Subversion in Women's Civil War Espionage



**B-2 9:20--9:35 Angela Osmar** Academic Help-seeking Behaviors in Black College Women

**B-3, 9:40-9:55 Taylor Supczenski** Josephine Butler: nineteenth century purity movements in the backdrop of Jack the Ripper

**B-4, 10:00-10:20 Marissa Thomas** An excerpt from *Underground: The Price of Sex* and a researched essay "Sexual Slavery: Telling the Story" by Marissa Thomas

10:20-10:30 **BREAK**

**B-5 10:35-10:50 Lillian Desenberg** The Person That Doesn't Exist: An Authentic Portrayal of a Woman I've Come to Know

**B-6 10:55-11:10 Georgia Reed** The Effect of Calorie Count Exposure on Body Image

**B-7, 11:15-11:30 Nathan Bodger** Women's Rights, Buddhism, and Law in Thailand

**11:30-12:30 – Lunch**

*A new lieutenant, 1980's*



## **BUSINESS AND MEDIA**

**B-8 12:40-12:55 Elijah McCoy** App-tastic: How can technology improve the stage management process?

**B-9 1:00-1:15 Allison Terry** Stetson University's Sustainable Food Initiatives: Progress and Communication Analysis

**B-10, 1:20-1:35 Liz Lorenzo** The Economics of Equity Crowdfunding

**B-11 1:40-1:55 Michaela Sellaro** Projecting President Kennedy: Television and the Public Image of the first Jet-Set Presidential Family

**B-12 2:00-2:15 Christopher Pate** Unconscionability Limiting Compensation: The Effects of Major Record Labels, 360 Record Deals, and Online Streaming Services on the Careers of Young Rap Artists

2:15-2:25 **BREAK**

**B-13, 2:25-2:40 Jennifer Algieri** 'Piracy Is Not A Victimless Crime': How Media Tropes Changed Pirates from Criminals to Role Models

**B-14 2:45-3:00 Cassidy Denslow** Is Reducing Plastic the Real Agenda? A Strategic Analysis of Starbucks Communication to Consumers on the Last Plastic Straw Movement

**B-15 3:15-3:30 Rebecca Fellingham** *Hamilton* as Public History

## ORAL PRESENTATIONS – SESSION C

**257 Sage Hall**

*8:30 am-3:15 pm*

*Dr. Khushbu Mishra, morning session chair*

*Dr. Lori Snook, afternoon session chair*

*Judges: Terry Grieb, Jennifer Corbin*

*School of Law, 1922*

## PREJUDICE, EXCLUSION AND REACTION

**C-1, 8:30-8:45 Jasmine Phimon** Ethnic Identity Expression in College Students

**C-2, 8:50-9:05 Jackie Johnson** The Little Rock Nine and its Impact on Education in the 1960's

**C-3, 9:10-9:25 Bianca Perito** The Election of 1896: William Jennings Bryan and American Populism

**C-4, 9:30-9:45 Brontë Joseph** Who am I and Who Am I Supposed to be?: Constructing Racial and Social Roles through the Costume Design for *Sweat*



**9:45-9:55 BREAK**

**C-5, 9:55-10:10 Shaylen Vitale** We Knew: The Failure of the American Press in Second World War Holocaust Coverage

**C-6 10:15 -10:30 Shannon Geyer** Genocide Denial and Why it Occurs at the State Level

**C-7, 10:35- 10:50 Nathan Bodger** Chinese Actions in Tibet since 1994: A Denial of Justice

**C-8, 10:55-11:10 Kenna McFall** "Combating left-wing terrorism without quarter": Operation Condor and the U.S. War on Communism

**C-9 11:15-11:30 Lana Kaczmarek** *Switched at Birth*: A Media's Representation on Disabilities

**C-10, 11:35-11:50 Tiffany Oms** An Epistemic Dilemma for Disability Rights: The Social Construction of Disability

**11:50-12:45 Lunch**

**C11 12:45-1:00 Hanna Elmasry** Robot Liability

**C-11, 1:05-1:20 Claretta Holsey** "And they're black, just as I dreamt they were": Reading Whiteness in Jean Genet's *The Blacks*

**C-12, 1:25--1:40 Kaitlyn Miller** Rhetorical and Linguistic Analysis of Variations within the Golden Rule

## **POLITICS IN INTERESTING PLACES**



**C-13, 1:45- 2:00 Brandon-John Hare** The Elephants in the Room: The Politics of a Small-Town Museum

**2:00-2:10 BREAK**

*Studying Politics with Dr. Bailey, 1974*

**C-14, 2:10-2:25 Estefany Arenas** More Than Just Symbolic: The Multidimensional Legacies of Women in Power in Latin America

**C-15, 2:30-2:45 Colette Cacciola** The Politics at Play in the Creation of the Museum of the Bible

**C-16 2:50-3:05 Zoe Weaver** Bu Yi Yang: Why Democracy in Taiwan is in Two

## ORAL PRESENTATIONS – SESSION D

**334 Flagler Hall**

*Lab time, 1960's*

9:00 am-2:15 pm

*Dr. Ramee Indralingam, Morning Session chair*

*Dr. Cynthia Bennington, Afternoon Session Chair*

*Judges: Dr. Torrence Gill, Dr. Holley Lynch*



### **SCIENCE ACROSS THE SPECTRUM I**

**D-1 9:00-9:15 Ameera Shaw, Paloma Avila, Zhana**

**Lopez, Alexander Levin** Deactivation of the FGF9

Gene in *Ciona intestinalis* using CRISPR-cas9

**D-2, 9:20-9:35 Jershawn Casimir** The effects of aggregation in neonatal pygmy rattlesnakes (*Sistrurus miliarius*) on evaporative water loss

**D-3, 9:40-9:55 Ameera Shaw** Voles (*Microtus spp.*) as New Emerging Reservoirs for Lyme Disease (*Borrelia burgdorferi*) in a Northern Illinois Prairie Ecosystem

**D-4, 10:00-10:15 Brianna Wise** The crayfish ECG as a useful assay for evaluating physiological effects of snake venoms

**D-5, 10:20-10:35 Garrett Crotty** Effects of Gestation and Temperature on Ventilation Rates in Pygmy Rattlesnakes (*Sistrurus miliarius*)

**D-6 10:40-10:55 Riley Young** The presence of predatory milkweed assassin bugs (*Zelus longipes*) decreases foraging in various species of bees (Anthophila) at several densities of Spanish needles (*Bidens alba*)

10:55-11:05 **BREAK**

**D-7, 11:05-11:20 Drew Sansone** Solar Panel Efficiency

**D-8, 11:25-11:40 Maddy Wheeler** The Prevalence of the Pentastome Parasite, *Raillietiella orientalis*, in Pygmy Rattlesnakes and Ribbons Snakes in Central Florida

**D-9 11:45-12:00 María Fernanda Sangri Gil** Behavioral Differences in Neurotypical Adults Attributable to Deficits in Theory of Mind

### **12:00-1:00 Lunch**

**D-10 1:00-1:15 Chandler Maynes** Protein and toxin analysis of Indian cobra (*Naja naja*) venom



**D-11 1:20-1:35 Zhana Lopez** The effects of environmental and solution temperature on the development of *Ciona intestinalis* with and without dechoriation

**D-12, 1:40-1:55 Samantha Harris** The Limitations Behind a Laser Range Finder

**D-13, 2:00-2:15 Riley Bibaud and Gaelin McLeod** Organic Sediments within Florida Springs as Potential Drivers of Algal Blooms

## ORAL PRESENTATIONS – SESSION E

**Room 112, Presser Hall**

9:00 am-2:15 pm

*Sidney Johnston, morning session chair*

*David Stock, Afternoon Session Chair*

*Judges: Dr. John Horn, Dr. Antonio Golan*

### **SCIENCE ACROSS THE SPECTRUM II**

**E-1 9:00-9:15 Kyra Aviles** Decreased Cell Viability in FGFR-inhibited Injured Adult *Ciona intestinalis* Hearts

**E-2, 9:20-9:35 Makayla Mitchell** Assessing the potential of a Food Recovery Network Chapter at Stetson University as a viable solution to divert food waste from landfills and increase food security in nearby Spring Hill Community

**E-3, 9:40-9:55 Mallory Hein** Prey behavior in the relationship between Ribbon Snakes (*Thamnophis sauritus*) and the Southern Leopard Frog (*Lithobates sphenoccephalus*)

**E-4, 10:00-10:15 William Gillett** Analyzing Cryptobiosis in Tardigrades: *Hypsibius dujardini* and *Dactylobiotus dispar*

**E-5, 10:20-10:35 Abigail Ault** Mediating Effects of Prosocial Motivation on the Relationship Between Interpersonal Trust and Interpersonal Trustworthiness

**E-6 10:40-10:55 Dante Guarino** Proteomic analysis of the venom of the Egyptian cobra, *Naja haje*

10:55-11:05 **BREAK**

*Ready to explore the world, 1920*

**E-7, 11:05-11:20 Lindsay Swaby** Effect of *Cymbopogon citratus* (lemongrass) tea on embryonic development in the axolotl, *Ambystoma mexicanum*

**E-8, 11:25-11:40 Sabrina Carlamere** *Ilex vomitoria* extract induces proliferation in human non-malignant lung fibroblast cells.



**E-9 11:45-12:00 Alexander Levin** The relationship between quinine, Fos-IR among rNST subdivisions, and aversive behavior in rats

## **12:00-1:00 Lunch**

**E-10 1:00-1:15 Megan Horwitz** Variations in Abundance for Mosquito Species in Rural and Urban Miami-Dade County

**E-11 1:20-1:35 Eryn Brisson** Aggregation Behavior of *Sistrurus miliarius* in Response to Olfactory Cues

**E-12 1:40-1:55 Hannah Gibilisco** A Multi-Modal Approach to Sensing Human Emotion

**E-13 2:00-2:15 Hunter Brown** Daily Patterns in Utilization of Algal Beds by Fish in Hypoxic Spring Waters

**E-14 2:20-2:35 Mackenzie Murphy** Analyzing United States spring ecosystem health through discharge or persistence (ft<sup>3</sup>/s) over a period of 50-100 years.



*School of Business, 1910*

## **ORAL PRESENTATIONS - SESSION F**

**LBC 318 & Rinker Auditorium**

*8:30 am-3:45 pm*

**Judges**

*Morning: Dr. Areti Vogel, Dr. Isabel C. Botero*

*Afternoon: Dr. Jessica West, Dr. KC Ma*

## **THE SCHOLARSHIP OF BUSINESS**

### **Sales Session**

**F-1 8:35-8:50: Dillon Galloway** Leveraging Social Selling Techniques in a Student Job Search

**F-2 8:55-9:10 Jamieson Craske** An Athletes Journey towards a Sales Career

**F-3: 9:15-9:30 Erica Lee vs. Bryndelyn Mcneary** CHEGG: Online Learning or Online Cheating

**F-4 9:35-9:50 Chloe Foster** JSEM Topic

**9:50-10:00 Break**

## **Young Entrepreneur and Family Enterprise Section**

**F-5 10:00-10:15 Bryson Pritchard and Dyad Syringe** Elevator Pitch

**F-6 10:20-10:35 Kailee Howe** Mish Mash Bowl

**F-7 10:40-10:55 pm. Lauren E Neidenfeuhr, Rachel E. Reaves and Emily Saccone**

**F-8 11:00 – 11:15 Joseph Alamo, Turner Grass, Justin Snyder and Christopher Williard** Family Business 1

**F-9 11:20-11:35 Gretchen Belkey, Anne Steinhauer and Kayla Yodzis** Family Business 2

**12:00-1:00 pm. Lunch**

## **Ethics Section**

**F-10 1:15-1:30 pm. Mackenzie Nalven and Nathaniel Smith** Facial Recognition Applications of Artificial Intelligence in Law Enforcement

**F-11 1:35-1:50 Nathaniel Diamond, Nathaniel Smith, Regis Steighner and Matthew Sweeney** A New Business Approach for the Cancer Action Network of the American Cancer Society

**F-12 1:55- 2:10 Brooke Elsbree, Aziza Hodae and Nathaniel Smith** Zillow Group and the Home Project: A CSR Initiative

**F-13 2:15-2:30 Mackenzie Nalven and Stewart Schmidt** Wendy's and the Fair Food Program: Enhancing Supply Chain Sustainability

**1:30-2:40 pm. Break**

## **Stock Pitch Session**

**F-14 2:45-3:00 Robert Brinson** "Spotify"

**F-15 3:05-3:20 Bilal Hashmi vs. Levesque Zechariah** “Lennar”

**F-16 3:25-3:40 Peter Lindner** “Berkshire Hathaway”

**F-17 3:45-4:00 Bradshaw Fuller** “Etsy”

## **ORAL PRESENTATIONS – SESSION G**

**Welcome Center**

*9:00 am-3:30 pm*

*Jean Wald, Morning session chair*

*Dr. Deborah Goldring, Afternoon Session Chair*

*Judges: Dr. Michael Eskenazi, Dr. Resche Hines*

## **EDUCATING AND MAINTAINING THE MIND**

### **Education and Engagement**

**G-1 9:00-9:15 Lauren Spratt** The Effects of Social Studies Education on Civic Engagement in Young Adults

**G-2 9:20-9:35 Nevada Carter** A Game Theory Approach to Modeling Climate Politics

**G-3, 9:40-9:55 Molly Flanagan** The Effect of Informative Contexts on the Recall of the Orthographic Representations of Words

9:55-10:05 **BREAK**

**G-4, 10:05-10:20 Peter Greubel, Peter Greubel, Sara Gerken, Seth Witt, and Stephanie Hanson** Survival of The Fittest

**G-5, 10:25-10:40 Jessica Algieri** Forgotten Founders and Fictional Facts: The Unique Story of Elizabeth Stetson Countess of Santa Eulalia

**G-6, 10:45-11:00 Peyton Marshall** The Proof is in the Pudding: Hiding Mathematics in the American Law School Curriculum

*Lecture Hall, 1902*

**G-7 11:00-11:15 Alyssa Reed** Supporting Diverse Student Learners and Advancing Equity



## The Dangers of Disengagement

**G-8, 11:30-11:45 Charlotte Earnhart** Collegiate Level Communication about Mental Health Services to Student Athletes

### 11:45-12:30 Lunch

**G-9, 12:30-12:45 Cody Carrigan** Examining the Economic Factors of Suicide in the United States

**G-10 12:50-1:05 Malinda Robinson** Comparing Greek and Non-Greek Life College Students' Sexual Health and Alcohol Use

### 1:45-1:55 BREAK

**G-11 1:55-2:10 Amanda Nikhazy** Stress, Feelings, and Communication Norms Among Student-Athletes

**G-12 2:15-2:30 Brianna Potter** The Effects of Mental Illnesses/Disorders within Marriages: A Potential Cause for Divorce

**G-13 2:35-2:50 Monica Manresa** Are You Anxious Because Big Brother is Watching or is Big Brother Watching Because You're Anxious? Anxiety as a Predictor of Conspiracy Endorsement



*Freshman Rats, 1950's*

**G-14 2:55-3:10 Jamie Pietrasz** Examining the Social-Emotional Impact of Poverty on Children

## SESSION H

### HONORS 102 SERVICE LEARNING AS SCHOLARSHIP

**322 Elizabeth Hall**

*Kevin Winchell, Session Chair*

9:00am-10:00am Shift

Group 1: SHG Compost & Commons Video: Anne Brooks, Mary Roth, Sarah Gaudreault, Sam Liu

Group 2: Sports Equipment: Luma Medina, Morgan Spies, Adrianna Strozak, Ansley McCoy

Group 3: All The Wonder In The World: Piper Wright, Vivianne Skavlem, Lilly Conley, Grace McElroy

Group 4: Dreams Come True Through You: Emma Gaughan, JD Pantoja, Sarah Sarver



*Big Man on Campus, 1895*

10:00am-11:00am Shift

Group 1: Increasing Community Involvement for Local 4H Club:  
Kayla Murchison

Group 2: Financial Literacy: Anthony Veneziano, Ethan Hammett, Dane Littlefield, Tanner Tuck, Dylan Sawyer, Jeffrey Ferguson

Group 3: Mental Health Awareness: Grace Crandall, Sara Buchanan, Tyler Kick, Amy Sheffield, Tazz Johnson

11:00am-noon Shift

Group 1: Boy Scouts of America: Sam Kaye, Chipper Stempkowski, Liam Wolfe, Nick Patricoff, Ben Zeh

Group 2: HIV Health Event: Naomi Antoine, Jasmine Hartsgrove, Justin Pinero

Group 3: Spring Hill Community Garden / Artisan Alley Farmers Market Food Access Project: Ihsaan Fanusie, Parker Webb, Lindsay Edwards, Paul Bounds

1:00pm-2:00pm Shift

Group 1: Better Together Days: Reed Barkowitz, Raven Golie, Rebecca Hett, Lana Kolchinsky

Group 2: Victim Advocacy: Bailey Kleindeinst, Royce Newman, Eli Maulfair, Anisah Majeed, Wilson Grooms, Garrett Zeiss

2:00pm-3:00pm Shift

Group 1: Spring Hill Arts Camp: Cullen Harkins, Max Mehler, Niklas Cotton, Deanna Lodi

**Whew! You all did it! (in the 1940's)**



**5:00-5:45 PRE-BANQUET RECEPTION FOR 2019  
SHOWCASE AND SURE SCHOLARS\***

Nemec Courtyard

Open to presenters and mentors.

\*Alcohol served. Bring ID's

**5: 45 EVENING BANQUET AND AWARDS**

Stetson Room

**6:15:**

**2019 Grady Ballenger Lecturer**

**Dr. Lonn Lanza Kaduce**

Professor of Criminology and Law, University of Florida

**Epistemologies of Ignorance in Law**



**Lon Lanza Kaduce** is Dr. Lon Lanza-Kaduce is Professor of Criminology and Law at the University of Florida, holding both a Ph.D in Sociology and a JD. His general interest area is in law and society with more specialized areas including Social Learning Theory, Substance Abuse Behavior, Delinquency and Deviant Behavior. He has published extensively on juvenile and college-age crime and on court justice. In 2016 he was Veritas Forum Lecturer on the Practice of Justice. He is the recipient of mentoring and teaching awards.

**Awards Ceremony**

**Maris Awards for Excellence in Showcase**

**Dr. Leonard Nance Award for Excellence in Justice Research**

**7:30-9:00 Guitar on the Rocks: A recital by Stetson guitar students, Stephen Robinson, director**

# ABSTRACTS

## Posters

P1 Mary Anampa (Dr. Lynn Kee)

[manampa@stetson.edu](mailto:manampa@stetson.edu)

### **Optimizing RNA extraction from adult *Ciona intestinalis* cardiac tissues**

The purpose of my investigation was to see if the Zymo Research RNA kit could extract RNA from *Ciona intestinalis* hearts. RNA degrades fast when exposed to the environment because of RNase. RNase is an enzyme that cuts RNA into smaller pieces, resulting in ineffective RNA for research. An applicable RNA isolation method can be helpful for future studies with *Ciona* as a model organism. I hypothesized that the Zymo Research RNA kit would extract a good quality and concentration of RNA from the *Ciona* hearts. I also hypothesized that RNA Shield would be the best method to preserve the extracted RNA because of the company's claims. The methods involved the dissection of *Ciona* hearts for the RNA extraction process. There were two experimental groups of four hearts each (RNA Later and RNA Shield) and one control group of one heart with no preservation solution. The extracted RNA samples were measured for their concentration and purity by a NanoDrop spectrophotometer and gel electrophoresis analyses. The results from the RNA extraction were analyzed, and RNA Shield was found to yield a significantly higher concentration. Future

studies could use RNA Shield to preserve extracted RNA samples with a lower risk of contamination.

P19 Erin Avers (Dr. Heather Evans-Anderson)

[eavers@stetson.edu](mailto:eavers@stetson.edu)

### **The Effect of Nicotine Administration During Late Larval, and Juvenile Stages on *Ciona intestinalis* Development and Heart Rate**

*Ciona intestinalis* have a central nervous system (CNS) in which their cholinergic receptors connect to body muscle walls, making them likely to be involved in triggering *Ciona* muscle contraction. In mammals, nicotine binds to cholinergic receptors and inhibits the normal functioning of acetylcholine, a neurotransmitter that regulates muscle contraction. Nicotine exposure during mammalian development effects maturation, birth weights, and chance of survival. *Ciona* hearts are good indicators for showing developmental effects because like the CNS, hearts differentiate during metamorphosis and have a measurable beat, thus if nicotine affects development *Ciona* hearts could be a good indicator to show the severity. Furthermore the hearts provide application to vertebrates including humans because, like mammals, *Ciona* are chordates. This study will test the effects of nicotine on the development of ascidian *Ciona intestinalis* and their heart structure, as well as their anatomical development through administration of nicotine during different stages of *Ciona* development. This could provide insight to see how important the cholinergic receptors are in these creatures as well as show the effects of smoking on a developing creature.



P2 Riley N. Bibaud (Dr. Jason Evans)

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### **Scleractinian Disease Prevalence in Relation to Marine Park Boundaries\***

Alongside coral bleaching and ocean acidification, disease poses one of the largest threats to coral reef ecosystems around the world. While there are various drivers of disease, ecosystems hosting complex, diverse fish communities — such as those within effectively managed marine parks — are known to have a lower disease prevalence than reefs with poor fish diversity. This study aimed to assess the scleractinian coral disease occurrence within highly protected areas as opposed to lesser regulated areas outside the confines of the marine park within Roatan Marine Park, Honduras. Fourteen sites were surveyed utilizing a roving diver technique to record all instances of common Caribbean coral diseases at various depths, which were later analyzed with a Mann-Whitney U Test. Among the sites surveyed, there was no significant difference in disease prevalence, suggesting that marine park inclusion is not an indicator of disease. In Roatan specifically, proximity to anthropogenic stresses such as point source pollution, runoff, and recreation — all concentrated within the marine park — may be larger drivers of disease. Similar to coral bleaching and ocean acidification, disease is a global stressor; therefore, while the Roatan Marine Park is effective in many facets, large scale, international approaches along the Mesoamerican reef may be better suited to curb scleractinian diseases.

\*This research was funded by a 2018 SURE Grant

P47 Mia Bishop (Dr. Michael Eskenazi)

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### **The Relationship Between Parenting, Substance Use and Depression**

Substance use affects millions of adolescents in the United States. Research has shown that certain parenting styles are linked to substance abuse among adolescents (Weiss & Schwarz, 1996). Previous studies have found that college students who suffer from depression are more likely to report

problematic drinking and alcohol abuse (Sharma, et al., 2011). Therefore, the purpose of the current study was to determine whether depression mediates the relationship between parenting styles and drug use. Participants completed a survey that consisted of three questionnaires, the Parental Authority Questionnaire (PAQ) (Buri, 1991), Beck Depression Inventory (BDI; Beck, et al., 1961), and Substance Use Survey. A mediation analysis indicated a significant relationship between authoritative parenting style and drug use  $R^2 = .35$ ,  $F(1, 48)$   $p < .001$ . The mediator, depression was added to the model and Sobel's Test indicated that the effect of the direct path significantly decreased, Sobel = 1.96,  $SE = .26$ ,  $p < .05$ . Therefore, depression explains part of the relationship between authoritative parenting and drug use. The findings suggest that students with authoritative parenting are less likely to be depressed and therefore are less likely to use drugs or have an addiction.

P29 Rachel Bogart (Dr. Wendy Anderson)

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### **Where the Ghost Crabs Are: Factors Affecting *Ocypode quadrata* Burrow Locations**

study looked at the influences on ghost crab (*Ocypode quadrata*) burrow locations. Ghost crabs are an indicator species and an important link in the food web. Initially the study was intended to look at the importance of shore wrack to the ghost crabs, specifically the mass of wrack and the number of burrows. It was decided to look at burrows as an indication of species population and preferred habitat. The location of burrows on the wrack line was studied, as well as the number of burrows seen during different months, and the presence of vehicles on the number of burrows. While the variation in the amount of shore wrack present was not an important factor for burrow locations, it was found that the month had a significant effect on the crab burrows numbers, as well as time combined with location on the wrack line. This data is useful for better managing the habitat of coastal wildlife, as ghost crabs are an important link in the ecosystem and also provide information about the health of the ecosystem.

P53 Anthony Bonilla (Dr. Roslyn Crowder)

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#### ***Alpinia zerumbet* Seed Extract Reduces Jurkat Leukemia Cell Viability**

*Alpinia zerumbet* (shell ginger) is a perennial member of the ginger family found only in East Asia, parts of the Caribbean, and to a small degree in Florida. This plant has been used for therapeutic purposes and has been an essential herb for medicine. Our research group previously prepared extracts from the seed of the plant and our preliminary results showed a decrease in Jurkat cell viability over varying time intervals. In the present study, we will further examine the cytotoxicity of *A. zerumbet* seed extract on leukemia cells. Trypan Blue Staining was used to count how many cells were dead and alive, as well as calculating cell viability. Annexin V was used to show the stages of cells going through regulated cell death and Cell Titer Glo showed the amount of ATP production. Three time points were tested, and they showed a dose-dependent decrease in Jurkat leukemia cell viability. All three time points showed a significant decrease from the 1 $\mu$ L to the 3 $\mu$ L. Most of the cells were in the early apoptotic stage until it was at the 3 $\mu$ L which showed the cells going through late apoptosis. The data that was collected showed that the *Alpinia zerumbet* seed can potentially be used as a therapeutic agent to induce cell death in Jurkat leukemia cells and expand drug options for leukemia patients.

P3 Tara Breedon (Dr. Sarah Garcia)

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#### **The Effects of tDCS and Meditation on Anxiety and Attention**

Anxiety has been shown to exaggerate pre-existing cognitive deficits for individuals with ADHD by disrupting brain networks contributing to working memory and sustained attention. Populations with comorbid ADHD and anxiety disorders have more severe working memory deficits and higher levels of inattentiveness compared to those with ADHD only.

Furthermore, stimulants are the most empirically validated treatment for ADHD, but they frequently worsen anxiety symptoms and fail to effectively improve working memory deficits in populations with ADHD and comorbid anxiety disorder. Together, this evidence underscores the need for treatment paradigms that are capable of effectively targeting both cognitive and anxiety symptoms in ADHD. It was hypothesized that a combination of mindfulness meditation, shown to be effective in reducing anxiety, and anodal transcranial direct current stimulation (tDCS), a noninvasive mild electric brain stimulation that may improve ADHD symptoms, may have synergistic effects. To test this hypothesis, thirty-six participants were randomly assigned to receive placebo(fake) tDCS and meditation or active(real) tDCS and meditation. Both groups were given pre-test post-test anxiety questionnaires and working memory tasks. We found that the active meditation condition had significantly greater improvements in working memory compared to the sham condition. We also found an overall reduction in state anxiety that did not significantly differ between conditions. These results suggest that when combined, meditation and tDCS are more effective at simultaneously impacting anxiety and cognition than meditation alone. Moving forward, it is important that ADHD treatments become more specified for comorbidities, as overlapping disorders may cause an individual to be less responsive to conventional treatment approaches

P21 Mackenzie Brown, Brian Ng<sup>1</sup>, Natalia Quinete<sup>2</sup>, and Piero Gardinali<sup>1,2</sup> (Dr. Tandy Grubbs)

[mbrown3@stetson.edu](mailto:mbrown3@stetson.edu)

1. Department of Chemistry and Biochemistry, Florida International University, 11200 SW 8th Street, Miami, Florida 33199

2. Southeast Environmental Research Center, OE-148, Florida International University, 11200 SW 8th Street, Miami, Florida 33199

#### **PDMS Sponge for Remediation of Endocrine Disruptors and Pharmaceuticals in Water Samples from South Florida**

The endocrine system, made up from a variety of glands, is a necessary function of an organism's body. It's main responsibility is for the production and movement of hormones. These glands include: the parathyroid, pancreas, and thyroid, among others. The duty of these hormones is to control tissue function, sleep, reproduction, growth and development, metabolism, etc. In turn, these hormones target certain tissues and organs, passing along messages that cause the body to perform necessary actions. For some time now, this integral, body system has been adversely impacted around the world, mostly in aquatic organisms, by chemicals called endocrine disruptors. Endocrine disruptors are chemicals, both natural and man-made, that interfere with the endocrine system, and unfortunately, are found with great frequency in waste and surface waters. This research focuses on finding a cost-efficient, reusable, and eco-friendly method of removing these harmful compounds from the environment. The material tested: a Polydimethylsiloxane sponge.

