STETSON SHOWCASE: A CELEBRATION OF STARS
APRIL 18, 2017
A Celebration of Achievement at Stetson University

About the Undergraduate Research and Creative Arts Symposium Showcase:
This event, with its debut in 1999 and former names of Undergraduate Scholarship and Performance Day (USAPD) and later Undergraduate Scholarship Day (USD), has grown to be one of the most distinctive Undergraduate Research Days in the United States. 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 our noted Keynote Speaker, Dr. Michael Jackson. 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.

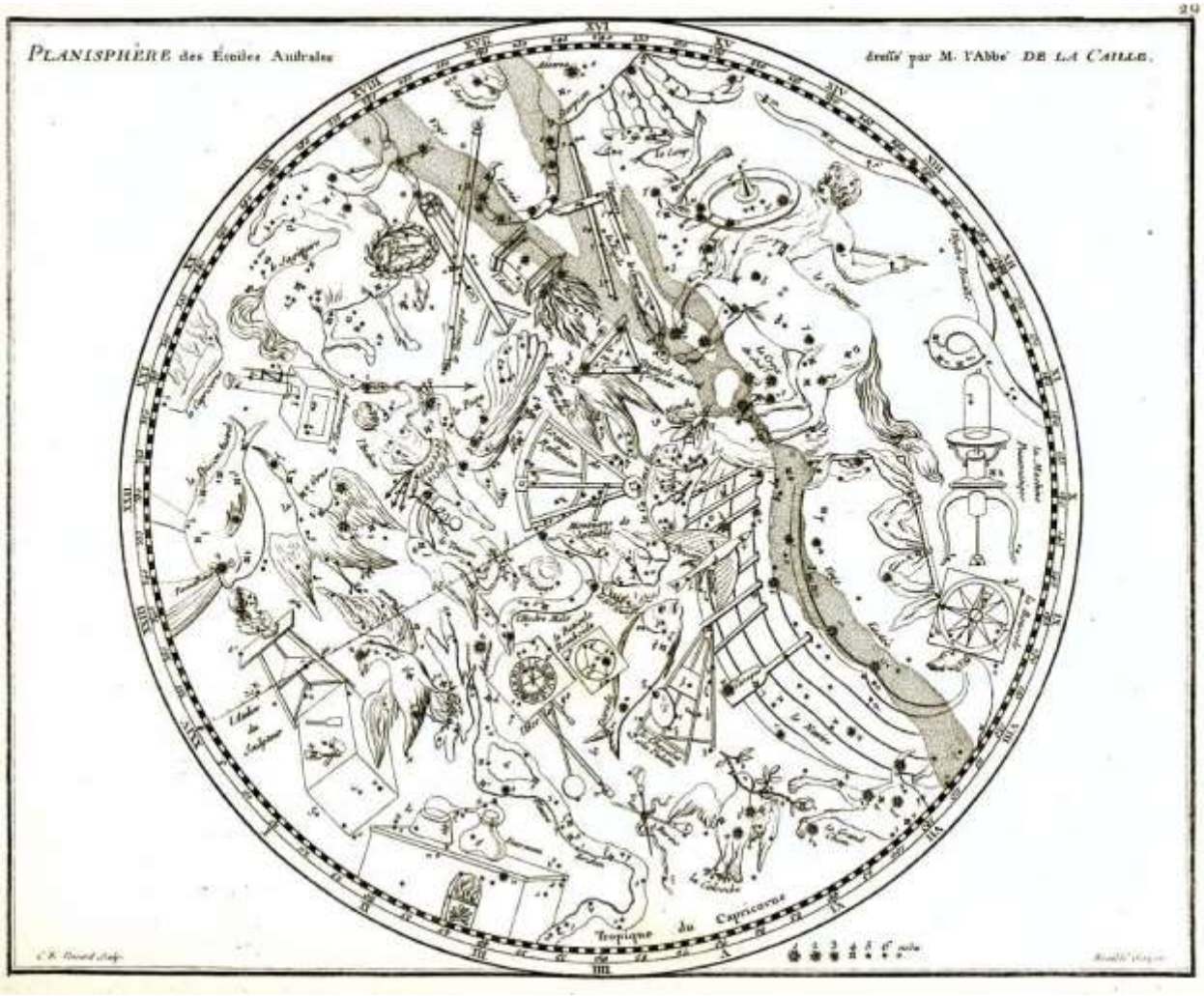
THE 2017 JUDGING PANEL AND ALTERNATES:

Dr. Robert Askew, Assistant Professor of Psychology
Bobbi Baugh, Mixed Media Artist
Molly Brown, User Experience and Outreach Librarian, duPont-Ball Library
Jennifer Certo, Assistant to the Vice-President for Student Affairs
Barbara Costello, Associate Professor/Government Information & Research Librarian
Dr. Laura Crysel, Assistant Professor of Psychology
Dr. Joshua Eckroth, Asst. Prof. of Computer Science
Dr. Christopher Ferguson, Professor of Psychology
Antonio Golan, Visiting Assistant Professor of Communication and Media Studies
Dr. Deborah Goldring, Asst Professor, Department of Marketing
Terry Grieb, Assoc. Prof. of Instructional Media and Assistant Director of Media Services
Dr. Melinda Hall, Assistant Professor of Philosophy
Dr. Philip Handyside, Adjunct Instructor, History
Dr. John Horn, Vice-President (ret.) for Research & Development, 3M
Laura N. Kirkland, Associate Professor, Catalog Librarian
Dr. Danielle Lindner, Assistant Professor of Psychology
Dr. Gary Maris, Professor Emeritus of Political Science
Dr. Joy A McGuirl-Hadley, Assistant Professor of Practice in Management
Dr. Nicole Porther, Visiting Assistant Professor of Public Health
Mollie Rich, Prof. Emeritus of Music
Dr. Robert Rich, Prof. Emeritus of Music
Dr. Gilbert Seigworth, Physician
Dr. Benjamin Tanner, Assistant Professor of Environmental Science and Studies
Dr. John Tichenor, Associate professor of Management
Dr. Daniil Zavlunov, Assistant Professor of Music History

<u>Cultural Credit</u>: 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.
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

In addition, full cultural credit can be earned at the Evening Keynote Address and the evening Guitar on the Rocks concert.

For credit, please take your stamped card to 312 Elizabeth Hall 2-5 pm on April 18:
OR bring your completed form to 312 Elizabeth Hall no later than 4 pm April 20. Cards are available at all venues.



PROGRAM

POSTER PRESENTATIONS

Rinker Fieldhouse, Hollis Center
Dr. Dejan Magoc, morning session chair
Dr. Kevin Riggs, afternoon session chair
Judges
Morning Rinker I: Dr. Laura Crysel, Dr. Joy A McGuirl-Hadley
Morning Rinker II: Dr. Joshua Eckroth, Dr. Chris Ferguson
Afternoon Rinker I: Dr. Danielle Lindner, Laura Kirkland
Afternoon Rinker II: Molly Brown, Dr. Robert Askew

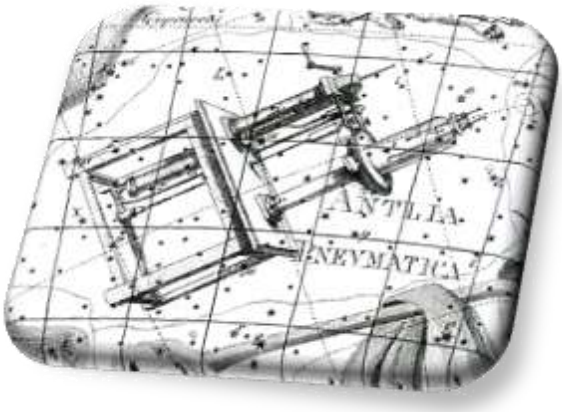
Morning I (9 a.m. – 12 p.m.)

P-1 Taheya Asad **IgY Max: an EGGcellent solution to promote Digestive Health**

P-2 Caitlin Brewer **Effect of sediment composition on growth of American eelgrass (*Vallisneria americana*)**

P-3 Jessica Butler **The Relationship Between Socioeconomic Status and Mental and Physical Health in College Students**

P-4 Nathan Sturgeon **Atomic Force Microscope Studies of Carbon Nanotubes**



P-5 Maya Ferdschneider **Predictors of Typical and Atypical Depression Symptoms in College Students**

P-6 Alexandria Fitzgerald **Classroom Management: Creating Positive Student Behavior in the Elementary Classroom**

P-7 Cheyenne Hammell **Public Knowledge and Understanding of the Volusia County Fertilizer Ordinance**

P-8 Mats Israelsson and Mary Bougoulas **The Evaluation of the Prevalence of Kyphosis in College Students at Stetson University**

P-9 Alexis Korotasz **The effect of prey elevation on caudal luring in neonate pigmy rattlesnakes (*Sistrurus miliarius*)**

P-10 Madi Madison **Priority and nutrients influence survival of *Asclepias tuberosa* seedlings when in competition**

P-11 Estaban Martinez-Francia **Topography of Active Neurons and Behavioral Responses to Umami in Rats**

P-12 Anna Miner, Anthony Espinosa, and Christina Loya **Gender Differences in Health Behaviors Among College Students**

P-13 Samantha Pasko **Air Breathing Behavior in *Pterygoplichthys disjunctivus (Loricariidae)* in Volusia Blue Spring,**
Florida
P-14 Christina Ponce **Student Discourse in Single Gender Classrooms**

P-15 Thaddeus Potter **Electronic properties of silicon and gold thin films**
P-16 Jessica Stein **Tidal Current Effects on Marine Epibenthic Growth**

P-17 Megan Tracey **Happy Hounds: The Effects of Probiotic Supplementation on Canine Digestive Health**

P-18 Honor Woodward **Body Image Disturbance and Disordered Eating Behavior: The Roles of Body Image Investment and Body Image Evaluation**

P-19 Laurie Scott and Ashni Deschenes **The effect of creatine supplementation on cognitive functioning of college-aged students**

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

P-20 Kaitlin Andersen **Detecting light-driven DNA repair by photolyase and finding optimal environment for enzymatic activity within *Clamydomonas reinhardtii***

P-21 Jeremy Bodiford and David Hall **It's Written All Over Your Face: The Influence of Men's Facial Hair on Perceptions of Professionalism and Competence**

P-22 Shannon Carmignani **Identification of Cancer Clusters Using Surveillance, Epidemiology and End Results Program (SEER)**

P-23 Adam Cooper; Emily White, Christian Lemus and Dr. Holly Goodson **Distinguishing between dissolved reactive phosphate and bioavailable phosphate for the development of a biophosphate sensor**

P-24 Tara Davison **Public Observation of Behavior Towards People with Physical Disabilities**

P-25 Adam Freeman **A comparison of age and growth between *Pterygoplichthus disjunctivis* populations in Florida and Texas springs**

P-26 Sarah Greco **Electrical Stimulation of Gustatory Cortex Causes Activation of Motor Output in Conscious Rats**

P-27 Sarah Hoffman **Comparison of First-Generation Students and Non-First Generation Students on Competitiveness, Anxiety, Stress, and Guilt: Does Birth Order Matter?**

P-28 Trinity Johnson **The Relationship between Racial Identity, Enculturation, and Dietary Health**

P-29 Madison Kell **Relationship between Cardiovascular Disease and Amounts of Greenspace in Florida Counties**

P-30 Bek Luke **College Students' Sexual Behavior: What Factors Predict Risky and Protective Actions?**

P-31 Orion Maier **Variation of reproductive traits in relation to environmental temperature in a humid subtropical viperid *(Sistrurus miliarius barbouri*) in central Florida**

P-32 Austin Miller, Fred Brown, Caleb Cheatham, and Dean Garabedian **Dynamics of N and P levels in the St. Johns River vs. Blue Springs and their potential impact on toxic algal blooms**

P-33 Sarah Myers **Evaluating the Relationships Between the Five-Factor Personality Traits and Musical Preferences**

P-34 Steven Pilato **The Impact of a High Fat Diet During Adolescence on Body Weight, Exercise, and Nucleus Accumben's Activity in Obese Prone Female Mice**

P-35 Mitchell Robey **Dreaments**

P-36 Stephanie Schreiber **Nutrient recycling in Blue Spring from the exotic snail species *Melanoides tuberculata* and its effect on algal growth**

P-37 Emily Stamey **Lack of induced systemic resistance among rhizomatous clonal networks of *Passiflora incarnata***

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

P-38 Glynn Baron **The Effect of NaCl & sucrose on Behavior and Neural Activity in the Gustatory Cortex**

P-39 Chandler Callaway **The Effect of Cylindrospermopsin on the Liver of Golden Shiner Fish (Notemigonus crysoleucas)**

P-40 Michael Clay **Git-Advise: An Automated Git Workflow Advisor**

P-41 Averi D'Anna **Television Viewing Habits as Predictors of Physical and Psychological Health**

P-42 Aaliyah Gray **Understanding the Relationship Between Sexual Identity, Life Satisfaction, Psychological Well-Being, and Online Community Use**

P-43 Valencia Henry **The Examination of Flaxseed Lignan, Enterolactone in Non Malignant Lung Fibroblasts Cells**

P-44 Madison Jones **The role of the *klp-6* mutation in neuronal morphology and behavior of *Caenorhabditis elegans***

P-45 Joshua Lieberman **Electrical Stimulation of the Gustatory Cortex Causes a Motor Response in Wistar Rats**

P-46 Samanatha Maguire **Creating a Positive Classroom Climate for Students**

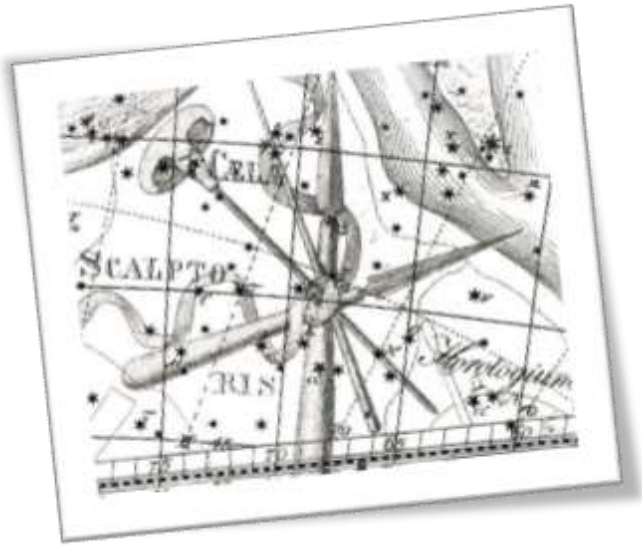
P-47 Joseph Martire **The Effects of Genetic Relatedness and Distance on Airborne Communication for *Passiflora incarnata***

P-48 Naser Mubarak **Effects of Powerful Female Role-Models in Media on Attitudes Towards Women, and Female Viewer Anxiety**

P-49 Steven Pilato and Tara Davison **A Matter of Taste?: The Role of the Gustatory Cortex in Evaluating the Palatability of Distilled H^2O**

P-50 Sharjeel Qureshi **Effect of ultraviolet radiation on DNA integrity and survival rates in hydrated and anhydrobiotic *Hypsibius dujardini* tardigrades**

P-51 Lindsay Summers, Brittani Janson, and Ismode Lorjuste **Knowledge, Perceptions/Readiness, and Prescribing Behaviors of Healthcare Providers Regarding HIV Testing and Pre-Exposure Prophylaxis (PrEP) in DeLand**



P-52 Carleigh Sales, Trent Austin and Catrina Sisi **Sleep Disorder in Division 1 Collegiate Athletes During the Competitive Season**

P-53 Lexus Walker **The effects of a rotating magnetic field on *Magnetospirillum magneticum***

P-54 Kara Swanson, Camy Housley, Dre'an Long, Daniela Moneuse and Alyssa Payne **Health Behaviors among School-Aged Children**

P-55 Mark Francis **The Effect of Triclosan on Axolotl (*Ambystoma mexicanum*) Development**

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

P-56 Natalie Applebaum **The effect of cigarette smoke exposure on the respiratory microbiome of *Mus musculus***

P-57 Caitlin Brewer **Effect of Algal Growth and Coverage on the Growth of American Eelgrass (*Vallisneria Americana*)**

P-58 Monika Chojnacka **Cytotoxic effects of *Alpinia zerumbet* essential oil on Jurkat E6-1 cell line**

P-59 Kristin Coulter **The effect of Oxytetracycline HCl on the embryonic development of *Ambystoma***

P-60 Anthony Dekker, Erin Busch and Kayla Snyder **Do the Effects of Kinesio Tape, Cupping Therapy, and Massage Therapy Reduce Lower Back Pain and Tension?**

P-61 Nicholas Fuller **The Effect of Florida Apple Snail Density on *Vallisneria americana* Weight and Reproduction**

P-62 Elsa Guevara **An investigation on a subpopulation of Florida black bear (*Ursus americanus floridanus*) seasonal roadkills and its relationship between sex and age class 1983-2015**

P-63 Bailey Jones **Evaluating a Measure of Experiential Avoidance in the Context of Self-Harm**

P-64 Brian Kirkland **Application of next generation Genotyping by Sequencing (GBS) to validate and improve upon the precision of previous molecular phylogenetic analysis of montane Great Basin stoneflies**

P-65 Minh Thu (Alice) Ma **Barriers to bond rotation in *N*,*N*-dimethylbenzamides probed using**

temperature dependent ^{1}H-NMR spectroscopy

P-66 Zaamena Manji **The Effect of Taxol on the motility, morphology, and survivability of embryos in the species *Hypsibius dujardini***

P-67 Logan Minckler **Investigating the effect of water pH on amphibian abundance in New York State**

P-68 Alicia Oberholzer **The Effects of Methyl- and Propylparaben on the Embryonic Development of *Ambystoma mexicanum***

P-69 May Pivarnik **Laterality in Coiling Behavior of Pygmy Rattlesnakes, *Sistrurus miliarius***

P-70 Richard Roe **Denial of Service via Internet of Things Devices: Attack Methodologies and Mitigation Techniques**

P-71 Chandra Schulte **Monitoring the American Horseshoe Crab, *Limulus polyphemus*, Densities on Nine Beaches in the Indian River Lagoon, Florida**

P-72 Laurie Scott **The effects of creatine supplementation on *Ambystoma mexicanum* embryos**

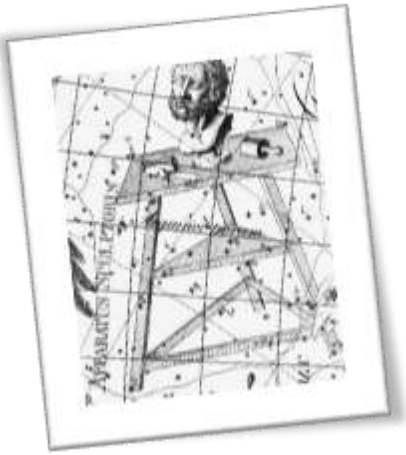
P-73 Macie Thornhill, Tiffany Marrero **Community Health Needs Assessment of Spring Hill Neighborhood, Deland. Florida**

P-74 Cory Zirkel **Examination of genistein-mediated apoptosis and oxidative stress in H460 lung cancer cells**

P-75 Ryan Cromwell **The relationship between human papillomavirus and incidence of cervical cancer with increasing age**

ART AND DIGITAL ARTS PRESENTATIONS AND EXHIBITIONS

Homer and Dolly Hand Art Center
10:00 am-4:00 pm
Dr. Lou Sabina, Morning Session Chair
Dr. Mayhill Fowler, afternoon session chair
Judges: Jennifer Certo, Bobbi Baugh



HAND ART CENTER

ART-1 10:00-10:15 Laine Callahan **Rebirth**

ART-2 10:20-10:35 Bianca Enos **Objectified**

ART-3 10:40-10:55 Isabel Hernandez **Dancers**

ART-4 11:00-11:55 Julia Lozano **Pelagic**

ART-5 11:20-11:35 Jasmine Ramos **What It Costs**

ART-6 11:40-11:55 Whitney Wolf **Winged Ones**

12:00-1:00 Lunch

HAND ART CENTER SEMINAR ROOM

ART-7 1:00-1:15 Nickolas Saffan **Documenting Micro Culture**

ART-8 1:20-1:35 Meghan Doyle **Unspeakable Tragedy**

ART-9 1:40-1:55 Ian Felpel **HIGAVI**

ART-10 2:00-2:15 Caitlin Prestridge **Weekday Friends & Co.**

2:15-2:20 Break

Pigment

ART-11 2:20-2:35 Madison McCutcheon

ART-12 2:40-2:55 Katie Mackey **"Driftwood" -- Exploring Life After Sexual Assault**

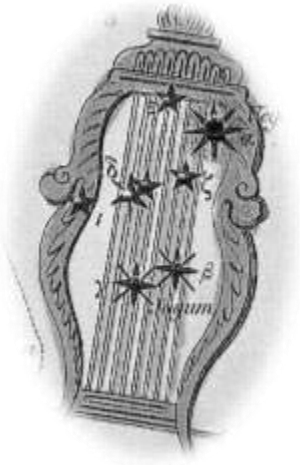
ART-13 3:00-3:15 Anna Chun **The God of Antiques**

ART-14 3:20-3:35 Colby Johnson **This World is Cold**

ART-15 3:40-3:55 Anthony Pizzo **Bogeyman Host**

JUNIOR MUSIC RECITALS

Lee Chapel, Elizabeth Hall
9:00 am-4:00 pm
Judges: Dr. Robert Rich, Mollie Rich, Dr. Daniil Zavlunov, Dr. John Tichenor
Programs in abstracts



M-1 9:00-9:30 Nicholas Villane, **Composition**

M-2 9:45 -10:15 Simone Seales, **Cello**

M-3 10:30 -11:00 Ajit Persaud, **Voice (Tenor)**

M-4 11:15-11:45 Alexandria Bocco, **Oboe**

11:45-12:45 Lunch

M-5 1:00-1:30 Jack G. Sumrall III, **Voice (Tenor)**

M-6 1:45-2:15 Emily Vitale, **Piano**

M-7 2:30-3:00 Kristina Manning, **Voice (Soprano)**

M-8 3:15-3:45 Courtney Pressler, **Flute and Piccolo**

ORAL PRESENTATIONS – SESSION A

25 Library Auditorium – Media Center
9:00 am-3:15 pm
Dr.Ken McCoy, morning session chair
Jean Wald, afternoon session chair
Judges: Dr. John Horn, Dr. Gilbert Seigworth

LOCAL RESEARCH

A-1 8:30-8:45 Sompi Harmetz **Florida Superfund Sites and the Social Composition of Communities That Surround Them**

A-2 8:50-9:05 Ashleigh Jones **Hatha Yoga as a Potential Treatment Option for Irritable Bowel Syndrome**

A-3 9:10- 9:25 Emma Schaefer **Relationship between socioeconomic status and prevalence of mosquito-promoting peri-domestic containers among yards in Volusia County Mosquito Control District, Florida**

A-4 9:30-9:45 Mary Leggett, Dr. Robert Askew, Matthew Vanaman and Dr. Danielle Lindner **Exercise Contribution to Self-Esteem**

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

A-5 9:55-10:10 Sara Marie Gorman **Can Read You This?: The Effect of Dyslexia Priming on Cognitive Task Performance**

A-6,10:15- 10:30 Katie Hansen **Attitudes about Climate Change: a Survey of Downtown Deland and Stetson University**

A-7 10:35-10:50 Sara Nelmes **Stetson Soil Analysis: Testing Nutrient Concentrations and pH in fertilized and unfertilized landscapes**

NEW WAYS TO LIVE: THE COMMUNITY CATALYST HOUSES

A-8 10:55-11:10 Sarah Coffey, JB Pitts, Lex Rasdal, Alissa Pagano, Jad Lotoc, and Jen Trinh **Hatter Hydroponics in The Catalyst House**

A-9-11 11:10-11:55
Experiments in Catalyst Living: A Group Session: Community Catalyst Houses: Spaces that activate our ability to live, learn and affect the community

11:55-1:00 LUNCH
A MATERIAL WORLD

A-12 1:00-1:15 John Pitts **Projecting climate change-influenced shifts in Georgian viniculture using a species distribution model**

A-13 1:20-1:35 Kendal Diehl **CEO's and She-E-O's: Analyzing the Gendered Discussion of Corporate Female Leaders in Business News Journals**

A-14 1:40-1:55 David Osorio **Vulnerability to Sea Level Rise in the Florida Keys**

1:55-2:05 **BREAK**

A-15 2:05-2:20 Samantha Williams **Styles of Management and Communication Applied to the Production Manager within the Theatrical Production Process**

A-16, 2:25-2:40 James Russo **Institutions and the Stages of Growth**

A-17 2:45-3:00 Samantha Zarek **Black Sunday: NASCAR's public relations strategies in response to Dale Earnhardt Sr.'s death**

ORAL PRESENTATIONS - SESSION B

John E. Johns Room 315, Elizabeth Hall
8:30 am-3:45 pm
Dr. Rajni Shankar-Brown, morning session chair
Dr. Leander Seah, Afternoon Session Chair
Judges: Dr. Melinda Hall, Barbara Costello

RACE, GENDER AND SEX

B-1 8:30-8:45 Jason Cruz **Tracing a Comic History of Racial Violence in *The Sellout***

B-2 8:50-9:10 Catherine Grace Aguda and Peter Junior Nyong'o **Who Killed Desdemona?**

B-3, 9:15-9:30 Adrianna LaForest **Black Students Sense of Racial Consciousness While Attending a Predominantly White Institution vs a Historically Black College**

B-4, 9:35-9:55 Melaina Cartwright-Mills **An Analysis of Gender Portrayal in Mozart's Comic Soprano Roles: the "Da Ponte Operas" and Singspiel**

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

B-5 10:05-10:20 Lynn Walsh **"She Barred the Door of Her Bedroom Forever": Amaranta's Virginity in *One Hundred Years of Solitude***

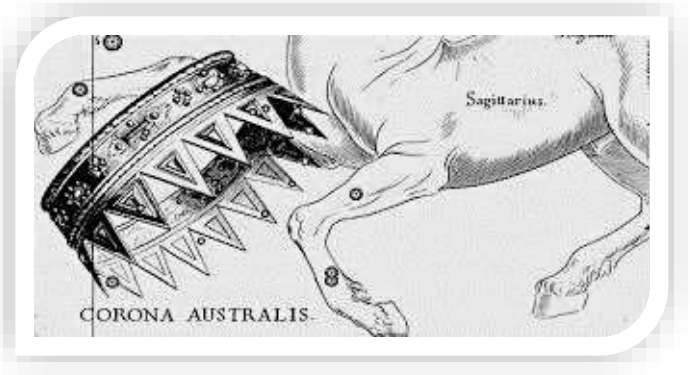
B-6 10:30-10:50 Amanda Rogers **Analysis of *Ghostbusters 2017***

B-7, 10:55-11:10 Emily Heathcote **"As Far As the Shadow of Decency Allowed": Valorization through the Commodification of *Lolita***

B-8 11:15-11:35 Nicholas Bouwmans **Character Analysis and Performance of Big Daddy**

B-9 11:40-11:55 Carly Batts **Gender-Based Attitudes in Open Space**

11:55-12:45 – Lunch



JUSTICE, POVERTY AND LAW

B-10, 12:45-1:00 Emma Schaefer
Public Health and Community Needs Assessment

Report of Spring Hill Community 2015-2016

B-11 1:05-1:20 Daniella Hankey **When Tragedy Strikes: A Frame Analysis of Two CBS News Outlets During the First Forty-Eight Hours of the Orlando Pulse Shooting**