P39 Brianna Burrowes (Dr. Sarah Garcia)  
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#### **Quit Yelling at Me: The Impact of Verbal Aggression on Receivers**

In previous studies of the relationship between verbal aggression and stress, receiving verbal aggression led to negative effects on physiological and emotional responses. The present study focuses on how ego-control (impulsivity) and emotional lability (emotional dysregulation) moderate the relationship between verbal aggression and stress. The relationship between verbal aggression and stress was expected to be stronger for those who have low ego-control and high emotional lability. Eight-nine participants were randomly assigned to be in a verbally aggressive or non-verbally aggressive conversation where they had the option to reply aggressively or non-aggressively. Findings showed individuals with low impulse had a greater decrease in their stress response. The results of this study can lead practitioners in the right direction to dealing with the prevention of aggressive behavior, verbal

and possibly physical, by addressing traits like ego-control and emotional dysregulation while treating a patient.

P4 Jessica Chamberlin and Camryn Soehnlein (Dr. Benjamin R. Tanner and Dr. Jason M. Evans )  
[jinchambe@stetson.edu](mailto:jinchambe@stetson.edu)

#### **Soil Cores Suggest Recent Establishment of Black Mangrove (*Avicennia Germinans*) Stands Within Salt Marshes in St. Augustine, Florida**

On a global basis, mangrove communities tend to dominate lower latitudes (below ~29°), while salt marshes dominate higher latitude settings. Mangroves have been moving northward up the coast of Florida and the mechanism for mangrove expansion could be the decrease in frequency of extreme cold events. The guiding objective of this study was to elucidate past shifts of the salt marsh/mangrove ecotone over longer timescales. Our research established sediment proxy indicators of salt marsh and mangrove sediments including macroscopic soil properties and chemical markers. Surface soil samples as well as deeper soil cores were collected and analyzed for physical characteristics and geochemical proxy indicators. Our findings demonstrate that mangrove sediments can be distinguished from salt marsh sediments, and our results suggest that a mangrove stand from our samples was established only recently after about 2,000 years of salt marsh sedimentation.

P22 Kendall Coakley (Dr. Kirsten Work)  
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#### **Determination of Vitamin C in organic and conventionally grown produce and the effect cooking conditions have on produce maintaining its nutritional value**

There is a growing interest in organically grown produce in the United States; However, there remains a question of whether organically grown food contains more nutritional value compared to conventionally grown produce. Vitamin C is prevalent in most fruits and vegetables, and due to its water solubility, it leaves the body as quickly as it enters,

the body then requires vitamin C to be replenished. This study investigated commercially available vegetables grown organically and conventionally and purchased to analyze the vitamin C content in each of them. The vitamin C content was also examined to see the effect cooking conditions had on organic and nonorganic produce after they were roasted or microwaved. The five types of vegetables used were broccoli, Brussel sprouts, spinach, and cauliflower. The only fruit analyzed in the study was a lemon. To determine the vitamin C content, we conducted a titration on the different samples. The findings showed that organically grown produce was not higher in vitamin C content compared to conventionally grown produce, and there was not a significant difference in vitamin C between the various types of organically grown produce. This study found that raw conventionally grown spinach had the highest amount of vitamin C content among all the samples studied. Other nutrients in organically grown food need to be analyzed as well as how cooking conditions affect them.

P40 Danielle Conti (Dr. Sean Beckmann)

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#### **Evaluation of Species-specific Genes *ospA*, *p66* and *flaB* to Detect *Borrelia burgdorferi* in Bird Blood Through PCR**

*Borrelia burgdorferi*, the causative agent of Lyme disease, can be found in a variety of reservoirs including small mammals and birds. While the role of birds as reservoirs is still widely under-researched, migratory birds may contribute to the spread of Lyme disease outside of expected ranges. The purpose of this study was to assess the effectiveness of various primers commonly used for *B. burgdorferi* detection in birds. Blood samples were collected from late Summer through early Fall at Severson Dells Nature Center and Rockford University, Illinois. Three conserved *Borrelia burgdorferi* genes; *ospA*, *p66* and *flaB*, were targeted using PCR. Sensitivity, specificity and accuracy were calculated to compare PCR results. *Borrelia burgdorferi* was identified in

confidence in 13 of the 47 samples (27.7%). *OspA* was the most congruent with other loci, while *flaB* and *p66* results showed less overlap than expected. Possible reasons for this are discussed including the probable presence of other *Borrelia* species.

P54 Lyneshka Cruz Laureano (Dr. Michael Eskenazi)

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#### **Perceptions of Agency in Mentally Ill Suspects: Variations in Insanity Defense Outcomes**

According to previous research, blaming a person's mental illness for their criminal behavior as well as supportive attitudes towards the insanity defense are significant predictors of an insanity defense outcome (Jung, 2015). Additionally, type of mental illness was not found to affect juror decisions in smaller offenses (Mossière & Maeder, 2015). The current study evaluated how the defendant's type of mental illness and the type of crime that they committed influenced jurors' willingness to provide a Not Guilty by Reason of Insanity (NGRI) verdict. It was hypothesized that 1) defendant's capacity to control their behavior would predict the willingness to provide an NGRI verdict, 2) the type of mental illness and the type of crime committed would individually influence willingness to provide NGRI verdict, and 3) there will be an interaction between the two. Participants completed scales measuring self-agency and attitudes towards the insanity defense as well as questionnaires assessing their willingness to accept the NGRI defense. Novel findings are that substantial capacity was a predictor for the NGRI defense, yet neither mental illness type nor crime type were, and there was no interaction between them. Discrepancies in the results encourage modifying the way insanity defense cases are currently being evaluated.

P5 Elizabeth Dealy (Dr. Danielle Lindner)

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#### **The Relationship Between Academic Gender Stereotypes, Academic Achievement, and Academic Self-Efficacy**

The aim of my study was to investigate a relationship between endorsement of traditional gender

stereotypes, academic achievement, and academic self efficacy. I hypothesized that there would be a negative correlation between students' endorsement of traditional gender stereotypes and academics. I also hypothesized that there would be a positive correlation between academic self-efficacy and academic achievement. Fifty two Undergraduate Stetson University students were recruited to participate in the study, from various grades and majors. Academic achievement was measured using relative grade point average (GPA), while academic self-efficacy was measured using the Student Self-Efficacy Scale (Rowbotham & Schmitz, 2003). Endorsement of traditional gender stereotypes was measured using the Traditional Gender Stereotype Endorsement Scale (Martinot, Bages, & Desert, 2011). A correlation was found between academic self-efficacy and GPA, ( $r=.40$ ,  $p=.004$ ). No correlation was found between academic achievement, and endorsed gender stereotypes ( $r=.09$ ,  $p=.56$ ), and no correlation was found between academic self-efficacy and endorsed gender stereotypes ( $r=-.17$ ,  $p=.25$ ). This suggests that endorsement of traditional gender stereotypes does not have any bearing on academic achievement and academic self-efficacy.

P55 Michael Denton (Dr. Wendy Anderson)  
mdenton@stetson.edu

#### **Effects of algal wrack on leaf growth and biomass accumulation of *Uniola paniculata***

Climate change-induced sea level rise and severe storms as well as anthropogenic development are just a few of the factors impacting sandy shore structure and ecology. These factors cause increased erosion of dunes, higher levels of flooding, and a greater risk of destruction to the human infrastructure built behind these ecosystems. Dune grasses such as *Uniola paniculata* have expansive root systems that provide stability to the dunes and facilitate the accumulation of sand. Because the sandy beach ecosystem is a nutrient poor environment, marine algae that washes ashore on beaches may subsidize the growth of *U. paniculata*. To investigate this, 75 *U. paniculata* plugs were planted in 4" square pots with beach sand and either

algal wrack laid on top of the soil, mixed into the soil, or none added. Leaf growth, biomass accumulation, and nutrient release from the algal wrack were measured for each treatment during the six-week trial. Algal wrack had a positive effect on both leaf growth ( $p = 0.042$ ) and biomass accumulation ( $p = 0.033$ ) of *U. paniculata* when mixed into the soil compared to the control or the wrack on top treatment. *U. paniculata* growing in treatments with algal wrack on top or mixed in to the sand had a combined average biomass gain of 3.09g, while the control had an average biomass gain of 2.51g. Nitrate and phosphate concentrations of leachate were also higher in the treatment with wrack mixed into the sand than the other treatments ( $p = 0.011$ ). These results suggest that leaving algal wrack in place or adding it during active restoration of dune systems may enhance growth of dune grasses, which would help physically stabilize dunes, support dune ecosystems, and protect human developments behind dunes along the Atlantic coast of North America.

P6 Shrini Desai (Dr. Kirsten Work)  
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#### **The effect of exogenous Fibroblast Growth Factor 6 on heart development in *Ciona intestinalis***

Since Fibroblast Growth Factor is known to promote heart cell progenitors, then if exogenous FGF-6 is added to *C. intestinalis* larvae as they are undergoing metamorphosis, then would it result in additional heart cells and bigger hearts? I hypothesized that *C. intestinalis* that received more FGF would have larger hearts/more heart cells because FGF signaling has been shown to set forth cardiac cell differentiation in this organism. To test this hypothesis, *C. intestinalis* were exposed to 4 ug and 1ug solutions of FGF6 while in their larval stage prior to metamorphosis. The results showed a significant difference between larva in the 4 ug group and control group ( $p= 0.004$ ). Most of the *C. intestinalis* did not develop past the larval stage and the few which were in the juvenile stage did not appear to be correctly developed. The results suggest that application of exogenous FGF6 affected developmental pathways, potentially

inducing or inhibiting other genes necessary for development. Since the organisms did not progress past the larval stage, the hearts did not develop and therefore the hypothesis was unable to be tested. Based on these results, further testing could be done to target specific genes and pathways effected by exogenous application of FGF6.

P8 Julian Diaz (Dr. Jordan Ruybal)

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#### **Analyzing Mosquito Abundance Rates Between Various Species in Urban and Rural Areas Throughout Miami-Dade County**

Mosquitoes are well-known carriers of diseases which have caused a great risk to human exposure. Temperature can affect the prominence of mosquito populations. Urban and rural environments also possess differences that may affect the abundance of mosquitos. We hypothesized that mosquito abundance would increase during the hot and wet summer months because mosquitos are known to reproduce and lay eggs during summer climates. We also hypothesized that the abundance would be higher in urban areas rather than rural areas because urban areas have factors, such as pot holes with standing water, lack of proper drainage throughout the city and pollution that retains water, all of which are perfect for breeding sites. Data from Miami-Dade Vector Control was analyzed and ultimately showed that mosquito abundance overall was higher in urban populations. The abundance of *Culex quinguefasciatus* mosquito was highest among the three species in urban areas, while the abundance of *Ae. Aegypti* was highest among species in rural areas throughout Miami-Dade County.

P10 Alexander Dombeck (Dr. Benjamin Tanner)

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#### **Sediment Archive of Seagrass Dynamics in Northern Indian River Lagoon, FL**

Seagrasses are an integral part of nearshore and estuarine environments in Florida, serving not only as a potential carbon sink, but also providing a food source for fish, waterfowl, and other herbivorous

species. Unfortunately, Florida's seagrass beds have experienced significant historical declines. Seagrass decline and intense algal blooms are likely two of the biggest environmental problems facing Florida's estuaries and the two problems are related. Algal blooms reduce sunlight penetration and are a factor contributing to seagrass loss. A sediment probe survey was undertaken to identify the depth and age of organic sediment deposits within seagrass beds in Mosquito Lagoon, a sub-lagoon of the northern part of the Indian River Lagoon, FL. Basal ages of six cores were obtained through radiocarbon dating and the deposits ranged from modern to ~700 cal yrs BP. Two of the cores were sub-sampled and analyzed for bulk density, carbon to nitrogen ratios, and stable carbon isotope ratios. Preliminary results from the analyses suggest an increase in microalgal or phytoplankton markers towards the top of the cores, highlighting the presence of recent, intense blooms in the lagoon. However, the age control required to determine exact timing of this increase is lacking. Average carbon sequestration rates were determined for these cores and ranged from 2.0 to 3.6 x 10<sup>-3</sup> g C cm<sup>-2</sup> yr<sup>-1</sup>. There was significant decomposition with depth. Our work shows that these seagrass beds contain an archive of paleoenvironmental information on the scale of hundreds of years and that they rapidly sink carbon.

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#### **The Effect of Movement on Water Loss in Neonatal Pygmy Rattlesnakes (*Sistrurus miliarius*)**

The aggregation behavior and movement of neonatal pygmy rattlesnakes from Lake Woodruff National Wildlife Refuge was investigated for its effect on water loss in neonates. Aggregation is a behavior neonate pygmy rattlesnake display directly after birth that is believed to aid in protection. The neonates stay with their mother until after their first ecdysis. Movement of animals is known to increase water loss because the boundary layer of air is constantly being removed. Differences in water loss, as a result of movement, of pre and post ecdysis neonates as well as siblings versus non-siblings were tested. The



movement of pre ecdysis paired neonates was not significantly different than the post ecdysis paired neonates ( $P > 0.05$ ). Similarly, single neonates did not show a significant difference in average percent moved in pre and post ecdysis snakes ( $P > 0.05$ ). The correlation of water loss and movement was weak in both paired and single snakes for both pre and post ecdysis. Snakes that moved more than others did not show an increase in water loss. Therefore, movement cannot be attributed to the major cause of water loss in neonates. Ecdysis also did not significantly affect water loss. The average scrubber gain per snake for pre and post ecdysis snakes was only slightly greater in post ecdysis neonates. Therefore, we concluded that water loss is not greatly affected by the amount the neonates move. Also, aggregation cannot be explained by the neonates' need to conserve water and may be attributed to other factors such as protection.

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#### **Pre-exposure to sweet taste does not alter behavioral responses to intra-oral infusion to sucrose in rats**

Discrimination between novel and familiar taste is important to the survival of many animals. To discern the taste reactivity (TR) behaviors to novel and familiar tastes, a TR test was performed using an intra-oral infusion of 0.1M sucrose solution for a period of three consecutive days. Adult male Wistar rats ( $N=4$ ) were exposed to sucrose (0.23 ml/min for 5 minutes) each day (15 min/rat total). The ingestive orofacial behaviors observed (mouth movements, tongue protrusions, lateral tongue protrusions, and lip flares) were recorded and analyzed frame by frame. We compared the means of ingestive behavior of each minute within the same day, to test if there is a difference in behavior as sucrose exposure increased within each trial. We also compared the same minutes between each day. To evaluate statistical differences, we performed multiple one-way analysis of variance tests. Our results concluded there was no significant difference in TR between novel and familiar sucrose. No significance was found between individual minutes

recorded during each of the daily sessions, nor between individual days. Rats in this study treated novel and familiar sucrose similarly.

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#### **Predicting Criminal Behavior with HEXACO and Dark Triad Personality Traits**

Previous research has shown personality to be a significant predictor of crime (Edwards, Albertson, & Verona, 2017; Flexon, Meldrum, Young, & Lehmann, 2016; Mededović, 2017) and it has been conceptualized that criminal behavior is a consequence of cognitive distortions (Brazão, Rijo, Salvador, & Pinto-Gouveia, 2017). The current study expands on past findings to address crime within a sample of noninstitutionalized, young women. It was hypothesized that 1) higher scores on the Dark Triad personality traits and lower scores on the HEXACO personality traits of Honesty-Humility, Emotionality, Agreeableness, and Conscientiousness would be predictive of crime, 2) the presence of cognitive distortions would be predictive of crime, and 3) the relationship between personality traits and crime would be moderated by cognitive distortions. The sample completed a survey including questionnaires assessing personality, cognitive distortions, and crime involvement. Novel findings include that personality and cognitive distortions significantly predict engagement in crime in a predominantly young, noninstitutionalized, female population. Cognitive distortions did not moderate this relationship, thus the effect of personality remains despite varying levels of cognitive distortions. By identifying traits that indicate an individual's likelihood of acting criminally, the current study provides useful information to aid in preventing crime.

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#### **Full-thickness Macular Hole Formation after Repair of Rhegmatogenous and Tractional Retinal Detachment**

Objective: To report the clinical features, associations, and outcomes of patients with full-thickness macular hole (MH) formation after pars plana vitrectomy for retinal detachment (RD). Methods: Retrospective, interventional case series of consecutive patients undergoing surgical repair of MH following prior tractional or rhegmatogenous retinal detachment repair from September 2014 to October 2018 at a busy vitreoretinal surgery practice. The presence of epiretinal membrane, rate of macular hole closure, and visual outcome following repair were evaluated. Results: A total of 996 cases of rhegmatogenous and tractional retinal detachment repair were identified. The incidence of subsequent MH formation was 0.008% (8/996). The presence of epiretinal membrane (ERM) prior to MH repair was noted in 50% of these cases (4/8). In cases with at least 3-months of postoperative follow-up, MH closure was achieved in 100% of eyes after a single surgery. The mean preoperative visual acuity (VA) was 2.06 logMAR units (20/2296 Snellen Equivalent) and significantly improved to 0.72 logMAR units (20/104 Snellen Equivalent;  $p=0.025$ ), at the last follow-up after MH repair. Overall, all patients had improvement in VA at the final postoperative visit with a VA of 20/200 or better achieved in 87.5% of cases. Conclusions: Although MH formation after successful RD repair is uncommon, favorable visual and anatomic results can be obtained. Comorbid epiretinal membrane formation may be a contributing factor in these cases.

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#### **Determining the Prevalence of Lyme Disease in Thirteen-lined Ground Squirrels and Jumping Mice**

White-footed mice are well known to be reservoir animals of the Lyme bacterium *B. burgdorferi*, however there are northwestern prairie areas where Lyme disease is known but there are no traces of white-footed mice. To determine how Lyme got in these areas, we are testing two potential reservoir animals that may carry the bacterium. This study was determined whether the distribution of Lyme disease

was more common in meadow jumping mice or thirteen-lined ground squirrels. By extracting the animal tissue DNA from toe tip samples and using PCR amplification of flagellin B to identify the prevalence of the Lyme bacterium *B. burgdorferi*, I was able to find the average rate of infection over time. Thirteen-lined ground squirrels had an infection rate of 28.6% while meadow jumping mice was 28.2%. Abundance varied by year between the species as the thirteen-lined ground squirrels had a significant difference ( $p=0.027$ ) between 2014-2017, and the meadow jumping mice were also significantly different ( $p=0.002$ ) between 2014-2018). The data demonstrated that thirteen-lined ground squirrels having a larger infection rate than meadow jumping mice.

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#### **Privatization's Effect on Economic Growth within Developing Countries**

Starting in the 1980s, with the Margaret Thatcher regime, privatization has taken the world by storm. Developing countries have followed the examples of developed countries such as the United States and Britain and have begun to adopt privatization plans to foster growth for their economy. Privatization is defined as the method of reallocating assets and functions from the public sector to the private sector. Privatization is meant to increase efficiency, productivity, generate profits and increase overall economic growth. The literature behind privatization and economic growth is mixed. Some have concluded that it has negative impacts on economic growth while others say it has a positive impact on economic growth. This study will examine 127 developing economies and the affect privatization has on economic growth using OLS regression techniques through the STATA software.

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### **An Econometric Analysis of the Determinants of Security Prices of the Standard & Poor's 500 index from 1999 to 2019**

Every day, nearly 170 billion dollars trades hands on the New York Stock Exchange. This, combined with the increasing democratization of financial education in our modern economy, creates an environment where every investor is always on the lookout of indications as to where a stock will move and when. This study takes a fundamental look as to the sole reason people invest, the protection and growth of principal, and applies this theory to analyze what key determinants people should look for when purchasing a stock in any company. Among the key factors in the determinants of price, much significance has been paid to a stock's price-to-earnings ratio, investor sentiment, and even market capitalization of a firm. As such, this study analyzed the quarterly progress of the 500 companies on the S&P500 index over 20 years, from Q4 1999 to Q1 2000, to see if not only these variables were truly significant, but also what other variables appeared significant in influencing the price of a company's stock.

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### **Sodium Restriction Alters Behavioral and Cortical Responses to Intra-Oral Infusion of NaCl in Conscious Rats**

To determine the effect of restricting dietary NaCl on behavioral and neural responses to subsequent NaCl intake, taste reactivity (TR) behaviors and Fos-immunoreactive (Fos-IR) neurons in the gustatory cortex (GC) elicited by intra-oral infusion of 1M NaCl were counted. Nine adult male Wistar rats were used in this study; 4 were placed on a low NaCl diet (Envigo, 0.01% NaCl) for 3 weeks prior to testing while control rats (n=5) were maintained on a normal rodent diet (0.3% NaCl). Following implantation of intra-oral cannulas and recovery from surgery, the typically 'aversive' 1M NaCl was infused (0.233ml/min for 5 min), TR behaviors were videotaped, and then rats were sacrificed and their brains processed for the Fos protein. Fos-IR neurons

in the medial and lateral granular (GI), dysgranular, and agranular insula were counted at 5 positions along the anterior-posterior axis of the GC. NaCl-restricted rats performed over 4x more ingestive and 28x fewer aversive TR behaviors than control rats ( $p < 0.001$ ). The clearest effects were on tongue protrusions (10x increase in restricted rats) and gapes (22x decrease in restricted rats). Also, NaCl restriction significantly increased the number of Fos-IR neurons throughout the GC. Overall, there were 3x more Fos-IR neurons in the GC of restricted than control rats ( $p < 0.001$ ). The biggest differences in the number of Fos-IR neurons were in the rostral and dorsal parts of the GC. These data indicate that dietary restriction of NaCl changes a largely aversive response to 1M NaCl to an ingestive behavioral response, and increases the number of GC neurons that respond to NaCl, particularly in the rostral and dorsal regions of the GC. Future studies will attempt to determine the role of GC subareas in the behavioral alterations caused by NaCl restriction.

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### **Moral Demand, Moral Identity, and the Empathy-Altruism Relationship**

Prior research has found positive effects of empathy and moral identity on altruism, and negative effects of increasing numbers of victims (i.e. moral demand) on altruism. This experiment was designed to test whether moral demand and moral identity moderate the relationship between empathy and altruism. Moral identity was found to significantly predict altruism. However, contrary to findings from previous research, the effect of empathy on altruism was negative, and the effect of moral demand was not replicated. Neither moral demand nor moral identity were significant interactions. Post-hoc analyses further explored how the empathy-altruism relationship differs by context.

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### **Prey Interaction in *Liodytes alleni* and *Liodytes rigida***

Research on diet and prey interaction in striped crayfish snakes (*L. alleni*) and glossy crayfish snakes (*L. rigida*) is very limited. As juveniles, these snakes feed on dragonfly larvae and when they become mature they feed on crayfish but it is not known why this is. This study took both types of crayfish snakes, placed them in a tank, and fed them different types of prey (crayfish, dragonfly larvae, and small fish) and recorded the interactions between the snakes and the prey with camcorders. Results showed that the snakes have no interests in interacting with any prey items besides crayfish. The snakes coexisted with the dragonfly larvae and the fish with no attempts to consume them. Therefore, we can conclude that crayfish snakes will not consume anything other than crayfish when they mature.

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#### **Old yaupon holly (*Ilex vomitoria*) extract increases cell viability in human lung fibroblasts**

Cancer is the leading cause of death, and many of its treatments are invasive to the patient and contain harmful side effects. To find an alternate treatment, researchers started exploring the possibility of using plants to treat cancer cells. They found that plants contain properties such as flavonoids and alkaloids which contain anti-cancer, anti-tumor, and anti-viral properties. The leaf extract from the plant yaupon holly (*Ilex vomitoria*) contains both flavonoids and alkaloids which, in this study, will be used to investigate the cytotoxic effects on normal fibroblast cells. We hypothesized that yaupon holly extract would not affect cell viability or cell proliferation when treating fibroblast cells. Cells were observed for cell density and cell viability was examined using the CellTiter-Glo Assay. Yaupon holly extract increased cell viability after 24 and 48 hours at 0.5  $\mu$ L, 1  $\mu$ L, and 2  $\mu$ L volumes. The hypothesis was not supported, yaupon holly extract increases cell proliferation and cell viability in fibroblast cells. More research needs to be conducted to investigate the mechanism on how yaupon holly extract causes higher cell proliferation and viability in fibroblast cells.

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#### **The effects of therapeutic vitamin A on *Ambystoma mexicanum* embryonic development**

Vitamin A is known to have teratogenic effects on many developing vertebrates, and we chose to test the sensitivity of axolotl embryos to therapeutic doses of vitamin A. We placed axolotl embryos in petri dishes containing five different concentrations of vitamin A and allowed them to develop for two weeks, until they hatched. We measured the axolotls' body length, head width, head length, and intraocular spacing and compared those results between concentrations to determine the effects of vitamin A. We discovered that as vitamin A concentrations increased, there was a significant decrease in all the body dimensions measured. The axolotls exposed to the highest amounts of vitamin A had the greatest decrease in body dimensions, and even the axolotls exposed to a therapeutic dose had decreased body dimensions. These results can be used for further research to determine the exact dose of vitamin A that is safe to intake during pregnancy without causing any developmental malformations.

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#### **Prevalence of *B. burgdorferi* based on life stages of *I. scapularis* and *D. variabilis* in the midwestern United States**

Lyme disease is a bacterial infect caused by *B. Burgdorferi*, a spirochete, that results in nearly 300,000 diagnoses throughout the United States each year. In the United States, it is often spread by *I. scapularis* and *D. variabilis*, two species of ticks that are known vectors which have one blood meal per each of their three life stages. This experiment aimed to see whether there was a higher prevalence of Lyme in differing life stages. Ticks were collected from Distillery Road Conservation Area in Boone County, Illinois and then their DNA was extracted and run through PCR in order to see if the ticks tested positive for Lyme. There was no significant evidence

to support the idea that there is a higher prevalence of Lyme in certain life stages opposed to others.

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#### ***Alpinia zerumbet* has no Significant Effect on ATP Production and Cell Viability in Normal Human Fibroblasts**

Previously we've found that *Alpinia zerumbet* (*A. zerumbet*) has cytotoxic effects on leukocytes. However, it is unknown if it is cytotoxic to human non-malignant cells. We investigated the cytotoxic effects of *A. zerumbet* on normal human fibroblasts (WI38) and their production of ATP. *A. zerumbet* is a natural antioxidant and a member of the ginger family. There is some research that suggests that antioxidants can combat reactive oxygen species (ROS). ROS are produced in cells and toxic in high amounts and cause mutations within the DNA. An *A. zerumbet* extract was prepared containing 95% ethanol. The three volumes of treatment we investigated were 0.125 ml, 0.50 ml and 1.50 ml. Our negative control group was given no extract. We examined the cell toxicity 24- and 48-hours post-treatment. To examine cell toxicity, we performed a Cell-Titer Glo assay measuring ATP production. A paired t-test for two sample means was done to analyze the data. At 48 hours, at the volumes tested there was no statistically significant difference in ATP production. There was a statistically significant difference between cells that received No Treatment and 1.5 ml of treatment ( $p = .0001$ ) after 24 hours of treatment. In conclusion, there is no statistically significant difference between fibroblasts that have been treated with various levels of *A. zerumbet* extract at 48-hours. However, there is a statistically significant difference between fibroblasts that have been treated with various volumes of *A. zerumbet* extract at 24-hours.

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#### **Analyzing the Acoustic Absorption Properties of Various Insulating Materials**

When sound waves encounter an object, they are either reflected or absorbed. If absorbed, the waves' acoustic energy is transformed into heat (or "lost" energy) and kinetic energy; but if reflected, the waves will generate reverberations in the surrounding space. This space must be somewhat enclosed, in order for reverberations to form. The decay time of the reverb (called reverb time) can then be used to determine the absorptive qualities of the environment. The aim of this research was to explore certain materials' abilities to absorb different frequencies of sound. Most of the materials used in the trials (i.e. fiberglass, rugs) are components of everyday buildings, and were chosen for this reason—as this research is intended to convey an understanding of the acoustic properties of buildings, in particular. The findings of this research suggest that walls and ceilings absorb midrange sound most effectively, while floors work best with low- and high-end sound.

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#### **Sorry Not Sorry: A Textual Analysis of Corporate Apologies**

Everybody makes mistakes, and businesses are no different. And just like people do, businesses sometimes find themselves needing to apologize for those mistakes. The present research suggests that not all apologies are created equal, however. Authentic communications are characterized by humility, vulnerability, and personalness. Communications high in Clout communicate relative social status, confidence, and leadership. We find that Authentic apologies—use the pronoun "I" more and focus on the present. Clout in apologies is negatively predicted by the I pronoun, but are positively predicted by the pronoun "we". Clout is

negatively predicted by a focus on the present, but positively predicted by a focus on the future.

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**Comparison of the distribution of southern rays, *Hypanus americanus*, and bluntnose rays, *Hypanus say*, in Pinellas County, FL**

We studied two species of rays, *Hypanus americanus* and *Hypanus say*, for their habitat use and segregation. Much of the life history of elasmobranchs is unknown except that they are affected by some abiotic factors (depth, temperature) and substrate bottom. We hypothesized that there would be segregation between the populations of each species, with habitat partitioning and sexual segregation based on abiotic factors. Rays were caught in tangle nets, measured, tagged and released with CMERA during the summer (May – October) in Dunedin, FL for six years (2013 – 2018). Mann – Whitney U, Kruskal – Wallis, and Chi Squared tests were used to analyze data. Populations varied in both species, with more *H. americanus* caught than *H. say*. Substrate use differed between species; depth and temperature preferences did not differ, although differences between sexes for both species were seen. Ray distribution varied spatially for both species with more rays on the coastal waters and estuaries. Our hypothesis was partially supported. Rays are affected by depth and temperature, potentially for reproductive purposes. Rays prefer grass as a bottom type, though literature suggests sand is more preferable for prey capture. More research needs to be done to understand the life history of rays.

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**Infrared Thermal Imaging: The Effects of Emissivity on Thermal Radiation**

This project is driven by infrared thermal imaging, or the use of thermo graphic cameras to detect infrared radiation which is then used to produce images called

thermo grams. This topic can be found useful in military applications, insulation purposes, breast cancer detection and in non contact temperature measuring. With this project we are looking into the effects of emissivity on infrared thermal imaging and how to effectively measure and correct for emissivity. Utilizing a Leslie cube, our source for the different emissivity values, we were able to derive experimental emissivity values for each surface. Then, with these experimental emissivity values we attempted to correct the temperature readings on our infrared camera.

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**Nutritional Outcomes for Market Children in Ecuador**

During Summer 2018, I assisted Dr. Megan Hinrichsen, a medical anthropologist and professor at Monmouth College to conduct an assessment of the non-profit, United to Benefit Ecuadorian Children Everywhere International (UBECEI) in Quito, Ecuador. The organization serves three markets located in South Quito providing children who accompany their parents to extensive days a safe, sanitary environment to play and learn. In order to determine the effectiveness of UBECEI programming we collected data on the population served by UBECEI regarding the children's health status. Furthermore, I have a data set of children in South Quito markets who have been surveyed as well without the treatment, UBECEI programming. With this information, I identify the children of UBECEI's risks and whether the children's nutritional status is different from children at other markets of South Quito. An economic analysis of the overall status of children UBECEI serves in the market will improve understanding of how the organization should define the population they serve and what immediate concerns should be addressed through programming.

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**Sex as a Moderator Between Color Manipulation and Consumer Behavior**

Colors are important in today's advertising, sparking certain reactions in the consumer. Attitude towards the ad (Aad) is defined as a positive or negative reaction to an advertisement stimulus. Past work has demonstrated connections between Aad and color. A gap in the literature exists regarding these color and Aad associations, since they have not been studied controlling for sex. The purpose of this study was to examine sex as a moderator between color manipulation and consumer behavior. The experiment contained six hypotheses: Aad would vary based on colors presented, women would have a higher Aad when exposed to orange, green, and purple backgrounds, men would have a higher Aad when exposed to a yellow background, and there would be no sex differences when exposed to a black background. One hundred and eighty two undergraduates were recruited for this study. An ice cream advertisement was made and recreated five times varying the background color. Participants were divided into five groups and given one of the advertisements plus an adapted Aad questionnaire. Participants exposed to a warm color advertisement showed a slightly higher Aad versus a cool one, though this difference was not significant. Color of the ad had no significant effect on Aad and no significant interaction was found on gender moderating color manipulation and Aad. Current results go against past research suggesting that color is not a key factor on determining consumers' Aad. Further research needs to be conducted on other advertisement manipulations to determine their effects on consumer behavior.

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#### **Parasitic Infection of *Raillietiella orientalis* through Intermediate Hosts**

*Raillietiella orientalis*, a lung parasite was introduced to Florida through the invasive species of Burmese Pythons from Southeast Asia. Snakes have many prey within their diet and each are likely to be intermediate hosts for *Raillietiella orientalis*. We explored mainly the green water snake (*Nerodia floridana*) and striped crayfish snake (*Regina alleni*)

and their diet to see if there are any that were infected. Their main diets include amphibians such as tadpoles and frogs, insects such as beetles, grasshoppers and butterflies and crayfish exclusively for the striped crayfish snakes. So the experiment was to see if there was an association between infected snakes and their prey. We collected some snakes and mainly their amphibian diet as their other dietary animals were harder for us to catch. We identified our caught specimens and began dissecting them after they were euthanized. These species were known for being infected with *Raillietiella orientalis*. Anything obtained from the cavities were examined based on their morphology. After examination to check if any specimen were infected, they were analyzed through an Fisher Exact Test to test for significance of association. Our results indicate that aquatic snake species aren't being indirectly infected with *Raillietiella orientalis* through intermediate hosts. However, there are still possibilities for this hypothesis as our sample size for their prey was quite miniscule and doesn't account for the entirety of their diet.

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#### **The Effect of Trump Tweets on the Foreign Exchange Market**

When the 45th President of the United States, Donald J. Trump, first entered the presidential race, his tweets were sure to grab everyone's attention. The Washington Post referred to his Twitter as "prolific", "populist", and "self-obsessed" (Philips, 2015). The New York Times admired his command of "an online SWAT team of devoted supporters who spring into action with stunning speed" (Barbaro, 2015). Since then, many have accredited his success as a presidential candidate to his exposure on social media, some political operatives even going as far as to call his Twitter "a continuous Trump rally that happens on Twitter at all hours". As President, he continues to actively use Twitter to express his views on global affairs. With over 55 million followers, an average of 22,000 favorites and 9,000 retweets, Trump has become the most followed world leader

and investors are now closely monitoring his tweets as indicators of future policy. This attention offers a unique opportunity to examine the role of social media in the foreign exchange market. Specifically, I analyze the impact of tweets from President Trump's official Twitter accounts on foreign exchange rates and trading volume.

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### **Data Analyses of Quantum Dots & Au Nanoparticles**

Quantum dots are highly tunable nanocrystals of a semiconducting material with diameters in the range of 2-10nm<sup>1</sup>. Their size, energy level and emission wavelength can be controlled. Au Nanoparticles are fascinating nanoparticles consisting of gold atoms that change color as their solution changes. By using the Atomic Force Microscope (nanometer microscope) and optical spectrometer we wished to examine and understand the coordination between core-type quantum dots' size and their emitted light spectrum and recorded the physical properties of alloyed-typed quantum dots and Au Nanoparticles.

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### **Building a LIDAR Based Autonomous Car Using a Raspberry Pi**

Physical computing is the emerging science of building physical systems by use of software and hardware that can respond to the outside world. The practice employs some of the more simple principles of physics and a range of activities from wiring circuitry, soldering and computer programming. One of the key features of physical computing is that it is a more accessible area of technology with devices, projects and documentation commercially available for the public. One of the more ambitious such projects that are currently extensively researched are autonomous cars. An autonomous car is a vehicle that is capable of sensing its environment and navigating without human input. My research aimed to develop a model autonomous car that integrates

as many or all of the technologies incorporated by major companies (Tesla, Google etc) into their autonomous car projects. Some of these technologies include LiDAR sensors, GPS tracking and video cameras. The main challenges of my research were learning and applying all the knowledge and skills required to develop such a project and making all these technologies work harmoniously. Those who are interested in my research will find that the field includes other interesting projects like automating ones house or building a personal video surveillance system.

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### **Effect of Social Media on Traditional TV**

As the presence of social media in our daily lives increases, one must wonder how it effects previous forms of media. News outlets are pointing out the decline in TV viewership, and that younger audiences have abandoned traditional forms of media for social media and streaming services, in a method labeled as cord cutting. For this study I will be observing the effects of social media growth on traditional television. As people have a finite amount of time I'm operating on the theory of media substitution, which states that as one form of media grows it will have a negative impact on the growth of other forms of media. I have tested this by comparing TV viewership against the web traffic of popular social media sites, such as YouTube and Facebook. From my results it seems that different forms of social media have varying effects on traditional television.

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### **The Effect of Cell Phone Encouragement on Step Count Over Time**

Despite the benefits that come with being physically active, people have a difficult time committing to exercise programs. This study aims to look at how the

amount of encouragement through a cell phone application affects step count over time, and how the change in step count differs between genders. A total of 22 participants between the ages of 18 and 25, 86.4% female, were recruited from the Psychology Department of a small liberal arts university and were only required to own a smartphone. First, daily step count was tracked for each participant for one week using their smartphone's built in health app. Over weeks two and three, participants randomly placed in the experimental group downloaded a pedometer app that sent daily notifications and reminders about reaching step count goals, while the control group continued using the preinstalled health app that sent no notifications. No main effects of time, gender, or condition were found and there were no significant differences between genders or condition groups on overall change in step count. Given the results of the study, more research is needed to determine the most effective way to better motivate people and encourage them to be more physically active long-term.

P32 Erica McCaughey (Dr. Peter May)

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**Assessment of macroinvertebrate richness and abundance between spikerush (*Elocharus palustris*), cattail (*Typha sp.*), and cordgrass (*Spartina sp.*) at Lake Woodruff NWR\***

Evaluating macroinvertebrate use of managed wetlands enhances management strategies on waterfowl sanctuaries, such as Lake Woodruff National Wildlife Refuge (NWR). The dominant plant types [spikerush (*Elocharus palustris*), cattail (*Typha sp.*), and cordgrass (*Spartina sp.*)] were used to study macroinvertebrate characteristics in an impounded marsh. From August to October, netted prisms, filled with vegetation, were placed in the impoundments and retrieved to quantify abundance and species richness of macroinvertebrates for each plant species. Although there was no significant difference between plant species richness or abundance, the p-value of richness among plant species ( $p=.08$ ) may suggest there was a possibility of significance with alteration of methods. There was a general increase

in abundance ( $R^2 = .61$ ) through the sampling season. The most common types of macroinvertebrates present in the three plant species were insects in the orders Hemiptera, Coleoptera, and Odonata. These data can be helpful for environmental management to understand relationships between vegetation and macroinvertebrate populations and their importance to consumers of higher trophic levels.

\*Funding Source: Lake Woodruff National Wildlife Refuge – USFWS

P46 Breanna McDermott (Dr. Lynn Kee)

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**Survivability of tardigrades, *Hypsibius dujardini*, shows opposing trends in extreme heat and freezing temperature exposure**

*H. dujardini*, along with the other species of tardigrades, have developed a special skill that protects them against the effects of dehydration: the ability to enter into a cryptobiotic state. Temperature studies on tardigrades have been very intermittent and have been mostly focused on the extreme cold they can survive and all under dehydrated conditions. I hypothesized that there will be a downward trend in survivability and lifespan of the tardigrade, *H. dujardini*, when exposed to the extremes of the temperature scale while hydrated. The tardigrades were counted under microscope, aerated via pipette, given water if needed, and placed into one of the temperature environments, 45° C, 25° C, -20° C, and -80° C, for 15 minutes. Both total tardigrades and active tardigrades were counted to ensure that all were found in the wells. After initial observation, the experimental group was left at room temperature and recounted at 1 hour, 10 hours, and 24 hours post-treatment for overall survivability. *H. dujardini* were able to survive and recover at all of the tested temperatures. The -80 C, -20 C, and 45 C test groups all began with little to no active tardigrades and had an upward trend in the first few hours post-treatment. The colder temperatures, -80 C and -20 C, had a downward trend in survival numbers after the 10-hour mark. The 45 C trial tardigrades did continue that upward trend and made a full recovery. The



hypothesis that there would be a downward trend in survivability and lifespan of the tardigrade, *H. dujardini*, when exposed to the extremes of the temperature scale was not supported.

P58 Samantha M. McPherson, Joseph Agugliaro, and Craig M. Lind (Dr. Terence M. Farrell)  
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#### **Assessing the metabolic cost of pregnancy in pygmy rattlesnakes (*Sistrurus miliarius*)**

Energetic tradeoffs associated with metabolically costly reproductive events can impact future reproductive success of an organism. Although yolk allocated to offspring in pitvipers is thought to be the primary fuel for embryonic growth, there may be additional maternal energetic costs during pregnancy associated with exchange of gas, nutrients, and waste between maternal and fetal tissues. This maintenance cost of pregnancy (MCP) may be reflected by an increase in maternal resting metabolic rate (RMR) during gestation in excess of the metabolic demands of embryos. If the MCP is relatively high, it may contribute to a low frequency of reproduction (LFR) observed in pygmy rattlesnakes and other Viperid species. To investigate energetic costs of pregnancy in *S. miliarius*, we used flow-through respirometry to measure RMR (CO<sub>2</sub> production) of 14 late pregnant and 11 non-reproductive females collected from July to August, 2018. We determined the difference in RMR between pregnant and non-reproductive snakes ( $\Delta\dot{V}CO_2$ ), and used non-linear regression of  $\Delta\dot{V}CO_2$  against total litter mass to estimate MCP as the y-intercept of this curve. RMR was significantly higher in pregnant snakes compared to non-reproductive females. Furthermore, there was a significant relationship between maternal RMR and the number of days before parturition; RMR of pregnant females increased when measured closer to parturition. Preliminarily, estimates of MCP were not significantly different from zero; these results indicate that MCP is a minor component of reproductive effort in pygmy rattlesnakes, and that LFR in this species may be a result of other costs associated with reproduction.

P48 Brent Meister (Dr. Peter May)  
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#### **There are Two Sides to Every Jetty: A comparison of benthic, fouling organisms on the North and South side of the North Ponce Inlet Jetty**

Much is unknown about the species diversity of rubble structure jetties. This has led to a gap in knowledge about species diversity around jetties. The goal of this research was to lay the base foundations of species diversity at the North Ponce Inlet Jetty, so that future studies may be conducted on environmental factors that affect species diversity. Ten video recordings, over a twenty-week period, as well as pictures every five-feet along a thirty-foot section of both sides of the North Ponce Inlet Jetty showed a complete picture of species diversity at the jetty. I initially believed that the south side of the jetty would have a higher species diversity than the north side of the jetty. This is due to the two types of energy that is observed at the jetty, one being current energy on the south side and wave energy on the north side of the jetty. During this experiment, it was found that the south side of the North Ponce Inlet jetty indeed had a higher species than the north side over a twenty-week period ( $P=9.14E-14$ ). During this experiment every measurement showed a constant trend of the south side having a higher species diversity; However, both sides are still very diverse overall. I concluded that the south side of the North Ponce Inlet Jetty had a higher species diversity than the north side.

P56 Nathan Monsanto (Dr. Michele Skelton)  
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#### **Effect of Creatine-Monohydrate on Cognitive Function in Healthy Male and Female Subjects**

The purpose of this study was to examine the effects of 4 weeks of creatine supplementation on cognitive function using the ImPACT test in healthy male and female subjects. In a randomized, double-blind placebo-controlled study, twenty-five subjects were divided into two groups. One group received creatine while the other group received a placebo. Subjects completed a 5-day loading phase (20 grams per day) followed by a 24-day maintenance phase (5 grams



per day). Cognitive function was assessed prior to supplementation and immediately after a 4-week supplementation phase. The ImPACT test was used and provides 6 measures of cognitive function. There were no significant changes in any of the cognitive measures between groups. However, females in the creatine group scored significantly higher than males on the visual memory test. Preliminary analysis suggests that acute supplementation of creatine does not enhance cognition in healthy subjects. A gender difference was observed in the treatment group suggesting that females may respond differently than males with regard to cognitive benefits with creatine supplementation.

P60 Michael Morello (Dr. Roslyn Crowder)  
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#### **Effects of *Alpinia zerumbet* seed extract on normal human lung fibroblasts**

*Alpinia zerumbet* leaf extracts were previously shown to have anticancer effects on malignant Jurkat E6-1 leukocyte cell line, such as inducing apoptosis and decreasing proliferation (Chojnacka, et. al, 2016). In our project, we examined the cytotoxicity of other parts of the *A. zerumbet*, specifically the seed. We measured the amount of luminescence from our non-malignant human fibroblasts, which would indicate their metabolic activity after treatment with *A. zerumbet* seed extract. We hypothesized that the extract prepared from seeds of *A. zerumbet* would induce apoptosis and have anti-proliferative effects on non-malignant human fibroblasts. We conducted our experiment to measure cell metabolism in treated human lung fibroblasts over three different time periods (24, 48 and 72 hours) and three different volumes (.15uL, .5uL and 1.5uL). The results from our experiment show that there is a significant difference in cell viability due to an increase in luminescence and cell metabolism when comparing all treatments volumes of our 72-hour time period to our untreated negative control.

P62 Mason Mulford (Dr. Kimberly Reiter)  
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#### **The golden Age of Science Fiction: The Impact of the Space Race on the Transition to Television**

Science fiction rose to popular prominence side by side with our real-world technological advancements. But what makes science fiction what it is, and how is it influenced by the time in which it was created? Today, science fiction is everywhere and is a staple of modern entertainment. When you think about science fiction, you usually think about space, however, even this is not constant as the shifting focus of popular opinion and technological discovery changes how people view what was once fantastical. As radio sets spread across the America, so did the popularization of many new radio-based programs aimed at utilizing this new medium to spread their story as far as possible. This included the spread of popular science fiction into the homes of millions. Classics such as Buck Rogers and Flash Gordon would be translated and achieve widespread success as radio broadcasts. Between the 1920s and 1980s the themes and nature of science fiction changed dramatically in every medium in which it appeared. With radio mostly dying out by the 1960s, television would take its place, while film and written formats would continue to become more popular and mainstream. Even after the works themselves lost their appeal, their influence continues to live on, notably as inspiration for George Lucas. The young director aspired to create a new Flash Gordon, but failing that, settled on Star Wars. My research hopes to explore the impact that technological advancement, notably the space race, had on the Science fiction genera. How did the advent of real-life space flight impact its portrayal in fiction? While writers for Buck Rogers in the 1930s were surprisingly detailed in their description of technology and science in space, the dramatic shifts in culture and life following the Second World War and the Cold War rapidly shifted the focus of audiences and directors moving into the 60s and 70s.

P33 Mackenzie Nalven (Dr. Camille King and Dr. Michael Eskenazi)  
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### **The Effect of Limiting Email Usage on Job Productivity\***

Previous studies have shown that using email at work is interruptive and can negatively affect job productivity and perceived stress. The purpose of this study was to determine if restricting, not eliminating, email use can increase actual and/or perceived productivity, as well as decrease stress. The experimental design was within-subjects; the 23 participants (employees at a non-profit organization) were exposed to the unrestricted (normal email usage) and restricted (email usage was limited to three times per day) email usage conditions. Job and perceived productivity did not differ between conditions, although, high multitaskers felt more productive in the unrestricted condition. Additionally, a significant interaction between email condition and multitasking preference on stress was observed. The findings suggest that reducing email usage alone cannot reduce email-related stress; perceived stress was affected by both multitasking preference and email condition. Furthermore, email-related interruptions did not appear to have a negative effect on productivity.

\*Funded in part by the 2018 SURE Grant

P35 Bailey Nix (Dr. Michael Eskenazi)

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### **The Interaction of Moral Foundations and Ideology on Activism**

Political ideology and moral foundations have been found to predict collective action—any action that works to achieve a political or social goal (Kerpelman, 1969; Levenson & Miller, 1976; Haidt, 2012; Van Zomeren, 2016). The purpose of this study was to analyze the relationship between collective action, moral foundations, and political ideology within modern political and activist movements. It was predicted that political ideology would moderate the relationship between moral foundations and collective action. A sample completed questionnaires measuring moral foundations, collective action, and political ideology. Moral foundations predicted a significant amount of the variance in collective action. The moral foundation of respect for authority was negatively associated with collective action, such

that more respect for authority was associated with lower collective action. Political ideology was associated with collective action, such that a more conservative participant would have lower levels of collective action. The interaction between respect for authority and ideology indicated that conservatives have lower levels of collective action, regardless of respect for authority; however, liberal's collective action increases as their respect for authority decreases. These results confirm the moderation hypothesis as well provide more recent evidence that moral foundations and political ideology interact to predict collective action.

P75 Ryan Pernel (Dr. Jordan Ruybal)

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### **Greater Variation and Abundance of Mosquito Species in an Urban Environment vs. Rural Environment**

Mosquitos are the most common vector for some diseases, such as, West Nile Virus. The specific disease carried by a mosquito depends on the species and the habitat they live in. Mosquitoes live in both urban and rural areas. These habitats can differ in many factors, such as, pollution levels, noise levels, and light sources. These factors can negatively affect mosquitoes. We caught mosquitoes in CO2 traps over a two month span. We used the mosquitoes trapped to determine if there was a difference in mosquito abundance and species composition over a landscape gradient, urban vs. rural. There was more abundance in mosquitoes caught at the rural locations than at the urban locations. There was also a notable difference in the species of mosquitoes caught. This information is important in understanding how likely disease can be spread based on the species of mosquito present and how human development affects mosquitoes.

P45 Sofia Poulos (Dr. Michael McFarland)

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### **Repairing Reputations: How SeaWorld Responded to Negative Publicity**

A crisis, which occurs suddenly and requires immediate attention, can damage the reputation of the organization or individual in question, which

leads to specific kinds of reactions. William Benoit's Image Repair Theory claims that when a reputation has been damaged, certain strategies may help repair it. This rhetorical thesis claims that SeaWorld, the theme park known for using captive marine animals for entertainment, experienced a crisis when the documentary, Blackfish, brought to light a new perception of SeaWorld to many people. It examines various statements and decisions through the lens of the image repair theory to identify which image repair strategies SeaWorld engaged in to determine how the organization framed its response to the publicity. This thesis finds that SeaWorld frequently used the transcendence strategy to paint its offensive actions in a more favorable context as well as denial as a way to be acquitted of accusations. SeaWorld also engaged in bolstering, minimizing, attacking the accusers, and taking corrective actions.

P57 Shilpa Ravoory (Dr. Kevin Riggs)

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#### **Vibrational Analysis of a Viola using Time Average Holography**

Holography is a physical structure that diffracts light into an image, records the light scattered from an object, and presents it in a way that appears to be 3D. TimeAverage Holography uses long exposures to record an object's motion. It is very similar to regular holography, except that the object is now being vibrated. Utilizing a very specific optical set up, the viola was driven at a wide range of frequencies, lit with a laser, and holograms were taken on a small piece of film. These film pieces were then developed in chemicals and viewed back through another laser setup which allowed one to see the vibrational patterns, or the nodes and antinodes. On a metal plate, one expects to see a symmetrical vibrational pattern, but on a viola the patterns will not be symmetric. The holography analysis done of the metal viola plate was compared to a Chladni Analysis done on the same plate. The viola holograms were compared to the holograms of the metal plate. After a lot of trial and error, I was able to adjust the amplitude just enough to receive excellent

results where the holography analysis matched almost perfectly to the Chladni Analysis.

P50 Mike Requeno (Dr. Kirsten Work )

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#### **The Difference between Morning, Afternoon, and Evening Video Surveys on the Fish Assemblage of Blue Spring State Park, Florida**

Video surveys have been one method of monitoring environmental stability in a freshwater environment by recording the fish assemblage. However, approximately one-third of fish in any freshwater ecosystem are nocturnal. There has been limited evidence of fish assemblage taken at later parts of the day due to low visibility and hazards of dangerous conditions. The purpose of the experiment was to observe any differences in fish abundance, species richness, and diversity in Volusia Blue Springs, Florida, between observations made in the morning, afternoon, and evening. A GoPro camera was used to conduct video surveys at a site approximately 150 meters from the headspring, and another site 1500 meters downstream to observe if there were different fish assemblages in a location closer to the St. Johns River. Abundance and species richness was analyzed using Kruskal-Wallis. Diversity was calculated with the Shannon-Weiner Index, and the data was analyzed using a two-way ANOVA. Time of day spent recording did not affect fish abundance, species richness, and diversity between the morning, afternoon, and evening time periods. However, the species richness and diversity of the downstream site was significantly greater than the upstream site for all three times ( $p < 0.05$ ). The hypothesis that the fish diversity, abundance, and species richness would be greater during the morning and afternoon trials than the evening trials was not supported because the presence of diurnal fish did not change to a significant degree throughout the day. The different species richness and diversity observed between the two sites was the result of the downstream site containing water with a higher level of dissolved oxygen that allowed more fish with poor tolerance to low oxygen to live in, and that it was closer to the St. Johns River.

P20 Riley Reynolds (Dr. Holley Lynch)

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### **Tissue Spreading Rate Dependence on Extracellular Matrix Concentration\***

The collective migration of tissues is an essential part of development. In order to understand this process, we must understand the physical mechanisms that drive these movements. In order for tissue to self-propagate, they must form adhesions to their substrate. To study the rate of tissue spreading, I varied the number of adhesion sites. I began by cutting the tissue explants from gastrulation-stage Axolotl (*Ambystoma mexicanum*) embryos, removing a tissue that spreads across the surface of the embryo. These tissue explants spread in a similar manner when placed onto a fibronectin-coated substrate. By varying the concentration of fibronectin, an extracellular matrix protein, I tested the effect of the number of adhesion sites on the rate of tissue spreading. Initial analysis showed that over a concentration of 25 µg/ml, changes in fibronectin concentration no longer had an effect on the spreading rate of tissue. These results will allow us to conduct future experiments on tissue spreading in a regime where slight variations in fibronectin-coating are unlikely to affect spreading rate.

\*Funded in part by a 2018 SURE Grant

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### **How initial explant size affects spreading rate of tissue explants from Axolotl embryos\***

Understanding how collective cell migration occurs can help give us better knowledge of what occurs during wound healing, cancer metastasis, and embryo development. All of these processes are dependent on the effective communication between cells to coordinate their movement. We set out to measure how the initial explant size affects the spread rate of tissue explants from Axolotl (*Ambystoma mexicanum*) embryos. We used two sizes designated large and small to understand how communication in cells can be affected by the size of

the explant. Axolotls are amphibious creatures and that is an important part of the reason we selected to use them in this experiment, this allowed us to remove a section of tissue (an explant) and transplant that explant onto a medium (protein surface) while still retaining the cells ability to spread and grow on the medium. This is similar to research done on frogs to try and understand the same phenomenon.