B-12 1:25-1:40 Maria Frank **Polish Pilots in Exile: The Polish-British Military Encounter, 1939-1945**

B-13, 1:45-2:05 Viviana Vasiu (LAW) **Justice Deferred No Longer: A Push In The Right Direction For Corporate And Individual Criminal Liability In The White Collar Arena**

2:05-2:15 **BREAK**

B-14, 2:15- 2:30 Natalie Frandsen **National Crises and the Expansion of U.S. Executive Power: The Presidencies of Franklin D. Roosevelt, George W. Bush, and Barack Obama**

B-15, 2:35-2:55 Evelynn Passino (LAW) **Halting the Pharmacy Crawl: How the Americans with Disabilities Act Can Protect Patient Access to Pain Medication**

B-16, 3:00-3:15 Brittany Kovalskaya **Criminal Clemency: The Effect of Criminal Defense Work on the Tolerance of Attorneys**

B17 3:20-3:35 Jorge Flores **Does Stress Moderate the Effect of Attitudes Towards Drugs and Drug Use?**

ORAL PRESENTATIONS – SESSION C

257 Sage Hall
8:30 am-3:30 pm
Dr. Jelena Petrovic, morning session chair
Dr. Lori Snook, afternoon session chair
Judges: Dr. Gary Maris, Dr. Philip Handyside

TAKE A WALK ON THE WILD SIDE: JOURNEYS INTO OTHER REALMS

C-1 8:45-9:00 Richelle Braswell **Studying Literature in the United Kingdom**

C-2, 9:05-9:20 Lynn Walsh **Differing Education and Cultural Experiences while Studying Abroad**

C-3, 9:25-9:40 Delaney Christine **'Now Starring: The Chivalrous Ill-Made Knight of the Cart': Lancelot and Chivalry in Film**

C-4, 9:45-10:05 Vasilios Loparnos **Exploring Conformity through an Absurdist Play**

10:05-10:15 **BREAK**

C-5, 10:15-10:30 Richelle Braswell **J.R.R. Tolkien: "Faërie is a Perilous Land"**

C-6 10:35 -10:50 J. Nichole Cheslow **Classifying Modern Paganism: A Postmodern Religion Fashioned Through Experience and Illustrated Through Fashion**

C-7, 10:55-11:10 Michael Peter **Bikers, Drugs, and Rock and Roll: Creation of Culture in Dennis Hopper's *Easy Rider***

C-8, 11:15-11:30 Chelsea Probus **Rock Climbing as a Religious Phenomenon: An Application of Ninian Smart's *Dimensions of the Sacred***

11:30-1:00 Lunch

THE POWER OF IMAGE, THE POWER OF WORDS

C-9, 1:00-1:15 Miracle Townsend **Inventing the Superhero: The Man of Steel, Jewish-American Culture, and the Golden Age of Comics, 1938-1954**

C-10, 1:20--1:35 Andrea Slouha **Supergirl and How Characterization Forms a Metaphor on American Immigration and the Refugee Agenda**

C-11, 1:40-2:00 Arielle Pennington **And What about the Rhinoceroses?**

C-12, 2:05-2:25 Natalia Mojica-Arango **Hollywood Goes to War: A Rhetorical Criticism of Disney Propaganda During WWII**

2:25-2:35 **BREAK**

C-13, 2:35-2:50 Rhiannon Boyer **Earthrise: Symbols, Images, and the Environmental Movement**

C-14 2:55-3:10 Austin Tyrrell **Colin Kaepernick…Please Rise: A Dramatistic Analysis of Colin Kaepernick's Protest as Symbolic Action**

C-15 3:15-3:30 Taylor Duguay **'I Am Your Voice': The Construction of Donald Trump as a Populist Hero in his 2016 RNC Address**

ORAL PRESENTATIONS – SESSION D

317 Flagler Hall
9:00 am-3:00 pm
Dr. Andrew Eisen, morning session chair
Dr. David Hill, afternoon session chair
Judges: Dr. Nicole Porther, Terry Grieb

APPLICATIONS AND ETHICS IN TECHNOLOGY

D-1 9:00-9:15 Matthew Vanaman **A Novel Measure For The Need For Moral Cognition**

D-2, 9:20-9:35 Maria Shimkovska **The Ethics of Engineering and Using Memory Modifying Technologies (MMTs) and the Advantages of Using Them in the Medical Field**

D-3, 9:40-9:55 Caitlin Meyer and Rene Aviles **To 3D and BeyonD**

D-4, 10:00-10:15 Victoria Grupp ***Track It, Zip It***

D-5, 10:20-10:35 Christian Decker **Scene by Scene Script Generation for Live Action Hollywood Movies**

D-6 10:40-10:55 Aaron Cook **Underwater Adventure: The Future of Storytelling**

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

MEDICINE FOR MAN AND ANIMAL

D-7, 11:05-11:20 Valeria Roati **Comparing the inhibitory effect of the flavonoids Quercetin and Catechin, and the polyphenol Curcumin, on Clostridium collagenase activity: A potential natural remedy for the treatment of equine bone degradation.**

D-8, 11:25-11:40 Kate Ellis **The Effect of Green Tea Extract on H460 Lung Cancer Cells**

D-9 11:45-12:00 Makayla Owens **C-Reactive Protein: Is it a good indicator of a Healthy Digestive System?**

12:00-1:00 Lunch

MEDICINE FOR MAN AND ANIMAL

D-10 1:00-1:15 Valeria Roati **The Effects of Age and Movement on the Cellular and Volumetric Development of the Equine Fetlock Joint**

D-11 1:20-1:35 Sarah Jensen **Development of CRISPR constructs for the insertion of GFP into the *Cdk-5* gene of *Caenorhabditis elegans***

D-12, 1:40-1:55 Cassidy Soehnlein **The Growth of Candida in the Lower Gastrointestinal Tract of Canines Increases with the use of Antibiotics**

D-13, 2:00-2:15 Johnny Pingshaw **Is Your Digestive Health Affecting Your Sleep?**

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

D-14, 2:25-2:40 James Rainey **Statistical Comparisons between Breast Cancer and Dieldrin Contamination Areas**

D-15, 2:45-3:00 Gary Music **Crackin' Down on the Brain-Gut Axis! Comparing the Effect of Probiotics on Gastrointestinal Health and the Implications for Mental Cognition and Behavior**

ORAL PRESENTATIONS – SESSION E

Rinker Auditorium, Lynn Business Center
9:00 am-3:30 pm
Dr. Alicia Slater, Morning session chair
Dr. Cynthia Bennington, Afternoon Session Chair
Judges: Dr. Deborah Goldring, Dr. Benjamin Tanner

SCIENCE ACROSS THE SPECTRUM I

E-1 9:00-9:15 Emily Niederman **Utilizing Hazus-MH and Sea Level Affecting Marshes Model (SLAMM) to identify floodplain conservation areas for coastal hazards**

E-2 9:20-9:35 Patrick Ball **Effect of pH and fungi presence on the germination of *Carphephorus corymbosus***

E-3, 9:40-9:55 Jeremy Schulte **Imaging the Vibrational Patterns of Trombone Bells Using Time Average Holography**

E-4,10:00-10:15 Katelynn Johnson **Food types affect growth rates in *Melanoides tuberculata***

E-5, 10:20-10:35 Cody Perrodin **Urban Ecology: Habitat Preferences of Anolis Lizards in a Heavily Landscaped, Urban Environment**

10:35-10:45 **BREAK**

E-6, 10:45-11:00 Fatima Ramis **Energetic Status is Positively Related to Maternal Behavior in a viviparous snake, *sistrurus miliarius***

E-7 11:05-11:15 Dylan Labbe **Simulation of Alfvén Waves in One Dimension**

E-8, 11:20-11:35 Paul Petrowski **Genetic structure of *Hesperoperla pacifica*, a montane stonefly**

E-9, 11:40-11:55 Stanford Borrell **Single-Axis Solar Tracker Using Closed-Loop Voltage Feedback**

11:55-1:00 Lunch

SCIENCE ACROSS THE SPECTRUM II

E -10 1:00-1:15 Donna-Jael Paredes **The Effects of Arginine Vasotocin on Maternal Care Behavior in a Viviparous Snake, *Sistrurus miliarius***

E-11 1:20-1:35 Sarah Coffey **Costa Rican agoecosystems as carbon sinks: the correlation between tree diversity and carbon storage in a tropical forest**

E-12 1:40-1:55 Whitney Harvey **Inorganic nitrogen and phosphorus are not chemical catalysts for accelerated generation times in the invasive snail species, *Melanoides tuberculata***

E-13, 2:00-2:15 Kameron Calabro **Magnetic Force Microscopy & Yttrium Iron Garnet**

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

E-14, 2:25-2:40 Henderson Gull **Predation success and handling strategies in the stone crab (*Menippe mercenaria*) in foraging trials with four shelled marine invertebrates**

E-15, 2:45-3:00 Christian Decker and Jure Jumalon **A Comparison of Sorting, Searching, and Arithmetic Based Serial Algorithms to an OpenCL Implementation**

E-16 3:05-3:20 Andrew Barton **Plasma corticosterone levels and body condition in reproductive and non-reproductive pigmy rattlesnakes, *Sistrurus miliarius***

SESSION F
HONORS TUTORIALS
Honors House 1:00-4:15
Dr. Grady Ballenger, Session Chair

HON-1 1:00-1:15 Haley Gaynor, Taylor Clarke, William Gillett, Cassidy Campbell, Daniel Keiser, and Noah Katz **Black Markets of Academia**

HON-2 1:20-1:35 Benjamin Griffiths and Arthur Tran **The History and Philosophy of Walking**

HON-3 1:40-1:55 Matthew Babikow, Lauren Durham, and Matthew Sweeney **Charity: A Solution or a Scam**

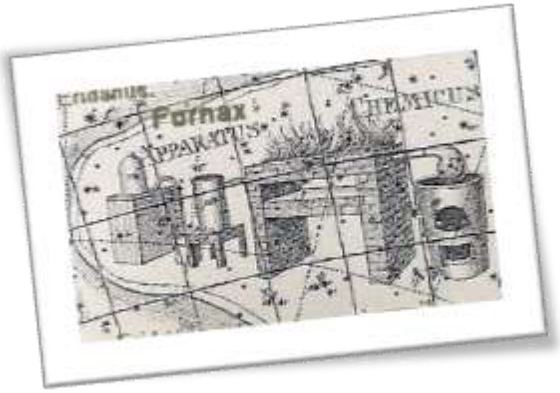
HON-4 2:00-2:15 Rachel Regester-Goumas and Anika Reichwald **Inventing the Ideal Diet**

2:15-3:15 **BREAK**

HON-5 3:15-3:30 Lauren Spratt and Kimberly Sutherland **Asian Culture and Religion in *Avatar: The Last Airbender***

HON-6 3:35-3:50 Kathryn Renae Metcalf **Global Perspectives of Language Education**

HON-7 3:55-4:10 Cleo Koenig and Markus-Daniel Jones **Theory to Practice: Ethical Incubator**



SESSION G
HONORS 102 SERVICE LEARNING AS SCHOLARSHIP
322 Elizabeth Hall
Kevin Winchell, Session Chair

9am-10am
Sally Ancheva and Tish Singham **Spread the Word to End the Word**
Rachel Cosker, Heyley Gatewood, Michael Chen, Emily de Jesus, Sierra Brown, Ashley Meyer **Starke Elementary After School Programs**
Emilio Coirini and Kate Benson **Volunteering with INDIVISIBLE**
John Levee **Hatter Records**

10am-11am
Austin Beltran **Second Chance Rescue Food Drive**
Mackenzie Nalven **Laws of Life Essay Contest**
Carleigh Alfrey **Youth Mentorship in Deland**
Tara Tovkach **Faces of Homelessness**
Emmie Palmer **De-Stress Fest**

11am-12pm
James Babich **Holiday Drives in Volusia**
Lauren Potts and Caitlyn Carey **Student Org Resume Coaching**
Nicholas Murphy and Lisa Cross **Haiti and Home**
Jacob Mauser **Advocacy Group for Stetson Students with Disabilities**
Delaney Mcgehee **A Ripple Effect in Deland's Youth**

1pm-2pm
Adeline Weems and Grace Paul **Mental Health Awareness**
Zachary Edwards and Ben Staskowski **George Marks Elementary Science Club**
Lauren Prestifilippo, James Aagaard, Vanessa Moya, **SCoMP**
Solstice Backus-Little **Volunteer Opportunities within Deland**
Joshua Hasker **Haircuts for the Homeless**

2pm-3pm
Jimmy Dean **Stetson Parli**
Son Vu **Youth Mentorship and Meals on Wheels Deland**
Ari Hardarson and Taylor Nenson **Gun Safety Course**
Brian Levine and Markus-Daniel Jones **Weekend Workshops**

3pm-4pm
Noah Wagar **Community Music Concert**
Monica Weaver **Toys for ARK**
Amanda Vargo **PBC Recruitment**

5:00-5:45 **PRE-BANQUET RECEPTION FOR 2017 SHOWCASE AND SURE SCHOLARS***

Nemec Courtyard

Open to presenters and mentors.

***Alcohol served. Bring ID's**

5: 45 EVENING BANQUET AND AWARDS
STETSON ROOM, CUB

6:15:
2016 Grady Ballenger Lecturer

Dr. Michael Jackson

Dean, College of Science and Technology
Millersville University of Pennsylvania

How I tripped and stumbled through research: lessons and reflections

My faculty-mentored research experience was the most transformative, influential, and memorable element of my undergraduate education. The knowledge I gained and the skills I began developing during that period enhanced my education, assisted in my growth as a scientist, and in no small part helped shaped my career. In this presentation, I will provide a cursory summary of my research experiences related to the investigation of stable molecules and free radicals using a variety of infrared and far-infrared lasers. I will also discuss the agony surrounding my doubts and failures along with highlighting what my students and I did to turn those stumbles into successes.

Dr. Michael Jackson is presently founding Dean for the College of Science and Technology at Millersville University of Pennsylvania. Previously, Dr. Jackson was a member of the physics faculty at Central Washington University, the University of Wisconsin-La Crosse, and the State University of West Georgia. He was Chairperson of the Department of Physics at Central Washington University from 2007 – 2013 and at the University of Wisconsin-La Crosse from 2006 – 2007. He earned a Ph.D. in Physics from New Mexico State University and a B.Sc. from the State University of New York, College at Oswego in Physics and Mathematics.

Dr. Jackson's service includes four elected terms as Councilor for the Physics and Astronomy Division at the Council on Undergraduate Research, where he has served in several capacities including as member of the Executive Board, Chair of the Physics and Astronomy Division, co-Chair of the Posters on the Hill committee, and co-Chair of the CUR Fellows committee. He served two elected terms as President of the Washington Section of the American Association of Physics Teachers and an elected term as Chair of the Academic Department Chairs Organization at Central Washington University. During Dr. Jackson's term as Department Chairperson at Central Washington University, the physics program grew significantly, approximately quadrupling the number of physics majors and repeatedly producing double-digit graduating physics classes. The success of the program has been recognized on the national level as a 'rising' thriving physics program.

Dr. Jackson's research interests include the discovery of far-infrared laser emissions, the measurement of their frequencies, and their use in conducting high-resolution spectroscopic investigations of stable molecules and short-lived free radicals. His research has been funded by the National Science Foundation, NASA's Space Grant program, Research Corporation, and the American Chemical Society. He has co-authored over 40 publications, many of which included undergraduate student co-authors. Awards that he has received include the Outstanding Undergraduate Science Teacher Award from the Society for College Science Teachers and the David Halliday and Robert Resnick Award for Excellence in Undergraduate Physics Teaching from the American Association of Physics Teachers. He is also a Fellow of the American Association of Physics Teachers.

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

ABSTRACTS

POSTER

P20 Kaitlin Andersen (Dr. David Stock)
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Detecting light-driven DNA repair by photolyase and finding optimal environment for enzymatic activity within *Clamydomonas reinhardtii*

Humans wear sunscreen and dive in and out of the sun to protect themselves from damage caused by UV light. Plants are in the sun all their lives but do not experience the same damage of UV exposure as other organisms. How are plants able to withstand UV exposure with so few signs of internal damage? Plants

can somehow repair themselves with an efficiency that other organisms cannot. The purpose of this study is to better understand the mechanism that repairs plants after sun damage. Using the study of DNA dark repair of *Clamydomonas reinhardtii* and *Euglena gracilis*, I developed a study of one of the enzymes in light repair, namely photolyase repair of thymine dimers within *C. reinhardtii* DNA. The focus of my study was the use of light to promote photolyase mediated DNA repair. Photolyase is catalyzed by wavelengths of energy within the spectrum of visible light that is 700nm to 400nm long. I hypothesized that blue light (450nm) and red light (700nm) would best catalyze activation of photolyase mediated DNA repair because they represent the two ends of the spectrum of colored light. I executed three replications of extraction of DNA and photolyase, radiation of DNA under UV rays, exposure of irradiated DNA to photolyase under activating colored light, and electrophoresis of DNA fragments to measure repair. The hypothesis was partially supported as both 450nm and 700nm wavelengths excited photolyase repair of thymine dimer pairs in *C. reinhardtii* DNA but the 550nm green light was also an efficient activator of photolyase repair and the 700nm red light was less effective than expected as demonstrated by the existence of thymine dimer pairs from failure of photolyase repair resulting in smaller DNA fragments in electrophoresis gel.

P56 Natalie Applebaum (Dr. David Stock)
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The effect of cigarette smoke exposure on the respiratory microbiome of *Mus musculus*

This experiment studied the effects of cigarette smoke on the respiratory microbiome of mice to determine if smoking leads to the proliferation of pathogenic bacteria within the respiratory tract, leading to potentially increased incidence of respiratory diseases. We hoped to observe the time it took for unfavorable changes in the microbial flora of the oral cavity to occur. Mice (*Mus musculus)* were used as a model organism. Microbial species were unable to be identified in the DNA sequences; thus the data did not show that a correlation exists between the amount of cigarette smoke exposure and the percent change in bacteria. More representative data must be obtained in order to test the hypothesis that increased exposure to cigarette smoke causes increased levels of microbial change.

P1 Taheya Asad (Dr. Michele Skeltom)
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IgY Max: an EGGcellent solution to promote Digestive Health

The primary role of the gastrointestinal tract is to digest and absorb nutrients to meet the metabolic requirements and demands for normal human growth and development. In addition, the intestinal mucosa provides a protective host defense against the constant presence of pathogens from food and microorganisms in the gut lumen. Within the gut flora resides living bacteria that are non-pathogenic microorganisms. When ingested these good bacteria (Probiotics) enhance gut well-being, regulate intestinal homeostasis and provide health benefits. When the gut flora is compromised, disease may occur. Dietary solutions such as pharmaceuticals, herbal medication, antibody therapy and probiotic supplementation have not shown to significantly relieve all gastrointestinal disease. IgY Max may provide an alternate solution. IgY Max is a hyper-immune egg powder supplement. This egg powder targets non-beneficial bacteria in the digestive tract, promoting the good bacteria and contributing to improved GI health. Subjects in this study were placed in groups of that were supplemented with either probiotic, IgY Max, IgY Max and a probiotic, or a placebo. All subjects completed the gastrointestinal quality of life index (GIQLI) before and after supplementation. Results of effectiveness of IgY Max will be presented.

P38 Glynn Baron (Dr. Michael King)
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The Effect of NaCl & sucrose on Behavior and Neural Activity in the Gustatory Cortex

The gustatory cortex (GC) is accountable for encoding chemical information into taste perception. Neurons in the GC respond to five specific tastants: sweet, sour, bitter, salty, and umami (glutamate). The specific location of neurons in the GC were activated by intra-oral infusion of 0.1 M and 1.0 M solutions of NaCl and sucrose in rats. The activated neurons were mapped using Fos immunohistochemistry. The behavioral responses to a taste, known as taste reactivity (TR), were videotaped during intra-oral infusion of all four solutions. The group of five adult Wistar rats that received intra-oral infusions were compared to each of the other experimental groups. The control groups comprised of trails eliciting no tastant and one with water. Fos-IR neurons were counted in 8 sections throughout the anterior-posterior regions of the GC. There was no significant difference between treatment groups and the total number of Fos-IR activated in the brain. The distribution of these neurons within the GC was different among tastes. In the lateral DI, there was a statistical significance between the number of Fos-IR neurons when comparing the 0.1M and 1.0M solutions ($p < 0.05$). The number of Fos-IR neurons were larger when comparing the two concentrations, especially in sections 4, 5, 6, and 8. There was no effect of the number of ingestive behaviors present between 0.1 M and 1.0 M solutions. There was a significant difference between the two concentrations in the aversive behaviors (p 0.003, 0.005). Linear regression exhibited no significance comparing the total number of Fos-IR neurons to the total number of TR behaviors. The regression showed no significance between ingestive behaviors and the total number Fos-IR neurons activated within the lateral DI. Sections of the central region of the GC may be responsible for Fos-IR neuron recognition and taste reactivity to both NaCl and sucrose.

P21 Jeremy Bodiford and David Hall (Dr. Randall Croom)
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It's Written All Over Your Face: The Influence of Men's Facial Hair on Perceptions of Professionalism and Competence

Prior research suggests that men with facial hair may enjoy social advantages that men without facial hair do not. Some researchers have proposed that beards evolved as a sign of male status and dominance. Other researchers have found that men with facial hair, relative to clean-shaven men, are rated higher on the more positive descriptors of masculinity such as masculine, strong, potent, dominant, and courageous (Addison 1989; Kenny and Fletcher 1973; Pellegrini 1973; Reed and Blunk 1990; Roll and Verinis 1971; Wood 1986). Given social biases that favor men and masculinity, particularly in organizational settings, we might expect that the most powerful men in organizations, CEOs, might be more likely to have facial hair. We conducted an examination of 477 male Fortune 500 CEOs that reveals that facial hair is the exception, not the rule. Given that large corporations provide a professional context, we decided to investigate whether facial hair influences perceptions of professionalism and other traits. We used a paired-samples t-test to compare evaluations of the faces of men with and without facial hair. Analyses revealed that for most men who were evaluated, facial hair was associated with lower ratings of attractiveness, professionalism, intelligence, and trustworthiness.

P57 Caitlin Brewer (Dr. Jason Evans)
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Effect of Algal Growth and Coverage on the Growth of American Eelgrass (*Vallisneria americana*)

Vallisneria americana, a once prominent submerged aquatic vegetation (SAV) species in

freshwater ecosystems, has recently experienced substantial declines in Volusia Blue Spring State Park. Algae are thought to be a large contributor to the health and, possibly to the decline, of eelgrass populations. The intention of this study is to determine a relationship between algal growth and coverage on the growth of SAV. Two distinctly different types of alga, Oscillatoria sp. and Synedra sp., were used to inoculate the plants. A total of 6 plants experienced each treatment. Physical changes to the macrophytes such as: weight, length, and asexual offspring were noted. These changes were then compared using a one-way ANOVA. Although no significant results were concluded, this research is a steppingstone for future research.

P2 Caitlin Brewer (Dr. Kirsten Work)
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Effect of sediment composition on growth of American eelgrass (*Vallisneria americana*)

Vallisneria americana, a once prominent SAV species in freshwater ecosystems, have recently experienced declines by the masses in Volusia Blue Spring State Park. Sediment composition can play a large role in the health of eelgrass populations. The intention of this study is to determine an ideal sediment composition ratio to promote healthy growth. This was accomplished by studying sediment compositions with 3 distinct organic matter ratios: 0%, 1.5%, and 5%. A total of 12 plants experienced each treatment. After 38 days any physical changes such as: asexual reproduction, weight, and length were recorded. The changes were then compared to the original plants by running a one-way ANOVA. Shoot length (p= 0.0179) and total length (p= 0.0286) experienced a significant difference in the control. Number of leaves (p=0.0187), shoot length (p= 0.00493), and total length (p=0.00158) vary significantly in the treatment with 1.5% organic material. The most remarkable growth was expressed in the sediment composition with 5% organic material; the wet weight (p= 0.00192), number of leaves (p= 0.00362), shoot length (p= 3.78*10-11), and total length (p= 2.12*10-11) all varied significantly. Asexual reproduction occurred in all treatments, but with higher occurrence in the highest organic matter concentration. Evidence from this study suggests *Vallisneria americana* can thrive in concentrations of organic material near 5%.

P3 Jessica Butler (Dr. Robert Askew)
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The Relationship Between Socioeconomic Status and Mental and Physical Health in College Students

This study evaluates the relationship between socioeconomic status and mental- and physical-health in college students at a small private university. These relationships have been assessed in other groups, but not in college student populations. Two hundred participants were sampled from Stetson University in Deland, Florida. They completed four questionnaires, one assessing demographics, two assessing mental health, and one evaluating physical health. This correlational study design was implemented using an anonymous, online survey. The measures utilized for mental health include the Generalized Anxiety Disorder-7 and a modified version of the Patient Health Questionnaire-9 Scale. To assess physical health, a Health Practices Scale was used. Familial income was the indicator of socioeconomic status. Results indicated that there is a statistically significant relationship between socioeconomic status and physical health. While there was no statistically significant relationship between socioeconomic status and mental health, a positive trend was observed, which may have reached statistical significance in a larger sample. These results document health disparities among college students differing by socioeconomic status and underscore the need for interventions to improve the health of students with socioeconomic challenges.

P39 Chandler Callaway (Dr. David Stock)
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The Effect of Cylindrospermopsin on the Liver of Golden Shiner Fish (Notemigonus crysoleucas)

Cylindrospermopsin (CYN) is a cyanotoxin produced by several common species of cyanobacteria. CYN has been known to cause damage to mammals, but there is limited information available on the effects it has on fish. The purpose of this experiment is to see if Superoxide Dismutase (SOD), a liver enzyme, is involved in preventing cellular damage caused by CYN. It was hypothesized that increasing CYN concentration will lead to an increase in unregulated cell death in the liver tissue. This was determined by performing a viable cell count for each of the treatment groups after a 5 day exposure to varying, environmentally relevant CYN concentrations. It is also hypothesized that increasing CYN concentration will lead to an increase in SOD. This was determined using an SOD Assay Kit from Sigma-Aldrich to test the levels of SOD in the blood of fish post-treatment. The results showed that the viable cell count is significantly different between control and treatment groups, and that it is dose dependent. The SOD assay showed that the levels of SOD increase with the increasing CYN concentrations. The data supported the hypothesis that CYN causes necrosis in liver tissues and that SOD is being used to counteract the toxic effects of CYN.

P22 Shannon Carmignani (Dr. Derek Barkalow)
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Identification of Cancer Clusters Using Surveillance, Epidemiology and End Results Program (SEER)

Cancer clusters are defined as a greater than expected number of cancer cases in a geographic area. Historically, cancer clusters have been discovered incidentally by word of mouth between patients and physicians or, in the case of Toms River, New Jersey, patients and nurses. The discovery of these clusters has not only triggered investigations that lowered cancer incidences but initiated research which established links between certain types of cancers and their environmental risk factors. Technology and detailed record keeping has afforded us the ability to track cancer incidence digitally, via software or other open source databases. Surveillance, Epidemiology and End Results Program (SEER) is one such program. Here, SEER was used to obtain individual patient demographics and malignant tumor data for patients under the age of 34. These data were then analyzed using Microsoft Excel with the purpose of locating and identifying cancer clusters. In support of the hypothesis that cancer clusters can be identified digitally, the results indicated a cluster of thyroid cancer in Fairfield County, Connecticut. According to SEER, patients located in this area have experienced accelerating increases of thyroid cancer from 2000 to 2013 (SEER data is on a 3-year lag but is being updated annually). Compelling evidence now exists linking certain types of thyroid cancer with exposure to Iodine-131, a radioisotope of Iodine, one of the most abundant substances released from failing nuclear power plants. Fairfield County's proximity to 4 nuclear power plants may be an explanation for this increase in malignant thyroid tumors and these findings, at the very least, justify the need to research all possible causal relationships. It would be worthwhile to examine the output of each nuclear power plant as well as the land, air and water quality in the surrounding areas.