\*Funded in part by a 2018 SURE Grant

P61 Madaline Roop and Grace Lookado (Dr. Sven Smith)

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### ***Skeletal***

“Skeletal: The Serial Killer Board Game, and “Dark Curiosities” is a three-part presentation that works together to show the three major aspects of serial killers. The former of the two were created by Madaline Roop, and the latter being created by Gracie Lookadoo both under the supervision of Dr. Sven Smith. *Skeletal* is a visual aid to creatively evaluate the correlation between serial killers and their methods of killing, along with what maladies they may suffer from. “Skeletal: The Serial Killer Board” is an interactive version that allows players to place themselves as a serial killer and race to collect the largest number of kills before being captured, or successfully getting away. “Dark Curiosities” is an original composition designed to artistically comment on popular culture’s obsession with serial killers. The speaker highlights their obsession with the killer, as opposed to the killer himself. The lyrics allude to the dehumanization of these psychologically ill people, their stereotypical background, the hero detective archetypal role people like to assume, Murder-o-Bilia, and the unexplainable fascination with the abnormal.

P52 Leslie Sanchez (Dr. Melissa Gibbs)

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### **Effects of Amoxicillin Levels on the Embryonic Development of *Ambystoma mexicanum***

There has been a negative impact of continual human contamination of aquatic ecosystems with drug pollutants on the long-term viability of the species

that live in these ecosystems (Wolter et al., 2000). There are currently detectable levels of amoxicillin in the environment, which led me to wonder at which concentration would amoxicillin pose danger to embryonic development of axolotls. The Mexican axolotl, *Ambystoma mexicanum*, is a key model organism for medical and environmental research. I hypothesized that axolotls reared in high concentrations of amoxicillin will have a decreased survival rate and an increase in abnormalities in comparison to axolotls that are reared in low amoxicillin concentrations. Our data showed that the embryos reared in lower concentrations of amoxicillin developed normally, whereas the axolotl embryos that were exposed to in the medium and high concentrations of amoxicillin either died or did not develop normally.

P49 Katherine H. Scott (Sarah L. Garcia)

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#### **Keep Calm and Pray On: The Exploration of How Religious Involvement Predicts Anxiety Levels**

Adolescent involvement in religiosity provides an opportunity to discover potential inner-peace, develop social support within the religious organization, and for further exploration on existential ideation. The purpose of the current study was to fill in a gap in the literature that addresses how religious involvement as an adolescent affects later anxiety levels in adulthood. The sample for this study consisted of 72 undergraduates (58% female,  $M = 20.36$   $SD = 4.79$  years of age). Participants completed an online survey that consisted of a demographics page, the State-Trait Anxiety Inventory, and the Centrality of Religiosity Scale. Following the initial study, twelve participants from the original pool were randomly selected to be interviewed on the research topic. ANOVA results demonstrated religious involvement as an adolescent did not significantly predict anxiety levels [ $F(2,69) = 2.69, p = .08$ ]. Further, socioeconomic status as an adolescent did not moderate the relationship between the two variables [ $F(4,63) = .774, p = .546$ ]. The interviews concluded that high religious involvement did not appear to have a longitudinal

effect on anxiety, but rather it appeared to increase anxiety during adolescence only. Overall, this study demonstrates that while there may not be a long-term effect of religiosity on anxiety, there are still aspects of religion, such as a lack of understanding or high level of judgment placed on the individual, that influences adolescents' anxiety levels.

P51 Chelsea Seaver (Dr. Asal Johnson)

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#### **The Wright Building Recognition Project\***

In 1919, the Wright Building was a central location for bustling businesses, once being the economic and cultural center of the DeLand African-American community. The building can still be found vacant and deteriorating a century later. This research seeks to document the rich history behind DeLand Florida's historical Wright Building. Moreover, it explores the collective identity of DeLand's African-American community through archival research, semi-structured interviews, and written transcriptions documenting the oral history of the Wright building. Through analysis of the written transcriptions, conclusions drawn about the built environment can strengthen the sense of community within the neighborhood, improving the overall health and well-being of its residents. Three common themes were derived from the analysis of the current interviews. Regarding the Wright Building, the themes included the access to community resources, a place to provide a sense of community during a time of discrimination, and a sense of place. The findings from this project are aimed to contribute to the restoration of the Wright Building, aid in securing the Wright Building's designation on the National Register of Historical Places and, most importantly, share its narrative with the many generations to come.

\*Funded by a 2018 SURE Grant

P64 Jasmine Segovia (Dr. Kirsten Work)

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### **The Effect of Different Watersheds on the Body Fineness Ratio of *Micropterus salmoides* in Florida Springs**

In an effort to understand the differences in body morphology of *Micropterus salmoides*, largemouth bass, in different watersheds around Florida, analysis of video surveying was conducted. Videos of twenty-seven different Florida springs were taken in 2017 and 2018 and examined in the fall of 2019. An apparent visual size difference between largemouth bass in St. Johns River watershed springs led to the formation of my hypothesis. I hypothesized that St. Johns River watershed springs will have a smaller average body fineness ratio in largemouth bass than other Florida watersheds. Using t-tests, I analyzed the average largemouth bass body fineness ratio in St. Johns River watershed springs compared to non-St. Johns River watershed springs, as well as compared average body fineness ratio in St. Johns River watershed springs in 2017 and 2018. There was no statistically significant difference between springs in the two watersheds. However, there was a statistical difference in average body fineness ratio of largemouth bass between 2017 and 2018. Possible reasons for my results could include factors such as fluctuating vegetation densities, differing video collection periods, differences in food availability between years, or other biological and environmental aspects.

P66 Rachael Shaw (Dr. Michele Skelton)

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### **The Effects of Specifically Immunized Egg Powder and Probiotics on the Microbial Diversity of the Gastrointestinal Tract in a Subclinical Population**

Dysbiosis of the gut is caused by an imbalance in the gastrointestinal bacteria. This can cause subclinical gastrointestinal complaints. In response to these symptoms doctors may prescribe antibiotics which can lead to antibiotic resistant bacteria developing in individuals. If the dysbiotic bacteria causing the symptoms is antibiotic resistant the clinical treatment of antibiotics will not be effective in removing the dysbiosis. Probiotics and specifically immunized egg powder have been shown to decrease dysbiotic

colonies and increase beneficial colonies. Probiotics have also been shown to strengthen intestinal barrier function which can decrease antibiotic resistance. This study examined the effects that probiotics and specifically immunized egg powder had on dysbiotic colonies and antibiotic resistance in a subclinical population. The subjects sent in fecal samples before and after the intervention. The fecal samples were analyzed. Then the number of dysbiotic colonies and number of types of antibiotic individuals were resistant to were counted. The most common stands of dysbiotic bacteria were *Klebsiella pneumoniae spp pneumoniae* and *Citrobacter freundii*. The results also found that almost all the subjects were resistant to the antibiotics Ampicillin and Amoxicillin-Clavulanic Acid. The results of this study suggest that physicians run a fecal analysis on patients presenting with symptoms of subclinical gastrointestinal distress for six months, in order to correctly treat dysbiosis and prevent further antibiotic resistance.

P63 Breanna Shi (Dr. Fazal Abbas)

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### **Comparative study for the Lane-Emden Equation to its Higher order Dynamics**

In this study, we consider the Lane-Emden equation of the first kind which arises in the study of stellar structures. The higher order dynamics of this equation in the non-iterative setting has been proposed and verified through mathematical induction. We develop the Homotopy Analysis Method (HAM) algorithm to obtain the convergent series solutions to the model equations. Choice of an initial value, nonlinearity, and linear operator in the construction of the HAM algorithm affect the solution radius of convergence. Analytical approximations are compared with the Pade approximant to a power series solution and Runge-Kutta-Fehlberg method (RK45). The traditional series solution follows the actual solution in the domain of positive solution while HAM does not seem sensitive to domain restriction.

P36 Steven Staudt (Dr. Jordan Ruybal)

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### **Greater Variation and Abundance of Mosquito Species in a Rural Environment rather than an Urban Environment**

Central Florida is a well-known area for high mosquito abundance where three mosquito species come together and aggregate. In this study, we simulated an urban and rural environment to analyze the effects of different environments on total mosquito abundance and mosquito species richness. To do this, we placed two traps per environment for a series of four experimental trapping dates (biweekly) during the months of July and August. We found that there was a much greater abundance in the rural location on all four trapping dates. We concluded this was due to the lower elevation of Lake Woodruff being able to hold rain water over the course of the experiment as opposed to the Urban location at Stetson University that did not retain water resulting in far less egg laying and less adult mosquito abundance. We also found that *Culex* mosquitos were the most abundant species captured, which we did not expect to see. We caught eighty-one more *Culex nigrapalpas* than any other mosquito species. We concluded this was due to the environment in which we were trapping, as previous research suggests that *Culex* mosquitos are known to be in warm, humid environments like Central Florida.

P65 Brittany Thomas (Dr. Michael Eskenazi)

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### **Executive Function and Utilitarianism: Higher Empathy Changes the Track**

Research indicates that better executive function is associated with more deontological decision making (Vera-Estay, et al., 2015; Maxfield, et al., 2012). Deontological decision making suggests an importance in following established rules regarding morality, duty, and doing what is “right;” utilitarianism presents a “logical” perspective and suggests that the right thing to do is based on the consequences of that action (Conway & Gawronski, 2013). While much is already known about the

relationships between empathy, moral decision making, and executive function, it is not yet known whether empathy moderates the relationship between executive function and moral decision making. It was hypothesized that 1) high empathy will be associated with less utilitarian decision-making, 2) high executive function will be associated with less utilitarian decision-making, and 3) empathy will moderate the relationship between executive function and utilitarian decision-making. Participants completed a measure of executive function, two measures of empathy, and a measure of moral decision-making. The findings suggest that empathy moderates the relationship between executive function and utilitarian decision-making. This research supports the importance and influence of empathy in our decision-making processes and, therefore, encourages more research on the construct.

P67 Dajah Torres (Dr. Christopher de Bodisco)

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### **Analyzing the Relationship Between Educational Attainment and Food Access in Florida**

A recent topic of interest has been how food access can affect different aspects of a person’s life and outcomes, including educational outcomes. I utilize census tract data on differing levels of food access and data from the 2013 American Community Survey from different counties in Florida to examine the relationship between access to nutritional food and highest level of education achieved. I hypothesize that those who experience lower levels of food access will have lower levels of educational achievements. I used regression analyses to test the relationship between these variables. My analysis is limited by the fact that highest level of education is an aggregate of a lifetime of variables, but this serves as just an introductory analysis on this topic.

P70 Katherine Trettel (Dr. Peter May)

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### **Sexual Asymmetry in Avian Mobbing Behavior: Males Mobbed More Often than Females in Northeast Ohio, Summer of 2018**

Mobbing is an anti-predator behavior with various explanations for its persistence through evolution. In birds, sexual selection is a possible driver of mobbing behavior, with males using mobbing as a form of phenotypic advertisement. 78 simulated mobbing trials were conducted in Northeast Ohio in the summer of 2018, comparing the effects of early and late season, as well as the presence or absence of a visual cue. The species of individuals observed mobbing were recorded, as well as the sex of individuals of sexually dimorphic species. Males appeared in higher frequencies as predicted, and statistically significant differences were found between male and female frequencies during the early and late season. A statistically significant relationship was also found between the ratio of sexually dimorphic and sexually monomorphic and season as well, with fewer sexually dimorphic individuals mobbing during the later season. These results support that mobbing behavior may be a mating behavior resulting from sexual selection.

P72 Alexandra Wagner (Dr. Kirsten Work)  
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### **A Comparative Study of the Relationship between Sediment Content and Fish Diversity, Richness and Abundance in Florida Springs**

Recently, increased algal blooms, due to anthropogenic sources, have threatened freshwater springs. While nitrate loading in most springs seems like a plausible driver of the algal blooms, it does not appear to be the case for all water bodies. Although other factors (i.e., biotic interactions and hydrodynamic properties) have been examined to determine the cause of algal blooms, research investigating organic sediments is sparse. The purpose of this study was to determine whether there was a relationship between accumulation of organic matter and fish diversity, richness and abundance within St. Johns and Suwannee River springs. Data were collected on fish population and soil core samples taken from nine St. Johns River and

five Suwannee River springs. To assess fish diversity, richness and abundance, GoPro cameras were placed in four different locations for each spring to record twelve-minute videos per site. At each spring three sediment cores were acquired from the deepest sediment deposits. These cores were assessed for percentage of organic matter, which was found to be similar within the St. Johns and Suwannee River springs. Fish species diversity and richness was also similar in St. Johns and Suwannee River springs while species abundance was greater in Suwannee River springs. Fish abundance may have been greater for certain species in the Suwannee River springs because of low densities of macrophytes for smaller fish to hide from predators. There are numerous abiotic and biotic variables interacting to determine a direct driver of the algal blooms. By understanding and gathering more data about the drivers of algal blooms, we can learn how to properly manage a healthy and diverse spring ecosystem.

P73 Parker Webb, Samantha Kaye, Robert Brinson, Dale Peterson, Amy Sheffield, Nathan Wyche, Bailey Kleindienst and Morgan Parker (Dr. Randall Croom)  
[wpwebb@stetson.edu](mailto:wpwebb@stetson.edu)

### **Is This a Good Idea? How Follower Perception of Leaders Influences Endorsement or Rejection of Leader Ideas**

In 2018, Kentucky High School valedictorian Ben Bowling opened his graduation speech with a quote: "'Don't just get involved. Fight for your seat at the table. Better yet, fight for a seat at the head of the table.'" — Donald J. Trump." The crowd burst into raucous applause. But before they could stop cheering, Howland said: "Just kidding. That was Barack Obama." According to Howland and others in attendance, the crowd quickly went silent, some of them groaning (Novelly, 2018). "I just thought it was a really good quote," said Bowling. The crowd apparently agreed—until they learned more about the source. We presented a series of actual quotations by two polarizing leaders, Barack Obama and Donald Trump (total n=97), and asked respondents to evaluate how inspiring these quotes were. After measuring dogmatism, rigidity, and



political orientation, and the degree to which respondents liked each of the candidates, half of the candidates were shown a bogus report indicating that they were much more biased than other survey respondents. Then, we asked respondents to evaluate quotes again, except that we switched the attributions—Obama quotes were attributed to Trump, and vice versa. We took the difference score between identical quotes at time 1 (quote with accurate attribution) and time 2 (quote with inaccurate contribution) as a measure of respondent bias, as zero bias would identify the quote as equally inspirational regardless of who said it. Results revealed that dogmatism, rigidity, political outlook, and liking generally predict bias, but that the effects were attenuated to the point of non-significance in respondents who were exposed to the bogus bias test.

P69 Caroline Weickel, K. Smith and J. Petersen (Dr. Michele Skelton)

[cweickel@stetson.edu](mailto:cweickel@stetson.edu)

#### **Effect of Creatine-Monohydrate on Cognitive Function in Subjects Who Differ in Dietary Meat Consumption**

The purpose of this study was to examine the effects of 4 weeks of creatine supplementation on cognitive function using the ImPACT test in vegetarians, subjects that consumed 1-10 servings of beef, chicken, pork, or fish per week, and subjects that consumed greater than 10 servings of beef, chicken, pork or fish per week. In a randomized, double-blind placebo-controlled study, twenty-five subjects were divided into two groups. One group received creatine while the other group received a placebo. Subjects completed a 5-day loading phase (20 grams per day) followed by a 24-day maintenance phase (5 grams per day). Cognitive function was assessed prior to supplementation and immediately after a 4-week supplementation phase. The ImPACT test was used and provides 6 measures of cognitive function. There were no significant changes in any of the cognitive measures between groups. However, vegetarians in the creatine group scored significantly higher than subjects who consumed greater than 10 servings of beef, chicken, pork or fish per week on the visual

memory test. Preliminary analysis suggests that acute supplementation of creatine may enhance cognition in vegetarians but have no effect on those who consume meat regularly in their diet.

P68 Rachel Wexler (Dr. Roslyn Crowder)

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#### **The Anti-Cancer Effect of *Alpinia zerumbet* Seed Covering Extract on Jurkat Leukemia Cells**

*Alpinia zerumbet* has been used as an herbal medication in a multitude of different countries to treat inflammation, the common cold, cardiovascular disease, etc. This research tested the hypothesis that *Alpinia zerumbet* seed covering extract would kill Jurkat leukemia cancer cells at medium and high volumes via an apoptosis mechanism. Trypan Blue, Cell Titer Glo, and Annexin V were used to measure leukemia cell cytotoxicity. Volumes of 0.25, 1, and 3 microliters of the seed covering extract were tested on Jurkat leukemia cells at 24, 48, and 72 hours. Total cell number and viability decreased with increasing time intervals as well as increasing volumes of *Alpinia zerumbet* seed covering extract. Similarly, the Jurkat leukemia cells died via an apoptosis rather than necrosis mechanism.

P37 Garland Woodruff Jr. (Dr. Kristen Work)

[gwoodruf@stetson.edu](mailto:gwoodruf@stetson.edu)

#### **The Continued Observation of Fish Diversity and Assemblages in the St Johns River Springs**

I compared various springs for dissolved oxygen concentrations and fish assemblages among springs at five of the St. John's River springs; Volusia Blue Springs, Wekiwa Springs, Rock Springs, Alexander Spring, and Gemini Springs using underwater video surveying. I also compared spring fish populations to the fish populations in the same springs two years earlier. I hypothesized that there would not be a difference in fish populations between 2016 and 2018. We observed the number on fish seen on video and compared and evaluated fish diversity, species abundance, total composition of fish, and dissolved oxygen concentrations. There were no significant differences between years for dissolved oxygen

concentrations or any of the fish assemblage metrics. This result was expected, because Florida springs are less affected by seasonal temperature changes throughout the year than other systems. Maintaining a spring's clarity and cleanliness is of the utmost importance for ecosystems across the globe that rely on springs.

## Hand Gallery Art Exhibits

Art3 Geraldine Diaz  
[gadiaz@stetson.edu](mailto:gadiaz@stetson.edu)

### Home

The untold truth about immigrating is that no one goes through the trouble of fleeing their home country unless the unknown journey you're about to embark on is safer than the place you used to call home. You leave everything you know, everyone you've met, everything you loved behind not knowing what tomorrow brings. Under the torments of a corrupt and vicious government, my family decided to immigrate to America in 2013. So here we were, finally safe, but we were lost.

Most of previous work dealt with the political consequences of a dictatorship, and it gave my viewers a window to what goes on in Venezuela. I soon realized my art was becoming everything I hated about my home country: anger, aggression, and hopelessness. Tired of telling a story with a negative narrative, I turned to tell the story of my family.

We found ourselves in a strange place, speaking an unknown language, trying to fit in a society we barely knew. As a family, we struggled to find a place for us to call home. As individuals, we struggled to find what we needed to be happy at different stages in life. So I asked them "what was the most difficult thing about moving to another country?", and they answered "to fit in", "to find myself", "to not know what comes next", "to provide for my family".

In my paintings, I have embodied every single one of our fears and challenges, just to be reminded by a central portrait of our loving family that no matter what, we are together. Our journey made us stronger and it made us grateful. We have traveled around the world to find home, and turned to one another to find it.

Art8 Ysabel Flores (Dan Gunderson and Grace Ramsey)  
[yflores@stetson.edu](mailto:yflores@stetson.edu)

### "Life as We Know it"

This mixed-media installation reflects my thoughts on our current American culture of consumerism. Ideas about the world are just as prolific as the products lining our everyday grocery shelves. People come up with new ideas everyday but not everything is useful even though they may come nicely packaged. Ideas have consequences and I believe we must take time to critically consider how the information we consume determines our beliefs which ultimately influences the way we live. I want to display this American experience in a style similar to some of the iconic works of Norman Rockwell and Edward Hopper. I hope to critically evaluate how our society views itself in light of our culture today, specifically when it comes to accessing information and sharing ideas. Through careful craftsmanship combined with a love for storytelling, I strive to make my sculptures and visual imagery connect with viewers in an honest and powerful way.

Art7 Sarah Hargest (Dan Gunderson)  
[shargest@stetson.edu](mailto:shargest@stetson.edu)

### Filtered

Through my paintings, I hope to bring light to the overlooked yet simple moments in our world. I wish to take the viewer into a past or new world. Creating a sense of nostalgia or emotional understanding between the viewer and myself is the most personal connection I can have as an artist. Not only does this connection provoke a specific emotion dedicated to the piece but it also allows the viewer to softly see

my interpretation of the emotion while also connecting it with their own. I hope to relate to the viewers on a topic that is casually suppressed and difficult to converse about. I hope to build a bridge with the viewer and help them to know they are not alone in their coping/grief methods.

My work portrays reality through arbitrary color and filters. This is my commentary on changing perspectives to put the mind at ease after a trauma, specifically death. The blotches of color, like a paint-by-number, create a sense of conflict and turmoil, which when paired with the bright arbitrary colors, adds to the sense of slight unease. My paintings portray images of DeLand and Stetson University which were where I really experienced the intense confusion and conflict in my personal grief. These paintings helped me to explore how I really felt all the time; there is not purely sadness when coping. These paintings express the moods and conflict that tends to be overlooked.

Art1 Sophie Hofstetter (Dan Gunderson)  
[tubasophie@gmail.com](mailto:tubasophie@gmail.com)

### Three Card Readings

I am currently working towards my goal of becoming an illustrative concept artist, using my world building and character design as the foundation for my artistic works. My current endeavor is creating a painted deck of tarot cards, broken up into three card spreads of the past, present, and future, that correspond to a single character and their story arc. I hope to communicate the reality of these characters and their struggles through this, as well as make sure their differing stories all can relate to thematic ideas present in tarot. The meanings of the cards can often be easily understood or otherwise interpreted and, in addition to allowing for artistic flourishes which I gear towards a more modern personal stylization, are effective tools for telling a story.

Art5 Joclyn Pelfresne (Dan Gunderson)  
[jpelfres@stetson.edu](mailto:jpelfres@stetson.edu)

### Sunsette

When I was a child, I always assumed that one day I would

be pulled into a magical destiny, full of fairies, princesses, and happy endings. Now, as I am pulled into adulthood, I am constantly looking for a way to reintroduce that magic into my life. I started with a story, and from there, I pulled a collection of important scenes of which I have sculpted out of polymer clay and resin.

This story begins with the protagonist, a girl named Aurie.

Her everyday life is tainted by depression and anxiety, and she wonders if she'll ever be enchanted with life again the way she was when she was a kid. One day, she finds a magical orb set within a tree, and when she touches it, she is transported to another realm. Aurie travels throughout eight of these magical realms and meets the Mothers, beings of wisdom and compassion, who care for their people and environment. They teach Aurie how to care for nature, how to cope with her problems, and realize her true potential.

In the end, Aurie discovers her true self, defeats her enemy, and help brings balance to all Existence. At its core, this story is about healing. It's about learning that *you are more than your sadness*, that *there are always people who care*, and that *getting better is possible*.

Art4 Hali Pollard (Dan Gunderson)  
[hpollard@stetson.edu](mailto:hpollard@stetson.edu)

### Layers

I've always admired small details of everyday life and those around me: the length of someone's eyelashes, the depth of the folds in my bed, or fragments of light reflecting in one's eyes. Not only the way they look, but also the way those details make me feel: safe, infatuated, nervous, or fearful.

Inspired by these everyday moments and feelings, I challenge myself to capture and recreate them. Painting is like a game to me; by using realistic and hyper-realistic methods of painting, I invite my viewers into these personal and vulnerable scenes. I elevated these compositions through projections of light, color, emphasizing multiple layers. I created a loosely written narrative that will seem almost familiar to the viewer, but will undoubtedly leave questions unanswered.

Though “Love” may be the most obvious layer of my work, I challenge the viewer to not overlook the more ambiguous layers that come with. I challenge them to try and understand the scenes through their own perspectives. As a communication major as well, I’m interested how we interact with those around us and how these interactions influence who we are and what we become. Essentially, we’re made from different feelings, experiences, and projections inflicted by others, and through this body of work, I aim to capture and explore these ideas, layer by layer.

Art6 Sandra Stephan (Dan Gunderson)  
[sstephan@stetson.edu](mailto:sstephan@stetson.edu)

### **(A)ligned**

I am interested in the relationship between the human body and the way it gives shape to clothing. For this reason, I create using textiles. The body naturally provides structure to all clothes, and I seek to enhance this relationship through embroidering, dying, and draping fabric. Clothing is usually viewed as something fashionable or practical, however, it is rarely seen solely as an artistic body of work. I want to challenge that assumption by mending the worlds of art and fashion to create pieces that function aesthetically as both a sculpture and a garment. Clothes intrigue me because of how they interact with the human body. Structurally a garment appears very different when hung or laying on the ground compared to when it has the support of someone’s shoulders and hips. I tend to follow two separate processes when I create my work. The first consists of designing patterns necessary to construct an item of

clothing. I then dye/paint on the fabric and sew the pattern pieces together to build the structure of a garment. I add unconventional, but natural materials (like hair) to make the viewer question the wearability of the piece and also to play with textures. The second method consists of finding material not intended for making clothes and use it to form a structured garment. Both of these creative processes show that a piece does not need to be on a canvas to be considered art, and that clothing has a purpose beyond simply being fashionable or practical. This collection highlights the interplay between clothing and its wearer to show how art and fashion can function symbiotically.

Art2 Olivia Valiante (Dan Gunderson)  
[ovaliant@stetson.edu](mailto:ovaliant@stetson.edu)

### **Inside the Box**

The goal of my work is to provide a visual representation of the invisible movement and energy around us. The push and pull of air flow, radio waves, infrared light, sound waves, a person’s aura, temperature, and endless unnamed forces are moving and flowing around us, through us, and from us. I use layered patterns to represent these energies and how they interact with each other and with us. My pieces only ever show one figure’s face at a time, but other figure’s hands. The hands are representative of our actions, interactions, and our humanity itself. Some patterns will flow underneath the figure, unbothered. Others emanate from the figure itself, a product of our presence. Some patterns stop at the edge, halted by human existence. I mainly use wood and acrylic paint to create my works. I appreciate the sturdiness of a solid support and the flexibility of acrylic paint. My details are loose and expressive despite their line-oriented nature to provide balance in my work. I create three-dimensional wooden boxes that spin, as well as flat wall pieces to achieve my goal of representing something in a unique and appealing way.

## *Music*

M-6 **Joey Dies, Trombone** (Dr. David Schmidt)  
[jdies@stetson.edu](mailto:jdies@stetson.edu)

Kristie Born, Piano

Wotda...  
Maria Toledo and Kevin Bennet, percussion  
Choral, Cadence et Fugato Henri Dutilleux (1916-2013)  
Colors  
    Yellow  
    Red  
    Blue  
    Green

Daniel Aldag (1965)

Bert Appermont (1973)

M-2 **Hannah Faircloth, Clarinet** (Dr. Lynn Musco)  
[hfaircloth@stetson.edu](mailto:hfaircloth@stetson.edu)

Heather Lang, Piano/Collaborator

Fantasie for Clarinet and Piano  
Tricolor Capers  
    Portent  
    Sway  
    Bop  
Three Preludes  
Allegro ben ritmato e deciso  
Andante con moto e poco rubato  
Agitato

Philippe Gaubert (1879-1941)  
Eric Mandat (b. 1957)

George Gershwin (1898-1937) – arr. Jay Gach

M-4 **Kat Kirby-Kopczynski, Soprano** (Dr. Karen Coker-Merritt)  
[akirbykopczynski@stetson.edu](mailto:akirbykopczynski@stetson.edu)

Hannah Sun, Piano

From Sechs Lieder, Op. 68 “Brentano Lieder”  
    An die Nacht  
    Amor  
“Caro nome”  
    From Rigoletto

Richard Strauss (1864-1949)

Giuseppe Verdi (1813-1901)

From Quatre chansons de jeunesse  
Pantomime  
Clair de Lune  
Pierrot  
Apparition

Claude Debussy (1862-1918)

Will There Really Be a Morning?