P58 Monika Chojnacka (Dr. Harry Price and Dr. Roslyn Crowder)
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Cytotoxic effects of *Alpinia zerumbet* essential oil on Jurkat E6-1 cell line

Plants have been used for their medicinal purposes for centuries. Their medicinal properties vary widely from antibacterial to anti-hypertensive. Recently, there has been an

increase in studies done to determine efficacy of certain plants on certain diseases and to understand the molecular mechanisms behind natural remedies. Cancers are among the diseases studied. Acute T-cell leukemia is an aggressive cancer of the bone marrow. Studies have shown cytotoxic effects of natural plant constituents, such as phenolic compounds and terpenes on this form of cancer. *Alpinia zerumbet* is a plant belonging to the ginger family, whose essential oil consists of many terpene compounds. The cytotoxic effects of this oil was investigated on Jurkat E6-1 T-cell leukemia cell line. A Trypan Blue and an ATP metabolic assay were conducted to determine effects on cell proliferation and viability, Annexin V flow cytometry was conducted to determine stages of apoptosis, and a caspase 8 assay was conducted to determine mode of apoptosis. At low concentrations of 0.0546%, 0.0741%, and 0.0936% (v/v), the essential oil significantly inhibited cell proliferation and induced apoptosis in a dose dependent manner at 24 and 48 hours of treatment.

P40 Michael Clay (Dr. Joshua Eckroth)
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Git-Advise: An Automated Git Workflow Advisor

We built Git-Advise, a software tool that produces a sequence of Git commands that can transform a Git repository's current state into a goal state described by the user. Git is an industry-standard tool for tracking changes to source code. First, we built planning engine that represents the various commands that Git supports for manipulating repositories. Second, we integrated with a graphical user interface that allows users to describe their goals. Once the user has specified goals, Git-Advise suggests a series of commands to transform the existing state of the Git repository to the desired state.

P23 Adam Cooper (Dr. W. Tandy Grubbs) and Emily White, Christian Lemus, Dr. Holly Goodson (Department of Chemistry and Biochemistry, University of Notre Dame)
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Distinguishing between dissolved reactive phosphate and bioavailable phosphate for the development of a biophosphate sensor

The overabundance of nutrients such as phosphate in aqueous systems, known as eutrophication, is a leading cause of algae blooms and water pollution. Drawbacks of current methodology for detecting phosphate are cost, lack of mobility, usage of noxious chemicals and a nonbiological view of phosphate. The goal of the project was to create an affordable, sustainable and mobile bioanalytical sensor for biophospate utilizing Saccharomyces cerevisiae (yeast) growth. This growth would determine the amount of bioavailable phosphate in an aqueous. The first step towards the production of this sensor was an in-depth understanding of the relationship between the readily tested Dissolved Reactive Phosphate (DRP) and bioavailable phosphate, as well as how varying methods of storage and sterilization would affect these two quantities. To determine DRP in environmental samples, the molybdenum blue method, which relies on a colorimetric reaction and subsequent analysis, was used. To determine bioavailable phosphate, optical densities of S. cerevisiae at saturation were compared. Tests conducted gave the unexpected result that bioavailable phosphate levels were lower than the DRP in the same sample. Future work is to calibrate the instrument itself and conduct a more in depth study of factors that separate DRP and bioavailable phosphate.

P59 Kristen Coulter (Dr. Melissa Gibbs)
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The effect of Oxytetracycline HCl on the embryonic development of *Ambystoma mexicanum*

Oxytetracycline HCl, which belongs to the tetracycline family, is one of the most common antibiotics found in agriculture. This antibiotic

inhibits gram-positive and gram-negative bacteria by inhibiting protein synthesis, and is widely found in livestock manure, especially swine, and in the surrounding environment. The purpose of this study was to research the effect that oxytetracycline HCl exposure has on axolotl embryo development. Because studies have shown that other antibiotics can inhibit growth in amphibians, I hypothesized that embryos exposed to higher levels of oxytetracycline HCl would have a higher mortality rate and have a significantly smaller body in comparison to the untreated embryos. I exposed the embryos to four different concentrations of oxytetracycline HCl; 3.72 mg/mL,0.372 mg/mL, 0.0372 mg/mL, and 0.00372 mg/mL, which were created using a series dilution based on maternal blood volume, a known wastewater concentration, and two other higher concentrations. The axolotls were measured and analyzed based on body length, gill length, head width, and body width. The findings of this study partially supported the hypothesis, as the axolotls did experience higher mortality among the highest concentrations, shorter gills, skinnier bodies but were not significantly shorter than the controls. More research is necessary to determine a concentration between 0.372 mg/mL and 0.0372 mg/mL at which there is not 100% mortality among the embryos.

P4 Ryan Cromwell (Dr. Derek Barkalow)
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The relationship between human papillomavirus and incidence of cervical cancer with increasing age

Human papillomavirus (HPV) is a multi- strain virus with dangerous conclusions. Among these are severe side affects such as cervical cancer. Cervical cancer is a life threating disease that kills hundreds of thousands of women per year. As one increases in age, lowering the strength of there immune system, those with existing HPV should begin to see it fester and change into cancer of the cervix. The purpose of my research was to analyze the relationship between HPV affected patients and what age they were diagnosed with cervical cancer, as well as to support the hypothesis that increasing age has a correlation with higher incidence. Data was collected from various organizations and universities to test if age was a factor in determining this likely-hood. The findings, however, did not support the original hypothesis. Cervical cancer is a life threatening illness that should be taken seriously. This research could be used to increase safeguards physicians take when looking at patients with this very same problem such as screenings and pap smears.

P41 Averi D'Anna (Dr. Erin Moore)
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Television Viewing Habits as Predictors of Physical and Psychological Health

Television consumption to be associated with physical and psychological health. Online streaming services have become increasingly popular in the United States, but little research has been done to identify any differences in the relationship between health and how television is consumed. A sample of 235 participants recruited through Mechanical Turk completed an online survey on their television consumption, perceived physical health, physical activity, sleep quality, diet, and symptoms of depression and anxiety. Negative correlations were found between overall hours watched and perceived physical health and physical activity; frequency of eating while watching television and perceived physical health, physical activity, and diet habits; and binge watching sessions and sleep quality. Changing television-watching behaviors could promote better physical health and sleep hygiene.

P24 Tara Davison (Dr. Danielle Lindner)
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Public Observation of Behavior Towards People with Physical Disabilities

Little research has focused specifically on behaviors of individuals toward the physically

disabled. The purpose of this study was to measure the behaviors of adult subjects as they encountered a physically disabled confederate in a supermarket. Approach-avoidant behavior, facial expressions and eye gaze were recorded using a behavioral observation coding scheme that I developed. Examples of approach or avoidant behavior included turning around or away from the aisle (avoidant), coming down the aisle(approach), or traveling through the entire aisle maintaining distance from the confederate (with the distance from the confederate indicating approach or avoidance). Facial expressions were coded as overtly positive, neutral, or overtly negative. After initial eye contact, any subsequent eye gaze (i.e., when the confederate was in visual field of view) was recorded. Overall, subjects displayed negative behavior such as avoiding the confederate more than half of the time and were more likely to have multiple gazes towards him. However, subjects had neutral facial expressions more than half of the time. Early interventions and interaction with people with disabilities and more positive media portrayals of people with disabilities in societal roles can help educate and attenuate these negative behaviors held by persons without disability towards those with them.

P60 Anthony Dekker, Erin Busch and Kayla Snyder (Dr. Michele Skelton)
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Do the Effects of Kinesio Tape, Cupping Therapy, and Massage Therapy Reduce Lower Back Pain and Tension?

The global prevalence of lower back pain has caused multiple public health issues for a wide range of people. Specifically within the United States, lower back pain is the most common cause for activity limitation for those 45 years or younger, the second most frequent reason for doctor visits, the fifth leading cause for hospitalizations, and third most common reason for surgical procedure. The focus of this study was to determine if the use of cupping therapy is effective in reducing lower back tension and pain in comparison to the use of massage therapy and Kinesio Tape. Subjects engaged in a four-week study where they were treated with each modality one week apart. The Owestry Disability Index questionnaire (ODI) and a Visual Analogue Scale (VAS) pain rating scale were completed by the subjects before and after treatment. The results of the study and further discussion of mechanical modalities of treatment for lower back pain will be presented.

P5 Maya Ferdschneider (Dr. Erin Moore)
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Predictors of Typical and Atypical Depression Symptoms in College Students

This study investigated levels of traditional and atypical depressive symptoms among college students and what demographic and psychosocial variables predict them. Depression may be harder to identify in some students, particularly men, because it may present with atypical symptoms related to anger. It was hypothesized that 1) racial minority students would report greater traditional symptoms than non-minority students, 2) male students would report higher levels of anger-related depression, while females would report higher levels of traditional symptoms, 3) student-athletes would report less traditional depression symptoms than non-athletes, and 4) both traditional and atypical depression symptoms would negatively correlate with spirituality and positively correlate with lack of social support. Data from 235 students were collected; they were recruited through email to complete an online survey. Participants completed the 20-item Center for Epidemiologic Studies Depression Scale to assess the frequency of experiencing traditional depression symptoms. Participants also completed the 12-item Aggression Questionnaire Short Form to measure atypical symptoms associated with depression, including physical aggression, verbal aggression, anger, and hostility. They also completed the 10-item subscale of the Interpersonal Support

Evaluation List that measures social support. The final scale they completed was an 8-item spirituality scale. Hypotheses 1 and 3 were not supported; there were no significant differences by race or athlete status. Hypothesis 2 was partially supported; there were no significant differences in traditional depression, but men reported higher anger-related depression than women. There were significant positive correlations between lack of social support and depression, and lack of social support and anger-related depression; traditional depression and anger-related depression were also significantly correlated; spirituality was not significantly correlated with either depression variables. Thus, Hypothesis 4 was partially supported. Multiple linear regression analyses were performed for both depression outcomes. The regression model for traditional depression was significant; the model explained 34% of the variance in depression. Lack of social support significantly contributed to the model and explained 15% of the unique variance in depression, while anger-related depression explained 7.7%. The regression model for anger-related depression was significant; the model explained 22% of the variance in anger-related depression. Traditional depression explained 9.7% of the unique variance in aggression, and lack of social support explained 1.5%; both were significant predictors. Sex was not a significant predictor in the full model and explained only 1%. These findings highlight that traditional and atypical depression symptoms are related to each other, with atypical symptoms being higher in men. Lack of social support is also an important factor in understanding depression risk.

P6 Alexandria Fitzgerald (Dr. Melissa Parks)
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Classroom Management: Creating Positive Student Behavior in the Elementary Classroom

The role of a teacher is to provide students with a great education while being able to manage a classroom efficiently. All students need structure and guidance and when broken, classroom management needs to be seen as a learning tool rather than punitive. Rules and procedures are not taught just for the fun of it, but rather for the students to understand what is expected of them every day from the time they enter the classroom until the time they leave. In my study, I looked into different common practices as well as some rather unfamiliar practices that can be used to create positive student behavior in elementary school classrooms. The purpose of my study is to understand what takes place in different classrooms that can aid in the creation of positive behaviors rather than negative behaviors, through classroom management.

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The Effect of Triclosan on Axolotl (*Ambystoma mexicanum*) Development

Triclosan is a commonly used agent in many antibacterial and antifungal products. These products we use nearly every day, such as in shampoos, soaps, deodorants, and antiseptics. Though it is an effective antibacterial, it imposes many issues to the environment as it is difficult to remove from wastewater. Long-term research on triclosan implications on humans has yet to be researched, and thus could be the cause of many different health issues. Since triclosan is mostly found in runoff water, animals and creatures living in these aquatic environments are to be the most impacted by this agent in their environment. Axolotls have been the research in embryology due to their ease of research, low cost care, and notable body changes through embryogenesis. The purpose of my study is to determine whether axolotls are impacted by this agent in their environment and to determine if axolotls have adapted to having this agent in their environments. I hypothesized that axolotls have adapted to having this agent in their environment, and axolotls will also have a higher mortality rate at higher concentrations of triclosan in their environment. I saw that axolotls did not acclimate to the normal

concentration of triclosan and that axolotls did suffer higher mortality rates at concentrations different from the norm. More research can be done to see if chronic exposure to triclosan impacts embryology.

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A comparison of age and growth between *Pterygoplichthus disjunctivis* populations in Florida and Texas springs

Loricariid armored catfish originating from South America have successfully invaded a variety of tropical and subtropical freshwater environments around the world. Armored catfish proliferate rapidly in their new environments, but their age and growth patterns are poorly understood in their new conditions. *Pterygoplichthus disjunctivis* is a species of loricariid armored catfish that has invaded both the Volusia County Blue Springs in Florida and the New Braunfels Comal Springs in Texas. The purpose of my research was to determine if the age and growth patterns of *P. disjunctivis* inhabiting the Comal springs match the distribution of growth patterns present in the Blue Springs. To accomplish this otolith growth bands were used to measure age and fish body length and estimate growth rates. The findings of this study support the hypothesis that *P. disjunctivis* populations in the Comal Springs and Blue Springs exhibit very similar growth rates. Controlling invasive armored catfish populations is proving very difficult, but a better understanding of their development in new environments should allow for a more organized and effective response.

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The Effect of Florida Apple Snail Density on *Vallisneria americana* Weight and Reproduction*

We analyzed the effect Florida Apple grazing had on *Vallisneria americana* weight, length, and reproduction after a period of 6 weeks. We measured weight and total length on the end of the period, and measured reproduction by counting the amount of offspring, or runners, the eelgrass produced. We used aquaculture bags as a medium for the eelgrass bundles. Two trials were completed, one to test the effect of varying snail densities using the conditions of no snails, 2, 4, and 8 snails, and the other to test solely the absence and presence of snails using two conditions of 6 snails of no snails. In the second trial, fertilizer was also added to replicate the conditions of Blue Spring. We found that there was a statistically significant inverse relationship between presence of snails and eelgrass weight and total length. There was not a statistically significant relationship between presence and absence of snails and reproduction, however the results were suggestive with p=.052. More research should be done to further understand how apple snail grazing affects eelgrass reproduction because it could give insight to a tradeoff in investment between growth and reproduction.
*This research was funded by a 2016 SURE Grant

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Understanding the Relationship Between Sexual Identity, Life Satisfaction, Psychological Well-Being, and Online Community Use

This study sought to address gaps in sexual minority research by utilizing a diverse sample of many sexual identities. An identity-based framework allows for a diverse look at sexuality because it considers non-binary groups that are typically excluded. It was hypothesized that asexual, demisexual, polysexual and pansexual individuals would report lower levels of life satisfaction and psychological well-being, more frequent support-seeking internet use, and less connection to the LGB community compared to gay, lesbian, and bisexual individuals. A sample of 284 individuals completed an online survey. Analyses indicated that asexuals were significantly less satisfied with life compared to

heterosexuals and significantly felt less connected to the LGB community; and, demisexuals were significantly more distressed than heterosexuals. Further research is needed to clarify and expand on these findings, which are applicable to creating more inclusive means of intervention that meets the needs of underrepresented sexual identities.

P26 Sarah Greco (Dr. Michael King)
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Electrical Stimulation of Gustatory Cortex Causes Activation of Motor Output in Conscious Rats

The role of the gustatory cortex (GC), a forebrain region that receives taste and other orosensory input, in the control of taste-related behaviors is unclear. The goal of this study was to determine if electrical stimulation of the GC, that elicits taste reactivity (TR) behaviors, causes perception of a taste or activates a motor output. Conditioned taste aversion was used to measure taste perception. TR behaviors in response to intraoral solutions were not different between treatment groups, however, HCl elicited the most aversive responses and sucrose elicited the most ingestive responses among all animals regardless of control or experimental group. The two-bottle preference test showed that both groups preferred sucrose over water. Fos protein was expressed in neurons that were mainly spread throughout the granular and dysgranular insular GC. These data indicate that electrical stimulation of the GC did not result in the perception of a taste and that the observed TR behaviors were most likely attributed to stimulation of a motor output. Therefore, the hypothesis that taste perception could be achieved via electrical stimulation was not supported. Although, there may be a trend toward taste perception and further study would be beneficial.

P62 Elsa Guevara (Dr. Derek Barkalow)
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An investigation on a subpopulation of Florida black bear (*Ursus americanus floridanus*) seasonal roadkills and its relationship between sex and age class 1983-2015

Habitat fragmentation, the isolation of habitats by roadways, coupled with development, poses a serious long-term threat to the persistence of black bear populations in some parts of the state of Florida. Over the past several decades, there has been an increase statewide in the total number of black bear roadkills due to their extensive home ranges in response to reproductive habitats and nutritional needs. The purpose of my research was to analyze the relationship of seasonal roadkills (1983-2015) in relation to age and sex class of a subpopulation of the Florida black bear by using a chi square analysis. The findings in this study support the hypothesis that seasonality and sex joined with age class are not independent of each other. I observed higher male mortality than female mortality among the population. It was also observed that roadkills were higher during foraging and mating seasons than at other times during the year. Even though roadkill mortality is difficult to regulate, techniques presented in this study could be beneficial in diminishing the impacts of roads and highways on wildlife species' mortality.

P7 Cheyenne Hammell (Dr. Jason Evans)
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Public Knowledge and Understanding of the Volusia County Fertilizer Ordinance

In 2014, Volusia County, Florida passed the Volusia County Fertilizer Ordinance as a means for combating algal growth in local water bodies. The purpose of my project was to survey Volusia County residents to determine the public's understanding and knowledge of the fertilizer ordinance. I studied the success of local policy and public knowledge of the ordinance. To distribute my surveys, I attended Volusia County public parks and approached residents with my survey. If residents possessed knowledge of an ordinance, then they were more likely to follow the provisions under that ordinance. The ordinance was successful if

residents followed the provisions. Based on my results, the majority of Volusia County residents answered that they did not know of the ordinance or were uncertain that it existed. In understanding the lack of knowledge of the ordinance, my project demonstrates it is not prevalent in the community and living up to its purpose.

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The Examination of Flaxseed Lignan, Enterolactone in Non Malignant Lung Fibroblasts Cells

Lung cancer is the leading cause of cancer-related death in both men and women in the United States. Treatment of lung cancer varies among surgery, radiation therapy, and chemotherapy. Although these treatments are effective, they each possess setbacks and rare complete remission. Presently, plant extracts have been an increasingly popular alternative remedy for patients undergoing cancer therapy. From previous studies, enterolactone, a mammalian lignan richly found in flaxseeds, was revealed to play a significant role in cancer prevention in breast and prostate cancer via its induction of apoptosis and inhibition of cellular proliferation. These anticancer properties have been associated with the interaction between enterolactone and estrogen receptors. The purpose of this novel study was to investigate the anticancer properties of enterolactone on W138 non-malignant lung cells. This was done as a continuation of Jordan Cockfield's senior research which showcased enterolactone having an apoptotic effect on Non-small lung cancer cells. Therefore, we wanted to see if the effect would differ in non-malignant cells. By employing cell viability assays with increasing concentrations of enterolactone, the data did not depict a strong relationship between malignant cells viability and the enterolactone concentration: increased concentrations of enterolactone did not lead to a vast decrease in the percentages of cell viability. With further investigation into the mechanism utilized by enterolactone to induce apoptosis, this naturally occurring compound can plausibly be incorporated into the endocrine therapy of lung cancer patients.

P27 Sarah Hoffman (Dr. Erin Moore)
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Comparison of First-Generation Students and Non-First Generation Students on Competitiveness, Anxiety, Stress, and Guilt: Does Birth Order Matter?

Birth order and the impact of having siblings have been explored for nearly a century regarding personality and academic success, but no studies have examined how first-generation status might interact with birth order. The current study hypothesized that first-generation college students would report higher levels of guilt, stress, and anxiety and lower levels of competitiveness compared to students who are non-first generation; first-born children would report higher levels of competitiveness than any other birth order; and later-born children would report higher levels of stress and anxiety than any other birth order. An online survey was completed by 361 undergraduate students recruited through a university subject pool and the Reddit website. Findings indicated that there were significant differences based on birth order for stress, anxiety, and guilt, with youngest children reporting higher anxiety and guilt and only children reporting the lowest stress levels. First-generation students reported higher guilt levels than non-first generation. There were also significant interactions between birth order and generation status for stress, anxiety, and guilt levels. College health professionals should consider developing initiatives to foster a more supportive environment for first-generation students that take into consideration that students may have different experiences depending on birth order.

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The Evaluation of the Prevalence of Kyphosis in College Students at Stetson University

This research study assessed the prevalence of kyphosis in college students at Stetson University with regard to daily activities. Participants completed a survey to collect information on individuals' daily lifestyle habits (ie., standing and sitting posture, calcium intake). Kyphotic angles were obtained using the Flexi-Curve instrument on males and female subjects in their natural sitting and standing postural positions. There was no prevalence of kyphotic tendencies for males or females in this study. Preliminary results based on kyphotic index (KI) for both males and females indicated that females had a significantly greater standing KI than males. However, the average KI of males and females in their natural standing and sitting postures fell within normal range and did not show kyphotic tendencies. Individuals with a self-perceived "S-shaped" spine showed significance in KI above normal range. Future research could be conducted to determine if self-perceived posture is in fact an early indicator of kyphosis in this age group.

P28 Trinity Johnson (Dr. Erin Moore)
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The Relationship between Racial Identity, Enculturation, and Dietary Health*

This study was a replication of previous research carried out by Cokley and Helm (2007) on Black racial identity and African American enculturation. While analyzing those factors, the concept of dietary health was an additional factor in this study. Since culture is an integral part of health-prompting behaviors, the study aimed to find a theoretical linkage between all three factors. It was hypothesized that higher levels of racial identification would be negatively associated with lower dietary health, higher levels of enculturation would be negatively associated with lower dietary health, and higher levels of enculturation would be positively association in higher levels of racial identity. Using convenience sampling, a total of 73 participants were recruited through a listserv of Black Students Associations/Unions, Stetson University Department of Psychology Subject Pool, and the surrounding Florida community (35 from student populations, 38 from communities). All participants completed the Cross Racial Identity Scale, African American Acculturation Scale, and the Health Practices Scale-Diet plus demographic questions. Students completed the measures online, while community members completed a paper-and-pencil survey. Findings revealed dietary health and racial identity were not significantly correlated, dietary health and encutlturation were not significantly correlated, and racial identity and enculturation had a significant positive correlation.

*This research was funded by the Psychology department and Dean's Fund.

P63 Bailey Jones (Dr. Erin Moore)
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Evaluating a Measure of Experiential Avoidance in the Context of Self-Harm

Some individuals engage in deliberate self-harm to tolerate emotional stress and cope with any negative internal thoughts or feelings. Evidence points to experiential avoidance as one of the possible causes of engagement in self-harm behavior. The current study served to evaluate the psychometric properties of a new scale developed to assess self-harm-related experiential avoidance. This study hypothesized that the new measure would be highly correlated with existing measures of experiential avoidance, would predict a history of self-harm, and would predict features of self-harm behavior. A sample of 151 adults recruited from Mechanical Turk completed an online survey containing questions on experiential avoidance, distress tolerance, and deliberate self-harm. First, the original 16-item SHEAS was examined for reliability and validity;

two items were removed. A principle component analysis was then conducted, which indicated that the new 14-item scale (SHEAS-R) captured four distinct factors. The results of this study indicate that the SHEAS-R is a better predictor of self-harm history, frequency, and duration than existing measures. Further research could explore the clinical implications of using this measure in therapeutic settings to evaluate patients with a history of self-harming behavior in terms of how they cope with negative thoughts and feelings.

P44 Madison Jones (Dr. Lynn Kee)
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The role of the *klp-6* mutation in neuronal morphology and behavior of *Caenorhabditis elegans*

Caenorhabditis elegans is an excellent model species for researching genetic and molecular mechanisms. Previous studies of the *klp-6* gene propose motor proteins localize and function in sensory neurons. For my research, I investigated the effects of a *klp-6* mutation on sensory neuronal morphology and behavior of *C. elegans.* I hypothesized that *klp-6* mutant worms would have an abnormal phenotype and that males would show an inability to find a mate. A worm synchronization, neuronal morphology assay and male turning assay was performed on both wild-type and mutant worms. The results for my neuronal assay show that there was a significant difference in neuron morphology between *klp-6* mutant and wild-type worms in head and tail regions ($p= 0.0202$; 0.0003). Results for the male turning assay showed no significant difference in male mating success the two groups ($p = 0.2286$). The findings of this study indicate that the mutation disturbs fast axonal transport and thus affects neuron formation. Future experiments will address whether cargo proteins are properly trafficked to the sensory neurons in the *klp-6* mutant. Characterizing mutant motor protein genes in *C. elegans* has implications for understanding human phenotypes of neurological diseases associated with motor protein defects.

P29 Madison Kell (Dr. Jason Evans)
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Relationship between Cardiovascular Disease and Amounts of Greenspace in Florida Counties

Cardiovascular disease is currently the leading cause of death in the United States, including Florida. Obesity and overweight rates, as well as their negative health impacts, have been increasing in the United States leading to more cases of cardiovascular disease. Some studies also suggest there is a relationship between cardiovascular disease and greenspace. This project was designed to find any relationship between cardiovascular disease and amount of greenspace in Florida. I hypothesized that more greenspace will contribute to lower rates of cardiovascular disease and vice versa. I collected data from public health records on cardiovascular disease deaths as well as GIS files representing areas of greenspace over Florida counties. For the purposes of this project, greenspace was defined as any public land consisting of recreational areas, state parks, city parks, and recreational trails. After all of my information was compiled, I normalized the death rates for each county and compared them to the total amount of greenspace, as a percentage, in each county. From this, I looked to find any relationship between greenspace and cardiovascular death rates. After compiling all of the information in Excel, I performed a statistical analysis on the death rates and percentage of greenspace and found $p = 0.028$, $R^2= 0.0717$, followed by $t = 8.428$, suggesting that areas with higher amounts of greenspace have lower death rates from cardiovascular disease.

P64 Brian Kirkland (Dr. Alicia Slater)
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Application of next generation Genotyping by Sequencing (GBS) to validate and improve upon the precision of previous molecular phylogenetic analysis of montane Great Basin stoneflies

A previous study, "Phylogeography and species biogeography of montane Great Basin stoneflies." was conducted by Schultheis, Alicia S., et al. in 2012 to test for genetic differentiation among Doroneuria baumanni populations present in the Great Basin of western North America. The original study relied on mitochondrial DNA (mtDNA) for the molecular phylogenetic analysis in order to elucidate possible evolutionary relationships between the various clades but this approach has several limitations. One key limitation is the reliance upon a relatively small number of molecular markers (mtDNA loci) that cover only a limited portion of the genome. This can potentially skew results by not adequately detecting population structure due to the limited genetic resolution. In this study, we attempt to use next-generation sequencing (NGS)-based genotyping methods to analyze thousands of Single Nucleotide Polymorphism (SNP) markers across the entire genome, increasing the precision in detecting small genetic differentiation among the D. baumanni populations to both validate and improve the fidelity of the previous study.

P9 Alexis Korotasz (Dr. Terrence Farrell)
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The effect of prey elevation on caudal luring in neonate pigmy rattlesnakes (*Sistrurus miliarius*)

Caudal luring is a form of aggressive mimicry utilized by ambush predators including *S. miliarius* which allows the predator to remain inconspicuous while enticing prey into coming within striking distance. The motions involved in caudal luring vary both among and within snake species, with no clear explanations for this variation. We examined whether the caudal luring behavior of pigmy rattlesnakes was dependent upon the perch elevation of green tree frogs (*Hyla cinerea*), a common prey item. We captured 21 pregnant females and held them in field enclosures until parturition. Foraging encounters were simulated by placing 55 neonates into experimental arenas after their first shed, giving them 24-48 hours to acclimate, and them presenting them with a frog tethered at either a high (20 cm) or low (0 cm) elevation perch above the substrate. Each snake was exposed to both elevation treatments in random order. We recorded their foraging behavior for approximately 15 minutes and analyzed the videos for caudal luring, luring latency (the time period from prey introduction to the start of luring, and luring amplitude (the area over which the tail was moved). Thirty-seven percent of all snakes lured but the proportion of snakes luring was not significantly related to prey elevation. We found no significant effect of prey elevation on luring latency or luring amplitude. Our results indicate that variation in luring behavior is not dependent on prey elevation, but as indicated by other studies, may be more strongly influenced by other factors such as prey type.

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Electrical Stimulation of the Gustatory Cortex Causes a Motor Response in Wistar Rats

The gustatory cortex (GC) is believed to be the part of the brain where taste perception occurs. Very little is known about what parts of the GC are responsible for the perception of specific tastes. One possible way to determine this is by electrically stimulating the GC with an electrode and comparing the taste reactivity behaviors to that of a rodent reacting to a known taste solution. However, it is unknown if behaviors seen following the electrical stimulation of the GC are due to taste sensation or activation of a motor output. One way to determine this is by coupling the electrical

stimulation of the GC with conditioned taste aversion (CTA). In this study Wistar rats were given an injection of a malaise inducing substance immediately followed by the electrical stimulation of the GC to make the rodents acquire a CTA towards the taste they perceived. The taste reactivity behaviors during the electrical stimulation of the GC were recorded to determine if the rodents became sick. The rodents were then exposed to a range of solutions and taste reactivity behaviors were recorded to determine if they acquired a CTA towards a specific tasting solution. Finally, a two bottle preference test was conducted two determine if the rodents acquired a CTA towards sucrose. When this was done to Wistar rats the data showed no significant evidence to support that rodents acquired a CTA towards any of the taste solutions. However, there was a strong general trend in the direction of a CTA to sucrose. Based on these data it can be surmised that the behaviors seen following the electrical stimulation the GC with an electrode may not be caused by taste sensation.

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College Students' Sexual Behavior: What Factors Predict Risky and Protective Actions?*

Most college students are sexually active. Multiple studies have found that many college students use condoms inconsistently and typically have more than one sexual partner. Unprotected sex and having more partners can increase the likelihood that a person will be exposed to sexually transmitted infections (STIs). College students are at particularly high risk because 50% of new cases of STIs occur in the 15-24-year-old age range. The purpose of this study was to identify the predictors of sexual behavior (condom use, number of sex partners, history of STI testing). The study found that women, older participants, participants who used condoms less often during vaginal sex in the last three months, and participants who reported having more lifetime sex partners were more likely to have been tested for an STI. Future research should focus on condom use in order to find more predictors that influence the use of condoms.

*Thank you to the Dean's Fund for helping to make dissemination of this research possible.

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Barriers to bond rotation in *N,N*-dimethylbenzamides probed using temperature dependent ^{1}H-NMR spectroscopy

The chemical bond between a carbon and a nitrogen, or amide bond, is ubiquitous in biochemical processes such as protein function and biosynthesis. This bond is further found in N,N-dimethyl amide compounds. Analytical methods involving Nuclear Magnetic Resonance (NMR) spectroscopy can be used to assess the kinetics and energetics of the internal bond rotation as well as peak broadening mechanism of these amide systems. In this study, temperature dependent ^{1}H-NMR was used to probe rotation around the C-N bond in *N,N*-dimethylbenzamide and its derivatives 3-bromo-*N*,*N*-dimethylbenzamide, 4-bromo-*N*,*N*-dimethylbenzamide, and 3-hydroxy-*N*,*N*-dimethylbenzamide (each dissolved in DMSO). Increasing bond rotation was observed as the temperature was increased over the range 25^{0}C – 65^{0}C, resulting in significant broadening and eventual coalescence of the methyl proton peaks. *Total* line-shape analysis was performed within the framework of a density-matrix quantum mechanical chemical exchange model to obtain the rate constant for rotation at each temperature. Subsequent analysis of the rate constant data yielded ΔH and ΔS of activation for bond rotation in each system. Experimental results were compared to theoretical values calculated using density functional theory [B3LYP/6-31G(d,p)]. In general, the substituted derivatives were found to have lower activation energies for bond rotation than the parent *N, N*-dimethylbenzamide compound. This research can aid in advancing the application of NMR spectroscopy in the studying of amide bonds and subsequently, in developing innovative

methods to probe and analyze fundamental biochemical processes.

P10 Madi Madison (Dr. Cynthia Bennington)
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Priority and nutrients influence survival of *Asclepias tuberosa* seedlings when in competition

The factors of priority and nutrients influence the survival of seedlings. The effect of priority leads to lasting differences in species dominance since it depends on when one species in a habitat arrives and if that species decreases the success of later species (Grman & Suding 2012). In the Volusia Sandhill, *Bidens alba* is an annual (yearly) plant that is an aggressive native weed and can dominate. *Asclepias tuberosa* is a perennial (lives longer than a year) native milkweed that does well in a low nutrient soil. I hypothesized that *Asclepias tuberosa* will do best when given priority and in a low nutrient soil. The seedlings of each species were first germinated in petri dishes to control for priority; individuals with priority were given a two week head start. Plants were planted in a mixture of sand and peat moss to control for the macronutrients. Low and high nutrient treatments were created using diluted Miracle Gro and were at the low and high range of typical Florida nutrients respectively. The pots were kept in the Sage greenhouse. Once target plants (*A. tuberosa*) established themselves, height, number of leaves and survival were measures over a 38 day period. The survival of the target over time was most influenced by nutrient levels based on a chi-squared analysis. Priority significantly influenced leaf growth of *A. tuberosa*. Farther studies could focus on the root growth, which is something I did not measure.

P46 P31Samantha Maguire (Dr. Melissa Parks)
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Creating a Positive Classroom Climate for Students

A positive classroom climate is one where students feel secure, respected, and welcoming. A positive classroom climate is one in which students are supported in their learning by the teacher and classmates and believe they can achieve any task. In theory, all preservice teachers should aspire to create this type of learning environment. In practice, creating a positive classroom climate where are students are supported and thrive can be elusive. This presentation will share strategies, supported by literature, that were observed in the field as part of an independent study. The presentation will focus on how preservice teachers can implement several strategies that will help create a foundation for building a positive classroom climate.

P31 Orion Maier (Dr. Terence Farrell)

Variation of reproductive traits in relation to environmental temperature in a humid subtropical viperid *(Sistrurus miliarius barbouri*) in central Florida

The effects of climate change have been shown to have various effects on the life history traits of many animals. Previous studies have investigated how these effects may be both species and population dependent. Dusky Pigmy Rattlesnake (*Sistrurus miliarius barbourin*) populations living near freshwater marshes in central Florida show several correlations between reproductive traits which have high repeatability between litters in different years. Using reproductive trait data from a 10-year study, we examined the effect of yearly environmental temperature differences on: Number of offspring, mean offspring weight, total clutch mass, and birth date. Our results show that changes in environmental temperature may not play a significant role in the reproductive traits in this population. Instead, environmental temperature may be one of several factors including precipitation and future studies are needed to further investigate possible cofactors.

P66 Zaamena Manji (Dr. Lynn Kee)
The Effect of Taxol on the motility, morphology, and survivability of embryos in the species *Hypsibius dujardini*

Tardigrades are a microscopic species that are known to be resistant to numerous harsh conditions including boiling, freezing, outer space, and radiation. Although the effect of various harsh conditions on adult tardigrades has been investigated, the effect on tardigrade embryos has not. The purpose of this study was to investigate the effect of taxol, a chemotherapy drug, on the morphology, motility, and survivability of adult and embryos in the species *Hypsibius dujardini*. I hypothesized that taxol treatment would result in morphological changes in the embryos, decreased motility in the adults, and little to no survivability of the embryos. Thus, the tardigrade embryos will not be resistant to taxol while the adults will be resistant. Therefore, I predicted that taxol treatment would affect the process of development in embryos more than adults. Results show morphological changes in the embryos of tardigrades, no change in the motility of adults, and a decrease in the survivability of tardigrade embryos in a time-dependent manner. This work demonstrates that embryos lacked resistance to taxol at higher concentrations in terms of morphology and survivability.

P11 Estaban Martinez-Francia (Dr. Michael King)
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Topography of Active Neurons and Behavioral Responses to Umami in Rats

The neural and behavioral responses to umami taste are not yet well-defined. The purpose of this study was to add to the limited umami research with regards to the regions it activates in the gustatory cortex (GC) through immunohistochemistry of Fos proteins, and to the taste reactivity (TR) behaviors rats performed during exposure. Fos immunohistochemistry was used to determine if there was a specific distribution of active neurons in the different sections and subregions of the GC. One hypothesis of this study was that my treatment group (umami taste) would activate more neurons in the GC than the two control groups (water and nothing). Fos immunohistochemistry results suggested no remarkable difference between the experimental and control treatments. Another hypothesis of this study was that umami would elicit more TR behaviors than water, and that it would evoke more acceptable behaviors than non-acceptable, within. As previous research suggested, intra-oral infusion of umami taste elicited significantly higher acceptable behaviors than it did non-acceptable behaviors. However, it did not induce a significantly higher amount of ingestive behaviors than water did, although results did show a significantly higher amount of two types of acceptable behaviors in the treatment group when compared to water ($p<0.05$).

P47 Joseph Martire (Dr. Cynthia Bennington)
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The Effects of Genetic Relatedness and Distance on Airborne Communication for *Passiflora incarnata*

Many plant defenses are inducible, activated by a stimulus such as feeding by an herbivore. There is growing evidence that defense induction can occur not only in response to direct herbivory, but also in response to communication between plants that are being eaten and those that are not. Such communication occurs through Volatile Organic Compounds (VOCs). These VOCs are released into the atmosphere once the plant's tissues are damaged, where they can be absorbed by other plants. Once absorbed by a neighboring plant, these compounds act as pheromone cues that communicate the presence of an herbivore. This can lead to increasing expression of physical, chemical, and biological defenses that can aid the plant against an herbivorous attack. For this research we specifically looked at *Passiflora incarnata*, and how distance and genetic identity affect induced defenses. We

exposed some of the plants to damage, via weekly clipping and also herbivorous damage by specialist caterpillar *Agraulis vanillae*. We then measured the amount of extrafloral nectar (EFN) produced and the specific leaf area (thickness) of the plants. We hypothesized that there would be greatest expression of defensive characteristics in individuals that were closest to the plant experiencing herbivory and that belonged to the same genotype. However, we found there was no significant effect of treatment on inducing higher production of EFN or increasing specific leaf area.

P32 Austin Miller, Fred Brown, Caleb Cheatham, and Dean Garabedian (Dr. Kenneth E. Nusbaum)
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Dynamics of N and P levels in the St. Johns River vs. Blue Springs and their potential impact on toxic algal blooms

The relationship of nutrient content to algal blooms is well documented. The recent algal blooms in the southern Indian River lagoon prompted us to survey important nutrients in St. Johns River (SJR) and Blue Springs (BS). As expected, nutrient levels in BS were consistent over the sixteen week observation period, whereas nutrient levels in SJR showed broad fluctuations, especially with dramatic spikes of phosphate. Based on our limited sample data, we are unable to predict the relationship of algal blooms to waterborne nutrients.

P67 Logan Minckler (Dr. Derek Barkalow)

Investigating the effect of water pH on amphibian abundance in New York State

Acidic deposition, the accumulation of acidic compounds in lakes, stream, soil and vegetation on the Earth's surface due to it separating from the atmosphere in the form of acid rain, has been an ongoing problem that many areas of the world have faced. This is especially true in areas where large amounts of fossil fuels are being burned. The acidification of these resources has a lasting effect on the environment by increasing the pH of the water, which can interfere with the natural processes of the wildlife such as amphibians. The purpose of this research was to look at how the differences in water pH levels affected amphibian abundance in New York State. The hypothesis that a more acidic pH would cause a decrease in the amphibian populations was partially supported. It is difficult for research to be conducted that looks at the effect of things like water pH on population size that get similar results due to many different variables but by using crowdsourcing and open data I hope to find a way that makes it more regulated.

P12 Anna Miner, Anthony Espinosa, and Christina Loya (Dr. Dejan Magoc)
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Gender Differences in Health Behaviors Among College Students

The change in lifestyle that come with entering college can affect eating, drinking and exercise behaviors among young adults. These habits can vary among males and females. The purpose of our study was to examine the gender differences in health-related behaviors among college students. For this study, 939 participants from two U.S. universities completed a comprehensive survey consisted of questions related to different aspects of health-related behaviors, such as participation in physical activity (PA), healthy eating, and alcohol consumption. The results indicated significant gender differences in levels of PA with men being significantly more physically active than women on Vigorous Days ($F(1,938) = 17.16$, $p < .001$). The results also indicated significant gender differences in unhealthy eating habits with men having a significant more likelihood to eat fast food on a weekly basis ($F(1,938) = 27.16$, $p < .001$). Furthermore, the results indicated significant gender differences in alcohol consumption with men consuming significantly more alcohol drinks than women in one sitting ($F(1,938) = 21.82$, $p < .001$). Future research can focus on gender-specific motivational factors that contribute to

health-related behaviors among college students.

P48 Naser Mubarak (Dr. Christopher Ferguson)
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Effects of Powerful Female Role-Models in Media on Attitudes Towards Women, and Female Viewer Anxiety *

Although there have been a number of studies examining the sexualization of female characters, most studies to date have not clearly delineated whether sexualized images or the presence of assertive versus passive female characters influences negative attitudes toward women in viewers, as well as female viewer anxiety. The present study sought to investigate whether the inclusion of powerful female characters in movies with sexualized content influences both male and female viewers' attitudes towards women as well as anxiety responses of female reviewers. Participants were asked to view a 30-minute presentation of exemplar movies in three conditions: a neutral/control condition without sexualized content, combined power/sexualization and sexualization without powerful female characters. Following competition of the movie, students were asked to fill out two short surveys, the Attitudes Toward Women scale, and second, the Beck Anxiety inventory. The results of the study demonstrated statistical significance between movie conditions, viewer anxiety, and rape myth acceptance. Participants reported decreased anxiety levels when viewing movies featuring nonsexualized, powerful female characters. Additionally, participants reported decreased acceptance of rape myths when viewing movies featuring sexualized and powerful female characters. Future experiments could explore the application of the results found here to new media such as video games.
*2016 SURE Grant recipient

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Evaluating the Relationships Between the Five-Factor Personality Traits and Musical Preferences

Previous research has evaluated the relationships between the Five-Factor personality traits and musical preferences. However, they have used different measures, making it necessary to determine which Five-Factor measure is the best predictor and whether the results differ depending on sex and age. The current study hypothesized that openness to experience would be positively correlated with preference for music that is reflective and negatively correlated with the degree of liking music that is upbeat; neuroticism, agreeableness, and conscientiousness would be positively correlated with preference for music that is upbeat and conventional; extraversion would be positively correlated with the degree of liking music that is intense and rebellious; and older adults will prefer more reflective music than younger adults. A sample of 173 participants recruited from Amazon Mechanical Turk and the Department of Psychology Subject Pool completed three five-factor model inventories and a test of musical preferences. It was found that openness to experience positively correlated with preference for music that classified as reflective and complex (classical, blues, folk, jazz), and that older adults like these types of music more than younger adults. Age negatively correlated with liking for rap/hip-hop, and neuroticism negatively correlated with liking country. Females were found to like pop more than males, whereas males liked the genres of rock, alternative, and heavy metal over women.
*Funding provided by the Dean's Fund.

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The Effects of Methyl- and Propylparaben on the Embryonic Development of *Ambystoma mexicanum*

Among the pollutants detected in surface

waters globally, are preservative compounds used in personal care products, such as methyl- and propylparaben. While parabens have been deemed safe for humans, they have been found to elicit estrogen mimicking responses in male medaka, and have also been found in the fatty tissues of fish, suggesting the potential for bioaccumulation. This study investigates the toxic effect of methyl- and propylparaben on the embryonic development of the Mexican axolotl, *Ambystoma mexicanum*. I hypothesized that methyl- and propylparaben would have a dose-dependent negative effect on various morphological measurements, and a dose-dependent positive effect on pre-hatch mortality. Embryos were exposed to five different test solutions, including commonly detected environmental concentrations of methy- and propylparaben for approximately two weeks. Gill length, body length, and interocular distance of hatchlings were assessed with microscopy, and the hatchlings were weighed. All environmental concentrations of methyl- and propylparaben were found to have significant negative effects on pre-hatch mortality and morphological features. Considering that amphibians face noteworthy extinction rates due to anthropogenic activities, more efforts should be made to further analyze the mechanisms by which parabens induce toxic effects in amphibians.

P13 Samantha Pasko (Dr. Melissa Gibbs)
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Air Breathing Behavior in *Pterygoplichthys disjunctivus (Loricariidae)* in Volusia Blue Spring, Florida.

Volusia County's Blue Spring is a hypoxic freshwater spring with dissolved oxygen levels as low as 0.1 Mg O_2/L. In order to survive in these conditions, fish may utilize various behavioral characteristics such as aerial respiration. This activity has been seen in the invasive armored catfish, *Pterygoplichthys disjunctivus* (Loricariidae). There is little to no data on juvenile catfish aerial respiration behavior. With this behavior comes some risks, such as predation. We would expect juveniles to avoid this behavior in order to avoid being easily preyed upon; therefor, juveniles are expected to not be in the spring run at all. This lack of data led us to investigate juvenile armored catfish behavior in hypoxic conditions in the lab. Results of a 2015 study found that small armored catfish relied more on aerial respiration than did larger fish when housed in hypoxic conditions. The data collected in that study prompted our interests in specific dissolved oxygen levels and environmental conditions, such as lighting and time of day, to determine how smaller *P. disjunctivus* utilize air breathing behavior compared to larger juveniles. Aerial respiration was measured in small, medium, and large juvenile armored catfish by comparing breaths per hour per catfish relative to size. Lighting (high and low) and time of day (morning, midday, evening) were also compared with breaths/hour in hypoxic conditions. Size showed a significant effect on breaths/hour in hypoxic conditions. Lighting and time of day showed no statistical significance.

P34 Steven Pilato (Dr. Camille King)
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The Impact of a High Fat Diet During Adolescence on Body Weight, Exercise, and Nucleus Accumben's Activity in Obese Prone Female Mice*

Genes, diet, and exercise contribute to the etiology of obesity. Adolescent obesity is of particular concern because it has been linked to negative health outcomes later in life. To examine the effects of a high-fat (HF) or regular-fat (RF) diet consumed during adolescence on bodyweight, wheel running behavior, and activity of a key component in the brain's reward circuit, the nucleus accumbens (NAc), eight obese-prone female mice were placed on either a HF (HF5, N=4) or RF diet (RF5, N=4)) for the 5-week adolescent period. For the next 3 weeks, half were maintained on their original diet (HF5-HF3, RF5-RF3); half experienced a diet shift (i.e., were placed on the

opposite diet (HF5-RF3, RF5-HF3)). Preliminary analyses indicate that at the end of adolescence, the HF5 group consumed more calories ($p = 0.005$) but interestingly, did not weigh or run more than the RF5 group. Following the 3-week diet shift, the RF5-HF3 mice (N=2) tended ($p = 0.06$) to run more than the HF5-HF3 mice (N=2), indicating a possible long term consequence of being raised on a HF diet. Scoring of NAc activity is underway.

* Research supported by an Undergraduate Research Grant from Psi Chi, the International Honor Society in Psychology.

P49 Steven Pilato and Tara Davison (Dr. Camille King)
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A Matter of Taste?: The Role of the Gustatory Cortex in Evaluating the Palatability of Distilled H^2O

When taste stimuli are infused into the mouths of rats, they, like humans, make stereotypical movements known as taste reactivity behaviors (TR). These behaviors, which are classified as either aversive or ingestive, are used to measure the palatability of taste stimuli. The brain's gustatory cortex (GC) likely is involved in this function but its exact role is uncertain. One way to see if the GC is involved in palatability is to damage it and examine whether the damage changes TR responses. In a previous study, bilateral destruction of the GC yielded no TR impairments to sweet or bitter stimuli; however, TR to distilled water (dH2O) was not always similar between surgical and control groups (King et al., 2015). The primary purpose of this study was to re-assess, in a different group of animals, whether the palatability of dH2O (as measured by TR) differed between rats with successful GC lesions (N=15) and non-lesioned (SHAM, N=16) rats. Currently, the videotaped TR behaviors of these animals are being scored. It is hypothesized that no differences between the GC-lesioned and the SHAM groups will emerge. The results may help shed light on the role the GC plays in the palatability of taste stimuli.

P69 May Pivarnik (Dr. Terrence Farrell)
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Laterality in Coiling Behavior of Pygmy Rattlesnakes, *Sistrurus miliarius*

In biology, a preference for one side of the body is referred to as laterality. Laterality can be either a physical or behavioral trait, and likely evolved from lateralization in the brain. In this research, we looked to see if there was a lateral preference in the coiling behavior of pygmy rattlesnakes, *Sistrurus miliarius*. Pygmy rattlesnakes are sit-and-wait predators, which coil during foraging. As such, we expected to observe a preference in coil direction, of either clockwise or counterclockwise. For this research we used pictures and videos of individual *S. miliarius*, from a prior experiment, and recorded the direction of coiling shown by each of the snakes. However, our analysis of these data showed there was no significant preference in the direction of the coils. This result may be showing that *S. miliarius* does not exhibit a lateral preference in their coiling behavior.

P14 Christina Ponce (Dr. Melissa Parks)
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Student Discourse in Single Gender Classrooms

Student discourse is a vast topic exploring the ways in which students communicate. Being aware of children's speech patterns and ways in which they express themselves is an important piece of the classroom puzzle preservice teachers are starting to build. Being cognizant of student discourse can be a key factor in creating an effective learning environment. This presentation will share ways in which elementary students express both their social and academic needs in single gender classrooms. Framing the presentation will be a review of the literature on strategies teachers can employ to help student build and use effective communication techniques in both single gender and mixed gender elementary classrooms.

P15 Thaddeus Potter (Dr. Kevin Riggs)
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Electronic properties of silicon and gold thin films

Different classes of materials have widely varying electronic properties, ranging from the highly conductive metals, to the insulating non-metals. In this study performed by Thad Potter under the supervision of Dr. Kevin Riggs, the relation between temperature and resistance of silicon and gold thin films were studied. The band gap of silicon was calculated, along with the temperature coefficient of resistivity for both materials

P50 Sharjeel Qureshi (Dr.Lynn Kee)
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Effect of ultraviolet radiation on DNA integrity and survival rates in hydrated and anhydrobiotic *Hypsibius dujardini* tardigrades

Hypsibius dujardini tardigrades are aquatic microscopic invertebrates which range from 250 µm to 1 mm in size. These organisms are unique due their cryptobiotic properties. Cryptobiosis is a low-metabolic physiological state which allows tardigrades to survive extreme conditions such as high temperatures and starvation. Much about those conditions have been studied, however there is very little research on the effects of UV radiation on the DNA and survivability of cryptobiotic tardigrades. To study the effects of UV radiation, we investigated and compared UV induced double-stranded breaks (DSBs) with healthy DNA and how UV irradiation affects survivability rates in both cryptobiotic and normal tardigrades. We induced cryptobiosis by dehydration. The tardigrades were exposed to UV radiation for varying amounts of time. For DNA analysis, DAPI and TUNEL assays were used using fluorescent microcopy. There was a similar significant decrease in healthy DNA in both states of UV exposed tardigrades, however, there was no fluorescence observed using the TUNEL assay, signifying a lack of DSBs. There was also a significant decrease in survivability in both states of tardigrades at a similar rate. These results signify that cryptobiosis might not play a role in protection of tardigrades against UV radiation.

P35 Mitchell Robey (Dr. Madison Creech)
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Dreaments

Walt Disney once said “all our dreams can come true, if we have the courage to pursue them.” Mitch’s senior project was partly inspired by Walt as it focuses on creating an experience that may be hard to find it today’s digital world. Developing relationships with businesses in Central Florida and providing them with high quality designs at low rates is the mission Dreaments strives to reach. Using the Adobe Creative Suite, he continues to develop an extensive portfolio ranging from video production to creative marketing while specializing in graphic design. “Dreaments represents the personnel connection that I had with his grandmother (Grammy) who passed away in 2016. 60 years ago, in 1957, my grandparents moved into a yellow house atop a small hill in Lynnfield, Massachusetts. Eventually, the house was painted pink, as it was Grammy’s favorite color. Pink is the primary color used throughout Dreaments as it represents my grandmother’s dream of writing an autobiography on her various passions and daily thoughts. It is my hope to bring her and others dreams alive by creating masterpieces using a variety of mediums from print to digital displays. There are many ideas in this world and it is my hope that through Dreaments, we can define and create them together.”

P70 Richard Roe (Dr. Joshua Eckroth)
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Denial of Service via Internet of Things Devices: Attack Methodologies and Mitigation Techniques

This research compares the effectiveness of traditional Denial of Service (DoS) attack vectors

to a new attack method that is specifically designed for use in devices that have limited resources, such as Internet of Things (IoT) devices. New mitigation techniques are explored to help prevent or reduce the effectiveness of these attacks. The results of this research can be applied to helping defend internet-facing web services from attack in both the public and private sector.

P52 Carleigh Sales, Trent Austin and Catrina Sisi (Dr. Asal Johnson)
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Sleep Disorder in Division 1 Collegiate Athletes During the Competitive Season

The purpose of this study is to examine sleep disorder among in-season NCAA Division I collegiate athletes in comparison to their off-season counterparts. This study used a SurveyMonkey questionnaire to examine the association between competitive season training and sleep disorder. Data was collected from consenting participants in person through the use of iPads and computers. Eligible participants were limited to Stetson University undergraduate NCAA Division I student athletes over the age of 18. Participants remained anonymous and their responses were confidential. We conducted chi-squared test and logistic regression analyses using SPSS software. We controlled for gender, year in school, and caffeine consumption. When controlling for these variables, out-of-season athletes were more likely to have a sleep disorder, however these findings were not statistically significant. This study provides information for athletic programs on the importance of sleep habits in student athletes. Adequate sleep is necessary for optimal athletic performance and overall health.