Ricky Ian Gordon

M-8 **Gabriella Martinez, violin** (Dr. Routa Kroumovitch-Gomez)  
[gmartinez@stetson.edu](mailto:gmartinez@stetson.edu)

Edit Palmer, piano

Violin Sonata No.1 Fugue in G minor, BWV 1001  
Allegretto  
Violin concerto No.5 in A minor, Op. 37  
Allegro non troppo

Johann Sebastian Bach (1685-1750)

Henri Vieuxtemps (1820-1881)

M-5 **Vanessa Moya, mezzo-soprano** (Jane Christeson)  
[vmoya@stetson.edu](mailto:vmoya@stetson.edu)

Hannah Sun, piano

I am in Need of Music  
Miranda Graham, soprano

Lori Laitman (b. 1955)

Lieder eines fahrenden Gesellen  
Ging' heut Morgen  
Ich hab' ein glühend Messer

Gustav Mahler (1860-1911)

Opus 26\*  
Есть много звуковъ, No. 1  
Все отнялъ у меня, No. 2  
Вчера мы встрѣтились, No. 13

Sergei Rachmaninoff (1873-1943)

*\*Translation*

1. There are many sounds
2. All was taken from me
3. Yesterday we met

La Favorita  
O mio Fernando

Gaetano Donizetti (1797-1848)

M-3 **Freddie Powell, Flute** (Dr. Tammara Phillips)  
[fpowell@stetson.edu](mailto:fpowell@stetson.edu)

Hannah Sun, piano  
Hypnosis  
Elysian Fields  
Sonata No. 3

Ian Clarke (b. 1964)  
Robert Maggio (b. 1964)  
Phillippe Gaubert (1879-1941)

M-7 **Deante Samples, Tenor** (Dr. Craig Maddox)  
[dsamples@stetson.edu](mailto:dsamples@stetson.edu)

Dr. Kristie Born, piano

Per la Gloria D'adorarvi –  
Mörike Lieder  
An Den Schaf  
Neue Liebe  
In Der Frühe  
L'enamouree  
Nuit D'etoiles  
When I Have Sung My Songs  
The Tender Land  
Martins Aria "I'm Getting' Tired of Travelin' Through

Giovanni Boncini (1650-174)  
Hugo Wolf (1860-1903)

Reynaldo Hahn (1874-1947)  
Claude Debussy (1862-1918)  
Ernest Charles (1895-1984)  
Aaron Copland (1900-1990)

M-1 **Maria Toledo, Percussion** (Dan Johnson)  
[mtoledo@stetson.edu](mailto:mtoledo@stetson.edu)

Chatterbox  
Arabesque I  
arr. by Naoko Takada  
March  
Walkin' Down Coolidge  
Blues for Gilbert  
Eight on 3 and Nine on 2

Chad Floyd (b. 1977)  
Claude Debussy (1862-1918)

Joe Tompkins  
Joe Tompkins  
Mark Glentworth  
Robert Marino

## Papers

F8 Joseph Alamo, Turner Grass, Justin Snyder and  
Christopher Willard (SOBA)  
[jalamo@stetson.edu](mailto:jalamo@stetson.edu) , [tgrass@stetson.edu](mailto:tgrass@stetson.edu) ,  
[jsnyder2@stetson.edu](mailto:jsnyder2@stetson.edu) , [cwilliard@stetson.edu](mailto:cwilliard@stetson.edu)

### Family Business 1

Art10 Jennifer Algieri (Dr. Matthew Roberts)  
[jpalgier@stetson.edu](mailto:jpalgier@stetson.edu)

## Fact Arr Fiction

"Fact Arr Fiction" is an interactive kiosk game which seeks to entertain users while educating them on the true history of pirates. Based on my research for my History senior capstone, this project combines history with interactivity to create an enticing educational experience, allowing users to touch elements of the kiosk in order to play a guessing game based on pirate lore. This kiosk is a combination of mediums and methods, including MaxPatch code, Premiere Pro videos featuring voice and song audio, Touchboard technology, and interactive ink. Each segment, from

code to videos to the kiosk itself, was created separately until the end when they were combined within the confines of the kiosk to create the perfect blend of a history lesson and an arcade game.

B13 Jennifer Algieri (Dr. Kimberly Reiter)

[jpalgier@stetson.edu](mailto:jpalgier@stetson.edu)

**'Piracy Is Not A Victimless Crime': How Media Tropes Changed Pirates from Criminals to Role Models**

This study examines the pirate tropes that various film companies, but particularly Disney, used to reshape and rebrand the figure of pirates to become something children could safely watch and emulate. This paper begins with the older origins of piracy in film, looking at what was the first big hit in pirate films, Captain Blood. The film is an outlier for the paper, a demonstration of the early incarnations of piracy as something not meant for child audiences, but is also used as to showcase the choice elements Disney, among others, chose to reclaim on their quest towards child-friendliness and what they chose to leave behind. The rest of the paper focuses specifically on the following films, starting with Treasure Island where the principle changes in cinema through tropes begin. That evolution takes place across numerous films before landing at the portrayal of pirates in Disney's Pirates of the Caribbean which shows the successful evolution of pirates soundly away from historical accuracy and towards family-friendly entertainment.

G5 Jessica Algieri (Dr. Emily Mieras)

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**Forgotten Founders and Fictional Facts: The Unique Story of Elizabeth Stetson Countess of Santa Eulalia\***

Elizabeth Stetson: Farm girl, benefactor, heiress, mother, Countess, double widow, world traveler. The story of Elizabeth Stetson is both vital to the story of Stetson University and a fascinating look into the life

of a woman who transcended classes in the late 1800's early 1900's. Elizabeth Shindler was born a farm girl in Indiana, and through skill and luck she became the wife of millionaire hat manufacturer John B. Stetson and both went on to become benefactors for DeLand Academy, which eventually was renamed to John B. Stetson University in his honor. On his passing Elizabeth became a millionaire with not only a massive trust fund, but also the largest stock holdings in the Stetson Hat Company. She took over as benefactor of Stetson University, and made her own mark. She then went on to remarry a Portuguese Count, making her Countess du Santa Eulalia, and became the center of a swirl of controversy as her new husband was accused of hiring others to woo the wealthy Heiress, and Elizabeth herself was accused of attempting a coup to take the throne of Portugal. She was a desperately private woman who, despite that, lived a remarkable life where she rose up from nothing to become one of the wealthiest independent women of the twentieth century. She gave so much which is now forgotten by the University she helped to grow. Stetson University remembers Henry DeLand and John B. Stetson as its founders, but neglects Elizabeth Stetson's contributions through its infant years, and in doing so has lost her story. Researching her story to compile a cohesive and accurate biography of her complex life proved complicated, but not impossible; and her story is now able to be preserved and shared.  
\*Funded in part by a 2018 SURE Grant

C15 Estefany Arenas (Dr. William Nylen)

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**More Than Just Symbolic: The Multidimensional Legacies of Women in Power in Latin America**

In this analysis I argue that there exists nothing in the literature that provides a concrete theoretical framework for how to assess the complexities of a female presidential legacy. Through an assessment of the presidencies of Dilma Rousseff, former president of Brazil, and Michelle Bachelet, former president of Chile, I apply my own conceptual framework to illustrate how a legacy is a multidimensional phenomenon composed of an overall Symbolic



Legacy and three additional types of legacies— Front-Page of News, Backlash, and Beneficiary-Specific. I am able to conclude that having a woman as president does matter and their “legacy” is not just a single one that is determined by a specific achievement or failure. Instead, female presidents leave multiple legacies that are contingent on what the media prioritizes, who is asking, and the perspective by which a person chooses to explore the legacies of women in executive level positions.

E5 Abigail Ault (Dr. Robert Askew)  
[aault@stetson.edu](mailto:aault@stetson.edu)

#### **Mediating Effects of Prosocial Motivation on the Relationship Between Interpersonal Trust and Interpersonal Trustworthiness**

It is well established in the literature that a strong positive correlation exists between trust and trustworthiness. Prosocial behavior has also been found to be positively correlated with each construct, although the nature of the relationship between the three variables is unclear. This study used multiple linear regression to replicate the correlations found previously in the literature and Sobel’s test to explore the potential mediating effects of prosocial motivation on the relationship between trust and trustworthiness. Sobel’s test was further used to examine the potential mediating effects separately of pleasure and pressure based prosocial motivation. The regression found a significant relationship between trust and trustworthiness in the predicted direction ( $\beta=0.513$ ,  $SE=0.539$ ,  $p<0.001$ ), as well one between prosocial motivation and trustworthiness ( $\beta=0.304$ ,  $SE=0.095$ ,  $p=0.006$ ). The first Sobel’s test found no statically significant mediating effect of prosocial motivation on the relationship between trust and trustworthiness (estimate=1.169,  $p=0.242$ ). While further Sobel’s tests found a different effect size in the mediating effects of pleasure based prosocial motivation (estimate=1.579,  $p=0.144$ ) and pressure based prosocial motivation (estimate=0.225,  $p=0.822$ ), neither result was significant and therefore do not lend support to the hypothesis that the mediating effect varies by motivation.

S1 Kyra Lindsay Aviles (Dr. Heather Evans-Anderson)  
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#### **Decreased Cell Viability in FGFR-inhibited Injured Adult *Ciona intestinalis* Hearts**

*Ciona intestinalis*, a tunicate, serves as a simple model for heart development in vertebrates. Tunicates and vertebrates have similar ancestry that allows the identification of conserved genes. The tunicate genome is morphologically and molecularly less complex than that of vertebrates. This simplicity allows highly conserved genes, such as Fibroblast Growth Factor (FGF), to be isolated for analysis. In the developing *Ciona*, FGF signaling is necessary for heart progenitor specification. In the adult *Ciona*, the role of FGF remains ambiguous but may have a role in response to injury. FGF expression levels in the *Ciona* heart are lowest in the adult stage; however, this increases when the adult is injured. This expression of FGF in the adult could be evidence of cardiomyocyte regeneration. Thus, we hypothesize that FGF has a role in cardiomyocyte specification in heart regeneration. Here, we compared cell viability between injured adult hearts that express FGF and injured adult hearts that lack FGF activity. We inhibited FGF activity by inhibiting the receptor for FGF (FGFR). Cell viability was determined using colorimetric assays and measured via absorbance. At 48 hours post-injury, FGFR-inhibited hearts produced low absorbance readings indicating low cell viability compared to hearts that have FGF activity. However, there was no significant difference in cell viability between treatment groups earlier at 24 hours post-injury. These findings suggest that hearts expressing FGF are more efficient at regeneration; however, the duration of new myocyte formation is unknown.

F9 Gretchen Belkey, Anne Steinhauer, and Kayla Yodzis (SOBA)  
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#### **Family Business 2**

D13 Riley Bibaud and Gaelin McLeod (Dr. Benjamin Tanner)

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### **Organic Sediments within Florida Springs as Potential Drivers of Algal Blooms**

Nitrate concentrations from agricultural runoff have been cited as the driving source of algal blooms in both freshwater and marine ecosystems, but recent studies are showing that many factors control algal abundance. There have been extensive studies completed on spring hydrology, however, there has been little to no research done on the effects of organic matter as the driver of algal growth. Fifteen springs in total (8 from the St. Johns River, 5 from the Suwannee River and 2 from the Santa Fe River) were assessed for carbon density, loss on ignition, sediment age, algal coverage and dissolved oxygen. It was hypothesized that the St. Johns River springs would have a higher organic content in the sediments than the Suwannee and Santa Fe based on anecdotal evidence. St. Johns River springs did not differ from the Suwannee and the Santa Fe River springs in organic matter content. There was also no statistically significant difference amongst surface carbon, dissolved oxygen, algal coverage, and macrophyte coverage between the various spring runs. While there was no significant difference between the varying river springs, the data suggests highly variable conditions spanning multiple spring runs regarding carbon and bulk density, loss on ignition, and dissolved oxygen. Therefore, general management strategies addressing organic sediments, nutrient inputs, and algae, should focus upon the individual spring run and surrounding areas, rather than implementing standard regulations upon all springs.

C7 Nathan Bodger (Dr. Christopher Bell)

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### **Chinese Actions in Tibet since 1994: A Denial of Justice**

One of the most significant shortcomings of international law, and the worst denials of justice, to take place in the last three decades, has been the ongoing failure of the international community to recognize the actions perpetrated by the People's

Republic of China (PRC) against the Tibetan people as genocide. The unwillingness of the international community to decry Chinese action as genocide and to punish it accordingly is primarily due to the fact that the list of crimes currently recognized as "genocide" is prohibitively narrow and does not formally include the crimes which constitute so-called "cultural genocide." The first part of this paper argues that, although they are not currently recognized on the same level as crimes of physical genocide, crimes of cultural genocide have the same end goal as crimes of physical genocide. This end goal is the erasing of a specific and culturally unified group of people from the face of the Earth, and thus, should be equally punished. The second part of this paper will argue that the Chinese action in Tibet from the Third National Forum on Work in Tibet, which took place 1994, up to the present day, constitute cultural genocide and should be combated swiftly by the international community to avoid complicity. This argument will be supported by two specific veins of Chinese activity. First are the attempts of the PRC to undermine and remove Tibetan Buddhism from Tibet through the manipulation and destruction of the Dali Lama and the Sangha. Second is the suppression of the Tibetan Language through the disadvantaging of those who speak Tibetan, and the population replacement tactic being used on the Tibetan plateau.

B7 Nathan Bodger (Dr. Christopher Bell)

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### **Women's Rights, Buddhism, and Law in Thailand\***

Buddhism is often conceptualized in the West as being a religion that espouses sound moral attitudes compatible with the modern notion of human rights. It would seem intuitive that states whose social norms respect human rights should be upholders of human rights law. However, the nation of Thailand, which is perhaps the best contemporary example of a truly Buddhist state, does not have an excellent human rights record and has particularly struggled to enact and enforce women's rights. This paper aims to explore the connection between women's rights, the law, and Buddhism. It will examine the possibility of a

causal link between the widespread adherence to Theravada Buddhism and the obstacles to instituting and enforcing women's rights law in Thailand. This study begins with an examination of the history and current state of women's rights in Thailand. It then part summarizes the literature concerning gender inequality within early Buddhism and modern Thai Buddhism. The final section contains a three-part analysis of the research question. Part one examines the possibility that Buddhism is responsible for the state of women's rights in Thai law and culture. Part two considers whether elements of culture separate from Buddhism have contributed to gender inequality within Thai law. Finally, part three reverses the causality and investigates the possibility that gender inequality within Thai law has facilitated the perpetuation of discrimination against women within Thai Buddhism and culture.

\*Funded in part by a 2018 SURE Grant

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"Spotify"

E11 Erynn Brisson (Dr. Terence Farrell)

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#### **Aggregation Behavior of *Sistrurus miliarius* in Response to Olfactory Cues**

The goal of this research was to better understand the aggregative behavior of neonatal *Sistrurus miliarius* prior to their first ecdysis. Our research focused on predatory defense as a reason for neonate to neonate attraction during this period. Our hypothesis was that if aggregation truly was a defense mechanism against predation, then such behavior would be more prevalent in neonatal pairs placed in a predator scented enclosure than those placed in a control. We tested this hypotheses through the presentation of olfactory cues to the randomly paired conspecific offspring of gravid females captured at two sites in Florida during the summer of 2018. These olfactory cues consisted of either a predator scent provided by *Coluber constrictor*, or a control scent provided by no scent

introduction. Each neonatal pair was placed in an experimental cage with one of these olfactory cues for a period of 2.5 hours. During this time a photograph was taken every thirty minutes and their posture, and position was recorded. Separation distance was later determined using Image J software. We tested for a significant difference in mean separation distance, posture, and mean % sheltered using paired sample T-tests and found that there was no difference between the two groups. We also tested for an association between neonate proximity in shelters and treatment type using a Fischer Exact Test and received insignificant results as well. As these findings did not support our hypothesis regarding aggregation as a means to avoid predation, it did provide evidence to bolster alternative hypotheses such as aggregation as a means to prevent water loss.

E13 Hunter Brown (Dr. Melissa Gibbs)

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#### **Daily Patterns in Utilization of Algal Beds by Fish in Hypoxic Spring Waters**

A student study utilizing snorkel surveys found a correlation between peak dissolved oxygen content in algal beds and daily fish movement of mosquito fish and mollies into these algal beds. Based on those findings we performed a similar experiment looking at the vertical movement of fish in the water column throughout the day. Our hypothesis mirrored the findings of the previous study, predicting we would see a peak in benthic fish population during the peak in benthic dissolved oxygen levels. We utilized newer technologies with GoPro cameras for videos to record fish counts at the surface and benthos. We also used YSI and HOBO probes were used to record dissolved oxygen (DO) and ambient light in the water. Contrary to our expectations, we found that fish presence on the benthos peaked around 1pm while the benthic DO peak occurred around 10am. Our hypothesis was not supported, as there was no statistically significant relationship between fish at the benthos and DO levels. There was also no correlation found between fish location at the benthos or surface, meaning that they were at the

differing locations for a reason. Although we could not demonstrate the role of DO in getting fish to the benthos, this experiment allowed us to develop an effective method for further experimentation in the daily movements of fish between the surface and the benthos.

C16 Colette Cacciola (Dr. Kimberly Reiter)

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### **The Politics at Play in the Creation of the Museum of the Bible\***

When the Museum of the Bible (MotB) opened in Washington, D.C. in 2017, criticisms had already been raised about its development and premise. The museum's mission statement reads, "We exist to invite all people to engage with the Bible. We invite Biblical exploration through museum exhibits and scholarly pursuits," but its link to Hobby Lobby complicates interpretation of this seemingly clear-cut goal. Following review of museum studies literature, writing and analysis of similar American museums, and media coverage of the controversy surrounding the MotB, I conducted research on-site at the museum, interviewing the lead registrar and head curator as well as touring each exhibit, which clarified the MotB's distinctiveness and remaining political and religious issues to address. The museum's place within the American milieu remains ambivalent given its age, but the prominence of its location in conjunction with the available literature allows for analysis into its current impact on American culture, religion, and politics.

\*Funded in part by a 2018 SURE Grant

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### ***Ilex vomitoria* extract induces proliferation in human non-malignant lung fibroblast cells.**

Various types of cancer have been known to kill roughly 3.5 million people annually around the world. To this day, most treatment methods like chemotherapy and synthetic drugs can be very toxic and have multiple side effects. Another alternative to these synthetic drugs are polyphenolic plants

because they possess anticancer properties from having cytotoxic podophyllotoxin, taxane, alkaloid, and flavonoid compounds. *Ilex vomitoria*, also known as Yaupon Holly, has been known to contain alkaloids and flavonoids and thus should have anticancer properties. In this study, we used Yaupon Holly new leaf plant extract to investigate its cytotoxic effects on human normal fibroblast cells in a dose-dependent manner. This is imperative because if it is cytotoxic to human normal fibroblast cells, it cannot be used as a potential cancer therapy. I hypothesized that there would be no fibroblast cells undergoing apoptosis when treated with Yaupon Holly new leaf plant extract. To support this claim, we quantified the cell density and cell viability utilizing a CellTiter Glo Assay. The results from this assay showed that the Yaupon Holly new leaf plant extract increased cell viability and increased proliferation after 48 and 72 hours at 0.25µL, 0.75µL and 1.25µL volumes. My hypothesis was partially supported, because the Yaupon Holly new leaf extract did not induce apoptosis in normal fibroblasts; however, it had a significant impact in increasing cell proliferation in the fibroblast cells. Thus, further research should be conducted in order to find out the cellular mechanism and proteins responsible for causing the fibroblast cells to have increased cell proliferation and viability.

G9 Cody Carrigan (Dr. Christopher de Bodisco)

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### **Examining the Economic Factors of Suicide in the United States**

With suicide rates rising in the United States over the past three decades in spite of continued economic growth, this paper examines various economic factors which may play a role in driving suicide rates. The primary purpose of this research is to locate economic factors which may be affecting suicide rates in order to provide insight into possible policy options. A cross-sectional model is used in this paper to analyze suicide rates across U.S. counties.

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### **A Game Theory Approach to Modeling Climate Politics**

Climate change is one of the most prominent issues facing our world today. The choices that our governments and corporations make with respect to the environment over the next decade will decide the future of humanity and life on this planet. A 2018 study by the IPCC (Intergovernmental Panel on Climate Change) estimated that the planet will reach 1.5 degrees Celsius above pre-industrial levels by 2030. The deadline for dealing with this problem is fast approaching. Despite the importance of this issue, many international agreements, such as the Paris Accords, have not been very effective, and most governments around the world still struggle with instituting progressive environmental policy. While there are political and social causes for this lack of action, global economics plays a large part in the decisions of these world powers. While there are many economic factors that play into these relationships, the prisoner's dilemma from game theory serves as an apt tool for modeling this relationship. This project intends to use a payoff-based model, derived from the prisoner's dilemma game, to make conclusions about the current state of cooperation over the issue of climate change by leading global powers. This game will take place within the context of global climate politics, where cooperation constitutes helping institute policy solutions. This analysis should help give insight to the consequences of instituting certain policy, as well as the result of different levels of cooperation.

D2 Jershawn Casimir (Dr. Terence Farrell)

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### **The effects of aggregation in neonatal pygmy rattlesnakes (*Sistrurus miliarius*) on evaporative water loss.**

Water loss is a key physiological process in the maintenance of homeostasis and aggregation in neonatal pygmy rattlesnakes has been thought to have an inhibitory effect on water loss. We tested this hypothesis by isolating individual neonates or pairs of neonates in metabolic chambers. Water loss was measured by taking the difference between the

initial mass of the air scrubbers that were connected to the metabolic chambers and their final masses after trials. Multiple variables that may have an effect on water loss were tested, such as area occupied by the snakes within the chambers, ecdysis status, and presence of an individual or a pair. There was no significant difference in water loss between smaller and larger areas of exposed skin, pre and post-ecdysis snakes, or the number of snakes within the chamber. Water loss was found to not be affected by neither ecdysis status nor aggregation of neonates within the metabolic chambers.

B1 Evan Cavallaro (Dr. Kimberly Reiter)

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### **Gender Rebellion, Class and the Thrill of Subversion in Women's Civil War Espionage**

The American Civil War, one of the bloodiest conflicts in American history, altered the course of a new and divided nation and solidified itself as one of the darkest episodes in American history. As a nation turned on itself over disagreements surrounding state rights and the legality of slavery, men of all ages enlisted in their respective armies and took up arms against those they believed were fighting for un-American ideals. As sons and fathers turned on each other, the women, both northern and southern, were left behind to deal with the effects of a disintegrating nation. However, not all the women left behind were keen on sitting idly by as the union fell apart. Tired of being restricted by strict societal and gender roles of the time, many women took matters into their own hands in the hopes that their efforts would help their respective armies claim victory over the other. This research paper and presentation focuses on the many women who turned to espionage and the opportunities they created for women across America at the end of the Civil War. By following four prominent spies with very different backgrounds, two from the North and two from the South, we are able to see a glimpse into the experiences that these women were going through as well as what their lives

consisted of after the war. During a time where women were expected to remain at home, these women showed incredible courage by defying society's expectations and participating in the war effort. Follow along their journey to find out whether or not the efforts put forth by these women created new opportunities for others after the union was whole once again.

A7 Lily Charbonneau (Dr. Kimberly Reiter)

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### **Paracelsus: The Alchemist Physician**

Paracelsus, full name Philippus Aureolus Theophrastus Bombastus von Hohenheim, was a 16th-century physician and alchemist and is perhaps most well-known as the father of toxicology. Paracelsus both during his lifetime and in the present day remains a controversial figure. By using his background in the alchemical arts, Paracelsus was one of the first physicians to advocate for medical practitioners to have a background in chemistry before practicing in the medical field. This paper seeks to shed light on this mysterious figure in history and to present Paracelsus as a man of reason and innovation within the medical field as well as discuss his background and discoveries within the field of chemistry and how this knowledge colored his medical career.

A18 Porter Crapps (Dr. Philip Lucas)

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### **The Camino de Santiago: Meaning and Motivations in the Medieval and Post-Modern Periods\***

The Camino de Santiago de Compostela is one of the oldest pilgrimage routes in European Christianity, with roots in the 10th century C.E. Its multiple tributaries stretch across Germany, France, and Portugal winding their way toward the Cathedral at Santiago de Compostela in Spain, where the remains of the Apostle James are believed to be buried. This paper explores the significant differences and similarities in pilgrim intentions and experiences in two periods: the Medieval period (1000-1200 C.E.,

and the Postmodern period (1980 to today). Data collection consisted of interviews and surveys completed by pilgrims I met on the Camino and a review of secondary research on both periods. A few of the Postmodern trends observed include, among others: a rise in identification with spirituality rather than religion, a desire for challenge and exercise, and a wish to experience authentic culture. These trends I contend are the result of the Postmodern condition, particularly the relativization of truth claims, hyper-individualism, and Postmodernity's domination of simulation. Despite significant differences observed between pilgrim motivations in these two eras, a thread of inner contemplation, self-examination, and personal renewal ties pilgrims from these two eras firmly together.

\*Funded in part by a 2018 SURE Grant

F2 Jamieson Craske (SOBA)

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### **An Athletes Journey towards a Sales Career**

A long time multi-sport athlete, and one of the Captains of the Stetson Football team, Jamieson's journey towards a career in professional sales is a compelling example of how sometimes one finds a purpose down an unlikely path. Skills developed in pursuit of one focal area, can through deliberate practice, create career capital far greater than the value of the original goal.

D5 Garrett Crotty (Dr. Terence Farrell)

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### **Effects of Gestation and Temperature on Ventilation Rates in Pygmy Rattlesnakes (*Sistrurus miliarius*)**

Due to the importance of respiratory function in the survival of all snake species, we investigated to further our understanding of the physiology of the snake respiratory system by seeing how ventilation rate of the Pygmy rattlesnake (*Sistrurus miliarius*) changed in response to gestation and temperature. Predicting that both pregnancy and increased ambient temperature would cause increases in the

ventilation rate, we ran two sets of trials: a set of summer trials comparing the ventilation rates of pregnant and non-pregnant *S. miliarius* and a set of winter trials comparing the ventilation rates of *S. miliarius* at three different temperatures (17, 25, and 32°C). Both sets of trials were accomplished by placing the snakes in respirometry chambers attached to a CO2 gas analyzer and recording the number of breaths taken in each session; using a t-test to interpret the summer data and single factor ANOVA to interpret the winter data. We found that pregnancy resulted in increased *S. miliarius* ventilation rates (p-value = .0001) but that temperature had no apparent effect on ventilation. The increased ventilation rates in pregnant snakes may have been caused by increased energy needs and decreased tidal volume, while the lack of change in ventilation at higher temperatures may have been a result of increased tidal volume.

B14 Cassidy Denslow (Dr. Tara Schuwerk)  
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#### **Is Reducing Plastic the Real Agenda? A Strategic Analysis of Starbucks Communication to Consumers on the Last Plastic Straw Movement**

This rhetorical study examined Starbucks' communication with consumers concerning a new lid for their cups, for evidence of greenwashing in relation to "The Last PlasticStraw" movement. Analyzing Starbucks' social media posts and press releases with the lens of strategic frames indicates that the company does market themselves as environmentally sustainable, while still causing harm to the environment with their new product. Both the content and the rhetorical structure of Starbucks' messages enforce company self-promotion and product promotion, instead of discussing the environmental movement. By promoting their new lid with greenwashing techniques, Starbucks engages in rhetoric seemingly designed to improve their public image, with considerably less focus on saving the planet from plastic.

B5 Lily Desenberg ( Krista Franco)

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#### **The Person That Doesn't Exist: An Authentic Portrayal of a Woman I've Come to Know**

Exceptional acting is demonstrated through believable reacting. In order to discover and reveal the motivation of a specific character, an actor must explore and evolve through a creative process. Each individual artist has a unique process. There is groundwork that all artists must undergo, but how they discover, research and apply can vary. My creative process involves a union between intense introspective investigation, and an examination of historic events, many of which are not easily recognized as American History, but whose violent repercussions trickled down to the lower-middle class population. Specifically, with NAFTA being signed into law, the influx of exploitation of immigrant workers caused havoc in my characters life. This presentation allows for the viewer to acquire a perspective of the research, discoveries, and inquiries conducted to awaken a character that does not exist off the page. The artistic goal is to allow the viewer or reader to gain insight on how research of real life events, and other data specific to Lynn Nottage's, *Sweat*, allowed for a believable performance and portrayal of the character, Tracey.