P36 Stephanie Schreiber (Dr. Kirsten Work)
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Nutrient recycling in Blue Spring from the exotic snail species *Melanoides tuberculata* and its effect on algal growth

Algae are beginning to become more of a problem in Florida springs due to increased nitrate concentrations. The snail species, *Melanoides tuberculata*, may eat the algae, but after consumption it may recycle nutrients, such as nitrate and phosphate, back into the water. We hypothesized that nutrient recycling from these snails would contribute to the growth of algae in Blue Spring. To test this hypothesis, we used four treatments, each with ten replicate containers of snails and/or native diatoms, all of which were collected in the field. The first treatment contained snails only, the second treatment contained diatoms only, the third treatment was a combination of both snails and diatoms, and the final treatment had snails, diatoms, and a screen to separate them. The experiment ran for three weeks. Phosphate concentrations were measured after ten days and again at the end of the experiment along with nitrate and chlorophyll a concentrations. In a second trial of the experiment, the snails were fed spinach once a week in separate dishes and then replaced in their respective containers. The trends showed phosphate concentrations were higher in the second experiment compared to the first. The chlorophyll concentrations are comparable from both experiments. Our hypothesis that the snails were recycling nutrients was supported, however, we cannot conclude that algal growth was stimulated by the nutrients being recycled.

P71 Chandra Schulte (Dr. Terence Farrell)

Monitoring the American Horseshoe Crab, *Limulus polyphemus*, Densities on Nine Beaches in the Indian River Lagoon, Florida.

The Indian River Lagoon, located in central Florida, is an estuary with national significance both ecologically and economically. The lagoon is a cause for concern in both the scientific community and the general public as anthropogenic interactions and influences have caused the area to reach a state of crisis. *Limulus polyphemus,* the American Horseshoe Crab, is one of many native species affected by the changing environment in the lagoon, but is

perhaps one of the least studied in terms of current status, abundance, and survivorship. The species is one of the oldest extant marine species in the Indian River Lagoon and is essential to its ecosystem. The present study aims to assess the status of *Limulus polyphemus* in the Indian River Lagoon and identify any factors that might affect the species' continued survival in this area. The month, lunar phase, and site effects on abundance, density, and proportion of individuals in a mating pair were analyzed. Only month showed significant effects on abundance and density. Further research must be conducted to better understand the environmental factors affecting *L. polyphemus* status and survival.

P72 Laurie Scott (Dr. Melissa Gibbs)
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The effects of creatine supplementation on *Ambystoma mexicanum* embryos

Creatine is an organic nitrogenous acid synthesized in the brain and utilized by the body to produce ATP. Creatine also plays a role in maintaining the high-energy levels needed for the biosynthetic activities of embryogenesis. The purpose of this study was to research the affect that creatine exposure has on axolotl embryo brain development and maturation rates. Since creatine should provide additional energy for growth and development, I hypothesized that embryos supplemented with creatine would develop at a faster rate, and would have slightly larger heads and bodies than untreated embryos. I exposed the axolotl embryos to different dilutions of creatine based on maternal blood volume (40 mg/L) and three other graduated dilutions based on the recommended dose (16mg/L, 8mg/L, 4mg/L). Four different measurements were used to analyze axolotl growth (body length, head length, head width, and intraocular distance). The findings of this study did not support the hypothesis, as all the creatine treatment groups were smaller than the control group, suggesting there is a certain threshold dosage for creatine supplementation. The only significant differences were in body length and head width, both of which were smaller than the control group. More research is necessary to determine what the threshold concentration of creatine is during axolotl embryogenesis so that more significant observations can be made to further determine the role of creatine in development.

P19 Laurie Scott and Ashni Deschenes (Dr. Michele Skelton)
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The effect of creatine supplementation on cognitive functioning of college-aged students

Creatine, food for muscle or food for thought? Creatine is an organic nitrogenous acid synthesized in the brain and utilized by the body to produce ATP. Creatine is utilized during muscle contraction and as a neuroprotective agent in the brain. The purpose of this study was to examine the effect of four-week creatine supplementation on cognitive function in college-aged students. The hypothesis of this study is that supplementation with creatine would result in better scores on the post-test compared to the pre-test (before supplementation) of the ImPACT test. The findings of the study supported the hypothesis in that subjects did significantly improve in certain subject areas after supplementation. These subject areas include verbal memory, visual memory, reaction time, and cognitive index, all of which contribute to cognitive functioning. More research is necessary to determine how significant a role creatine plays in improving cognitive function and at what dosage it is most effective. Future studies should have a larger sample size and varying creatine dosages.

P37 Emily Stamey (Dr. Cynthia Bennington)
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Lack of induced systemic resistance among rhizomatous clonal networks of *Passiflora incarnata*

Plants defend themselves via toxic agents,

mechanical barriers, and attraction of predators to deter herbivores. Some species have also shown the ability to communicate dangers of herbivory amongst one another via volatile organic compounds and sink-source mechanisms in phloem of connected ramets. I hypothesized that *P. incarnata*, a species which grows in rhizomal networks, would be able to communicate dangers of herbivory via the rhizomes between parent and daughter ramets, causing induced defense responses. My hypothesis was not supported by our findings. My data instead showed that while individual ramets do induce a systemic response to herbivory, the connected and adjacent unconnected ramets do not, suggesting a lack of communication. This is likely due to the short life spans of P. incarnata shoots and the restricted mobility of specialist herbivore, *Agraulis vanillae*.

P16 Jessica Stein (Dr. Jason Evans)
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Tidal Current Effects on Marine Epibenthic Growth

Artificial reefs give us the opportunity to study marine ecology, how organisms have adapted to certain resources and how they arrived (Speight and Henderson 2010). Artificial reefs such as floating docks create a diverse surface area for epibenthic encrusting organisms to attach as the water currents disperse larvae (Dunstan 1984). The purpose of this study is to determine the effects of currents on the epibenthic colonization of a floating dock habitat at the Inlet Harbor Floating Docks in Ponce Inlet, Florida. If areas of increased water currents show higher probability of epibenthic growth, then the expectation is to see an increase in colonization and diversity in areas of higher current flow. Once we know how these organism's larvae are recruited we will better understand how these animals develop at these sites, and how they got to those individual sites and settlement based on each species. This study was funded by Stetson University Dean's Funding and Stetson's Institute for Water and Environmental Resilience.

P75 Nathan Sturgeon (Dr. Kevin Riggs)
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Atomic Force Microscope Studies of Carbon Nanotubes

The primary purpose of this research was to improve the resolution of the Atomic Force Microscope (AFM). Simultaneously, observations were made about carbon nanotubes (CNT) which, in this experiment, served as predictable samples. Both multi-walled and single-walled carbon nanotubes were studied in order to push the AFM resolution to its limit. The key data for this research was attained by understanding the nature and arrangements of these different CNTs, including the various forms they can be arranged. The covalent sp2 bonds between the carbon atoms are what allows the CNTs to remain strong and, simultaneously, lightweight. These bonds also govern the CNT structure in a predictable way. Knowing how the CNTs should look under the AFM helped determine when a better resolution was achieved. Ultimately, a simple table recording parameter adjustments for each scan was used to determine which settings allowed for the best resolution. The AFM has highest resolution when measuring the z-axis of a material. This value was used in comparison with the xy measurements to determine how much the resolution actually improved. Significant differences were observed when looking at the extreme parameters involving scan rate and amplitude.

P51 Lindsay Summers, Brittani Janson, and Ismode Lorjuste (Dr. Laura Gunn)
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Knowledge, Perceptions/Readiness, and Prescribing Behaviors of Healthcare Providers Regarding HIV Testing and Pre-Exposure Prophylaxis (PrEP) in DeLand

Florida is ranked highest nationally among newly diagnosed HIV infections. This ranking,

and current literature, reflects the need for investigation of barriers healthcare providers perceive may affect their prescription of HIV testing and preventive treatment to patients. The purpose of this study is to: assess knowledge, perceptions/readiness, and prescribing behaviors of healthcare providers in DeLand regarding HIV testing and Pre-Exposure Prophylaxis (PrEP); identify providers' barriers to testing and PrEP prescription; and discuss areas needing additional educational efforts regarding testing and preventive care by Florida Department of Health (FDOH)-
Volusia. Investigators adapted a national questionnaire by merging items with questions co-developed with FDOH to form a 25-item instrument. Questionnaires were distributed to the population of 62 eligible healthcare providers: infectious disease specialists; family/general practitioners; OB/GYNs; hospital emergency department; urgent care clinics; and Stetson Health Services. Results from a 19.35% response rate demonstrate providers' reluctance to participate for several reasons. Though relationships between knowledge/perceptions/readiness and prescribing behaviors are expected, no statistical associations were found ($p>0.05$). Yet, 50% of respondents rarely/never offer HIV tests to pregnant women according to practice guidelines; less than 10% always/very often prescribe PrEP to high-risk patients. Complete results convey the importance of greater collaboration between local providers and FDOH.

P54 Kara Swanson, Camy Housley, Dre'an Long, Daniela Moneuse and Alyssa Payne (Dr. Dejan Magoc)
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Health Behaviors among School-Aged Children

Childhood obesity represents an important public health topic and can result in serious health complications such as diabetes, heart disease, and atherosclerosis. One in four children in Florida is considered overweight or obese. The purpose of our study was to examine the prevalence of participation in four unhealthy behaviors (physical inactivity, unhealthy eating habits, participation in recreational screen time, and consumption of sugary drinks) and relationships among these behaviors in children ages 17 and younger, who participated in the 2016 DeLand YMCA summer camp program. Thirty-two children, ages 2 to 17, completed a questionnaire about their levels of physical activity, recreational screen time, sugary drink consumption, and fruit and vegetable consumption. On average, children are not meeting the recommended levels of physical activity and are not consuming the recommended daily servings of fruits and vegetables. In addition, students are participating in excessive hours of screen time and consumption of sugary drinks. The results showed that age was significantly correlated to screen time usage per day, suggesting that older kids spend more time using electronic devices for recreational purposes than younger kids ($F(1, 31) = 4.70$, $p < 0.05$). Moreover, screen time usage showed a significant negative correlation with daily hours of physical activity. Longitudinal studies can further investigate the effectiveness of physical activity and nutrition based afterschool programs on health-related behaviors in children.

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Community Health Needs Assessment of Spring Hill Neighborhood, Deland. Florida

Spring Hill is a neighborhood that is densely populated and has a low income rate. The purpose of this study is to assess public health and built environment concerns of Spring Hill by residence status of respondents: Volusia County and City of Deland. The ambiguous jurisdiction lines in Spring Hill between the City of Deland and Volusia County may contribute to the differences in public health concerns among responders. We used questionnaires from 180 responders of Volusia County and the City of Deland and compared the responses of each residence (Deland=106; Volusia County=65).

Our results show residents of Deland were most concerned about public health and social issues including HIV, diabetes, poverty and convict employment. Residents of Volusia County were most concerned with diabetes, high blood pressure, convict employment and crime. In addition, residents expressed concern with the relationship between the Spring Hill community and the police. In order to improve the health outcomes of Spring Hill community, social and economic circumstances need to be changed. There would also be benefits to Spring Hill's annexation into the City of Deland.

P17 Megan Tracey (Dr. Michele Skelton)
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Happy Hounds: The Effects of Probiotic Supplementation on Canine Digestive Health

Most people think of probiotics as live microorganisms that may promote health benefits to humans. Presently, probiotics have become an increasingly popular alternative remedy for digestive disorders in humans. But what if such benefits had the ability to cross species? Digestive disorders are among the highest reported health-related problems in canines. Pharmaceutical products, costly dietary alterations, and surgeries are often used to treat these ailments in canines. Previous research has revealed the ability of probiotics to adhere to intestinal mucosa as well as proliferate and colonize in the colon of canines. The purpose of this study is to examine probiotic supplementation on canine digestive health. Twenty-one dogs were supplemented with a probiotic for four weeks. Digestive health as perceived by the owners significantly improved in these dogs. Factors associated with this improvement will be discussed.

P53 Lexus Walker (Dr. David Stock)
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The effects of a rotating magnetic field on *Magnetospirillum magneticum**

There is little known about magnetotactic bacteria and what affects their movement along magnetic field lines. Magnetotactic bacteria contain prokaryotic structures called magnetosomes that help orient the bacteria along Earth's magnetic field lines similar to a compass needle by optimizing the cellular dipole moment. *Magnetospirillum magneticum* is a species of magnetotactic bacteria that was used to validate the hypothesis that if an increasing rotating magnetic field was applied, the bacteria would change the direction of their initial velocity more rapidly. The bacteria were viewed under a Zeiss Axioplan 2 imagery microscope and increasing magnetic fields were applied to the bacteria. After two minutes the magnetic field was reversed. Images were captured at ten second intervals to determine the amount of time the bacteria would take to turn opposite of their initial direction. It was found that as the magnetic flux increases, the amount of time it takes for the bacteria to change their initial direction also increases, thus the hypothesis was supported. Magnetosensitive bacteria could be useful to many aspects of biology including medicine and have been proven to be an important part of our environment ecologically.
*I would like to thank the Stetson Biology Department for funding this research.

P18 Honor Woodward (Dr. Danielle Lindner)

Body Image Disturbance and Disordered Eating Behavior: The Roles of Body Image Investment and Body Image Evaluation

Most researchers study body image evaluation, specifically one's satisfaction or dissatisfaction with appearance, as it relates to disordered eating. However, current models for the development of eating disorders suggest body image investment, or basing self-worth largely on appearance, is the core psychopathology of eating disorders. The purpose of this study was to examine how women with varying levels of body satisfaction and body image investment differ in disordered eating behavior. Over 170 women ages 18-30 completed an anonymous online questionnaire via Amazon Mechanical Turk. Participants completed the following

measures: the Multi-Dimensional Body Self Relations Questionnaire Appearance Evaluation (MBSRQ-AE) and Appearance Orientation (MBSRQ-AO) Scales, the Eating Disorder Inventory-3 Drive for Thinness (EDI-DT) and Bulimia (EDI-B) Scales, the Eating Disorder Examination Questionnaire (EDE-Q), and the Body Image Quality of Life Inventory (BIQLI). Using median splits, participants were categorized as high or low body image satisfaction and high or low body investment. Participants were further categorized into four groups: 1) high body satisfaction/high appearance investment; 2) high body satisfaction/low appearance investment; 3) low body satisfaction/low appearance investment; and 4) low body satisfaction/high appearance investment. Differences between groups were examined using multiple one-way analyses of variance (ANOVAs). Significant differences were observed between groups on EDI-DT, $F(3,171)= 12.78$, $p<.001$. Post-hoc Tukey tests revealed that low body satisfaction/high investment participants reported significantly higher drive for thinness than participants in all other groups. Significant differences were also observed between groups on the EDI-B, $F(3, 172)= 5.78$, $p<.001$. Post-hoc Tukey tests indicated that low body satisfaction/high investment reported significantly higher bulimia symptoms than low body satisfaction/low investment and high body satisfaction/low investment participants. Significant differences were also observed between groups on EDE-Q scores, $F(3,172)=20.28$, $p<.001$. Post-hoc Tukey tests indicated that low body satisfaction/high investment participants reported more disordered eating symptoms than participants in other groups. Lastly, significant differences were observed in the BIQLI scores, $F(3, 172)= 20.45$, $p<.001$. The post-hoc Tukey test revealed that high body satisfaction/high investment participants reported better body image quality of life than participants in other groups. This study highlighted the importance of assessing body image investment and addressing this aspect of body image in eating disorder prevention programs rather than focusing solely on body image evaluation as has been done by researchers in the past.

P74 Cory Zirkel (Dr. Roslyn Crowder)
Czirkel@stetson.edu

Examination of genistein-mediated apoptosis and oxidative stress in H460 lung cancer cells

Genistein is a naturally occurring isoflavone derived from soy-based products. This polyphenolic compound has received a great deal of attention because of its potential chemopreventive and therapeutic effects on various types of cancer. The purpose of this study was to investigate genistein's ability to induce apoptosis and oxidative stress in non-small cell H460 lung cancer cells. In order to investigate genistein-mediated apoptosis, various experiments were executed. Coomassie Blue stains revealed a suggested dose-dependent apoptotic response to genistein treatment. CCK analysis measured a dose-dependent response in decreased metabolic activity with increasing genistein concentrations. A Luminescent cell viability assay displayed a dose-dependent decrease in ATP activity with increasing genistein concentrations. An Annexin V binding assay measured 61.24% of H460 cells to be in late apoptosis at a genistein concentration of 200µM with only 23.7% and 13.62% of cells to be in late apoptosis at concentrations of 100µM and 0µM respectively. An oxidative stress kit measured 34.16% and 35.83% of ROS(+) cells at 100µM and 200µM concentrations respectively, while at 0µM of genistein only 14.04% of ROS(+) cells were measured. These findings display genistein as a potential chemotherapeutic treatment for non-small cell lung cancer with a possible link to oxidative stress.

ART ON EXHIBIT
(Digital Arts in Oral Presentation Abstracts)

Laine Callahan (Dan Gunderson and Grace Ramsey)
lcallaha@stetson.edu
Rebirth

Rebirth will be presented as a large scale wall installation that focuses on the material and the process. The installation will display on the main wall I have chosen in the gallery. It will measure 10 feet across and 10 feet high. The installation is made up of amorphous pieces of ripped canvas, and will present a pattern like sculptural form. The show will be created and displayed as a textile installation. My process begins with a large blank canvas laid across the floor. I paint the entire canvas with the colors I've chosen, highlighting different shades of blues, whites, and golds. After the painting(s) dry, I tear my favorite parts of the canvas. Ripping, tearing, staining, and ultimately creating a new sense of life for the blank canvas is my goal. After separating the canvas parts, I place them on the wall in an arrangement that creates movement and emphasizes color and texture. On the adjacent wall, I will also be displaying two large scale canvas paintings that will almost seem like enlarged versions of some of the textile pieces that make up my installation. The paintings will each measure 6 feet tall by 3 feet wide. With these paintings, I want to represent the beautiful evolution of my canvas. I aim to have my two paintings reflect the stages that my textile pieces have gone through…Overall, this work is a reflection of my journey as an artist. Embracing the mistakes, the flaws, and the unknown is what makes it its own restoration.

Bianca Enos (Grace Ramsey)
biancaenos@aol.com
Objectified

My overall goal as an artist is to create paintings that take ordinary objects and bring them into a setting that highlights their innate and often overlooked beauty. Issues regarding body dissatisfaction in females and the objectification of women by society are topics that I have been concerned with for quite some time, due to their prevalence in the media and my personal experience with such matters. I have chosen to make these topics the focus of my Senior Thesis show in a series of five large-scale paintings. By replacing parts of the female figure with objects of comparable form, I visually convey how women are often judged by others, and by themselves, for their physical, exterior beauty; A beauty that has been defined and drilled into their minds by society. Each of the five paintings features a nude woman painted in a realistic grisaille fashion. The women's torso have been replaced by various objects, including an hourglass, a teapot, a diamond, a doughnut, and a present, in a way that imitates and resembles the various body types of women. By partially painting these women as objects, I am making a statement that causes viewers to reflect on the objectification of women by society, and the unrealistic (and almost fantastical) physical expectations imposed upon women, which leaves half of the women in this country dissatisfied with their outer image and themselves.

Isabel Hernandez (Dan Gunderson)
Ihernan2@stetson.edu
Dancers

Isabel Hernandez's pieces are created for purely aesthetic purposes, providing an explanation for the shows simple title, Dancers. A more complex label would add an unintended narrative to her work. Isabel enjoys the way that there is nothing to "get" about her work. Regardless of the viewers' opinion of her creations, they are able to look at each piece and understand the subject matter. While one viewer may be able to vocalize their opinions toward this subject matter more easily than another, no thought, feeling, or opinion can be

dismissed or disregarded. Originally, Isabel chose to create ceramic dancers because of the appealing sense of motion that they conveyed. As she continued to work with her dancing figures, her focus shifted to the elegant lines and strong feelings of dancing. The texture of the chunky figures contrasts the elegant, controlled, fluid motions of their bodies. This combination allows Isabel to adjoin folk art and impressionism.

Julia Lozano (Dan Gunderson)
jlozano@stetson.edu
Pelagic

Julia Lozano has studied Studio Art and Marketing in her time at Stetson University. Growing up on an island in the Keys, she admits that it was difficult not to fall in love with water. The ocean that surrounded her for many years has provided her with the inspiration that has driven her ceramics career. She is intrigued by the motions of each unique wave, and she uses complex symmetry and asymmetry to mimic these forms and movements of water. Her clay creations challenge gravity and the nature of solidified structures. Her ribbon-like ceramic pieces seem to catch a moment of fluid motion in a still and stable ceramic piece. Each swirling and spiraling element joins to another, leaving spaces that allow light to pass through naturally, casting beautiful shadows. Collectively, these pieces create forms that compel viewers to contemplate motion, while also giving them a sense of who Julia is and where she came from.

Jasmine Ramos (Grace Ramsey)
jramos@stetson.edu
What It Costs

My paintings and sculptures will depict a juxtaposition between toy water guns and assault weapons through colors, scale, titles, and wording. Through my Showcase presentation I hope to clearly discuss the intent of my pieces as well as the changes I have made from the beginning to the completion of this show in order to show how I have grown as an artist and as an individual.

Whitney Wolf (Dan Gunderson and Grace Ramsey)
wwolf@stetson.edu
Winged Ones

The aim of my work is to translate my nature experiences into art objects. I spend a lot of time in nature—hiking, taking photographs, meditating, all as part of my creative process. I cultivate my inspiration through exploration of natural environments and ecosystems. I find my subjects (or perhaps they find me) during these nature experiences. To achieve my aim stylistically, I employ what I call "heightened naturalism." This term describes how I focus on details and color as a tool to magnify and capture the essence of my subjects.
I choose birds and other animals, often endangered, as my art subjects to record my spiritual connection to them, to explore their totemic/symbolic meaning, to share their beauty, and to add to the conservation discourse. My goal is for the viewer to walk away with a new respect for nature and a desire to both seek out their own nature experiences and to preserve those sacred places where these beings can still be found.

MUSIC

M4 **Alexandria Bocco**, **Oboe** (Dr. Dione Chandler)
Accompanist: Cameron Michael, Piano
abocco@stetson.edu

Sonate pour hautbois et piano FP 185 by Francis Poulenc (1899-1963)

1. Elegie
2. Scherzo
3. Deploration

Six Metamorphosis After Ovid Op. 49 by Benjamin Britten (1913-1976)

1. Pan
4. Bacchus
6. Arethusa

Fantaisie Pastorale pour hautbois Op. 37 by Eugene Bozza (1905-1991)

M7 **Kristina Manning**, **Voice (Soprano)** (Jane Christeson)
Accompanist: Austin McElwain, piano
kmmannin@stetson.edu

Vincenzo Bellini (1801-1835)
Malinconia, ninfa gentile
Ma rendi pur contento
Per pieta, bell'idol mio

Gabriel Fauré (1845-1924)
Poème d'un jour, Op. 21
Rencontre
Toujours
Adieu

Roger Quilter (1877-1953)
Three Pastoral Songs, Op. 22
I will go with my father a-ploughing
Cherry Valley
I wish and I wish
Jaida Hawkins, violin
Ivan Kaiser, cello

Giacomo Puccini (1858-1924)
La Rondine
Chi il bel sogno

M3 **Ajit Persaud**, **Voice (Tenor)** (Dr. Jamison Walker)
Accompanist: Dr. Kristie Born, Piano
apersaud@stetson.ede

Vincenzo Bellini (1801 – 1835)
Sei Ariette
Malinconia, Ninfa gentile
Vanne, O Rosa Fortunata
Ma Rendi Pur Contento

Johannes Brahms (1833 – 1897)
Deutsche Volkslieder
Da unten im Tale
Feinsliebchen, du sollst
Schwesterlein
Logan Spannuth, guitar

Georges Bizet (1838 – 1875)
Guitare
Chanson d'Avril

William Bolcom (b. 1938)
A View from the Bridge
New York Lights

M8 **Courtney Pressler**, **Flute and Piccolo** (Dr. Tammara Phillips)
Accompanist: Kristie Born, piano
cpressle@stetson.edu

Sonata for flute and piano
Bohuslav Martinu (1890-1959)
Allegro moderato
Kokopelli
Katherine Hoover (b. 1937)

L'Histoire du Tango for flute and guitar
Astor Piazzolla (1921-1992)
Bordel 1900
Marc Velazco, guitar

La Tourterelle for piccolo and piano
Eugène Damaré (1840-1919)
Bachelor of Music with an Outside Field of Business

M2 **Simone Seales**, **Cello** (David Bjella)
Accompanist: Dr. Kristie Born, Piano
sseales@stetson.edu

Très Lent
Joan Tower (b. 1938)

Cello Concerto in B Minor Op. 104 B.191
Antonin Dvorak (1841-1904)
I. Allegro

M5 **Jack G. Sumrall III, Voice (Tenor)** (Jane Christeson)
Accompanist: Tammy Miller, piano
jsumrall@stetson.edu

Georg Frideric Handel (1685-1759)
Pastorello d'un povero armento
Emily Lilavois, violin
Taylor Caldwell, violin
Kristian Gonzalez, viola
Ivan Kaiser, cello

Olivier Messiaen (1908-1992)
Le sourire
Poldowski (1880-1932)
Dansons la gigue
Emile Paladihle (1884-1924)
Pysché

Erich Wolfgang Korngold (1897-1957)
Was du mir bist, Op. 22 No. 1
Die Welt is stille eingeschlafen, Op. 22 No. 2

Richard Strauss (1864-1949)
Di rigore armato il seno (Der Rosenkavalier)
Salvatore Cardillo (1874-1947)
Core 'ngrato
Bachelor of Music with an Outside Field of Education

M1 **Nicholas Villane**, **Composition** (Dr. Manuel de Murga and Dr. Sydney Hodkinson)
nvillane@stetson.edu

Q Nicholas Villane (1996)

Jackson Brummett- Trumpet
Kat Kirchner- Trumpet
Aquila Marshall- Trumpet
Amy Di Marco- Horn
Ryan Morrison- Horn
Rob Scarff- Trombone
Matthew Rose- Trombone
Jeremy Rumsey- Tuba
Jack G Sumrall III- Conductor

M6 **Emily Vitale, Piano** (Dr. Michael Rickman)
evitale@stetson.edu

Johannes Brahms (1833-1897)

Klavierstücke, Opus 118
Intermezzo in A Minor
Intermezzo in A Major
Ballade in G Minor
Intermezzo in F Minor
Romanze in F Major
Intermezzo in E-flat Minor

ORAL PRESENTATIONS AND HONORS TUTORIALS

B2 Catherine Grace Aguda and Peter Junior Nyong'o (Dr. Julie Schmitt)
caguda@stetson.edu
Who Killed Desdemona?

In this presentation, the lead actors in Stetson University's production of Shakespeare's Othello will detail the investigative process and preparation of two of the most compelling characters written by Shakespeare: Desdemona and Othello. Grace Aguda will explore the human rhetoric, relations and meaning within the play while arguing that the tragic responsibility of Desdemona's death should stray away from race and shift towards masculine-influenced responsibility. Cruelty, resulting from masculine stimulus, encompassed the life of Desdemona in Cyprus, and through this exploration, Aguda hopes to show that masculinity, communication and influence killed Desdemona. Conversely, rather than directly exploring the larger ramifications of race evidently present in the play, Junior Nyong'o introspectively investigated 'othering' and its role in Othello's self perception. Is Shakespeare attributing Othello's gullibility to his race? Or is he suggesting that it is because of his race that others choose to degrade him to such an extent? Is Othello heroic because he is black, or in spite of it? These are some of the questions Nyong'o hopes to communicate in his characterization of Othello. Aguda and Nyong'o will conclude by performing a scene which demonstrates how their acting choices have been informed by these analyses.

HON-2 Matthew Babikow, Lauren Durham, and Matthew Sweeney (Dr. Ranjini Thaver)
mbabikow@stetson.edu
Charity: A Solution or a Scam

This Honors 202 Tutorial has focused on the benefits, issues, pros, and cons of charity and philanthropy. Hoping to find an effective way to contribute to the betterment of society, students have studied the differences between charity and philanthropy, tried to determine the balance necessary when giving, defined non-profits, and researched successful and unsuccessful organizations. While taking a closer look at these institutions, students have explored the economic and global impacts of charity and philanthropy and have researched the influence that local organizations and student clubs have on local and global communities. Through discussion and critical reflection on students' own purpose and place as charitable givers, this class has helped them to narrow in on the best way to help others through philanthropy and charity and to understand the impact that giving has on the targeted communities.

E2 Patrick Ball (Dr. Cynthia Bennington)
pball@stetson.edu
Effect of pH and fungi presence on the germination of *Carphephorus corymbosus*

Sandhill ecosystems, dominated by longleaf pine, historically covered large swaths of large

upland habitat in central Florida. The relatively high light that reaches the understory, combined with frequent fire, results in a diverse understory. Unfortunately, this ecosystem has become altered and reduced due to urbanization, agriculture, and fire suppression; these practices have changed the soil features, including nutrient levels, pH, and soil biota. The Volusia Sandhill Ecosystem (VS) is a .5 ha site on the campus of Stetson University. This site has high nutrient levels and pH relative to a mature sandhill site, like our comparsion site at Heart Island (HI) in Deleon Springs, FL. We manipulated the soil we collected from VS by altering its pH and microbial community and asked how these treatments affected the germination and seedling establishment of a sandhill native perennial, Florida paintbrush (*Carphephtus. Corymbosus).* We initially treated all VS soil with a fungicide. In this 2x2 factorial experiment I manipulated half of the high (7.0) pH soil of VS with sulfuric acid to get a pH of 4.5. For soil at each pH level (7.0 and 4.5), we had two levels of soil biota: a) none and b) the addition of root segments of *C. corymbosus* collected from HI. 576 seeds were divided evenly and planted in all four treatment groups. In my second experiment I used only soil that had roots added, but autoclaved half of to remove all traces of soil microbes. In both experiments we measured germination rate. While pH had no influence on germination rate (p=.104). Adding roots to soil did increase germination rate (p=.006). However, after autoclaving soil there was no difference in germination (p= .68). added roots had a bigger influence on germination, this cloud be due to biota that in or on the roots. By focusing on soil health, restoring native plants into altered ecosystems maybe more successful.

E16 Andrew Barton (Dr. Craig Lind and Dr. Terrence Farrell)
abarton@stetson.edu

Plasma corticosterone levels and body condition in reproductive and non-reproductive pigmy rattlesnakes, *Sistrurus miliarius.*

We examined corticosterone levels in female pigmy rattle snakes with differing reproductive status and body condition to determine if there was an association. Corticosterone is an important hormone that controls stress response and has been implicated in reproductive status in other reptiles. I hypothesized that reduced body condition and energetically compromised life history stages (vitellogenesis and reproduction), will be correlated with increased corticosterone levels and reduced immune competence. Vitellogenic females are expected to demonstrate elevated corticosterone levels due to increased energetic requirements and possible nutrient stress due to lack of foraging, consistent with previous research. My body condition and corticosterone hypothesis was supported and my reproductive status and corticosterone hypothesis was not.

B9 Carly Batts (Dr. Jason Evans)
cbattsko@stetson.edu

Gender-Based Attitudes About Open Space

This study documents the relationship between men and women and their attitude towards open space attributes. Attributes such as beauty, safety, and accessibility were measured with an Attitude Toward Object model, which allowed for the computation of an importance score for each. My hypothesis was that women would interpret open space more negatively than men. I will expect women to be less willing to interact in open space, and more afraid of open spaces at night. Studies have shown that women have been kept out of nature since the agricultural revolution and often are the victimized gender of nighttime crimes. The connections drawn between the data and each gender included, a strong tendency for passive recreation amongst women, along with women placing higher importance ratings for conservation. Both genders ranked the same attributes for open space during the day and night in the same order of importance – this could indicate that open space socialization remains similar for each gender, though

consistently women gave higher importance ratings for all attributes. For instance, men were more likely to have 'never' participated in open space recreation at night, but women rated their own personal feelings of safety on a lower scale (women indicate they were more fearful at night in open spaces).

E9 Stanford J. Borrell (Dr. Kevin Riggs)
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Single-Axis Solar Tracker Using Closed-Loop Voltage Feedback

The application of a solar tracker system is a popular technique used to maximize the electrical energy production of an array of photovoltaic (PV) solar cells by maximizing the amount of absorbed sunlight throughout a day. A single-axis solar tracker was developed to track the sun using closed-loop feedback from east to west and allowed for the maximum amount of sunlight to be absorbed by the PV solar cell during the testing period. A tri-pod was used to support a CIS (Copper, Indium, Selenium) PV solar cell mounted to a stepper motor via direct drive. The stepper motor position determined the angle at which the PV solar cell faced relative to true east. The position of the stepper motor was calculated by continuously measuring the change in output voltage from the PV solar cell and using the optimization algorithm, the Method of Steepest Ascent. The calculated position values were compared to the accepted sun position values, per 10-minute time intervals, from equations in Astronomical Algorithms by J.J. Michalsky. The developed solar tracker system, using closed-loop voltage feedback, was found to be accurate to 3.31% and had a mean tracking error of ±2.33°.

B8 Nicholas Bouwmans (Dr. Julie Schmitt)
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Character Analysis and Performance of Big Daddy

The purpose of this work was to study the character role of Big Daddy from Tennessee William's *Cat on a Hot Tin Roof* and form an interpretation, for the purpose of performing the part. This was achieved by studying the script, and doing an extensive character analysis. In, addition supplemental research was added to reinforce the interpretation of the role, which centered on the idea that Big Daddy is the result of two conflicting ideologies clashing. This research centered on the speech and language of the character, the difference between performed truth and actual truth, the psychological idea of "homosexual panic", and the effect of plantation life influencing personal beliefs. This culminated in the performance done here at Stetson University in the fall of 2016.

C13 Rhiannon Boyer (Dr. Michael McFarland)
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Earthrise: Symbols, Images, and the Environmental Movement

This analysis explains how images have affected the environmental movement, specifically the first image of Earth: Earthrise. Beginning with imagery in literature during the romantic era, authors such as Henry David Thoreau and Ralph Waldo Emerson spawned a conversation about the environment which affected people many years to come. Preservationists and conservationists, alike, utilize images to define eras, protests, themes, and efforts done during the environmental movement. Images of Yosemite have defined the Wild West while conserving the land at the same time and the first image of Earth helped create the Environmental Protection Agency and began the first Earth Day celebration. Overall, images are effective communication devices which help persuade audiences to affect change.

C5 Richelle Braswell (Dr. Joel Davis)
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J.R.R. Tolkien: "Faërie is a Perilous Land"

During Fall 2016, my independent study was conducted under Dr. Joel Davis. I studied John Ronald Reuel "J.R.R" Tolkien and his various

works, including *The Lord of the Rings* and lesser known works such as *Roverandom*. I propose that Tolkien created a world within a bubble. This bubble is like a pantry; Tolkien takes different pieces of information, or ingredients, and combines them to create his different works. I also discuss Tolkien's understanding of the Faërie realm, its darker side, and its various roles throughout his literature. He discusses his view of Faërie in his essay "On Fairy-Stories"; this essay plays a pivotal role in Tolkien and his works. Many critics focus on this essay, and I mention briefly some of this criticism. I identify recurring themes prevalent in Tolkien's various works, such as The West, the sea, and blindfolds in Elven land.

C1 Richelle Braswell (Dr. Grady Ballenger)
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Studying Literature in the United Kingdom*

During the spring of 2016, I had the opportunity to study abroad at the University of Oxford. Oxford's educational system is quite different from Stetson's. Oxford has tutorials where typically one student (sometimes two or three students) meets with a tutor for an hour each week for eight weeks. I took two tutorials that opened my eyes to the way Oxford tutors teach, learn, research, and even write papers, as these activities had their own variations, some of which were familiar and some of which were entirely new. After my eight-week term, I traveled in England, Wales, and France for a month. These travels furthered my knowledge of various cultures, such as their unique cuisine, languages, and outlooks on life.
*2016 Honors Grant recipient

E13 Kameron Calabro (Dr. Kevin Riggs)
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Magnetic Force Microscopy & Yttrium Iron Garnet

The objective of this project was to use Magnetic Force Microscopy (MFM) to image the magnetic domain lines of Yttrium Iron Garnet (YIG). Then create a magnetic field with a different magnet to observe the effects of Ampere's law on YIG. Then using the Quesant program then analyze the change in the magnetic field of YIG.

B4 Melaina Cartwright-Mills (Dr. Daniil Zavlunov)
mcartwri@stetson.edu
An Analysis of Gender Portrayal in Mozart's Comic Soprano Roles: the "Da Ponte Operas" and Singspiel *

Wolfgang Amadeus Mozart was one of the most famous opera composers of all time, and his operas are widely performed and studied to this day. This study examines Mozart's characterization of women in his comic operas, both Italian (opera buffa) and German (singspiel), and the implications of that characterization. In the process, it discusses two interrelated components: the role that a character's social class plays in her musical delineation, and the unique features that each national tradition of comic opera contributes to the construction of gender identity. This presentation analyzes the forms and texts of specific arias that these characters sing in order to discover Mozart's characterization of gender and the characters' conceptions of their own identity. The exploration of these characters' relationships and identities is useful for singers who wish to give authentic performances of these opera roles.

- 2016 SURE Grant Recipient

C6 J. Nichole Cheslow (Dr. Philip Lucas)
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Classifying Modern Paganism: A Postmodern Religion Fashioned Through Experience and Illustrated Through Fashion

This article argues that Modern Paganism is best defined as a postmodern religion, which can be clearly seen in its fluid approach to language, resistance to authority, and belief in the relative nature of history. It is important to define what is meant by postmodern which, in

this case, is the idea that there is no one universal Truth, but instead an infinite number of perspectives, as well as an infinite number of ways to describe those perspectives. Modern Paganism is most simply defined as an umbrella term that refers to an ambiguous collection of traditions that share common features, such as a reverence for the divine feminine, concern for the environment, a lack of unified authority, and a flexibility of beliefs and language. This can be exemplified through Pagan fashions for daily life, rituals, and festivals, and the variety of cultures, time periods, and subcultures from which they draw.

C3 Delaney Christine (Dr. Kimberly Reiter)
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'Now Starring: The Chivalrous Ill-Made Knight of the Cart': Lancelot and Chivalry in Film

In studying the tales and lore of King Arthur and his Knights of the Round Table, one will always run across several characters that are, for the most part, a standard actor in the stories. Sometimes these characters can be manipulated and changed based upon the time of writing, or what readers and viewers may already know about the character in general. This research examines one such character: Sir Lancelot, the Knight of the Cart, the Ill-Made Knight, King Arthur's right hand man and Guinevere's loyal knightly love interest. Is Lancelot always portrayed as the epitome of knightly chivalry and courtly love in literature and film? Research for this paper and presentation included readings of the first tales where Lancelot is introduced, as well as readings from other authors discussing chivalry, Lancelot, and his adventures with King Arthur. Films starring a Lancelot character were viewed, such as *Camelot* (1967), *Lancelot and Guinevere* (1963), *First Knight* (1995), and *King Arthur* (2004). These films were viewed to see how films portray Lancelot and his chivalry, to see if it correlates with the traditional literature.

Art 13 Anna Chun (Dr. Dengke Chen)
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The God of Antiques

Sometimes life likes to throw unexpected curveballs, and oftentimes it becomes hard to find solace when it seems as if everyone else has their own series of problems. Opening up becomes especially difficult when your own imagination turns on you; it is paralyzing—terrifying, even—to find support, or even realize that you need support in the first place. Self-imposed isolation is a topic not many people seem to approach, much less incorporate without it sounding too melodramatic; of course, anything can sound dramatic when you're a teenager with a traumatic past and scars too deep to share. Your name is Hwan, and you find yourself standing at the precipice of childhood and growing up. The world you live in is far from normal. People become figurative and literal monsters, emotions are literal parasites living in your body, and just around the corner is a strange building with an eye-shaped doorknob that takes you to an antique store where the owner has four eyes. You learned at a young age that the world is capricious and cruel, but will you overcome your hardships, or will you let it consume you?

E11 Sarah Coffey (Dr. Cynthia Bennington)
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Costa Rican agoecosystems as carbon sinks: the correlation between tree diversity and carbon storage in a tropical forest

I used leaf litter as a representation of the carbon stored in a tropical, pre-montane forest adjacent to a Costa Rican coffee farm. I hypothesized that greater diversity in tree species would increase the capacity for carbon storage. By counting the total number of tree species within ten 200 meter circular plots and collecting the leaf litter from each plot, I analyzed the relationship between tree species diversity and the carbon stored in leaf litter using a linear regression. My hypothesis was supported, as there was a positive relationship between tree diversity and the amount of leaf litter in each plot, suggesting that carbon

storage is greatest where diversity is greatest (p=0.05). Forest fragments increase the biodiversity within the whole agroecosystem and enhance the forest's capacity to serve as a carbon sink due to species complementarity mechanisms. While high biodiversity is a goal in its own right, it also serves as an important climate change mitigation strategy and should be considered in management of agroecosystems.

A8 Sarah Coffey, JB Pitts, Lex Rasdal, Alissa Pagano, Jad Lotoc, and Jen Trinh (Dr. J. Anthony Abbott)
scoffey@stetson.edu

Hatter Hydroponics: The Catalyst House

The Sustaining Green-Living Community Catalyst House offered six students the opportunity to live out the values of sustainable living. This Catalyst House provided a place to focus on the intersection of environmental stability, economic viability, and social equity during the 2016-2017 academic year. As a community, we worked to decrease our carbon emissions by growing our own food. One of the ways we did this was by building our own deep water culture hydroponic system for growing lettuce and other greens. By partnering with the Stetson Environmental Club, Hatter Harvest, and the Farmworker Association of Florida, we served our community and promoted sustainability on and off campus. We are very grateful to our faculty advisor, Dr. Abbott, and his wife, Barbara Bredis, for their guidance and contribution to our garden. We are looking forward to sharing our presentation "Seeking Sustainable Solutions: Hatter Hydroponics" to show others the importance and ease of growing our own food as a means of decreasing our carbon footprint.

A 9-11 Community Catalyst Houses: Sustaining Green Living, World Kitchen, Intersections of Faith, and Futures in Healthcare (Jessica Day)
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Community Catalyst Houses: Spaces that activate our ability to live, learn and affect the community

The Stetson student is a catalyst for change in our world. Housing and Residential Life empowered approximately 30 students in its first pilot year of the Community Catalyst House Program to motivate change. Four groups of students took on the challenge of living within a smaller community with the goal of effecting something greater than themselves. Driven to create their own communities, foster inclusive environments and drive others to live and learn together this year; these four communities were successful in establishing four separate goals. Sustaining Green Living focused on creating sustainable food production. Intersections of Faith focused on the exploration and access of sacred traditions and American religions. Futures in Healthcare devoted time supporting services of health care in the DeLand community. World Kitchen structured their conversations about conflict in our world around the food others eat. Each community was responsible for creating a project related to their theme that focused on meeting a challenge facing our community (Stetson, DeLand, or beyond). As a result of their efforts this year, our communities will showcase their project, report back on their successes and challenges from the year, and what they hope to continue after living in this community of catalyst.

Art-7 Aaron Cook (Dr. Dengke Chen)
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Underwater Adventure: The Future of Storytelling

Technology has been a leading tool in education for the past century. Since the rise of John Dewey's philosophy of educational progressivism, there has been a movement to make learning more fun and hands on. Since It is extremely important for a children to learn how to read at an early age, we decided to develop an interactive children's book that makes reading fun and hands on. Our project is an attempts to redefine storytelling by utilizing

cutting edge Augmented Reality and 3D Technology. The interactive children's book immerses the user into the story using sound, touch, 3D animations and games. The readers are able to reach a new level of comprehension because they are required to solve problems or complete an objective to progress further into the story. This technology could redefine the way primary schools teach reading to their students. The application of this technology doesn't need to stop here. It could also be applied to textbooks or classroom activities.

B1 Jason Cruz (Dr. Grady Ballenger)
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Tracing a Comic History of Racial Violence in *The Sellout*

In my paper I focus on the way Paul Beatty uses satire and comedic wit to teach the history of American racial violence in his 2015 novel The Sellout. Beatty's Man Booker prize winning story focuses on a black man attempting to bring back racial segregation in the hopes of uplifting his blighted and forgotten community in Los Angeles. Beatty's humor makes painful details of racist violence palatable to readers in ways that other, drier texts cannot. This, I argue, can enable broader understanding and action to fight back against the racism of today. With funding from Stetson's English department and Honors Program, I was able to present this paper at the 2017 Sigma Tau Delta international convention on April 1st in Louisville, Kentucky.

D5 Christian Decker (Dr. Joshua Eckroth)
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Scene by Scene Script Generation for Live Action Hollywood Movies

Today there is no "Google for video" that actually searches the content of the video. Content-based video search can be achieved by indexing video scene transcriptions much like a film script. We have developed a tool that automatically processes video and produces a transcript representing its contents. The processing pipeline involves scene segmentation, action recognition, face recognition, and speech transcription. We measure the accuracy of each stage of the pipeline as well as the entire movie-to-script process.

E15 Christian Decker and Jure Jumalon (Dr. Hala ElAarag)
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A Comparison of Sorting, Searching, and Arithmetic Based Serial Algorithms to an OpenCL Implementation

Utilizing graphics cards to process general purpose computations by parallelizing them would increase performance. In this paper we will explore popular searching, sorting, and arithmetic based algorithms such as selection sort, sequential search, and matrix addition, by parallelizing them and analysing the performance increase or decrease. We will also analyze a popular parallel sorting algorithm; bitonic search in both its parallel and nonparallel forms. The results show that the parallel versions are significantly faster than their counterparts in almost all cases.

A10 Kendall Diehl (Dr. Michael McFarland)
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CEO's and She-E-O's: Analyzing the Gendered Discussion of Corporate Female Leaders in Business News Journals

This research takes a rhetorical approach to understanding the portrayal of female leaders in news media. The analysis answers questions regarding the gendered nature of news contents and interview questions when reporters are discussing corporate female authority figures. On the basis of gender in the business-related news media, it applies to concept of social constructionism in order analyze articles written in the New York Times and the Wall Street Journal. The goal is to determine common characteristics of reporter writing regarding negativity towards the person of interest, downplay of career successes, and statements that encourage stereotypical

gendered reports of females. Application of this particular concept serves to analyze and understand how news media depicts females who have achieved upper-level management positions in corporate environments based on the development of a social construct as a method to interpret reality. With a direct focus on Carly Fiorina, the research examines these sources of news media based on their approach to discussing her career over the course of the time she has been in the public eye, roughly 1999 when she was first promoted to HP's CEO and up until the present.

Art8 Meghan Doyle (Dr. Amandine Pras)
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Unspeakable Tragedy

"Unspeakable Tragedy" seeks to confront the disturbing effects and reality of drinking and driving. According to the Centers for Disease Control (CDC), there is on average one accident every 53 minutes that involves an alcohol-impaired driver. Many temptations are faced in college culture and one of them is underage drinking and driving. Underage drinking and driving has essentially become an epidemic, rapidly developing among today's youth. Meghan has photographed and designed 6 manipulated images using Adobe Photoshop and Adobe Illustrator. Her aim is to portray a powerful message of the consequences of drinking and driving to the audience. She hopes to educate students about the effects of alcohol through her influential images and personal story about the passing of a loved one due to a drinking and driving tragedy. She is determined to pass the message along - "Educated people make educated decisions and educated people will not make the decision to drive drunk".

C15 Taylor Duguay (Dr. Michael McFarland)
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'I Am Your Voice': The Construction of Donald Trump as a Populist Hero in his 2016 RNC Address

Focusing specifically upon Donald Trump's nomination acceptance address at the 2016 Republican National Convention, my thesis employs an interdisciplinary perspective in order to analyze the populist nature of Trump's campaign rhetoric. My rhetorical analysis, which is informed by Kenneth Burke's theory of dramatism and follows his method of cluster criticism, ultimately argues that Trump rhetorically migrates through the stages of Burke's redemption model in his address in order to frame himself as a hero to the American people. Overall, my thesis contributes to the existing body of literature regarding populist discourse in American politics, and ultimately provides insight into the famed campaign that brought Donald Trump, a businessman and reality television star, to the Oval Office.

D8 Kate Ellis (Dr. Roslyn Crowder)
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The Effect of Green Tea Extract on H460 Lung Cancer Cells

Natural substances have not only displayed promise in inducing regulated cell death, also known as apoptosis, in multiple kinds of cancer, but have also shown potential in preventing cancer from developing at all. Green tea extract is a common natural substance in an individual's diet that can be easily acquired. Within green tea extract is a polyphenol called epigallocatechin gallate, or EGCG, which has been shown to prevent tumors from growing or developing when used alone or in combination with chemotherapy. A natural substance such as EGCG is advantageous because it can be added into an individual's diet and used along with traditional cancer treatments. We investigated the effect EGCG has on H460 lung cancer cells to determine the optimum EGCG concentration for highest lung cancer cell death. Lung cancer cell death was evident at concentrations of 100 and 400 µM after a 24-hour treatment. Our preliminary results support regulated cell death being induced in lung cancer cells. Our future studies will also examine which proteins get activated in EGCG-

induced lung cancer cell death as well as that apoptosis is occurring. These results suggest that EGCG has potential to be an effective treatment for lung cancer.

Art9 Ian Felpel (Dr. Matthew Roberts)
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HIGAVI

Stars speckle the night sky, as the wind moans a lullaby. Planets gleam like beams of light piercing through an orifice. Kaleidoscopic galaxies shift in a recognizable yet erratic pattern. Is God sustaining this creation, guiding all by his providential hand? Is this realm merely the operation of natural laws and chance? Does mankind's actions have significant influence in the universe, or are such actions meaningless? HIGAVI (acronym for Hybrid Interactive-Generative Audiovisual Instrument) captures this question of life and meaning through an amalgamation of music, visuals, and interactive electronics. The installation is designed to be continuously changing, while also requiring the audience's participation. As participants walk across a series of invisible infrared beams, animations and music are generated in real-time. Melodies can be created by one or more people, while the computer composes accompanying soundscapes. Each time the piece is played, it is programmed to be ephemeral and never repeated the same way twice.

B17 Jorge Flores (Dr. Sven Smith, Dr. Rick medlin)
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A growing body of literature suggests that the non-medical use of drugs becomes more common among university and college students for the purpose of enhancing academic performance. Studying this demographic, we can begin to interpret students' perception of drugs as compared to their admitted drug use in the face of the assumed anti-drug education prevalent in the formal culture prevalent at universities. We look to comment further on the notion that stress encourages drug use amongst college students while controlling for demographic and treating the effect of drug perception as a moderator. Confidential surveys were used to collect data. To expand knowledge about the samples follow up interviews were conducted with most of the participants. After the data was collected I used G-Power to determine the sample size needed to find a statistically significant sample with a moderate effect size. To begin investigating possible correlations, I conducted simple bivariate analyses. Multivariate linear regression was also used to determine the correlation between stress (Perceived stress scale) and drug use (stimulant survey questionnaire), while controlling for demographic, familial influence, and drug perception (drug use stigmatization scale). After the quantitative data was collected I was able to follow up with 70 participants and this gave me an opportunity to continue to dissect the relationship between use and respondents' perception of drugs. Common themes were extracted from the follow-up interviews and compared to the quantitative analyses to look for causal patterns.

B14 Natalie Frandsen (Dr. Margaret Venzke)
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National Crises and the Expansion of U.S. Executive Power: The Presidencies of Franklin D. Roosevelt, George W. Bush, and Barack Obama *

I conducted research on the evolution of the executive power. This provided me with the opportunity to fly to Washington, D.C. to collect primary documents in the National Archives and Library of Congress. This research explores the executive's authority to expand the powers of the presidency beyond the framers' intent of the U.S. Constitution. This research argues that Franklin Roosevelt set the precedent for using executive orders in national crises, George W. Bush expanded presidential power through signing statements, and the administration under Barack Obama

transformed executive power into a legislative authority whereby any succeeding president dissatisfied with Congress or the Supreme Court can bypass the separation of powers.

- 2016 Evans Johnson Grant

B12 Maria Frank (Dr. Mayhill Fowler)
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Polish Pilots in Exile: The Polish-British Military Encounter, 1939-1945*

Poland's and Britain's fates have been intertwined through their encounter in World War II, after Nazi Germany invaded Poland in September, 1939. Through this Polish-British alliance the Polish Government in Exile found a new headquarters in London, and the Polish Armed forces joined Britain's Royal Military to combat Nazi Germany through Europe. The paper addresses how these two countries' militaries overlapped, and the differing gender and social relations they encountered in 1939-1945. I will be focusing on the Polish Air Force and their battles alongside the Royal Air Force. The author compares the level of inclusivity of these units, paying specific attention to the organization of their squadrons. Who were these Polish fighter pilots and what contribution did they make to the war effort overall? The Polish were dependent on Britain at the outbreak of this war, but as the war progressed Poland's impact on the success of the West increased. Britain and Poland were interdependent during World War Two, at a time when the Poles did not even have a country to call their own.

- 2016 Evans Johnson Grant.

HON1 Haley Gaynor, Taylor Clarke, William Gillett, Cassidy Campbell, Daniel Keiser, and Noah Katz (Dr. Alan Green)
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Black Markets of Academia

Black markets are defined as illegal traffic or trade in officially controlled or scarce commodities. They are widespread and occur in many sectors of society. In this presentation, we will be examining different aspects of the black markets of academia. We will present our findings from an individual honors tutorial research topic. This project gave us own our personal experience in this market and resulted in a deeper understanding of how they work. The main points we will cover include the size of the market, legal implications, costs associated with using the using these sources, supply and demand sides of the market, how to beat Blackboard using these black markets, and a professor perspective on how these markets influence education.

A5 Sara Marie Gorman (Dr. Rick Medlin)
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Can Read You This?: The Effect of Dyslexia Priming on Cognitive Task Performance

This study assessed the impact dyslexia and dyscalculia priming have on cognitive task performance. Forty Stetson students were recruited for participation in the experiment. Participants exposed to dyslexia priming read a written prompt about an individual who cannot read/write; those exposed to dyscalculia priming read about an individual who cannot identify numbers/count. After priming, both groups completed a reading and math task--both tasks were computerized. The reading task prompted each participant to identify letter strings as words or non-words. Each letter string was either semantically associated to the item presented previously or not. The math task scored each participant's proficiency in basic mathematical skills. The researcher hypothesized that dyslexia primed participants would take longer to identify words than the dyscalculia group. Also, participants exposed to dyscalculia priming would perform more poorly on the math task. Contrary to these hypotheses, results indicated that dyscalculia primed participants took significantly longer to identify associated word pairs and non-words than those exposed to dyslexia priming. Both groups showed no difference in math scores. These

results suggest that priming had an adverse effect on cognitive performance due to participant "reactance." Thus, how individuals view themselves is a far greater determinant for how they behave.