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#### **A New Business Approach for the Cancer Action Network of the American Cancer Society**

As American Cancer Society's (ACS) Cancer Action Network (CAN) struggles to be relevant in their efforts to recruit Millennials in their various lobbying and advocacy activities, a new business model is required. After speaking with the CEO of ACS CAN, we developed a campaign designed to tap into the rapidly growing social media platforms.

G8 Charlotte Earnhart (Dr. Tara Schuwerk)



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### **Collegiate Level Communication about Mental Health Services to Student Athletes**

This is a qualitative study conducted to explore mental health services communication from universities towards their student athletes. Literature on sports identity, the culture and environment of college athletics, and the stigma behind mental health, all helped inform this project. Twelve one-on-one, semi-structured interviews were conducted with student athletes from various universities in the U.S. The interviews were transcribed and analyzed using a modified grounded theory approach. The data provided a list of effective communication strategies that universities are using to bring awareness to their mental health services. The data also provided a list of suggested strategies student athletes believe would work better. What I learned from this project is that there is room for improvement in the health service communication organizations across the board. I also learned that the majority of participants found it beneficial for coaches to know what is going on with their athletes off the field but the majority of athletes didn't have a good relationship with their coach posing the idea that the communication from the university has even more importance. My goal for this project is to raise student athletes' awareness of the mental health services, providing them with an overall better athletic experience when it comes to their mental health.

C11 Hanna Elmasry (Dr. James Fox)

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### **Robot Liability**

This paper discusses tort liability for artificial intelligence. It compares and contrasts social, autonomous robots from the more common types of artificial intelligence, like autonomous vehicles. In particular, this paper discusses the application of traditional negligence, products liability, and no-fault schemes in regard to both autonomous vehicles and social, autonomous robots. After pointing out the complications with applying these types of schemes to social, autonomous robots, the paper discusses

two alternatives for regulating social robots: treating them as slaves or treating them similar to animals under the legal system. The implications of each of those options are discussed.

F12 Brooke Elsbree, Aziza Hodae and Nathaniel Smith (SOBA)

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### **Zillow Group and the Home Project: A CSR Initiative**

As representatives of Top Hat Consulting, we presented to the leadership of Zillow Group in an effort to improve their established initiatives addressing housing insecurities in the United States: 1) community partnerships, 2) neighborhood ambassadors; and 3) in-kind services and product contributions. After studying the U.S. real estate market and the issue of homelessness and housing insecurity, we proposed a plan to leverage Zillow's three main initiatives to create the greatest community impact.

A12 Becky Fellingham (Dr. Lori Snook)

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### **Contextualizing Art: Tom Stoppard's *Artist Descending a Staircase***

When the world discusses the theater hits of the twenty-first century, such as *Hamilton: An American Musical*, they are going to question what the culture was like to have prompted such unique and dimensional plays. To fully understand a work of art, one must first understand the context in which it was written. *Artist Descending a Staircase*, by Tom Stoppard, is a complex play which touches on World War I, the 1960s, and the 1970s. Understanding these periods and the roles the characters play within them aids in the best understanding of Stoppard's work. Additionally, through researching the connection *Artist Descending a Staircase*, a relatively unknown radio play, had on Stoppard's later popular work *Travesties* highlights how Stoppard viewed writing in the early part of his career, and how the Stoppardian style of writing came to be. Through the contextualizing of *Artist Descending a Staircase*, we



can see that *Artist* was not simply a “dry-run” for his more popular play, *Travesties*, but a significant piece of theater of its own right, one that emphasizes the Stoppardian writing style and absurdist theater.

B15 Becky Fellingham (Dr. Grady Ballenger)

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### ***Hamilton* as Public History**

Since the musical *Hamilton* opened off Broadway in 2014, historians have taken the time to write countless articles about their favorite or least favorite parts. Some are huge fans of the musical, others are quick to point out its flaws, and some still argue that despite its problematic history, *Hamilton* can still objectively be good. Understanding the uses of creative license chosen by Lin Manuel Miranda and his cocreators allow for audiences to make sense of a complicated history. Was Alexander Hamilton an immigrant? Did he really have a romantic relationship with his sister-in-law, Angelica Schuyler? These questions, and the reason Miranda chooses to represent the character ahistorically, play into a large space of the playwrights’ own motives behind creating the musical. Viewing *Hamilton* as history is admittedly problematic, but perhaps understanding it as public history is the best way to fully comprehend the outstanding reach of this musical turned phenomenon. Historian and counsel for the show, Ron Chernow, argues that the show can be viewed as “history for grown-ups” in the ways in which it does not deify the founders, but includes their shortcomings alongside their successes.<sup>1</sup> This is notable, as most works delineated as Founder’s Chic follow a way that celebrates everything a founder does, and casts all their actions in a positive light. In this deviation from the subgenre so contested by historians, *Hamilton* should indeed be viewed as more historically accurate than some of the other popular works of Founders Chic. Contextualizing *Hamilton* is increasingly important due to the phenomenon inspired by the musical. Two million people have seen the show on Broadway alone, add the thousands that have seen the touring companies, those who listen exclusively through the CDs, and

those who have seen the numerous television specials...it is a reach that no historian could even dream of. Therefore, understanding the effects *Hamilton* in regards to Public History highlights how history is understood by Americans today.

G3 Molly Flanagan (Dr. Michael Eskenazi and Dr. Danielle Lindner)

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### **The Effect of Informative Contexts on the Recall of the Orthographic Representations of Words**

When readers are exposed to novel words during reading, we incidentally create an orthographic representation (spelling memory) of the word and then connect the phonological (sound) and semantic (meaning) representations in order to create one single interconnected lexical representation (word memory) (Perfetti, 2007). The purpose of the current study was to determine if informative contexts help participants remember the correct spelling of a word after it has been interfered with. Participants were first exposed to 36 novel words (e.g. blaff) in informative contexts. They then saw that word either as the correct spelling (blaff) or an incorrect spelling (blaph) to damage the orthographic representation. Finally, participants heard an informative or uninformative sentence with the novel word it in and were asked to spell the word correctly. When participants were presented with all correct information, they were more likely to remember the correct spelling when getting an informative sentence at recall. However, when participants were presented with an incorrect spelling, only high-skill spellers were benefitted from the informative sentence at recall. Low-skill spellers were not able to recall the correct spelling even when presented with an informative sentence. The data indicate that high-skill spellers have stronger and more interconnected lexical representations.

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### **JSEM Topic**

F17 Bradshaw Fuller (SOBA)

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**"Etsy"**

F1 Dillon Galloway (SOBA)

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### **Leveraging Social Selling Techniques in a Student Job Search**

Often described as "strategic listening" - social selling represents a series of tactics designed to identify potential customers based on the buying signals discerned via their online presence. While used by successful sales people to identify prospects, these same techniques can also be leveraged by job seekers to identify and engage with potential employers. This presentation will highlight both the optimizations that Dillon made to his own on-line presence, and a number of the techniques he used to engage, and ultimately interview with more than two dozen technology companies over a period from May – November 2018 prior to accepting a position with Oracle.

C6 Shannon Geyer (Dr. William Nylen)

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### **Genocide Denial and Why it Occurs at the State Level**

My senior research project started off with an interest in the denial of the Armenian Genocide. As the granddaughter of ancestors who fled religious persecution that was taking place in the Ottoman Empire during World War One, I wanted to explore why perpetrators sometimes accept their role in genocide, while others deny. This research is important I believe simply because genocide denial keeps genocide alive. I ventured slightly away from my original focus, as my senior research took me in the direction of a most similar system (MSS) design that explored the case studies of German acceptance of the Holocaust, and Japanese denial of the Nanking Massacre. Using these two countries, I created, in a qualitative methodology, a model to explain genocide acceptance, and a separate one to explain genocide

denial. At the end of the construction of this model I tested their validity by incorporating Turkey's denial of the Armenian Genocide to see if it fit the parameters of the model I created to explain the factors surrounding genocide denial at the state level. I made the argument that a variety of structural factors supplemented by cultural variation will ultimately lead one to accept their history with genocide or deny its existence altogether.

E12 Hannah Gibilisco, Michael Laubenberg<sup>1</sup>, Valerii Spiridonov<sup>1</sup>, Jacob Belga<sup>2</sup> Jason O. Hallstrom<sup>1</sup>, Paul R. Peluso<sup>1</sup> (Dr. Joshua Eckroth)

<sup>1</sup>Florida Atlantic University, I-SENSE

<sup>2</sup>University of Central Florida, Computer Science

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### **A Multi-Modal Approach to Sensing Human Emotion**

This paper explores the computational neuroscience foundations necessary to achieve reliable detection and classification of human emotions. We are witnessing a revolution in biometric sensing; its applications include biometric-based security, personalized healthcare, social skills education, business intelligence, monitoring of doctor-patient dynamics, and sports performance training—among numerous others. The primary driving force of this research has been the emergence of wireless and/or contact-free technology for sensing human physiology, motion, and posture. We posit an analogous solution to real-time emotion detection enabled by advancements in the sensing of human expression. Our approach combines sensing of speech characteristics, natural language processing, facial landmark monitoring, and machine learning. This paper presents early results into a multi-modal sensing system for detecting and classifying human emotion. Our findings show classification accuracy across seven fundamental emotions: anger, fear, disgust, happiness, sadness, surprise, and contempt.

E4 William Gillett (Dr. Lynn Kee)

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### **Analyzing Cryptobiosis in Tardigrades: *Hypsibius dujardini* and *Dactylobiotus dispar***

This study examined the potential effect of low dose UV irradiation on two species of tardigrades: *Hypsibius dujardini*, a model organism, and *Dactylobiotus dispar*. Prior research focused on death, but not the effect of a lower UV dose on tardigrades. A total of 136 tardigrades were irradiated in one of two UV conditions, 254nm or 302nm. Additionally, the effect of allowing greater radiation dissipation was tested. Tardigrades were found to enter a probable cryptobiosis state which was monitored and compared between the two species for 48 hours. The results indicated that the two species overall had quite similar reactions to radiation. A significant difference did occur with *H. dujardini* more likely to enter cryptobiosis than *D. dispar*. Changing the environmental conditions to allow for dissipation of radiation was found to have no effect. There was no significant difference between time spent in cryptobiosis. There was no significant difference between likelihood to leave cryptobiosis within 48 hours. Future research could greater analyze this phenomenon and compare it to lethal dose levels.

G4 Peter Greubel, Sara Gerken, Seth Witt, and Stephanie Hanson (Dr. Jason Evans)

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#### **Survival of The Fittest**

This Honors Tutorial course aims to prepare students for various survival situations in the wilderness with a focus on sustainable and safe practices that can be employed in a variety of situations. We will become both “book smart” and “street smart” in regard to living in the wild while also having fun. The skills taught in this course will help promote an individual’s wellbeing if found in a perilous situation in an unfamiliar, wild habitat. This can be greatly beneficial, as these skills can be utilized in expected and unexpected circumstances alike. This course will tackle topics that, while unusual in the classroom, are important life skills. There is a focus on an involvement and appreciation for the outdoors, as well as handling unexpected situations in nature safely. We explore subjects ranging from shelter to water purification, through a combination of teaching

methods including lectures, discussions, and field days.

E6 Dante Guarino (Dr. Ryan McCleary)

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#### **Proteomic analysis of the venom of the Egyptian cobra, *Naja haje***

Snake bites are a world-wide epidemic. The WHO (World Health Organization) estimates that there are at least 421,000 envenomings and 20,000 deaths per year due to snake bites (Kasturiratne, et al., 2008). The highest incidences of mortality and morbidity occur in Southern Asia and sub-Saharan Africa (Kasturiratne, et al., 2008). Antivenom is serum from animals that have been immunized with venom (Malasit et al., 1986). Antivenom does not exist for every type of snake venom in the world, so characterization of venom is extremely important if we are to help treat future snake bites. As snake venoms are known to show major variability, we compared our study to what has been found previously and attempted to discover novel proteins and toxins that may be present in the venom. These possible confirmations and discoveries could help in the future creation of an antivenom used for cobra bite treatment. *Naja haje* cobra venom was extracted at the Reptile Discovery Center in DeLand, FL. Pooled, freeze-dried venom was sent to the University of Florida’s Mass Spectrometry Research and Education Center. The venom was digested using trypsin and subsequently subjected to liquid chromatography tandem mass spectrometry (LC-MS/MS). Peptide matches to protein sequences were examined through bioinformatic analysis. Matched protein sequences were categorized by protein family using UniProt, NCBI, and Clustal Omega on-line databases. Once the alignments were completed, identified peptides were mapped onto the proteins. The overall estimated protein composition of the venom was calculated and indicated a total of 64 unique proteins detected in the pooled venom sample. They belong to 11 protein families based on structural similarities with previously-published sequences. What was found in our proteome analysis was similar to what was found in a previous study of Moroccan *Naja haje*

(Malih et al., 2014). In the future, *Naja haje* (Egyptian cobra) venom should be assessed for antivenom and medicinal purposes now that the venom has been characterized.

Art11 Taylor Hamilton (Dr. Matthew Roberts)

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### **Personal Patterns**

Personal Patterns are designs inspired by how women identify themselves, then digitally printed onto fabric and sewn into skirts. For this project, I interviewed four different types of women: a woman of color, a girlboss, a female athlete and a transwoman. I took inspiration from each interview -- favorite color, hobbies and interests, biggest accomplishment, etc. -- and incorporated them into each design. The designs are then digitally printed and sewn into skirts to focus on expression through fashion. We use the clothes we wear to express ourselves, and I wanted to make these patterns to represent the interests and personality of each woman.

C14 Brandon-John Hare (Dr. Kimberly Reiter)

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### **The Elephants in the Room: The Politics of a Small-Town Museum**

This paper examines how small-town politics affect the curation and creation of museums in the American South. Museums are fundamental to the preservation of local history, but small-town players may have an adverse effect on the ability for these institutions to operate as intended. This paper uses the Burgess Building, DeLand's African American hospital museum as a case study as to how politics affect museum creation. The Conrad family one of DeLand's major philanthropic families, donated the funds to resuscitate the decaying former hospital. Through this donation, Hawtense Conrad stipulated the perpetual display of her collection of over one hundred glass elephants in the museum. Her seemingly innocuous display of elephants detracts from the meaning and purpose of this hospital museum, and calls into question older issues of

patronage. The West Volusia Historical Society attempted to minimize the elephant display but due to contractual obligations they have to display the elephant regardless of how they feel. Many saw no need to change the terms. Members of the Historical Society who had been friends with Hawtense saw no issue with the elephants and wanted to display them to preserve her memory and her extensive philanthropy in DeLand. The Conrad family was such an integral part of Volusia County history that civil servants often steer away from confrontation when topics of changing things they have done. The overarching purpose of this paper was to speak on the problematic nature of an all-white staff attempting to preserve African American history. Across the United States, African American museums struggle with keeping their doors open and do what they need to keep the public interested. This paper looks to answer the question, how does one juxtapose the racial of a small towns history with the old school politicking?

A14 Sarah Hargest (Krista Franco)

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### **Busted!: Research and Creation Processes of a Props Designer**

In theatre, props may seem like a given. What would it be like to see an actor go through the motions without the use of any objects that motivate their action? Properties Designers are charged with collecting authentic objects for performance to communicate thematic choices put forth by the director and other designers, and in doing so, must be skilled in every needed fabrication method. The artistic choices made in property design are exercised through materials used and how they're manipulated. This presentation explores the processes of the Properties Designer when designing a show. Through *Anna In the Tropics*, performed at Stetson in the fall of 2018, discovery of authentically articulated props helped tell a believable story. In addition, I chose to demonstrate props fabrication skills through the design and creation of a trick prop bust with a few of the most commonly used prop materials.

D12 Samantha Harris (Dr. Kevin Riggs)

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### **The Limitations Behind a Laser Range Finder**

This project uncovered inconsistencies in mapping an environment when the laser range finder's linear and angular velocity was increased, measuring the distance of an object when the laser beam was split, measuring the distance of an object closer than 10 cm and measuring the acceleration due to gravity of an air glider sliding down an air track. The mappings of the environment became inaccurate when rotating the device faster than .02 rev/s or translating faster than 5 cm/minute. When the beam was split between two objects with different distances, an intermediate value was produced. Measuring distances closer than 10 cm resulted in distances larger than the actual distance because the laser pulse returns in a smaller amount of time than the timer is able to measure. Lastly, when measuring the acceleration due to gravity, the most accurate values of  $g$  were found when the air track was at an 8-11 degree slope.

F15 Bilal Hashmi and Levesque Zechariah (SOBA)

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### **"Lennar"**

Is the next housing crisis almost here? Will it be as bad as the one in 2008?

Historically, the housing market has had a leading relationship with the U.S. economy. The two presenters argue their short and long positions over the largest homebuilder of the country, Lennar Corporation. While one argues for the stock to be a bear case in the late housing cycle, the other insists the undervaluation as a buying opportunity.

E3 Mallory Hein (Dr. Terence Farrell)

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### **Prey behavior in the relationship between Ribbon Snakes (*Thamnophis sauritus*) and the Southern Leopard Frog (*Lithobates sphenoccephalus*)**

This observational study looks at the behavior of the Southern Leopard Frog (*Lithobates sphenoccephalus*)

when approached by the Ribbon Snakes (*Thamnophis sauritus*). Many factors need to be considered when a prey is deciding whether or not to flee. Aspects of their health like hunger, injury, or prevalence of danger are at the forefront, and can be thought of as a threshold. Once the danger outweighs the benefits of staying put, prey will flee. The southern leopard frog, when approached, either flees or bows by placing the tip of their head down to the ground. The reason for this bowing motion is unknown, but I hypothesized that the proportion of size between the two organisms would play a role. To test this, videos of natural mud holes where both ribbon snakes and leopard frogs congregate were taken. Cameras were set up and left for a few hours. Screenshots of the video were taken as a snake approached a frog, and then noted whether or not the frog bowed or fled after the video was resumed. Image J was then used to measure the head length of the snake and the back length of the frog. A proportion of these two measurements were taken, and placed into either the category of bowing or fleeing. A t-test was run on the data.

A11 Cooper Hendrix (Krista Franco)

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### **Theater: Who Cares?**

Theater is the realization of fiction. Its historical accuracy notwithstanding, a play is simply watching things play out on a stage, mostly not real events. So the important question is who cares, and why should they? The answer comes from the experience gained by seeing a play. The answer comes from an audience understanding the gravity of a person being portrayed and learning from him. This could be comedically, dramatically, musically, or (as the art of play writing goes further into post-modernity) any number of adverbs. The goal of an actor is to make that connection between those events being shown on stage and the audience. In my research for the role of Jason in the play *Sweat*, I attempted to find out what makes people care about a character and the struggles he or she goes through. I have researched and gone through the process of creating that person that is seen on stage. My discoveries

include the necessity of critical script reading, and the importance of working and taking criticism from fellow actors. These important part of the creative process of the art of acting are what create a character that can be understood fully by the audience.

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**“And they’re black, just as I dreamt they were”:**

**Reading Whiteness in Jean Genet’s *The Blacks***

Authored by French playwright Jean Genet in 1957, *The Blacks: a clown show (or Les Nègres, clownerie)* professes to speak about the black experience, *despite* a white authorship and *to spite* a white audience who would claim to define the black individual. This paper is interested in the doubleness of racial positioning. Black actors play black characters who regurgitate racial stereotypes, and black actors wear white masks to caricaturize whiteness. Genet glories in the meta-theatrical conventions of worlds-within-worlds, masks, and exaggerated ritualized exchanges because these are capable of provoking white spectators who had hoped, instead, to be entertained. In Genet’s clown show, blacks embody the audience’s fear and fantasies—not to reinforce white expectations of blackness, but to invalidate these claims and expose the white audience member’s complicity in the construction of these myths.

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**Mouth Sound**

This is a reading of three original experimental poems, entitled “We feeling,” “how to spell the N word,” and “Mouth (Forsakes) Sound.” I will explore the relationship between form and content; the use of form to interrogate race, gender, and the stiff language of categorization; and the role of performance in the making of meaning. My presentation will ask the following: Is the page alone an efficient/a sufficient vehicle for poetic communication? How can a print poem build levels

of meaning through performance? Can one circumvent the limitations of language while using language as one’s medium? I will discuss the bodies of knowledge to which these poems are indebted, connecting these knowledge reserves to the content of the work.

A6 Bailey Homa (Dr. Michael McFarland)  
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**A “Fairy Tale” Wedding: How Media Turns a Reality into Fantasy**

History was made on July 29, 1981 when Lady Diana Spencer became Her Royal Highness, Princess Diana of Wales through her marriage to Prince Charles. This ‘fairy tale’ event drew in media from all over the world. Fairy tales are a world in which fantastic characters and beings exist. Storybooks use exaggerated language and diction to describe these characters. In this study, a fantasy theme analysis is conducted of the media’s coverage of the wedding of Princess Diana and Prince Charles. It looks into how the media influenced the public’s collective thought that this wedding was a fairy tale. This thesis claims that through the dramatization of the setting, characters, and actions in the media’s coverage of the royal wedding, a cohesive group thought was created in the public. The syntax and diction used in the media’s articles guide the audience into viewing the wedding as a fairy tale. The lines between reality and fantasy become merged for the audience due to the coverage of the royal wedding.

E10 Megan Horwitz (Dr. Jordan Ruybal )  
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**Variations in Abundance for Mosquito Species in Rural and Urban Miami-Dade County**

In order to determine both spatial and temporal patterns of mosquito abundance in rural and urban

South Florida, three species were observed: *Aedes albopictus*, *Aedes aegypti*, and *Culex quinquefasciatus*. We hypothesized that mosquito abundance would increase in summer months and that the overall abundance of these mosquitoes would be greater in urban areas than rural areas. By contacting Miami-Dade Vector Control, data was received for mosquito abundances in various locations of Miami-Dade County throughout 2017 and analyzed for differences in abundance between rural and urban sites. Our hypothesis was supported by this data. There was a significantly larger abundance of mosquitoes in urban areas than rural areas in 2017. It was also found that, generally, mosquito abundance was highest in summer months for *Aedes aegypti* and rural *Aedes albopictus*. This study can contribute to monitoring mosquito populations as a means of vector control in order to prevent the spread of mosquito-borne diseases.

F6 Kailee Howe  
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**Mish Mash Bowl**

C2 Jackie Johnson (Dr. Kimberly Reiter)  
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### **The Little Rock Nine and its Impact on Education in the 1960's**

The enrollment of nine African-American students at an all-white Little Rock Central High School on September 23, 1957 sparked immediate controversy. They were initially denied entrance into the school, where they were met at the doors with violent and racist threats by a crowd who did not want to accept the change that was in play. Eventually with intervention from President Eisenhower the Little Rock Nine would finally be able to enter the school and their courage would make a lasting difference in education and affect the State of Arkansas in ways that have been understudied in terms of politics, economics, and race relations. Through literature and document review, archival analysis, and the use of multiple other primary sources this paper will argue that the actions of the Little Rock Nine

(henceforth LR9) fit into a much larger struggle over race relations, politics and economics within Arkansas that were a direct cause from this event. This study will also analyze the undermined role of activism performed by white women who created a group called the Women's Emergency Committee. The LR9 are known as heroes for their spotlight in history but are often forgotten as individuals beyond the Little Rock Integration Crisis itself. These nine African American students showed courage and perseverance by not backing down in the face of the horrors of racism, hatred and violence directed at them because of their skin color during the 1950's and 60s. Many historians who have studied the LR9 and those who have studied the event have failed to analyze the larger implications that the LR9 had within the community of Little Rock, Arkansas during this period. This Desegregation effort was met with violent resistance in the school, political resistance, and mass resistance by political leaders, teachers and parents. All of these efforts of resistance had the ultimate goal of forcing political leaders to abandon the idea of desegregation as a whole and eventually lead to the school temporally closing down. Important aspects like the ones mentioned are not talked about enough in relation to this momentous event in history and are often talked about as a back story when discussing the legacy of the LR9. This paper's main goal is to bring into the light these understudied components of this events because they play a key role in the analyzing the legacy of the event itself.

C4 Brontë Joseph (Krista Franco)  
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### **Who am I and Who Am I Supposed to be?: Constructing Racial and Social Roles through the Costume Design for Sweat**

Feminist philosopher Simone de Beauvoir theorized that gender was performative, stating how a person displays their gender identity is based on their experiences with other persons of that gender and the social conventions surrounding the chosen gender identity. For my senior project, I expounded upon de Beauvoir's theory by exploring the performative aspects of race and socioeconomic



status. Through costume design, I was able to communicate the commonplace struggles of blue-collar trade workers in eastern Pennsylvania in Lynn Nottage's Pulitzer-prize winning play, *Sweat*, presented at Second Stage Theatre. For the performers, these were roles unlike themselves, and through my research, I developed looks that shaped their identities. In a world where appearance matters, this project explains my dramaturgical analysis, costume design process, as well as the collaborative efforts that gave life to this November 2018 production.

C9 Lana Kaczmarek (Dr. Tara Schuwerk)

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### ***Switched at Birth: A Media's Representation on Disabilities***

In the past, media has portrayed the Deaf community as a group of weak and vulnerable individuals who are dependent on their hearing savior to survive in the mainstreamed society. ABC Family questioned this representation of the Deaf society and refuted this stereotype and prejudice against the Deaf community through the storylines of the series, *Switched at Birth*. This project analyzed how the television show, *Switched at Birth* represents the Deaf community through the interactions between the Deaf and hearing characters to the viewing audience. Other prior research was examined including information on Deaf perception, media influence on society, Deaf culture in media, and *Switched at Birth* and Deaf culture. The project was conducted through a rhetorical criticism consistent of a textual analysis and Kenneth Burke's, "Literature as Equipment for Living." The analysis was also examined through rhetorical proofs including logos, ethos, pathos, and kairos to view how *Switched at Birth* represented Deaf culture. The study was analyzed through a select range of episodes over the five seasons that included Deaf culture and ignorance against the Deaf community. The analysis helped readers understand how this show represented Deaf culture through the Deaf and hearing interactions. A conclusion was drawn as to summarize how *Switched*

*at Birth* represented the Deaf community through the interactions of hearing and Deaf characters.

Art12 Jordan King (Dr. Dengke Chen)

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### ***Immunity: Videogames as an Educational Tool***

When most people think of video games, entertainment is what comes to mind. However, video games can be utilized effectively in a variety of other industries, such as military, advertising, and education. With funding provided from SURE and FIEA, I designed an educational video game called *Immunity* during the summer of 2018. Within the game, one plays as a white blood cell exploring the human body while collecting molecules and destroying pathogens along the way. Each of *Immunity's* three levels provide a unique gameplay experience, as well as show a different part of the human body as progression is made through the life cycle of a white blood cell. My goal for the project was to provide a small demonstration of multiple entertaining, classic gameplay styles, while also incorporating an educational experience. Through *Immunity*, one can learn about the human body while also having fun. Video games can be more than simply entertainment. They can also be an effective educational tool.

A17 Kaitlyn Kocsis (Dr. Michael McFarland)

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### ***Balancing the Best of the World: National Geographic Traveler's Rhetorical Presentation of Culture and Its Ideological Significance***

Since 1984, the National Geographic Society has published eight issues per year of *National Geographic Traveler* magazine. At the end of each year, the final issue is centered around a "Best of the World" section. The content of this section highlights destinations and splits them into categories, such as Best for Culture and Best for Nature. The rhetorical content within each of these divisions is composed of one long-form profile piece, five to seven shorter excerpts, and a showcase of travel photography. The focus of this research project is to analyze and



explain the rhetorical presentation of the destinations featured in the December 2018/January 2019 issue of *National Geographic Traveler*. In revealing the attitudes, criticisms, and values presented by the magazine's rhetoric, an ideological pattern of what constitutes a "best of the world" worthy destination is revealed. This ideology gives insight into *National Geographic Traveler's* rhetorical attitudes toward culture. It is the mission of all content produced by the National Geographic Society to assist in shaping their "ultimate vision: a planet in balance." The goal of this study is to analyze the presented rhetorical ideology and explain how that ideology supports and/or contradicts this mission.

F3 Erica Lee and Bryndelyn Mcneary  
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#### **CHEGG: Online Learning or Online Cheating**

During the time of digitalization, the process of education has been aided by the introduction of online instructional resources. While there is benefit provided by the new tools, an ethical dilemma is at play with the capability for academic dishonesty. With over two million subscribers, Chegg is in the center of the controversy as some may view it as a platform to enable easier cheating. A debate ensues as Lee and McNeary cross examine one another's arguments to determine if Chegg's substantial growth outweighs its potential liability and harm as an investment.

E9 Alexander Levin (Dr. Michael King)  
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#### **The relationship between quinine, Fos-IR among rNST subdivisions, and aversive behavior in rats**

Behavioral science has been attempting to explain gustatory behaviors through neuroscience. Recent evidence suggests oro-motor reflex pathways that relay through the nucleus of the solitary tract (NST), in rats (King, 2007). The rostral NST (rNST) was determined to link sensory information from the facial and glossopharyngeal cranial nerves with projections to oro-motor nuclei and the hypoglossal nerve through the rostral central and lateral subdivisions. Immunohistochemical staining of fos

protein revealed topographically distinct subdivisions in the rNST through Fos-IR. Because of the importance of the rNST in oro-motor behavior, I hypothesized that each tastant would elicit distinguishable Fos expression within the central and lateral subdivisions of the rostral nucleus of the solitary tract. Additionally, I postulated that an increase in Fos-IR would relate to an increase in ingestive behaviors. Fos-IR was found to increase in response to quinine along select subdivisions of the rNST, dependent on location relative to each cranial nerve terminal field. This data supported rNST aptitude for distinguishing bitter versus sweet stimuli; yet the research failed to support my hypothesis of individual tastant encoding. Moreover, an increase in aversive behavior was associated with increased Fos in the rostral central subdivision of the facial nerve innervation.

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#### **Berkshire Hathaway**

Berkshire Hathaway is the world's fifth largest company and is ran by histories best investor, Warren Buffett. The \$500 billion conglomerate owns many companies ranging from GEICO to Duracell. The company has \$100 billion in cash and is looking to purchase another company when the time presents itself. In terms of management Berkshire is the exception, the company has perhaps one of the most decentralized management styles. The only requirement for subsidiaries is they must sent excess cash flows to HQ and that is it.

D11 Zhana Lopez (Dr. Lynn Kee and Dr. Heather Evans- Anderson)  
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#### **The effects of environmental and solution temperature on the development of *Ciona intestinalis* with and without dechoriation**

*Ciona intestinalis*, commonly known as a sea squirt, has increasingly become a popular model organism for genetics, evolutionary, and developmental biology. It is easily manipulated in labs due to its

small body size and structure and its short developmental time period. At the embryonic stage they are very sensitive and manipulations performed directly after fertilization affect the organisms' overall development. In this study, we analyzed the effect of environmental temperature and solution temperature before and after dechoriation of the embryos. Dechoriation uses a chemical solution to remove the protective layer that naturally surrounds the embryos that help them float. We conducted fertilizations and left the normal embryos to develop in two different environmental temperatures. Following, we conducted a dechoriation process of the embryos in two different solution temperatures and left them to develop. This research acts to expand current knowledge of optimal temperatures for development and performing techniques used in lab for further research experiments on *Ciona intestinalis*.

B10 Liz Lorenzo (Dr. Christopher De Bodisco)  
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### **The Economics of Equity Crowdfunding**

Traditionally, the financing of early-stage creative projects and ventures is typically geographically localized since these types of funding decisions are usually based on personal relationships and due diligence requiring face-to-face interactions in response to high levels of risk, uncertainty, and information asymmetry. However, with the recent rise of crowdfunding - raising capital from many people through an online platform - which offers little opportunity for careful due diligence and involves not only friends and family but also many strangers from near and far, is concerning to many. In my paper I highlight the extent to which economic theory, in particular transaction costs, reputation, and market design, can explain the rise of non-equity crowdfunding.

A3 Kayla MacPhee (Dr. Katya Kudryavtseva)  
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### **The Ethical Issues Concerning the Conservation and Public Display of Artworks.**

All works of art deteriorate over time due to their own material composition. The environment surrounding the works also has a big impact on their rate of deterioration. Museum professionals focus much of their time and policies on caring for and preserving artifacts. In an ideal environment, at temperatures between 55-65° Fahrenheit and in the dark, a work could last forever. However that's not practical for real world applications. Public display is important for the value, influence, and history of a work, as well as our education and understanding of cultures and people throughout history. Unfortunately, every time a work goes on display it deteriorates just a little bit further. Sometime this can be unnoticeable, but over time the damage can be significant. This paper will focus on the conflicts between public display and conservation within Stetson University through the Hand Art Center museum and the Energy and Water Conservation Policy on campus.

G13 Monica L. Manresa (Dr. Daniele Lindner)  
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### **Are You Anxious Because Big Brother is Watching or is Big Brother Watching Because You're Anxious? Anxiety as a Predictor of Conspiracy Endorsement**

The idea that there are often forces at work behind major world events that the general population is not aware of has become a staple in popular culture discussion. Present research indicates that there are a wide variety of traits that are correlated with high conspiracy theory endorsement and that conspiracy beliefs often form a monological belief system, a self-sustaining worldview created through a network of mutually supportive beliefs. This does however not necessitate that the various theories believed are compatible with each other. The aim of this research is to study the correlation of anxiety and conspiracy belief endorsement while checking for correlation with political affiliation and religiosity. Participants (N = 82) recruited from the Stetson University Psychology Department were asked to complete questionnaires measuring both general conspiracy endorsement and specific conspiracy theory endorsement; a measure general anxiety was also

given. No significant correlation was found between anxiety and specific conspiracy belief ( $r = .001$ ,  $p = .99$ ) or general conspiracy endorsement ( $r = .17$ ,  $p = .13$ ). There was also no significant relationship between religiosity and general conspiracy endorsement ( $r = -.008$ ,  $p = .95$ ) or religiosity and specific conspiracy endorsement ( $r = .15$ ,  $p = .17$ ). As conspiracy theories take a more prominent place in popular culture, it is important to study how anxiety in an individual correlates with something that appears to be just another facet of media but can be so much more.

G6 Peyton Marshall (Dr. James Fox)

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### **The Proof is in the Pudding: Hiding Mathematics in the American Law School Curriculum**

Law students are notorious for saying: “if I were good at math, I would have gone to medical school.”

However, research suggests that a connection exists between mathematic ability and legal decision making. Using these findings, law school curriculum needs to be adapted to better prepare students for the legal profession by emphasizing logic and proofs, by drawing a connection between mathematics and the law, and by reshaping the idea of what it means to be “math-minded.” Three proposals will be provided to introduce a math-based curriculum in law school.

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### **Sherlock Holmes vs. The Supernatural: The Hound of the Baskervilles and Sir Arthur Conan Doyle’s Fascination with the Paranormal**

The purpose of this paper is to show readers the origins of Sherlock Holmes’ most famous mystery, The Hound of the Baskervilles, and to explore the relationship between science and the paranormal in the nineteenth and early twentieth century. Hound was a significant moment in the legacy of Sherlock Holmes because it was the first Holmes story to feature supernatural elements, and it also brought

Sherlock Holmes back into the public spotlight after being killed off years earlier in “The Final Problem.” This reflects not only Victorian society’s interest in scientific logic through the character of Sherlock Holmes, but also society’s interest in supernatural elements like Spiritualism. Spiritualism is the belief that one could communicate with the afterlife through séances. This is significant because Sir Arthur Conan Doyle, the man who created Sherlock Holmes, was a devoted Spiritualist later in his life. This is not to say that Hound is a Spiritualist work or had Spiritualist messages in it. It is a piece of work that was reflective of what was popular in Victorian society. While Conan Doyle didn’t become a Spiritualist till after the First World War, he was one of many people who believed that the supernatural was worthy of scientific investigation through societies like the Society for Psychical Research (SPR). Conan Doyle would spend years investigating paranormal cases involving spirit photography and séances. However, the Cottingley Fairies incident, as well as his relationship with Henry Houdini would damage his reputation with critics and his fans. It was ironic that the man who created Sherlock Holmes would fall for false pictures of spirits. In the end, Hound is reflective of Victorian society in the nineteenth and early twentieth century as well as featuring what many consider to be Holmes’ most famous mystery on the moors of Dartmoor despite Conan Doyle’s later beliefs in the supernatural.

D10 Chandler Maynes (Dr. Ryan McLeary)

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### **Protein and toxin analysis of Indian cobra (*Naja naja*) venom**

Snake venoms are complex and contain various quantities and types of proteins and peptides that have been identified in several studies. Many snakes do not have complete proteomic analyses done on their venom yet. The Indian cobra (*Naja naja*) is a venomous snake that belongs to the elapid snake family and is among the “Big Four” responsible for majority of snake envenomation cases in Asia. Understanding venom composition is important for producing antivenoms used to aid humans when

encountered with a venomous snake, so we performed a proteomic analysis using the tryptic digest and tandem mass spectrometry technique. From our data, we found 58 unique proteins that belonged to 12 different toxin families. The venom was found to contain numerous three-finger toxins and phospholipases A2 along with a variety of other toxin families. These included cobra venom factors, phosphodiesterases, snake venom metalloproteinases, nerve growth factors, L-amino acid oxidases, Kunitz factors, 5' nucleotidases, cysteine-rich secretory proteins, snake venom serine proteases and acetylcholinesterases. This study helped us to better understand venom proteomes of the Indian cobra (*Naja naja*).

B8 Elijah McCoy (Krista Franco)  
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#### **App-tastic: How can technology improve the stage management process?**

Stage management refers to the organization, decision-making, and guidance of crew members of a production. The purpose of this study is to determine the effectiveness of current stage management practices and see how technology innovate the process. In the evaluation of stage management, I wanted to compare our process to that of another university. The overall goal was to determine if it is possible to teach someone how to stage management without a formalized course in a college setting. The outcomes lead to the development of a mobile application, incorporating the steps of stage management utilizing modern technology. This project focused on, but not limited to my experience in stage managing the production Sweat by Lynn Nottage.

C8 Kenna McFall (Dr. Kimberly Reiter)  
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#### **"Combating left-wing terrorism without quarter": Operation Condor and the U.S. War on Communism**

In 1976, Argentina underwent a governmental collapse and military take-over that lead to the deaths of over 30,000 Argentines. This internal

struggle, aptly named the Dirty War, lasted from 1976-1983 when the military renounced power. While it is conventionally accepted that this was only an internal affair, declassified U.S. State Department records show that the United States crucially intervened before and throughout the Dirty War in the name of ending communism. In this paper I review these US military, CIA, and State Department records as well as international sources such as to study the depth of this involvement and how the U.S. played a key role in the support of the Argentine military junta.

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#### **Applying Transformational Theory to Rhythm in Taiko Drumming**

Transformational theory is the process by which this becomes that. Specifically, I apply algebraic set theory to show how some rhythmic patterns transform to other rhythmic patterns. As a lens for my studies, I focus on rhythmic patterns in music for taiko drum ensembles. The taiko ensemble is non-pitched percussion instruments, therefore narrowing the musical parameters of my research. As opposed to having rhythmic divisions of exclusively 2s or 3s in the music, I show how the music for taiko drums combines the divisions of 2s and 3s into permutations and functions. My analyses of music for the taiko ensemble apply transformation functions to rhythms thus defining how rhythm(this) becomes rhythm(that). In this presentation, I will explore one of my case studies, Kamaitachi by Jordan Tani, demonstrating how different rhythmic patterns return and transform within the piece. At the conclusion of the presentation, I indicate the culmination of all patterns and transformations observed at the end of the piece.

C13 Kaitlyn Miller (Dr. Tara Schuwerk)  
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#### **Rhetorical and Linguistic Analysis of Variations within the Golden Rule**

The Golden Rule is a complex concept compacted into a simple phrase. While often quoted as “Treat others as you would want others to treat you” the countless variations add a new depth to this saying. Traditionally the Golden Rule aligns with religious teachings of ethical interactions. Looking at religious variants within ideologies and verses which embody the Golden Rule allow for unique cultural lens to be applied. The Golden Rule is typically founded in religious practices and applied within interpersonal relations. The ability to break down similar phrases and draw cultural implications allows for a deeper understanding of the Golden Rule. By studying how wording impacts each phrase can highlight distinct differences within key phrases of Buddhism, Christianity, and Hinduism. These unique religions help showcase how the Golden Rule can be a similar and yet completely original thought. The emphasis on diction and vernacular is a rhetorical research method which builds important meanings from implied meanings and internal motives. By identifying and breaking down each phrase it is possible to create a better understanding of the Golden Rule and how it applies to each religious culture and the modern world. Focusing on applying the Golden Rule to communication surrounding bullying, medicine and sports allows for a global and modern approach to creating a new comprehension of an ancient concept.

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**Assessing the potential of a Food Recovery Network Chapter at Stetson University as a viable solution to divert food waste from landfills and increase food security in nearby Spring Hill Community**

The United States, one of the wealthiest countries in the world, is still battling the problem of food insecurity among its citizens. Despite this fact, the United States continues to waste a significant amount of the food it produces for human consumption. The purpose of this research is to determine how effective the method of recovering food is at both diverting food waste away from landfills and reducing food insecurity. This was

determined by implementing a chapter of the Food Recovery Network on Stetson University’s campus and by donating the recovered food to the nearby Spring Hill Community. This study gathers information about the amount of food recovered, uses a SWOT analysis to examine the strengths and weaknesses of the food recovery method, and briefly discusses other potential solutions to this problem. The results demonstrated that food recovery should not be viewed as a sufficient solution for reducing food insecurity due to its unpredictable nature. In addition, while food recovery is successful at diverting food waste away from landfills, other methods should be applied in order to reduce food waste before it even reaches the consumer.

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**How to See Your Dragon: the Medieval English Dragon as a Political and Social Icon**

The question I wanted to answer through my research is why is the medieval English dragon the quintessential image of medieval fantasy? The fact remains that whenever an author wants to evoke the imagery of the medieval era, their stories are not complete without dragons. These dragons that litter the pages of books written by famous authors such as Tolkien, C.S. Lewis, J.K. Rowling, and George R.R. Martin, each author legitimizes the setting of their story taking place in the medieval era, ranging from the 5th-15th century, with one thing...dragons. Whether or not the dragons are friendly or malicious, the image is cemented in the reader's brain because when they envision a dragon terrorizing a village, keeping a damsel in distress, or noble heroes going to slay the mighty creature, they always think about one era in time, the medieval period. I studied both secondary and primary sources that speak of dragons soaring through the skies, hiding submerged in lakes, and hoarding mountains of treasure in caverns and all them share characteristics of the Welsh Red Dragon. Even if the color is different, the attributes are the same, so I traced the lines back to heraldry. I noticed all my sources, both secondary and primary, mention heraldic images of dragons. Heraldry also

reached its peak in the medieval era and is still studied and practiced today. For the Britons, the dragon had special meanings, both good and bad, and they used this creature on all their heraldic imagery. So, I decided to argue that heraldry is the reason why the medieval English dragon is the quintessential image of medieval fantasy; it's because heraldry was seen all over the UK (and Europe) and the dragon icon would have been one of the most prominent.

Mackenzie Murphy (Dr. Kirstin Work)  
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#### **Analyzing United States spring ecosystem health through discharge or persistence (ft<sup>3</sup>/s) over a period of 50-100 years**

Spring ecosystems around the United States provide a unique habitat for plants and animals and also provide humans with many ecosystem services. These habitats are threatened by environmental factors and anthropogenic influences, including use of water from spring aquifer systems. Water discharge is an important measurement of spring health and can help preserve these environments. I hypothesize that springs throughout the United States will show a significant decrease in discharge over the span of the last 50-100 years due to an increase in anthropogenic water use. We collected discharge data from spring systems in the United States to assess the health of these ecosystems over the last 50-100 years. We found statistically significant findings in four of the seven springs we analyzed. Box Canyon Spring, ID provided us with our strongest observation of a decrease in discharge over the time period ( $P=9.66 \times 10^{-34}$ ). Using this information we can provide support for future research and aid in spring system management.

F13 Mackenzie Nalven and Stewart Schmidt (SOBA)  
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**Wendy's and the Fair Food Program: Enhancing Supply Chain Sustainability**

Wendy's has been the object of widespread protests for its refusal to join the Fair Food Program of the

Coalition of Immokalee Workers (CIW), a type of worker-driven social responsibility that protects farm workers, ensuring humane labor conditions and wages. Top Hat Consulting recommends that Wendy's has a meeting with Greg Asbed and members of the CIW to discuss these initiatives, ensure ethical business practices throughout all levels of Wendy's vertical supply chain by joining the Fair Food Program, and pressure the indoor greenhouse farms Wendy's purchases their tomatoes from to join the Fair Food Program as Participating Growers.

F10 Mackenzie Nalven and Nathaniel Smith (SOBA)  
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**Facial Recognition Applications of Artificial Intelligence in Law Enforcement**

In this presentation, we analyze the legal, financial, and ethical ramifications of implementing facial recognition applications of artificial intelligence in law enforcement. We offer recommendations on how to react to the many ethical dilemmas presented by the emergence of AI enhanced technologies.

Art9 Solomon Nehrig (Dr. Charles Underriner)  
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#### **Harmonic Levels**

While the musical score in video games typically garners less artistic attention than the graphics or storytelling, the music nevertheless serves as far more than 'background.' A powerful piece of music can deepen the emotional resonance of a story, or further immerse the player in a fantastical world. It is that power that I reach for in my pieces of music; to create not just a background tune, but an active, contributing part of the greater artistic whole. My love of and interest in video game music comes from a lifetime of replaying tunes that I'd hear in games, and studying the structures behind them. Little did I know this was my first foray into music theory, and I would learn even more about it at Stetson. My project is a demo reel: a video that places my original music alongside footage appropriate to the music's intended medium (in this case, video games). More

than that, however, it is the first time I am producing my own, original compositions. After gathering the games and video clips, and spending weeks at my piano figuring out melodies and motives, I worked with live, sampled, and synthesized instruments to create these pieces of music. Three of my pieces – “Gone Home,” “Ruins,” and “Push Forward” – are stylistically based on game music composers that have inspired me. The other two – “Forlorn” and “New Journey” – are entirely my own style. I invite the listener to join me in exploring the world of each game featured in this reel through melody, harmony, and musical story.

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G11 Amanda Nikhazy (Dr. Tara Schuwerk)

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### **Stress, Feelings, and Communication Norms Among Student-Athletes**

In any group of people there are norms in which are communicated and deemed acceptable behavior. The life of a student-athlete is one that can be seen to have expectations unlike any other attendee at a University. This study looks into these athletes and examine ways in which they are silenced by certain actions that they are allowed to express, feelings that can show and stress that way go on in their lives. I would like to understand why student-athletes act the way they do and what is there driving force. I would be considered credible for this topic because I myself am a student athlete and have prior direct contact with this select group on individuals. I have interviewed and studied student-athletes communication at a small Liberal Arts University. Mental Health can be defined as the psychological well-being and satisfactory adjustment to society and to the ordinary demands of life. Key factors that I looked at while analyzing data was to find out how athletes are dealing with stress and the ways in which they communicate that to those around them. Which individuals are student-athletes drawn to and

communicate there issues with; Which can include but not limited to coaches, teammates, athletic staff and family. This study will have the goal of retrieving information on whether speaking out loud about stress is normal within student athletes, and if it is accepted or spoken of in general.

C10 Tiffany Oms (Dr. Melinda Hall)

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### **An Epistemic Dilemma for Disability Rights: The Social Construction of Disability**

Disability is socially constructed. Discrimination is influenced by ableist stigma, disability stereotypes, fear of human difference, and misunderstandings. Social hierarchies play a detrimental role in encouraging oppression of people with disabilities as a sociological tool of control and isolation. Within many societies, individuals with disabilities are treated as inferior members via testimonial injustice and hermeneutical injustice. Epistemic injustices cause epistemic harm to individuals with and without disabilities in negative ways. People with disabilities may suffer from physiological and psychological harms when their knowledge and beliefs are discredited or ignored by their society. Cultures that do not have the social tools to understand experiences with disability can be harmed when people do not challenge views about disability as something that is naturally ‘bad’. I argue that viewing disability as mere natural bodily dysfunction or deficiency adversely effects the rights of individuals with disabilities to share or gain epistemic knowledge within their community, which can decrease their overall wellbeing. Thus, all members of a society ought to ask ‘why’ questions about disability to weaken the persistent and systematic institutional practices that epistemically silence people with disabilities.

B2 Angela Osmar (Dr. Danielle Lindner)

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### **Academic Help-seeking Behaviors in Black College Women**



The Strong Black Woman (SBW) ideology, prominent among Black Women, is an ideology that emphasizes self-reliance, emotional containment, and perseverance; thus, creating a lack of vulnerability and negative attitudes towards seeking help. This study examines how the SBW ideology affects academic help-seeking in Black college women. Forty-two Black college women ages 18-23 ( $M = 19.84$ ,  $SD = 1.273$ ) were recruited for this study. A slight majority ( $n = 16$ , 38.1%) were first year students. However, participants represented each academic year: 16 first-year (38.1%), 2 second-year (4.76%), 14 third-year (33.3%), and 10 fourth-year (23.81%) students. SBW endorsement scores ranged from 1-5, ( $M = 3.84$ ,  $SD = .073$ ), and higher scores indicated higher endorsement. Academic help-seeking scores ranged from 1-7, ( $M = 4.10$ ,  $SD = .159$ ), and higher scores indicated lower help-seeking behaviors. There was a significant positive correlation between the SBW ideology and academic help-seeking,  $r = .40$ ,  $p < .01$ , meaning that high endorsement of the SBW ideology is related to low academic help-seeking in this sample. This study can help higher education institutions recognize that Black women attending their institution who may endorse the SBW ideology need more institutional support through academic success and counseling services to increase their academic help-seeking behaviors.

\*Recipient, Dean's Fund

A9 James Parker (Dr. Michael McFarland)

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### **An American Force of Familial Violence Against An Esoteric, Fascist Threat: A Thematic and Mythic Interpretation of *Star Wars The Force Awakens***

Popular culture has always provided writers and directors a voice in which to express opinions and norms in line with the status quo. One of the most powerful tools available to filmmakers and fiction writers alike is the Hero and Villain struggle. By personifying and uniting norms and values behind characters that are meant to be identified with and representative of a social paragon, and then demonstrating a heroic figure defeating a villainous

one; fiction stories can depict a series of characteristics and norms as either "good" or "evil" through the rhetorical lenses of heroes and villains. In reverse-engineering the film *Star Wars: The Force Awakens* using Mythic and Thematic criticism methods, the film can be analyzed by asking the questions: "What attributes does the film demonstrate as desirable in heroes?" and "What attributes does the film demonstrate as deplorable in villains?" Through thematic and mythic analysis, the film *Star Wars: The Force Awakens* creates a symbolic struggle between a natural, familial, and diverse American "goodness" that combats an industrialized, authoritarian, conformist specter of "evilness" in the form of such former American initiatives as McCarthyism and former enemies including the Third Reich.

B12 Christopher Pate (Dr. James Fox)

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### **Unconscionability Limiting Compensation: The Effects of Major Record Labels, 360 Record Deals, and Online Streaming Services on the Careers of Young Rap Artists**

Record labels have changed their practices significantly with the rise of the modern internet music community—abandoning their historical practices of signing artists mainly for album revenues and shifting instead to signing artists to "360 Deals." These deals generate revenue for the label by capitalizing on many ancillary rights—rights to online streaming profits, profits from endorsements, profits from social media, and profits from sites such as YouTube—historically held only by the artist. Because of the bargaining process and low royalties these major labels pay their artists for these rights; the artists' compensation is severely limited. Artists who are signed to these deals should have recourse under the contract doctrine of unconscionability. As a solution, courts should find these deals, or portions thereof, unconscionable. Further, artists should either remain unsigned, or sign with artist run labels who have the potential to add value in all areas of these artists' lives.



Art10 Yolanda Patino (Dr. Denke Chen)

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### **Dine 'n Dash\***

Dine 'n Dash is a first person game that features a 3D modeled, cartoon-styled, fantasy world with simple puzzles for the player to explore through Virtual Reality goggles. The game proposes a simple series of obstacles for the player to navigate while progressing through the scenery. My inspiration for this project was fueled by a lifetime interest in video games and a desire to create an interactive experience that could be enjoyed by anyone while still giving enough of a challenge that would require the player to become immersed in their surroundings in order to find solutions that would progress them to the next stage of the game. This project explores the depths of game development from the perspective of a solo developer that specializes with the visual features in combination with Virtual Reality to create a sense of otherworldly immersion.

\*Recipient of a 2018 FIEA Grant

C3 Bianca Perito (Dr. Kimberly Reiter)

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### **The Election of 1896: William Jennings Bryan and American Populism**

In 1896, William Jennings Bryan symbolized a return to the nostalgic past for farmers who had begun to feel overwhelmed with the pressures of industrialization. As the Democratic candidate for the presidential election, Bryan became the voice of farmers and laborers who struggled to regain a sense of identity. America was in a transition during the Gilded Age. It was not just economic conditions that transformed, industrialization brought profound social transformations. A sector of the population became alienated and turned their frustration away from the established elites and bureaucratic order. The Gilded Age brought with it the idea of populism

in America. It can be argued that Bryan needs to be understood as a populist because of his ability to capitalize on the grievances of a forgotten class of individuals. Similar to other populist figures, Bryan used his power to characterize the political elite, the "corrupt" banking industries, and the powerful railroad monopolies as enemies of the people. With this classification, I argue that populism was as relevant in 1896 as it is now. Using a comparative analysis of the 1896 and 2016 presidential elections, I argue that there are similarities between Bryan and Donald Trump and in the movements that shaped them into populist figures.

Jamie Pietrasz (Dr. Rajni Shankar-Brown)

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### **Examining the Social-Emotional Impact of Poverty on Children**

C1 Jasmine Phimon (Dr. Danielle Lindner)

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### **Ethnic Identity Expression in College Students**

Ethnic identity (EI) is defined as the way individuals identify themselves in terms of ethnicity. The goal of this study was to analyze the expression of EI in college students through two methods: a narrative approach using open-ended questions, and a pre-existing survey called the Multigroup Ethnic Identity Measure (MEIM). The sample of this study was a total of 44 participants, with 86.3% (n= 38) being female, 11.35% (n= 5) being male, and 2.3% (n=1) being transgender male. The hypothesis for this study was that the subscales of the MEIM-R would be correlated with one another and that the themes reflected in the subscales would be reflected in the participants' responses to open-ended questions. The MEIM-R had a total of three subscales: Affirmation, Curiosity and Commitment. There was a strong positive correlation between participants' commitment and curiosity regarding ethnic identity ( $r = .75$ ), a strong positive correlation between affirmation and commitment ( $r = .87$ ), and a strong positive correlation between affirmation and curiosity ( $r = .82$ ). This positive relationship is also

reflected in the open-ended responses answered by the participants. Many of the open ended responses reflected a very strong connection with European decent (36.4%, n = 16)), along with a large number of participants identifying with an American ethnicity (15.9%, n = 7). It is also important to note that two people noted having an ethnic identity grounded in their religious faith (n = 2, 4.55%). In response to the open-ended questions, many of the people who reported having strong feelings of pride in their EI found family traditions to be very important to these feelings. A notable theme in regards to the question asking about the commitment of the participant to their EI, was the social stigmas that were placed on certain ethnic groups and the impacts that those stigmas had on the participants. Several participants noted that due to the current social climate, they have made the decision to not associate or identify with an ethnic identity. This study helped to broaden the literature on EI formation and factors related to college students' EI expression.