HON-2 Benjamin Griffiths and Arthur Tran (Dr. Joshua Rust)
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The History and Philosophy of Walking

Walking has always been one of the most easily understood and universally held ideals. Everyone is supposed to understand it. But, as we shift into a world where walking is not a necessity, as it had been in the past, the views that many of us hold for walking are varied. History and Philosophy of Walking explores the various topics surrounding walking and its impact within our daily lives. More specifically for this showcase, we are going to speak about topics discussed in the course, and a more recent walking experiment we conducted.

D4 Victoria Grupp (Dr. Amandine Pras)
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Track It, Zip It*

"Track It, Zip It" is a Digital Musical Instrument (DMI) I designed with the support of the SURE grant and IDMIL, McGill University, in Montreal, QC. I conducted an interview with professional improvisational percussionist, Jim Black, about what he imagined his ideal wearable interface to be. I researched and prototyped innovative ways to design fabric sensors and integrate them onto a shirt incorporating the preferred gestural movements he demonstrated. The DMI is durable and provides consistent and accurate outputs to the computer, as any instrument needs to. Half way through the research residency Jim Black came to Montreal, QC to assist me in identifying my success in these objectives and further developments needed seen in today's "Track It, Zip It". This is a step towards bridging a gap between technology design and extended music practices.

- 2016 SURE Grant Recipient

E14 Henderson Gull (Dr. Terrence Farrell)
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Predation success and handling strategies in the stone crab (*Menippe mercenaria*) in foraging trials with four shelled marine invertebrates

The Floridian Stone Crab (*Menippe mercenaria*) is an important commercial species in Florida with large claws that are sustainably harvested. Its large crushing claws allow *M. mercenaria* to forage on hard-shelled organisms such as mollusks and crustaceans. We investigated prey selection in juvenile *M. mercenaria* to observe its preferences in available local prey types, note behavioral strategies in handling shelled prey, and to determine the shell morphologies it could open. We used 18 juvenile crabs (carapace width under 60mm). Each crab was given four trials of morphologically different local prey items, Ivory Barnacles (*Balanus eburneus*), *Echinolittorina jamaicensis*, Checkered Nerites (*Nerita tesselata*), and Mussels (*Brachidontes exustus*) in random order. We ran a total of 72 trials and found that prey type and consumption success were not independent, loss of a claw had no significant influence on average trial success, and that there was not a significant relationship between the number of successful trials and crab carapace width. *M. mercenaria* was unable to crush the circular shell structure of nerite snails. *Littorina* snails were always shattered, while mussels tended to be either shattered or be penetrated through the connective hinge of the shells, and barnacles were either removed from their surface substrate and extracted from the missing plate bottom or had their shells removed by individual plates. We suspect that predation from juvenile *M. mercenaria* is partially responsible for the presence of these food organisms only in high tidal areas of the shore walls and mangroves in the Halifax River as any organisms lower would risk predation from the Crabs.

B11 Daniella Hankey (Dr. Michael McFarland)
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When Tragedy Strikes: A Frame Analysis of Two CBS News Outlets During the First Forty-Eight Hours of the Orlando Pulse Shooting

Throughout the news, major factors influence audience's perception of mediated news on television including breaking news and mass shootings. This study explores the reporting of two CBS affiliate news stations and twenty- four hour of the Pulse shooting that occurred in Orlando, Florida 2016. The two news stations are: WKMG-Local 6 (Orlando) and WCCO (Minnesota) as both had major coverage of the Pulse attack as well as full websites that covered any of the Pulse shooting. Throughout this study, areas will be examined to help show the importance of the incident, which include: the stories content and the framing of the two news channels. This study applies the framing theory to a controversial issue and event profusely covered by the American mass media: Orlando Pulse Shooting. To accomplish this, coverage of twenty- four hours through six videos (three Local 6 and three WCCO) can be seen through these two important news stations.

A6 Katie Hansen (Dr. Jason M. Evans)
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Attitudes about Climate Change: a Survey of Downtown Deland and Stetson University

I conducted a survey about climate change in order to compare attitudes of people found in two different locations, a private university campus and a public place. Results from my study showed that on average participants surveyed at the Stetson University location are more likely to agree that climate change is occurring and be alarmed about the future impacts. An astonishing 20% of all participants surveyed answered that they did not know if climate change is occurring, 9% were somewhat sure that climate change is not occurring, and 3% deny that climate change is occurring at all. I expected to see a relationship between political preferences and negative views about climate change, (Dunlap 2010). Although there was not a significant relationship between conservative political views and climate change it was shown that the majority of those who denied climate change is occurring were republican. I also found that 42% of participants surveyed in the public space of Downtown DeLand did not know if any of their friends or relatives agreed with their views on climate change, unlike Stetson University where 36% responded that most agree with their views. These findings show that more discussion of climate is needed especially between friends and relatives.

A1 Sompi Harmetz (Dr. Jason Evans)
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Florida Superfund Sites and the Social Composition of Communities That Surround Them

Superfund sites can be seen as dangerous to those in nearby area because of the large amounts of chemicals they might contain, even once remediated. This can lead surrounding neighborhoods to become exposed to a wide array of health defects and social problems such as the stigmatization of property henceforth and discriminatory housing practices. By analyzing the location of Superfund sites in Florida and the demographics of their Census Block Group, this paper sought to determine if there is a positive correlation between Superfund locations and several sociological variables. The results showed that Census Block Groups within a 1-mile radius of a Superfund site tend to have more people below the poverty line, are more urban, contain more renters, and have more Hispanic and Black residents, than other Census Block Groups. The racial indicators percent Black and percent Hispanic showed the strongest effects when analyzed with logistic and stepwise regression, suggesting that race was the highest indicator of proximity to Superfund sites. These findings are consistent with prior research suggesting that racial minorities and those below the

poverty line are systemically more likely to have exposure to chronic and acute environmental hazards.

E12 Whitney Harvey (Dr. Kirsten Work)
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Inorganic nitrogen and phosphorus are not chemical catalysts for accelerated generation times in the invasive snail species, *Melanoides tuberculata*

Melanoides tuberculata is an invasive snail species found worldwide. Traits such as parthenogenetic reproduction, ovoviviparity, and rapid generation times have allowed this invasive snail to dominate many foreign ecosystems. Additionally, these snails have the capacity to cause trematode infections in humans and animals. This study evaluated whether elevated exposure to N & P had the potential to significantly increase reproduction rates (measured by number of offspring produced per treatment) in *M. tuberculata*. Isolated snails were exposed to water, which was changed regularly (either 3 times per week or 7 times per week depending on the trial), from tanks containing elevated levels of N & P. Elevated N & P levels were produced either naturally or synthetically (from either feces, algae, inorganic lab nutrients, or a high-density snail community). There was no significant increase in offspring produced when *M. tuberculata* was exposed to elevated levels of inorganic N & P. However, there were significant increases in reproduction for animals exposed to organic N & P from either the feces or algae treatments. Although inorganic nitrogen and phosphorus do not seem to be chemical catalysts for accelerated reproduction as hypothesized, since significant reproduction increases were measured when *M. tuberculata* was exposed to organic sources of N & P, the connection between *M. tuberculata* reproduction rates and nitrogen and phosphorus levels is still unknown. The snails' highly developed olfactory system and significant behavioral response to other chemical treatments does suggest a plausible connection between the olfactory and reproduction system that needs further study in *M. tuberculata*.

B7 Emily Heathcote (Dr. Grady Ballenger and Dr. Melinda Hall)
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"As Far As the Shadow of Decency Allowed": Valorization through the Commodification of *Lolita*

Vladimir Nabokov's novel, *Lolita*, is considered to be one of the most important texts of the 20th century. However, through the lenses of Karl Marx and Julia Kristeva, it can be understood as a navigatory tool through the process by which the natural, female, sexual body is pornographically sexualized, commodified, and its resulting capital, valorized. Furthermore, the novel's commodification and valorization does not stop within its pages, rather its effects on how we view, discuss, and capitalize on women has rippled into the 21st century.

D11 Sarah Jensen (Dr. Lynn Kee)
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Development of CRISPR constructs for the insertion of GFP into the *Cdk-5* gene of *Caenorhabditis elegans*

A new gene editing system, termed CRISPR-Cas9, provides an efficient way to make targeted edits to the genome within living cells. The goal of this study is to create the CRISPR/cas9 molecular constructs that allow visualization of *Cdk-5*'s *in vivo* localization within the animal model, *Caenorhabditis elegans.* Studying the *Cdk-5* gene would provide insight into the underlying mechanisms that regulate the development of Alzheimer's disease. The two components of the system that I worked to build are a single guide RNA specific to *Cdk-5* gene and a DNA homology repair template containing the GFP sequence. Forward primer sequences specific to guide sites were designed to be used to amplify the

GFP sequence. The PCR product of these primers created the homologous repair template. The homologous repair template was run through a gel and determined that the primers were able to anneal and were the expected band size. The homologous repair template was determined to be of the correct sequence by a restriction enzyme digest. Next, the single guide RNA was created by annealing each specific guide sequence into the pDR274 plasmid. The single guide RNA plasmids were transformed and replicated in BL21 bacteria. After *in vitro* transcription of the plasmids, the single guide RNA's were finished and their production was confirmed using gel electrophoresis. The next step of this research is to pursue an injection of the previously made CRISPR constructs and a Cas9 protein into the animal model *C. elegans.* This would allow a visualization of the localization of the *Cdk-5 in vivo*. Using CRISPR/Cas9 technology to study *Cdk-5* allows for an *in vivo* model of the progression of Alzheimer's disease.

Art14 Colby Johnson (Dr. Amandine Pras)
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This World Is Cold

Nobody is willing to analyze the path they took to get here, a road littered with half memories of nights that leave the taste of lead in one's mouth. We can hear the prayers of the forgotten being drowned in rooms of granite. Their incantations being forever lost in a sea of empty chambers, grasping for the closest ear but failing to leave any mark of their existence. These hymns are for those with no tongue, kneeling before an altar of 1's and 0's, begging for the same chains that keep their humanity captive. "This World Is Cold" is an album for those who do not wish to be found, for those who are past the point of giving up. Using distorted and harsh synthesizer leads, the album tells a story of loneliness and exile to the rhythm of a cold, stale heart.

E4 Katelyn Johnson (Dr. Kirsten Work)
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Food types affect growth rates in *Melanoides tuberculata*

Invasive species have plagued environments leading to reduced numbers in species that share the habitat, over-competition for resources, and the transmission of diseases. One species that has made it's way here locally is *Melanoide s tuberculata*. *Melanoide s tuberculata* is an invasive snail found all over the United States and in many other continents and countries. These snails are important to study due to their high growth rates, ability to quickly reproduce, and their ability to be an intermediate host for pathogenic trematodes. The purpose of this study is to determine if the food available affects the growth rates of *Melan oides tuberculata*. We predict that diet will impact growth rates depending on the type of food they are and whether the food is native to their established environment. My hypothesis that the type of food *Mela noides tuberculata* are fed will affect their growth rates was supported. In addition, our second hypothesis that yeast would have the slowest growth rate was also supported.

A2 Ashleigh Jones (Dr. Michele Skelton)
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Hatha Yoga as a Potential Treatment Option for Irritable Bowel Syndrome

An estimated 15.3 million Americans suffer from Irritable Bowel Syndrome (IBS). Abdominal pain, decreased quality of life, and atypical bowel movements are merely some of the characteristics of IBS. Since a large component of IBS is increased stress and anxiety, yoga has been suggested as an alternative form of treatment for IBS. Hatha yoga focuses on meditation and controlled breathing to relax participants which makes it a reasonable option for the treatment of IBS. Previous studies have suggested yoga is a promising treatment option for IBS patients as symptoms, stress levels, and overall quality of life improved after participating in a yoga program even after periods as short as 4 weeks. Is yoga an effective

treatment option for a subclinical population with bowel disturbances? Is it an effective treatment for GI distress in college students? Information on the use of yoga to maintain a healthy digestive system will be the focus of this presentation.

HON-7 Cleo Koenig and Markus-Daniel Jones (Dr. Rajni Shankar-Brown)
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Theory to Practice: Ethical Incubator

The Ethical Incubator is born from acknowledging that, for good or bad, businesses are some of the most impactful agents of our contemporary society. At the Ethical Incubator, as at many organizations, we believe that, when business structure themselves to be an agent for positive change, they can also become financially successful in the long-run. Through out this semester, we have been discussing how an incubator can contribute to such change by developing a model where we can help already established businesses and also business ideas that have not yet been developed.

B16 Brittany Kovalskaya (Dr. Sven Smith)
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Criminal Clemency: The Effect of Criminal Defense Work on the Tolerance of Attorneys

The work of a criminal defense attorney typically has a bad connotation to it and leads to bad stereotypes. Some of these stereotypes include that the criminal defense attorney protects people with no souls, they protect guilty people, and that they themselves lie and cheat to let these criminals loose into society. Criminal attorneys have valid reasons for committing to this job. They want to make sure their client receives their day in court and they want to fight to reform the criminal justice system. My research revolves around whether criminal attorneys are more tolerant than non-criminal attorneys when it comes to sentencing and criminal deviance, because criminal attorneys work in this field and have different views. I hypothesize that criminal attorneys are more tolerant and I interviewed 20 criminal and 20 non-criminal attorneys to find that out.

E7 Dylan Labbe (Dr. Kevin Riggs and Dr. Thomas Vogel)

Simulation of Alfvén Waves in One Dimension

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A key phenomenon in MHD plasma theory is the Alfven wave, a low-frequency transverse wave in which ions oscillate due to a constant magnetic field applied to an ionized plasma. This wave behaves similarly to a massive vibrating string and depends only on the magnetic field and the total mass density of the plasma. The goal of my project is to simulate this Alfven motion by implementing the leapfrog and Lax-Wendroff integration algorithms in Python. The results of this project could prove useful as an experiment in a computational methods course.

B3 Adrianna LaForest (Dr. Emily Mieras)
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Black Students Sense of Racial Consciousness While Attending a Predominantly White Institution vs a Historically Black College

A majority of young adolescents go through the same thought processes in their decision when choosing a college or university to attend. They look at proximity, programs offered, costs, and etc. For black students there is way more on the line then just looking at costs and location. Black students chose between attending Predominantly White Institutions vs Historically Black Colleges and Universities. This decision shapes the formation of their racial identity for the next four years. There is an ongoing debate in the black community that denounces black students that choose to attend PWI's instead of HBCU's. Students who attend PWI's are seen as "less black" our traitorous to their own people. They are seen as assimilationists who just want to blend in to the white community instead of taking a nationalist stance and supporting what

their people built. My project aims to determine Black students sense of racial consciousness when attending a PWI vs an HBCU. I have generated a survey that assesses students' sense of racial identity and consciousness based on their interpersonal relationships, faith, school environment, and involvement in extracurricular activities. My sample population includes students from both Stetson University (PWI) and Bethune-Cookman University (HBCU). The results are pointing to a higher sense of racial consciousness and discomfort in Stetson University black students compared to Bethune. I believe my results will continue along this trend and show that students at Stetson University have a higher sense of racial consciousness because they are the minority in this community and have to work harder to develop and cultivate their identity. I believe the findings from this research project in collaboration with the Campus Climate survey will be greatly beneficially to fixing the racial/political climate here at Stetson University.

A4 Mary Leggett, Dr. Robert Askew, Matthew Vanaman and Dr. Danielle Lindner (Dr. Robert Askew)
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Exercise Contribution to Self-Esteem*

The goal of this presentation is to introduce a new scale designed to measure the contribution of exercise to an individual's self-esteem. Over 700 participants were recruited through Amazon's Mechanical Turk and an additional on-campus cohort was recruited to ensure a comprehensive assessment of the scale scores' validity and reliability. The Exercise Contribution to Self-Esteem Scale (ECSES) includes 14 items prompting respondents to determine how true a statement is of them with response options ranging from "Strongly Disagree" to "Strongly Agree." Results from this study indicate that ECSES scores measure a trait that is distinct from general self-esteem and that the importance of exercise to self-esteem differs among different types of athletes (i.e. collegiate and casual; team and solo sports).

*Funding provided by the College of Arts and Sciences Dean's Fund and Psychology Department Research Fund

C4 Vasilios Loparnos (Dr. Julie Schmitt)
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Exploring Conformity through an Absurdist Play

For my senior project, I played a lead role in the Stetson Theatre Arts production of *Rhinoceros* by Eugene Ionesco. The purpose of my preliminary research was to explore the themes and ideas of conformity, humanity, and logic evident in the text, and then apply that research to the rehearsal and performance process. This presentation will begin with an explanation of my research process preparing for the role and a brief synopsis of the play, which will include photographs from the production. To conclude, a short excerpt from the play will be performed as a demonstration of acting choices informed by my analysis of the character.

Art12 Katie Mackey (Dr. Madison Creech)
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"Driftwood" -- Exploring Life After Sexual Assault

"Driftwood" is focused on the lives of sexual assault and rape survivors after they leave the public eye. Because fear mongering sells, the media is skewed toward focusing on the assaulter rather than the victim—this has brought on a negative stereotype and expectation for women who would dare to speak out. Like rotten wood that washes up on shore, bruised and beaten by the waves, these girls were labeled: broken and used. Many live their lives in this eternal state of victimhood where no one bothers to pick them up. Each of the women in this exhibition was left behind to drown in their memories. Yet, each one found their freedom through faith. Showing great strength and tenacity, they dare to share the love they found in a God who picked them up out of the dirt and gave them a new story. Through interviews, these women shared their

story and inspired each individual art piece. Adding my own story in the form of written word, "Driftwood" acts as a timeline of hurt, personal thought, and inner healing. We all hope that through this exhibition, others who have been drowning in their own personal experiences could find freedom.

Art11 Madison McCutcheon (Dr. Nathan Wolek)
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Pigment

Individuality, a flower that blooms in the season of experience. It is impossible for two people to be identical, so why have societal pressures created a selfish tunnel vision of thought making it more popular to latch onto the mainstream than to realize the power of diversity? Through an extensive blend of audio interviews and portrait manipulation, ***Pigment*** aims to bring enlightenment to originality in a world of monotony. With a selection of multicultural college students, Madison McCutcheon creates a visual example of the diversity of the mind by using self-constructed audio files to provoke reactions. Using color as the response medium, the visual representation easily bridged together the digital artwork and the reminder that everyone is unique in every dimension. Because of the pressures of society, this work is an important statement focusing on acceptance of differences in appearance, status, knowledge, and all aspects.

HON-6 Kathryn Renae Metcalf (Dr. Rajni Shankar-Brown)
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Global Perspectives of Language Education

In the United States, there is no national mandate for foreign language education. To the contrary, many other developed countries require study of foreign languages. This presentation investigates other developed countries' policies on language education and compares their age of onset of instruction, which languages are commonly offered by region/country, and how many languages students are required to study. Additionally, the presentation discusses motivations to learn a foreign language and compares world languages spoken by population to languages commonly studied in different regions, with reference to globalization. Ultimately, the presentation contrasts the mentioned countries' policies to the policies of the United States and suggests how the United States can improve.

D3 Caitlin Meyer & Rene Aviles (Dr. Michele Skelton)
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To 3D and Beyond

Three-dimensional printers function much like your typical inkjet printer. Information is sent from a computer which is then processed through an STL which tells the printer where and how to print the object. By moving across the platform while excreting a material just over its melting point, the 3D printer forms layers upon layers until the completed 3D object is formed. In the past, these printers were exclusively available to large organizations and facilities due to their large size and exorbitant price. However, today the 3D printing industry has developed lines of personalized 3D printers which can be affordably purchased and used in small organizations and schools. The purpose of this presentation is to address the question of “how can 3D printers benefit collegiate students in the pre-health field”.

C12 Natalia Mojica-Arango (Dr. Michael McFarland)
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Hollywood Goes to War: A Rhetorical Criticism of Disney Propaganda During WWII*

By the early 1940’s the rising dominance gained by Nazi Germany and its allies became a threat to all western sovereignty. Fear, uncertainty and terror were becoming prominent realities

in the lives of citizens all over the world. However, and as history was about to show, the morning of December 7, 1941 forever changed the course of the War. The attack made by the Japanese on Pearl Harbor catapulted the United States into entering War World II, and with its entrance, a new way of gaining prominence also arrived. Although a powerful military power, the United States turned to entertainment to sway, convince and gain support both from its citizens and from foreign governments. Walt Disney thus became the representative voice for an entire nation. With its music, films, and political posters, Disney was able to heavily influence Americans and foreign nations to participate and help maintain the prosperity of the United States through the entirety of the War. Until recent times, very little research has been conducted to understand the powerful influence that Disney had both on U.S culture and politics, as well as on Latin American and European culture and politics. The collaboration between the U.S. and Disney captures the art of political manipulation during wartime. Through its animated cartoons, Disney shaped the political behaviors, decisions and perspectives of the Eastern and Western Hemispheres. This essay will explore how Disney cinema helped to fulfill the United States' war agenda through the conditioning of audiences through propaganda. Send in the Duck!
*2016 Evans Johnson Grant

D15 Gary Music (Dr. Michele Skelton)
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Crackin' Down on the Brain-Gut Axis! Comparing the Effect of Probiotics on Gastrointestinal Health and the Implications for Mental Cognition and Behavior.

Is your belly scrambled? You may be experiencing gastrointestinal distress which can disrupt your whole body, including your thoughts! Recent links between gastrointestinal health and brain health have been made that could send you into shell shock. Research shows that the mind and gut are connected in many ways through chemical sensors. These sensors tell the brain when you're hungry, full, or even when your gastrointestinal bacteria are imbalanced. Imbalances between healthy and harmful bacteria lining your stomach and intestines may be related to disruptions in mental alertness, memory, and behavior. This presentation will discuss recent literature comparing the effectiveness of probiotics at restoring gut microbiota levels and its consequences on cognitive functioning and health. (This study was made possible by an external grant from IgY Nutrition.)

A8 Sara Nelmes (Dr. Wendy Anderson)
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Stetson Soil Analysis: Testing Nutrient Concentrations and pH in fertilized and unfertilized landscapes

Fertilizers applied to managed landscapes can pollute surface water or groundwater and are one of the leading contributors to algal blooms. Given Stetson's commitment to environmental stewardship, I asked if the fertilizers that Stetson applies on the Stetson Green are migrating into the groundwater system. I analyzed the pH and concentrations of total nitrogen, phosphorus, and potassium in soils from the Stetson Green (fertilized) and the Restored Sandhill Ecosystem (unfertilized control) at depths of 2" (root zone) and 6" (below root zone) over three weeks. If the Stetson Green is overfertilized, then nutrients will migrate from the 2" to the 6" zone over time. Nitrogen in the Green was higher than in the Sandhill site at both depths, and was highest in the 2" zone in Week 1, shortly after a fertilizer application. However, by Weeks 2 and 3, nitrogen had declined significantly in both the 2" and 6" zone. Phosphorus in the Green was higher in the 2" zone compared to the 6" zone and both zones in the Sandhill. Phosphorus in the Green's 2" zone remained high across all 3 weeks, even as it declined over time in the 6" zone. Potassium and pH were not significantly different between sites, depth, or over time. These results indicate that nitrogen and phosphorus are present in higher

concentrations in the soils of the fertilized Stetson Green, but have different fates over time. No evidence suggested that nutrients migrate to soil depths below the root zone where they might eventually pollute groundwater supplies.

E1 Emily Niederman (Dr. Jason Evans)
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Utilizing Hazus-MH and Sea Level Affecting Marshes Model (SLAMM) to identify floodplain conservation areas for coastal hazards

Local governments have limited options when facing coastal floodplain hazards, such as hurricanes, storm surge, flooding, and sea level rise. Some of the most common strategies include active planning (adaptation), passive observation (do nothing), or wholesale retreat (abandonment). One suite of adaptation actions involves conservation and restoration of natural ecosystems to buffer the potential damages caused by coastal hazards. However, a challenge for coastal floodplain managers is the identification of locations where ecosystem restoration is most likely to be sustainable and resilient under the range of possibilities implied by climate change. This study proposes and implements a geographic information systems (GIS) methodology for selecting adaptation action areas in Florida's Upper Indian River Lagoon watershed. Two GIS models, the Federal Emergency Management Agency's Hazus Multi-Hazard (Hazus-MH) and the Sea Level Affecting Marshes Model (SLAMM), are used to create a weighted overlay analysis that identifies and ranks the suitability of sites for sustainably implementing an integrated ecosystem restoration and floodplain mitigation strategy. The results of this analysis can inform long-term disaster mitigation planning and climate change adaptation strategies at a local, regional, and federal level.

A11 David Osorio (Dr. Ranjini Thaver)
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Vulnerability to Sea Level Rise in the Florida Keys

Sea Level Rise is one of several threats of Climate Change for many coastal populations. The purpose of this research is to assess whether poor people in the Florida Keys are more vulnerable to Sea Level Rise by analyzing if housing markets have pushed lower income families into higher risk locations. To accomplish this, I will use a hedonic model for housing in the Keys. This model has several components: housing characteristics, neighborhood characteristics, buyer characteristics and flood risk, which will allow to measure if flood risk has lowered prices so poor people move into more vulnerable areas.

D9 Makayla Owens (Dr. Michele Skelton)
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C-Reactive Protein: Is it a good indicator of a Healthy Digestive System?

C- Reactive protein (CrP) levels in the body is an important value to know. It may just be a blood marker associated with gastrointestinal inflammation. High levels may be an indicator of an undiagnosed inflammatory disease of the Digestive System such as IBS or Inflammatory Bowel Disease (IBD). The purpose of this presentation is to present information on the causes of IBD and why CrP may be an effective blood marker for digestive health. What you can do to avoid elevated CrP and maintain good digestive health will also be presented.

E10 Donna-Jael Paredes, (Drs. Terence Farrell and Craig Lind)
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The Effects of Arginine Vasotocin on Maternal Care Behavior in a Viviparous Snake, *Sistrurus miliarius*.*

Maternal care behaviors are exhibited in several different species of snakes and are expressed through neonate attendance and offspring defense. However, we know very little about the neuroendocrine pathways that regulate them in these vertebrates. Previous research indicates that blocking arginine vasotocin (AVT) in Pigmy Rattlesnakes, Sistrurus miliarius,

significantly disrupted maternal attendance. To experimentally test the hypothesis that hypothalamic peptides mediate maternal care behaviors in viviparous snakes, post-partum pigmy rattlesnakes were injected with AVT to determine if the maternal care behaviors would be greater compared to those injected with a saline solution. 32 pregnant pigmy rattlesnakes were collected from Lake Woodruff National Wildlife Refuge and were randomly assigned to hormone or control groups, placed in outdoor cages and then photographed with their neonates three times a day. Measures of spatial aggregation for each mother-offspring group were then calculated from the images. The AVT injection had no significant effect on the intensity of the maternal care behaviors (estimated by the spatial relationships between mother and offspring). Further research should be conducted to better understand the involvement of peptide hormones on the expression of maternal behaviors.

- 2016 SURE Grant recipient

B15 Evelynn Passino (Dr. Ciara C. Torres-Spelliscy)
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Halting the Pharmacy Crawl: How the Americans with Disabilities Act Can Protect Patient Access to Pain Medication
The DEA and Florida regulators are making it too difficult for individuals in Florida with chronic pain to access the drugs they need to function in their zeal to stop the opioid epidemic. This leads some pharmacies to discriminate against chronic pain patients, many of whom are disabled, raising the specter of violations of the Americans with Disabilities Act (ADA). This paper suggests changes to how pharmacists handle requests for pain medication so that the disabled get the pain medications they need.
C11 Arielle Pennington (Dr. Julie Schmitt)
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And What about the Rhinoceroses?