G12 Brianna Potter (Dr. Christopher de Bodisco)  
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### **The Effects of Mental Illnesses/Disorders within Marriages: A Potential Cause for Divorce**

As early as the eighteenth century, various mental illnesses/disorders have been recognized across the U.S. and medical professionals have made numerous attempts to resolve how to properly treat those with them. Although American communities in the past portrayed abundant negative stigma for those with mental illnesses/disorders, technological and medical innovations within the last two centuries have allowed for more successful and appropriate treatment for such persons. Yet while not as persistent today, however, there still exists a negative stigma towards the mentally ill from the general public, wherein a movement has been growing in recent decades to decrease such stigma. This stigma not only affects the general population with mental illnesses/disorders, but the individuals themselves and their relationships with others also – including their marriages. This paper serves to analyze the impact of mental illnesses/disorders on marriages

and how it contributes to the rise/fall of divorce rates across America. Moreover, if mental illnesses/disorders do contribute to a rise in divorce rates, could it be a part of the negative stigma at work? An OLS regression is used to measure these impacts along with other independent variables (i.e. number of mental healthcare providers) using county-level data for all fifty states in America.

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### **Elevator Pitch**

Art14 Cynde Puckett (Dr. Matthew Roberts)  
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### **Oak: Choosing Survival**

The World Health Organization estimates that 35% of women worldwide have experienced physical or sexual violence. These women often suffer from post-traumatic stress, depression, anxiety, and more. *Oak: Choosing Survival* uses art to raise awareness of this issue and encourages women by letting them know they are not alone. It expresses the possibility of hope and healing. As a survivor of domestic violence, sexual abuse, and sexual assault, I am on a journey of healing. My faith, nature, and art have helped me on this journey. Oak trees are symbolic of strength and resilience – spending time with them helped me find my own and reminds me that there is still beauty in the world. The project began with a few words and photos and grew to include other women's experiences and the history of violence against women. The project utilizes digital art in the form of gallery images, an interactive book of poetry and photos, audio recordings, video, augmented reality, and a tour of oak trees with interactive poetry. For the printing of books, maps, images, signs, and creation of augmented reality experiences, I received funding from Stetson's College of Arts and Sciences and Creative Arts Department.

A16 Kathrine (Katie) Pulling (Krista Franco)

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**19th Century London in 21st Century DeLand;  
Properties Design of *The Importance of Being Earnest***

“A jack of all trades is a master of none, but oftentimes better than a master of one.” Many people become experts at one specific thing, they specialize academically or in their careers and this is what makes them exceptional at their job. As a properties designer, I have a responsibility to expand my reach of knowledge far wider than most specialties within theatre; and that, in short, is my specialty—it’s how I excel and problem solve. Through collaboration with the director and production team, we have created the visual representation of 19th century Victorian London on stage in Stetson’s production of Oscar Wilde’s *The Importance of Being Earnest*. Through extensive research on Victorian period and style, my design creates the atmosphere of each setting through furniture and décor (known as set dressing) and handheld items that the actors will move about the set with (known as hand props). A specific prop intended for this production, the Ottavino Spinet, demonstrates my ability to design and fabricate an authentic item for theatrical purposes.

G7 Alyssa Reed (Dr. Rajni Shankar-Brown)

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**Supporting Diverse Student Learners and Advancing Equity**

B6 Georgia Reed (Dr. Erin Moore)

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**The Effect of Calorie Count Exposure on Body Image\***

Few experimental studies have evaluated the effect of exposure to calorie content on body image. Existing studies generally use milkshakes as the food, which limits generalizability given half of the population cannot consume lactose. This study

explored the idea of the effects that calories can have on body image. A sample of 322 participants were recruited through a mixture of Reddit /r/samplesize and Stetson Announce. Participants were exposed to a food condition (Healthy, Indulgent, or No Exposure) with an assigned calorie count (180, 580, No Calories). They completed a few scales that measured mood, body image, and filled out an eating questionnaire. It was hypothesized that exposure to hypothetical calorie counts will have a negative effect on body image after controlling for mood, healthier foods assigned more calories will affect body image less than unhealthy foods with more calories, and women will have a lower body image score than men. The results of the study and discussion concerning effects on body image due to the exposure of calories will be presented.

\*This research was funded by the Psychology Department and the Dean’s Fund.

G10 Malinda Robinson (Dr. Erin Moore)

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**Comparing Greek and Non-Greek Life College Students’ Sexual Health and Alcohol Use**

The study of whether students involved in Greek Life do, in fact, engage in riskier sexual behavior and consume more alcohol is an important area of study, especially at Stetson University, a school where a notable percentage of students pledge a fraternity or sorority. However, little research has directly compared Greek and non-Greek students within the same study. This quasi-experimental study will report on data gathered from 151 participants involved in Greek Life and 312 participants who are not. Participants completed an anonymous online survey that asked about their sexual behavior and alcohol use as well as their attitudes about sexual health and sexual behavior under the influence of alcohol. Implications of study findings will be discussed.

D9 María Fernanda Sangri Gil (Dr. Robert L. Askew)

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**Behavioral Differences in Neurotypical Adults Attributable to Deficits in Theory of Mind**

Negative psychological and behavioral outcomes for individuals with Schizophrenia and Autism Spectrum Disorder (ASD) have been shown to be attributable to deficits in Theory of Mind (ToM), which is defined as the ability to understand and predict the intent, behaviors, and emotions of others. Several examples include difficulty in mirroring behaviors, the norm of reciprocity, and increased guilt-driven avoidance behaviors. While behavioral consequences have been extensively examined in clinical populations, little research has been carried out in neurotypical adults (NTA). As proxy measures of ToM suitable for neurotypical adults, three dimensions were selected; empathy, egocentrism, and locus of control, because of their high correlation with and conceptual similarity to awareness, relation, and realization in children with ASD. Three hypotheses were tested in 54 psychology college students, with simple linear regressions independently. While no statistically significant effects were observed between egocentrism and the negative norm of reciprocity, nor locus of control and fear of guilt, those who were higher in empathy were more likely to engage in mirroring behaviors ( $\beta = .403$ ,  $p = .002$ ). These findings suggest while ToM deficits may explain some negative behavioral outcomes in those with ASD and Schizophrenia, only empathy was predictive of deficits in NTA college students.

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### **Solar Panel Efficiency**

Our work in this subject pertains to the efficiency of solar panels and the differences in power output of solar tracking and non-tracking panels. To further this we found the maximum power point of our panel and found the ideal resistance to which we could measure power output by the panel. We developed a LabVIEW program to be able to move our solar panel on a step motor and effectively move at incremental degree steps. By using data taken from a third-party data site, Sunearthtools.com, we were able to find the azimuthal and elevation angles of the sun for any given time in Deland. Using this data, we had the program move the solar panel to the perpendicular angle to the sun's rays to achieve the maximum surface area exposure to the sun's energy.

We took two samples for this one being the solar tracking panel and the other being the same panel on an ideally similar day for exposure. The second sample was our static day in which the panel was mounted on a tripod, this was at the day's average azimuthal angle and elevation angle. After comparing the data for both days we were able to conclude to the fact that the tracking panel was much more consistent in the power outputs in comparison to the static panel output.

Art16 Bianca Mari Santimaw (Dr. Dengke Chen)

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### **"Under the Same Moon" - 3D Animation & Virtual Reality**

Art is an experience and I have always had an interest in working in the Animation industry and assisting in the development of artistic experiences through 3D Animation. With this in mind, I created the project Under the Same Moon, to showcase five unique 3D environments, which can be experienced in Virtual Reality. The worlds are set to a post apocalyptic theme focusing on the use of detail, color and structure to represent the differences between utopian and dystopian environmental settings, in this alternate universe I have created. This project gives an insight into the design aspects of 3D Environment Art.

B11 Michaela Sellaro (Dr. Kimberly Reiter)

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### **Projecting President Kennedy: Television and the Public Image of the first Jet-Set Presidential Family**

Few other presidents have been as popularly remembered, continue to enjoy a fairly prominent place in American culture, and have left such indelible marks on the political process as President John F. Kennedy. I seek to answer questions surrounding John F. Kennedy's legacy including: How did his use of television factor in to how compelling Kennedy was and continues to be? And considering the widespread debates in fields such as political science and presidential studies about Kennedy's substance versus his style, why is he still so

substantial? My research suggests that part of Kennedy's enduring appeal stems from the fact that Americans felt connected to him, bonded almost, through television, but they knew so little about him as a person. John Kennedy's ability to play many roles successfully apparently contributes to why he is still so compelling and why he continues to occupy a large space in America's memory. Kennedy was a strong and reliable president, a supportive husband, a loving – albeit busy – father. He was celebrity-politician who somehow still felt down to Earth. While Kennedy was not the first political figure or presidential candidate to utilize the medium, he is one of the most memorable, with some calling him a "Presidential TV star." In life, he was a popular and pleasant president. In death, he was mythologized and martyred. Kennedy the human man was superseded by the Kennedy narrative, and the desire to more deeply connect remains. There continue to be new things to uncover, discuss, and analyze, and at this point it is hard to imagine ever knowing enough or having enough information or access to Kennedy's life; details and aspects continue to be kept from public consumption, further feeding the accessible but aloof aura.

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#### **Voles (*Microtus spp.*) as New Emerging Reservoirs for Lyme Disease (*Borrelia burgdorferi*) in a Northern Illinois Prairie Ecosystem**

Lyme disease is a zoonotic disease caused by the bacteria *Borrelia burgdorferi* and is transmitted via ticks. The primary reservoir of *Borrelia burgdorferi* is the white-footed mouse (*Peromyscus leucopus*), but other species such as prairie voles (*Microtus ochrogaster*) and meadow voles (*Microtus pennsylvanicus*) may also represent reservoirs. To assess the roles of voles as reservoirs, tissue samples were collected from the Distillery Road Conservation

Area in Rockford, Illinois and tested for the presence of Lyme disease using polymerase chain reaction (PCR) and agarose gel electrophoresis. Data collected in 2018 were compared with data collected from 2014 to 2017. *Borrelia burgdorferi* prevalence in *M. ochrogaster* and *M. pennsylvanicus* was high enough for them to represent potential reservoirs. Infection prevalence did not differ significantly between the two species. There was interannual variation in overall infection rates which may be associated with biennial prescribed burns at the study site.

D1 Ameera Shaw, Paloma Avila, Zhana Lopez, Alexander Levin (Dr. Lynn Kee & Dr. Heather Evans-Anderson)

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#### **Deactivation of the FGF9 Gene in *Ciona intestinalis* using CRISPR-cas9**

The sea vase, *Ciona intestinalis* (*C. intestinalis*), is an ascidian tunicate often used in developmental studies due to its' many conserved genes in relation to higher vertebrate species such as humans, offering a relatively simple procedure to study these complex genes of interest. Moreover, *C. intestinalis* has a simple one-chamber heart with mesenchyme repair into adulthood. In this study we looked at the role of the FGF9 gene, the only fibroblast growth factor of *C. intestinalis*, in muscle development. FGF9 is needed for the differentiation of neural, notochord, and mesenchymal cells, a precursor for all muscle. The CRISPR-Cas9 mechanism has allowed developmental biologists to knock-out genes to better understand their phenotypic role in the heart development of wild-type *C. intestinalis*. Our group applied the CRISPR-Cas9 mechanism to target and remove the first and second exons in the FGF9 gene with the hypothesis that the knock-out would result in significantly less muscle cell differentiation in larva. We designed primers for one-step overlap PCR (OSO-PCR) and confirmed successful sgRNA formation with gel electrophoresis. We then attempted to electroporate the DNA expression cassette into dechorionated embryos. Successful DNA electroporation will be visualized with fluorescent mCherry in tagged muscle cells. In attempt to

support our hypothesis, this research also acts to improve upon and apply the CRISPR-Cas9 method in gene knock-out.

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### **Good Roads and the Dixie Highway: Connecting Florida with the Rest of the Nation\***

The impact of transportation infrastructure on tourism and economic development has long been overlooked. Such infrastructure, however, serves as a crucial influence on growth in these areas both nationally and on a state and local level. This paper focuses on the growth and development of tourism in Florida during the early twentieth century as influenced by the automobile and subsequent development of transportation infrastructure. The specific focus is on the Good Roads Movement and the Dixie Highway which grew out of that movement, including the political and social debates resulting from these efforts. Prior scholarship in this area focuses on regional and national perspectives. The author builds off of these perspectives but adds in original primary source research to apply them to the specific example of Florida. Through this combination, the historiography of Florida during the early twentieth century is expanded upon by adding a new element to traditional narratives surrounding development during this period. By asking questions about how the automobile and the Good Roads Movement impacted Florida's growth during this era, this paper seeks to acquire a better understanding of the social and economic impact of the automobile in the period following its introduction. Ultimately, the research shows that this new technology and infrastructure helped broaden the appeal of Florida from a winter destination for the wealthy elites to a tourist mecca for the masses. The increased accessibility and improved infrastructure resulting from the automobile led to Florida's establishment as a tourist destination for Americans of all social strata as well as to a new conception of government involved in daily life, both on the state level and the federal one.

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### **"The Sorting Hat Says"...: An Ethnography Of Communication At The Wizarding World Of Harry Potter**

Following one's inclusion to the Harry Potter fandom, a fan is left wondering which of the four houses they belong to at Hogwarts. Whether they are a Gryffindor, Ravenclaw, Hufflepuff, or Slytherin, a fan's house identity is a continually reinforced aspect of the Harry Potter fandom. For this study I have conducted an ethnography of communication at the Wizarding World of Harry Potter at Universal Studios Orlando. My study at the park specifically focuses on uncovering patterns of communication fans partake in that represent their own house affiliation. For this study, I focused primarily on how the fan's interactions are shaped by their performance, language use, identity, and location, and how this intersection creates a specific environment in which fans are recreating the culture from the books and movies. Through the conclusion of this ethnography of communication, I have documented the prevalence of house representation at the Wizarding World, and drawn conclusions leaning towards understanding the significance this has where cultural and fandom studies are concerned.

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### **The Effects of Social Studies Education on Civic Engagement in Young Adults**

It is well documented that the level of civic engagement among young adults is lower than other adult age groups. What is even more concerning is that the level of young adults' civic engagement is decreasing. Propensity towards civic engagement is one of many potential behaviors obtained during political socialization, the process through which an individual learns norms, attitudes, and behaviors regarding the political system in which they live .

Political socialization can happen at any age, but is particularly formative during adolescence. The school acts as one source of political socialization. The goal of this research was to assess if social studies education plays a role in political socialization, particularly in the development of civically engaged behaviors. A large 'N' quantitative study was performed to test the effects of social studies policy on rates of civic engagement in young adults.

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### **The Text, the Vision, the Creation: My Journey Through Directing Circle Mirror Transformation**

This presentation explores the process of directing a theatrical production, from choosing a show to the final performances. Through dramaturgical research, conceptual development, and practical application, the director collaborates with a production team and a cast of actors to transform the text into a theatrical staged work. The process culminates in the performances, where all of the elements are brought together to present the director's specific message or point of view. Directing fully embodies communication, both behind the scenes and with the audience. Specifically, my research aims to document and describe my personal journey as director of Stetson University's Production of Circle Mirror Transformation, performed in the Spring of 2019.

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### **Josephine Butler: nineteenth century purity movements in the backdrop of Jack the Ripper**

This project focused on a connection between the timing of the Social Purity Movement in nineteenth century England and the Jack the Ripper murders. Focusing in on a comparison between women's rights activist Josephine Butler's libertarian purity movement and the moral reformers purity movement, debating which purity movement influenced the social and gender norms of the time, as well as, had a correlational link to the Jack the Ripper murders. I analyzed the relationship between

the wealthy and the poor women within the England social hierarchy to determine how the social purity movements began. In accordance with gender roles and class, prostitutes were the epitome of all social evils. Josephine Butler, the leader of the Ladies National Association focused her purity movement on the double standard of sexual morality, the fact that prostitution was an economic, and driven by male dominance and violence. The libertarian view of Butler was that everyone's individual rights matter. The fight against the CDAs of the 1860s expressed these concerns for Butler and the ladies within her Association. However, leading up to the Jack the Ripper murders the divide between the libertarian purity movement and the moral reform purity movement reinforced the negative feels about prostitutes from society. The National Vigilance Association (the moral reformers) believed, unlike Butler and her Libertarian ideals, that prostitute was a moral issue. The moral reformers also believed, opposite that of the libertarians, that the rights of prostitutes should be limited for the betterment of the community. The divide resulted in the NVA shutting down 200 brothels and common house lodges, places where low income women and prostitute (not one in the same at times) lived, leaving them vulnerable to violence in the night because they were homeless. This happened a year prior to the Jack the Ripper murders. The deterioration of Butler's libertarian purity movement that was strong during the 1860s Contagious Diseases Act repeal protests, lost out to the moral reformer because the NVA group. Nevertheless, Butler was an important figure in women's rights and the conclusion made in the paper being that, had Butler maintained a stronger hold on the purity movement in the 1880s, the preconditions created by the NVA leading up to the Jack the Ripper Murders would not have been so devastating.

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### **Effect of *Cymbopogon citratus* (lemongrass) tea on embryonic development in the axolotl, *Ambystoma mexicanum***



*Cymbopogon citratus*, commonly known as lemongrass, has various uses in traditional medicine throughout the modern world. While lemongrass is generally nontoxic, its safety during pregnancy is unconfirmed. This led me to investigate the effect of lemongrass tea on embryonic development in the Mexican axolotl, *Ambystoma mexicanum*. I exposed axolotl embryos to varying concentrations of lemongrass tea for a 24-hour period. After the embryos hatched, I compared the mean head length, head width, tail length, gill length, and survival rate between treatment groups. Lemongrass tea exposure did not affect axolotl head length, head width, tail length, or survival at any of the concentrations tested. Doses of at least 10x the recommended dose, however, resulted in decreased gill length. Although my data suggest that the typical dose of tea used in folk medicine will not harm overall embryo growth during pregnancy, higher concentrations may have negative effects during embryonic development due to reductions in normal gas exchange (gill length). Further research is needed to more precisely determine what range of lemongrass tea concentrations is safe during pregnancy.

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#### **Stetson University's Sustainable Food Initiatives: Progress and Communication Analysis**

There is a growing concern about environmental issues associated with the food system. Globally, greenhouse gases are released from fertilizers and fossil fuels in industrial farming, transportation, and food waste. Nitrogen pollution and eutrophication are additional causes for concern associated with the overuse of fertilizer. At the community level, solutions to reduce these negative environmental impacts include sourcing food locally, sending food waste to an energy recovery system, re-using food waste for other purposes, or attaining a closed-loop system. On a campus level, communication tactics can be used to effectively share information about ongoing environmental efforts related to food systems: utilizing social media, creating and following

a CSR message, building brands, and expressing social norms. This project focused on the process and communication of environmental sustainability in Stetson University's food system. I aimed to answer two questions: 1) How effectively is Stetson's Dining Service provider, Chartwells, conveying their sustainability initiatives and progress to the Stetson community? 2) How can Chartwells continue their efforts to reduce food waste and sourcing food locally? I distributed surveys to Stetson community members and local farmers, as well as performed an analysis of the communication strategies Chartwells uses within the University. To conclude, I propose numerous recommendations for improving the food system process and communication of environmentally sustainable dining initiatives at Stetson University.

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#### **An excerpt from *Underground: The Price of Sex* and a researched essay "Sexual Slavery: Telling the Story" by Marissa Thomas**

For this short presentation, I will read brief sections from both my excerpt from my creative piece and researched essay. The excerpt centers on two recent high school graduates, May and Aiden, as they are pulled into an underground sex trafficking business. In the researched essay, I discuss the multi-billion-dollar trade that people need to be aware of by understanding signs of deceit that occur with the industry. I also compare the true story of Katariina Rosenblatt's novel *Stolen: The True Story of a Sex Trafficking Survivor* and Pamala Kennedy Chestnut's fictional *More than Rice: A Journey Through the Underworld of Human Trafficking* to show the different forms of deceit predators use and identify the similarities and differences of the two characters' experiences in the sex trade and their escapes from their captors. The topic of sex trafficking and slavery is difficult for many to digest or comprehend, but knowledge of tactics sexual predators use to lure in their victims and of resources one can provide to victims allowing them to use their voices are essential



to overpowering predators. I will explain my challenges of writing about this difficult topic and its importance in societal conversation.

C5 Shaylen Vitale (Dr. Kimberly Reiter)

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### **We Knew: The Failure of the American Press in Second World War Holocaust Coverage**

Despite having accurate accounts of the Holocaust, the American press decided to either not publish these stories or relegate them to the back pages, effectively burying them from the American public. My senior research has been a two-step process to examine to what extent reporting of newspapers of less readership and in opposite ends of the United States cover the Holocaust from September 1939 to May 1945 compared to the coverage of The New York Times to determine whether or not the lack of coverage was a national press issue or subject to region only. During the Fall 2018 semester, through comparison of story placement, language and readership demographics, I compared the front page Holocaust coverage of The New York Times with the front page reporting of three other secondary tier regional papers as regional case studies: The Boston Globe (the Northeast U.S), the Chicago Tribune (the Midwest), the Los Angeles Times (Pacific Westcoast), and the Washington Post (District of Columbia). My research concluded that the reporting of newspapers of secondary-tier cities was even less. This current semester continues this research by investigating the extent of editorial decisions and regional practices impacted how these newspapers presented Holocaust information. From this previous research, it can be assumed that each paper had both isolated and similar factors that contributed to their limited front cover reporting.

Art15 Ngaio Warrington (Dr. Matthew Roberts and Dr. Charles Underriner)

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### **Taste and See**

This is a spoken word album composed of testimonies about the goodness of God. It is a

reflection of depression, insecurity, failure, disappointment, rejection, and it reveals the character of God in each situation to display what it looks like to, "Taste and see that the Lord is good." "Taste and See" simply means to, "Come see or experience." I want to give students the opportunity to hear the stories of poets who have experienced God and have received healing and comfort to extend that same hope to them. I believe that it will also aid in reconstructing the perspective of the God of the Bible. From taking my Muhammad and Qur'an class last semester, I recognized that there are many students who have misconceptions from simply being misinformed of who the God of the Bible is and who he says we are. I love that in my Muhammad and Qur'an class, Islam was presented to us in a way to help clarify misconceptions about the religion. I would love my project to be similar in the sense that it helps clarify who God is.

C16 Zoe M. Weaver (Dr. Christopher de Bodisco)

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### **Bu Yi Yang: Why Democracy in Taiwan is in Two**

If one were to spend a weekend in Taiwan during election season, it would quickly become apparent that the Taiwanese love the look of democracy. Candidates running for all levels of public office have a well-developed and devout fan base--often flooding the streets for rallies and parades, creating an overwhelming sense of comradery among voters of all ages and backgrounds. It might also become apparent, however, that if one stays longer and perhaps visits a Taiwanese classroom, workplace, or household, that such displays of political participation are almost nonexistent. The same rallying students are often afraid to express political opinions in class, let alone with their parents, and discussions of hard-pressing issues are avoided. While largely anecdotal, this account of contemporary politics in Taiwan leads to an intriguing question for the future democratic studies. Through this analysis, I hope to demonstrate two fundamental concepts. The first is that democracy as we view it in mainstream literature (as a single political process or system), is actually divided into two separate and unequal notions in

Taiwan. Secondly, I will treat political participation much like an economic decision in which citizens assess the costs and benefits of both notions of democracy.

D8 Maddy Wheeler (Dr. Terence Farrell)  
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**The Prevalence of the Pentastome Parasite, *Raillietiella orientalis*, in Pygmy Rattlesnakes and Ribbon Snakes in Central Florida**

Direct effects of invasive species like predation and competition on native species have been well documented, but indirect effects like the introduction of parasites to native species also have impacts. The invasive Burmese Python (*Python bivittatus*), recently introduced the parasitic pentastome species *Raillietiella orientalis* from Asia to native snakes in Florida. We determined the infection rate of *R. orientalis* infection in Ribbon Snakes (*Thamnophis sauritus*) and Pygmy Rattlesnakes (*Sistrurus miliarius*) at the Lake Woodruff National Wildlife Refuge (LWNWR) and the Lake Monroe Conservation Area (LMCA). Intestinal washes were collected to detect eggs and therefore adult pentastomes in live snakes and dissections were conducted to detect pentastomes in deceased snakes. At LWNWR, 64.7% of Pygmy Rattlesnakes were infected with an average of 6.11 parasite per snake while 20.0% of Ribbon Snakes were infected. Even though there was a large difference in infection rate between the two species, the difference was not significant. However, there was a significant difference in pentastome infection rates between the two study sites in Pygmy Rattlesnakes with 64.7% infected at LWNWR and 8.3% infected at LMCA. Our results indicate an important conservation issue given the high infection rates and parasite burden in Pygmy Rattlesnakes in Central Florida.

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**The crayfish ECG as a useful assay for evaluating physiological effects of snake venoms**

Little is known about the venom of a crayfish snake (*Liodytes alleni* and *Liodytes rigida*), or how venom affects its prey of choice—the crayfish. Venom from the crayfish snake (*L. alleni* and *L. rigida*) proved to be difficult to obtain. So, we conducted a study to determine whether the crayfish ECG was a useful model for examining snake venoms in general, since little has been done to see the effects of snake venoms in invertebrates. We hope to see consistent changes in the strength and rhythm of the crayfish (*Procambarus clarkii* or *Procambarus alleni*) heart rate after exposure to different concentrations of Florida Cottonmouth (*Agkistrodon piscivorus conanti*) venom. Our future goal is to conduct studies involving the effectiveness of the venom of the crayfish snake (*L. alleni* and *L. rigida*) on the crayfish (*P. clarkii* or *P. alleni*). From its effects, we could learn of potential medicinal properties its venom may contain.

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**The presence of predatory milkweed assassin bugs (*Zelus longipes*) decreases foraging in various species of bees (Anthophila) at several densities of Spanish needles (*Bidens alba*)**

In this field study, I examined what conditions would influence native Floridian bees to alter their instinctual risk-averse behaviors, specifically the instinct to avoid a known predator. Several species of bees have been observed to alter their chances of coming into contact with a predator based on the available number of flowers to forage from in the immediate area (Chittka, 2001). I experimented in order to observe whether bees would be significantly less likely to forage from a flower housing a predatory insect, compared to a non-threatening insect, as well as whether the density of available flowers would affect the overall visitation rate to flowers housing predatory insects. The number of visitations to flowers housing either a pinned predatory insect or non-threatening insect was recorded at both the natural flower density of the area, and again at half the original density. A two-way ANOVA analysis revealed that the bees chose to visit

flowers housing a predatory insect significantly more often in patches where the foraging options had been reduced, compared to the same patch at its natural density. The data also supported that in patches of both natural and reduced density, the

bees were significantly more likely to visit the flowers housing a non-predatory insect, which implies that the bees were somewhat aware of the presence of the predators, and ultimately overruled their aversion instincts when visiting dangerous flowers.

### **Stetson Undergraduate Research Committee:**

- Dr. Kimberly Reiter, Associate Professor of History – Committee Chair
- Dr. Thomas J. Farrell, Interim Dean, College of Arts & Sciences
- Sidney Johnston, Grants and Contracts Manager
- Grace Kaletski, Assistant Professor, Library
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- Dr. Melissa Parks, Assistant Professor of Education
- Dr. Kevin Riggs, Professor of Physics
- Dr. David Schmidt, Assistant Professor of Music
- Dr. John York, Associate Professor of Chemistry

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