"And what about the rhinoceroses -- are they practice or are they theory?"(Eugene Ionesco). Conformity is an ever-present phenomenon in our lives. It can cause a transformation in our world almost unfathomable, and make it seem absolutely natural by the end of its course. By presenting an absurd transformation of human characters into rhinoceroses, *Rhinoceros* forces its audience scrutinize conformity and the negative effects it can have on the world around them. As set designer, I needed to illustrate the transformation of an environment that was subject to negative conformity. To achieve this, I merged videography, animation, and projections with traditional theatrical set pieces.

E5 Cody Perrodin (Dr. Jason M. Evans)
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Urban Ecology: Habitat Preferences of Anolis Lizards in a Heavily Landscaped, Urban Environment

My study focuses on the distribution of *A. sagrei* in a meticulously landscaped college campus. This study uses ecosystem principles to consider spatial distribution based on habitat suitability. The goal is to work with theory of urban ecology to shape our landscape to promote more biodiversity. I used data collection methods suitable for regression analysis and spatial analysis to look for statistically significant factors. The results from the regression analysis suggest that certain habitats are significant. However, the spatial analysis suggest that other factors, such as nutrient subsidies, could be significant in shaping lizard populations.

C7 Michael Peter (Dr. Michael McFarland)
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Bikers, Drugs, and Rock and Roll: Creation of Culture in Dennis Hopper's *Easy Rider*

This thesis explores the creation of culture in Dennis Hopper's film *Easy Rider* (1969). The film has been selected due to its place in film and cultural history, and readers are asked to be open about the exposure and analysis of its taboo themes, motifs, and cultural

representations. A background of literature, 1960's history and events, and film industry context provide exposition for the subject. The rhetorical analysis unpacks character behavior, character appearance, and music as a vehicle for freedom in Hopper's film. With the tyrannizing image theory of Richard Weaver, this thesis suggests ways in which true freedom is created, represented, accepted, and rejected.

E8 Paul Petrowski (Dr. Alicia Slater)
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Genetic structure of *Hesperoperla pacifica*, a montane stonefly

Hesperoperla pacifica is a montane stonefly with limited capacity for dispersal. Their preferred habitats, mountain top streams, are highly isolated from one another, leading to potentially interesting patterns of genetic structure for *H. pacifica*. It is widely believed that in the case of aquatic insect species, colonization events of isolated habitats occur when environmental conditions are such that habitats are more continuous, and that habitats contracted as a result of changing environmental conditions. Previous studies using *Doroneuria baumanni*, a closely related, habitat specialist stonefly, have shown high levels of genetic differentiation between habitats in close geographic proximity. In *H. pacifica*, a habitat generalist, we expected to find much lower levels of genetic structure present. We sequenced five nuclear loci from *H. pacifica*, and found lower levels of genetic structure and observed that haplotype sharing is more widespread between stoneflies from different locations. We identified two major population clusters, and established that significant levels of genetic differentiation exist between the two clusters. These findings are consistent with the habitat expansion and contraction model. Support for this research came from the Department of Biology, the Honors Program, and the Dean's Fund.

D13 Johnny Pingshaw (Dr. Michele.Skelton)
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Is your Digestive Health affecting your Sleep?

The primary role of the gastrointestinal (GI) tract is to digest and absorb nutrients to maintain bodily functions. The intestinal mucosa provides a protective defense against pathogens that are present in food. Within the gut flora resides living bacteria that are non-pathogenic microorganisms. Many factors can disrupt the GI tract causing an imbalance in these microorganisms. Previous research has shown that probiotic supplementation may improve sleep quality by improving digestive health. The purpose of this study was to compare quality of sleep as measure by the Pittsburg Sleep Quality Index (PSQI) in subjects who were supplemented with either a probiotic, IgY Max, or a placebo. All subjects completed the PSQI before and after supplementation. Results of the effectiveness of supplementation will be presented.

A9 John Pitts (Dr. Jason Evans)
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Projecting climate change-influenced shifts in Georgian viniculture using a species distribution model.

While climate change has thus far had a mostly positive impact on global grape growing, it is predicted that as temperatures continue to rise there will be regional shifts in where specific varieties of wine can be produced. In the Republic of Georgia, a mountainous country with three distinct climatic zones and an 8,000 year history of winemaking, there is a strong connection between wine style and place. Using climate data based off IPCC projections, this project ran a maximum entropy species distribution model on four Georgian grape species in order to analyze how the winemaking regions of Georgia could change in the future. The models were strongly predictive (each AUC value > 0.917) of current distribution, and projected that the suitable range for each of the four species analyzed will expand by the year 2070. With over 90% of its wine produced in the Kakethi region, these results offer insight into

new prospective regions for grape production within Georgia. However, there are many other factors that could potentially affect the accuracy of the projections moving forward, therefore I suggest that these results be used in a future qualitative study of Georgian winemakers about climate-influenced changes to the nation's winemaking industry.

Art15 Anthony Pizzo (Dr. Nathan Wolek)
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Bogeyman Hosted

Disorder is dust, caking itself onto traditional motions and places. By deafening and distracting the host, it remote controls the brief, sensitive encounters of life. Bodies glide past me and I assume they run their program effortlessly, without bugs or bogeymen. I know they don't hear my shoulder blade whining to be stretched, my focus scattering like roaches. And so, I obstinately count them lucky and unaware. But I have never been isolated, just blindfolded. These bodies are warm, thoughtful, and troubled all the same. Like a sheet of dust blown off a vinyl, I now hear though lucid ears. Everybody has something. With Bogeyman Hosted, I hope to grant a voice to my disorder, and strike up a conversation with the audience on the topics of self-control and self-image. A flimsy chain had bound my bitten ankle, but now I am unmuted and unmixed.

Art10 Caitlin Prestridge (Dr. Madison Creech)
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Weekday Friends & Co.
Weekday Friends & Co. is a collection of inspirational digital animations created to bring positivity to one's day. It features a cast of six recurring animals named for each weekday with Monday represented by two animals. The animals were originally drawn on a dry erase board and displayed outside of Caitlin Prestridge's dorm room for fellow students to view as they passed by. They were designed to bring a smile to one's face and encourage people to overcome any sorrow or stress that they may be experiencing. For her senior project, Prestridge decided to share the animals and their friends with a larger audience via social media. She pulled from her graphic design background to digitally draw and animate each Weekday Friend. The animals are accompanied by an inspirational or friendly quote, typed in a font created by Prestridge herself. In addition, Prestridge designed posters, zines, and button pins of the animals to highlight her graphic design skill set. Weekday Friends & Co. is simple at heart and given meaning by what its audience takes away from it.

C8 Chelsea Probus (Dr. Gregory Sapp)
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Rock Climbing as a Religious Phenomenon: An Application of Ninian Smart's *Dimensions of the Sacred**

Ninian Smart's *Dimensions of the Sacred* creates a framework for understanding religion and religious phenomena by outlining seven dimensions that describe religious characteristics. This paper uses Smart's ideas as a framework, supplemented with the theories of Durkheim, Tillich, Niebuhr, James, and Eliade, to understand how the American rock climbing community behaves like a religious phenomenon. By surveying the rock climbing community by means of primary and secondary sources, online forums, documentaries, climber-created media, and autobiographies, the presence of the seven dimensions could be assessed. The similarities between rock climbing and religion contribute significantly not only to the understanding of rock climbing, but to the field of sport and religion, and our understanding of the human condition.

- This research was funded by the Office of the Dean of Arts and Sciences

D14 James Rainey (Dr. Jason Evans)
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Statistical Comparisons between Breast Cancer and Dieldrin Contamination Areas

The risk factors associated between an individual and breast cancer are typically sourced to poor environmental qualities and hormonally active agents. Organochlorines, however, have been the focus as carcinogenic compounds because of their persistence in the natural environment and ability to persist within the food chain. Dieldrin is an organochlorine that was banned from the United States in 1987, but still appears in the environment or residential areas by excessive contamination levels. Before dieldrin was banned, it was heavily used as a termite pesticide and can stay within that environment for decades. Dieldrin has been known to have negative health effects on humans such as convulsions, kidney failure, and nervous system damage. Additional studies have focused on associations between cancers with dieldrin ever since the EPA banned/classified the pesticide as a carcinogen in 1987. In 2012, the Volusia Health Department identified 116 out of 287 wells within the Country Club Estates, in DeLand, that were contaminated with dieldrin exceeding the Health Advisory Level of 0.002 ug/L. The well detections made the residents nervous that there was an immediate relationship between their cancer rates and dieldrin. All of this information led to the hypothesis of my study; Florida counties with higher dieldrin contamination will also show high breast cancer incidence and mortality rates. After producing a scatterplot, along with a regression, there seems to be no significant relationship between breast cancer and dieldrin contamination. Although there was no significant association, there was an interesting range value with the high dieldrin concentrations that may lead to further studies on the subject.

E6 Fatima Ramis (Dr. Terrence Farrell)
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Energetic Status is Positively Related to Maternal Behavior in a viviparous snake, *sistrurus miliarius*.

Parental strategies are widely studied in various animal species as it is recognized that mothers use a variety of reproductive strategies to maximize fitness in terms of present and lifetime reproductive success. The energetic demands of maternal investment is predicted to be related to life history strategies of the organism. Viviparous snakes are an ideal model to measure the adaptive advantage of maternal care due to their 'slow' life history, viviparity, and vulnerable neonate period. However, little is known about the effects of energetic status on maternal care in snakes. In this study we measured the relationship between energetic status of postpartum snakes and maternal investment in the form of physical aggregation towards offspring in 32 pigmy rattlesnakes *sistrurus miliarius*. The forms of physical aggregation included: nearest distance from mother, average distance from mother, and average neighbor distance from neonates. The relationship of corticosteroid on the mediation of maternal behaviors was calculated. In this we measured pre- and postpartum corticosteroid levels in mothers, as well as change. Results showed that mothers with higher energy stores aggregated closer with offspring than those with lower energetic status, while corticosteroid levels were not related to energetic status or maternal aggregation. This suggests that energetic storage of the mother is involved for the mediation of maternal behavior in viviparous snakes, and thus play a role in reproductive strategies.

HON-4 Rachel Regester-Goumas and Anika Reichwald
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Inventing the Ideal Diet

In this class, we examined diet and nutrition within a social context throughout history. We began by dividing our semester into more specific categories and alternated weeks of

student presentations and seminar-style discussion. The topics we discussed relating throughout this course are as follows: Foundation of Diet: Ancient Societal Views on Diet; Geography and Foodways; Poverty and Nutrition in Modern Age; Sugar vs. Fat and Processed Food in the Modern Age; Fad Diets; Food Politics. The course allowed us to discover major themes relating to food as a source of cultural identity, the desire for food as a "quick fix" in the modern age, the socio-economic effects on food, and the effects of globalization on food. Each class discussion was based upon scholarly sources which focused on topics ranging from the history of cereal to cultural practices of fermentation among people in the Bering Strait. The Showcase presentation will discuss the strengths and weaknesses of our class structure and highlight some key points we come away from the course having learned.

D7 Valeria Roati (Dr. Harry Price)
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Comparing the inhibitory effect of the flavonoids Quercetin and Catechin, and the polyphenol Curcumin, on Clostridium collagenase activity: A potential natural remedy for the treatment of equine bone degradation.

This research looked at the effects of two different flavonoids: quercetin and catechin, along with the polyphenol curcumin, on the activity of collagenase. Collagenase is a metalloproteinase (MMP) which is involved in the maintenance and repair of bone and cartilage. The activity of this MMP has been linked to degenerative joint diseases in horses. Flavonoids have been shown to inhibit enzymes involved in skin and bone matrix degradation. Since collagenase plays an important role in bone and joint health, the aim of this project was to determine if these compounds were effective inhibitors of collagenase activity. The results of kinetic assays indicate that like the positive control inhibitor 1,10-phenanthroline, all compounds did act as inhibitors. Of the compounds tested, quercetin showed the greatest level of inhibition, followed by curcumin and then catechin. This research is important because implementing natural products in the feed of horses would be less harmful, more economical, and easier to put into practice, than using cortisone and other anti- inflammatory drugs.

D10 Valeria Roati (Dr. Cynthia Bennington)
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The Effects of Age and Movement on the Cellular and Volumetric Development of the Equine Fetlock Joint

Horses are prone to bone degradation, especially in limbs with high motion joints like the fetlock. This stress can cause fractures and lead to cartilage degradation. The replication of chondrocytes that will make up the cartilage in adult horses is limited to a brief period after birth, and the process as to why it stops its replication during adulthood is still unknown. Understanding the development of cartilage in the first phase of life provides insights into the mechanisms that are at the basis of cartilage regeneration, which may be important for developing methods to regenerate damaged tissue. This research looked at chondrocytes, which appear to act as stem cells only shortly after birth, in the developing joint of the equine fetlock. In particular, we looked at six foals that died in utero or within a few days after birth. We obtained CT scans of the four fetlock joints of each foal and reconstructed these using Osirix MD. From these reconstructions were were able to calculate bone volume. We hypothesized that the greater the stress, which we assumed to differ due to age, placed upon the joint, the greater the volume of the epiphyseal bone and the lower the cartilage volume. This was observed in the volume of the epiphyseal bone of the hind legs, which significantly increased with increasing age. Under the veterinary point of view, this research is important, because it may aid in finding chondrocytes that are replicating at their highest rate based on age, which we found out to be during embryonic development; thus

leading to more specific chondrogenic grafts, and ultimately improve rehabilitation time as well as cartilage recovery in horses.

B6 Amanda Rogers (Dr. Jelena Petrovic)
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Analysis of *Ghostbusters 2017*

The release of the new *Ghostbusters* movie, a reboot of the 1980's hit, created controversy among fans. The "Ghostbusters" are a cultural icon to many people. What that icon is supposed to represent is an emotional topic for some. Methodical investigation of this movie can give us insight into our culture. I explored how social value is coded in this film. To discover how the 2016 Ghostbusters movie represents social value, I did close textual analysis of key scenes, and a paradigmatic analysis of the film by using elements Grinner's SCWAMP model. In my analysis, I found an underlying message of conformity. This conformity privileges the status quo and distances itself from systemic change by rewarding regression to the social mean. This is important to look at because an embedded ideology of this type of conformity suggests an uncertainty avoidant culture. An important component of media literacy is being aware of the potential for embedded ideologies. Exposing the mechanisms of those embeds in a blockbuster movie shows how prevalent they are, and could provide a deeper awareness for movie-goers.

A13 James Russo (Dr. Alan Green)
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Institutions and the Stages of Growth *

This paper reconsiders growth regressions from the perspective of Walt Whitman Rostow's classic growth stages framework. We revised Rostow's stages and then code every country that has data available according to the framework. We then estimate growth regression by stage and with interaction variables between institutions and growth stages. We find that the determinants of growth do vary by stage and that different institutions have different impacts by stage.
*2016 SURE Grant recipient

B10 Emma Schaefer (Dr.Asal Mohamedi-Johnson)
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Public Health and Community Needs Assessment Report of Spring Hill Community 2015-2016*

Spring Hill, also known as Southwest Deland CDP (census designated place), is a 698-acre community located west of Deland, Florida (Spring Hill Community Redevelopment Agency, 2014). Of the community's 988 residents, 81% identify as being part of minority groups (United States Census Bureau, 2014). Now considered the poorest community in Florida, Spring Hill was once the site of housing for workers in the booming citrus and fern industries in the late 1800s. Twelve Stetson students and the Florida Department of Health generated and administered a survey in the community assessing their health, environmental, and public safety concerns. Surveys were distributed and collected at several congregations in the Spring Hill area. Stetson students entered survey responses into SPSS, where they were then recoded and analyzed to identify respondent demographics and concerns based upon residence status. The majority of respondents were Spring Hill residents, educated at a high school level, female, and between the ages of 45 and 64. Residents were most concerned with the community's limited access to fresh produce, businesses, healthcare, and exercise programs. Spring Hill's poor infrastructure, specifically the scarcity of sidewalks and streetlights, was also indicated as below satisfactory. Additionally, respondents were concerned about the community's persisting unemployment, poverty, and incidence of chronic disease. It was concluded that Spring Hill's poor infrastructure and limited access to necessities could stem from jagged jurisdictional boundaries, resulting in higher rates of heart disease, blood pressure, and

diabetes. The results of this analysis were presented to the Spring Hill Community Redevelopment Agency and the City of Deland, and are now available in written format.
*2016 SURE Grant Recipient

A3 Emma Schaefer (Dr.Jason Evans and Dr. J. Anthony Abbott)
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Relationship between socioeconomic status and prevalence of mosquito-promoting peri-domestic containers among yards in Volusia County Mosquito Control District, Florida.

Vector-borne diseases are either protozoan or viral in nature and transmitted by a few of the over 300 species of mosquito (AMCA). These diseases include malaria, yellow fever, Zika virus, dengue hemorrhagic fever, and many others. Mosquitoes are adopting more anthropophilic behaviors that lead them to establish colonies near human settlements, bringing them closer to human populations and increasing the risk of an outbreak. Identification of the areas where peri-domestic containers are found most often East Volusia County (VC) is essential in optimizing modern mosquito control practices and preventing a vector borne disease outbreak in the case that some of the population are carriers. Using data collected by Volusia County Mosquito Control (VCMC), I identified the most prevalent peri-domestic containers in East VC and attempted to discern any trends in container prevalence based upon socioeconomic status (SES). Using Moran's I spatial autocorrelation in ArcGIS, a clustering of non-permanent mosquito-promoting containers was observed. Correlations run comparing socioeconomic status and container counts by zip code yielded no statistically significant relationship. Although clustering around areas of low socioeconomic status could not be confirmed, the results of this analysis can aid VCMC in adapting their mosquito control techniques to the individual needs of Volusia County.

E3 Jeremy Schulte (Dr. Kevin Riggs)
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Imaging the Vibrational Patterns of Trombone Bells Using Time Average Holography

The vibration of the trombone bell plays a role in the overall timbre of the instrument's sound. To better understand the vibrational patterns of the trombone bell, we set out to image them using time average holography. This method allows the researcher to visually observe how the bell reacts when driven to vibrate under different conditions. By studying multiple bells vibrating over a wide range of frequencies we gained a better understanding of how differing factors change the vibrational patterns of the trombone bell.

D2 Maria Shimkovska (Dr.Hala ElAarag)
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The Ethics of Engineering and Using Memory Modifying Technologies (MMTs) and the Advantages of Using Them in the Medical Field

With the immense speed of technological advancement, impacting people's daily present and future lives, it is not surprising that ethical dilemmas emerged as a result. Programmers and scientists are trying to combine their efforts constantly to create new technological devices that would help people in one way or another, and raising the question of "Yes, but is it ethical?" is one that has increased in importance. One of those technologies are Memory Modifying Technologies, or MMTs. MMTs are technologies able to modify the functionality of the brain. The research's purpose is to unravel the reason behind some of the ethical dilemmas facing Memory Modifying Technologies. Memory erasure has not been an uncommon topic of interest in science fiction, however through neuroengineering there is a way to erase memories and possibly restore them back. MMTs are increasingly being developed. There are two forms of MMTs: memory editing, and memory enhancement. The research focuses on what those Memory Modifying Technologies

are and on the ethical arguments of developing and using MMTs. Furthermore, the research raises the question of what exactly are ethics and why we need to be ethical. Finally concluding based on the information gathered thus far whether MMTs might have benefits that outweigh the negatives.

C10 Andrea D. Slouha (Dr. Jelena Petrovic)
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Supergirl and How Characterization Forms a Metaphor on American Immigration and the Refugee Agenda

This study will focus on how the CW's Supergirl addresses immigration and refugee policies through their storyline, and how the show's characterization argues the inverse, propagating the idea of cultural assimilation. This essay will use a selection of episodes from Supergirl's second season that highlights issues dealing specifically with the immigration and refugee agenda, and will analyze how the characters in the show react, respond, and settle these issues, along with what deeper meaning can be derived from such process. Supergirl's approach to these issues is in response to how America is handling a real-life immigration and refugee problem with Middle-Eastern individuals. As will soon be shown, using a low-stakes media text such as a television show to address these important, high-stakes issues allow for audiences to better comprehend these issues, and teaches them how to shape their own opinion on such matters. By further analyzing the not so subtle message that the show is trying to convey, this study will show that though Supergirl and her fellow heroes preach for amnesty and tolerance for these refugees, they also further the idea that aliens should be able to blend in to gain acceptance.

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The Growth of Candida in the Lower Gastrointestinal Tract of Canines Increases with the use of Antibiotics

Veterinarians have noticed multiple symptoms in dogs after antibiotic treatment including bacterial skin infections, diarrhea, and ear infections. This research was carried out with the goal of determining if antibiotics had an effect on the bacterial growth of Candida in the lower gastrointestinal tract of dogs. The research I conducted was meant to determine if antibiotic treatment led to candidiasis and if symptoms were consistent with an overgrowth of yeast. The results displayed a significant difference between healthy dogs and dogs taking antibiotics. The healthy dogs had very little to no Candida count on their gram stains, while dogs that had just finished or were currently on antibiotics had an average count of 12 Candida bodies per field of view. The data was analyzed using an unpaired T-test. The findings indicated that there was a strongly significant difference between antibiotic treatment and the control with a p-value of 9.12×10^{-37}. This is a significant outcome that can be beneficial in veterinary medicine and further studied with the treatment of an antifungal.

HON-5 Lauren Spratt and Kimberly Sutherland
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Asian Culture and Religion in *Avatar: The Last Airbender*

"Asian Culture and Religion in Avatar: The Last Airbender was a course designed to analyze, discuss, and learn about the numerous Asian influences presented in the show, including cultural allusions, religious elements, and popular media. Throughout the semester, the class focused on topics such as clothing, music, religion, martial arts, sociological perspectives, and history."

C9 Miracle Townsend (Dr. Margaret Venzke)
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Inventing the Superhero: The Man of Steel, Jewish-American Culture, and the Golden Age

of Comics, 1938-1954

Superman debuted in Action Comics #1 and is considered to be the first superhero. His creation launched an era known as the Golden Age of Comics during which the American comic book industry experienced a burst in popularity throughout the 1940s before rapidly declining in the early years of the Cold War. A majority of comic book creators during this time period were second generation Jewish-Americans. The Jewish-American experience played a vital role in the making of many superheroes who have stood the test of time. However, many of these creators have been forgotten by history. This is best exemplified in the case of Superman's creators Joe Shuster and Jerry Siegel.

C14 Austin Tyrrell (Dr. Michael McFarland)
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Colin Kaepernick…Please Rise: A Dramatistic Analysis of Colin Kaepernick's Protest as Symbolic Action

The flag is a prevalent symbol in U.S. society, representing a multitude of ideas and meanings to U.S. citizens. One of the scenes in which the flag carries meaning is at football games, due in part to a long standing association between the sport and the nation's military. Therefore, whether he was aware of it or not, when Colin Kaepernick decided to protest in the name of racial equality during the national anthem, he essentially decided to strike a match next to a powder keg of symbolism. His symbolic action was met with additional symbolic actions of both support and opposition. By utilizing Leland Griffin's synthesis of Kenneth Burke's theories in, "A Dramatistic Theory of the Rhetoric of Movements," I found that Kaepernick's protest is dependent on the symbolic power of the flag and the NFL. Kaepernick uses the flag and the NFL's popularity as a platform to express his objection of the misuse of the symbolism of race. However, his misuse of the flag as a U.S. symbol ultimately hurts his protest. This action places Kaepernick in the position of simultaneously performing his act of victimage towards the country, in this case not standing, and adding an act of mortification, namely kneeling, to his protest.

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A Novel Measure For The Need For Moral Cognition*

The *need for moral cognition* is the tendency for an individual to contemplate, reflect on, deliberate over, and otherwise engage with morals-laden subject matter. Those high in this personality trait might be spotted discussing religion and politics over Thanksgiving dinner, or sitting nonchalantly during their Introductory Philosophy course while the rest of the class appears paralyzed at considering whether shooting your mother to save a thousand people is the right thing to do. It's obvious that individuals appear to differ in their interest and willingness to spend time thinking about what is "right", but there is currently no instrument available to measure differences in this trait among individuals. First, this project employed semi-structured interviews with individuals as well as focus group with Stetson University faculty in order to uncover the various facets of the need for moral cognition trait. Following this, a 700-participant internet sample was used to test the functionality of the scale on a range of criteria, including the structure of the trait as well as the behavior of the scale compared to other theoretically-related measures. Lastly, longitudinal data (i.e., multiple observations over time) utilizing a 200-participant sample of Stetson students was used to test the scale's reliability and correlation to various expected behavioral outcomes of those particularly high or low in the trait. This scale, which is targeting publication in an academic journal by this summer, will be the first of its kind in the psychological literature.

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B13 Viviana Vasiu (Dr. Ciara C. Torres-Spelliscy)
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Justice Deferred No Longer: A Push In The Right Direction For Corporate And Individual Criminal Liability In The White Collar Arena

The author proposes that the legislature enact the Justice Deferred No Longer Act (JDNLA). This Act would hold both corporations and higher-ups in corporations liable solely under a modified Model Penal Code that follows the Identification Model (for corporations) and responsible corporate officer (for individuals) approaches.This would accomplish several goals that would actually benefit both corporations and prosecutors in a way that would further the goals of criminal law in the long run. First, it would benefit corporations because it would supersede and narrow the very liberal, civil respondeat superior liability rule where corporations could be held liable for even one single rogue employee that meets the relaxed standards of this rule. Second, it would benefit prosecutions and the goals of criminal law in general because it would provide an enforceable model to actually prosecute both corporations and individuals under the same catch-all model—higher-ups being the crucial key towards both corporate and individual prosecution. This Act would take methods that mirror American legal tools already present (i.e. the identification model which is similar to the Model Penal Code approach), principles and rhetoric (such as the Yates Memo and Principles of Prosecution), and the laws already available to create piece of legislation that would be enforceable, and not mere rhetoric and ideals.

C2 Lynn Walsh (Dr. Grady Ballenger)
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Differing Education and Cultural Experiences while Studying Abroad

In Spring 2016, I had the privilege of studying abroad in Norwich, England, specifically at the University of East Anglia. My trip was funded in part through the Stetson University Honors Program. During my six-month stay, I took three literature courses that allowed me to observe the stark differences between the British and the American university educational systems, and traveled throughout England and Wales. I will analyze England and America's approaches to education, critique various teaching techniques, and propose procedures I recommend be absorbed into America's system. I will also discuss my cultural shock and assimilation, particularly focusing on my experience as an American critiquing my country and its literature from an outside perspective. Finally, I will explore the historically significant places to which I traveled and discuss the personal growth that comes with solo traveling.

B5 Lynn Walsh (Dr. Grady Ballenger)
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"She Barred the Door of Her Bedroom Forever": Amaranta's Virginity in *One Hundred Years of Solitude*

I explore the unique portrayal of virginal traits within Gabriel García Márquez's character Amaranta Buendía in *One Hundred Years of Solitude*. By using the Ancient Roman cult of Vesta and the Roman Catholic Church as lenses, we can view Amaranta as a character infatuated with these religions' overvaluing of virginity and sexual purity. Amaranta bears parallels to several unique characteristics found within the cult of Vesta's "vestal virginity," particularly her associations with fire and her fear of live interment. Catholic equivalents surface when Amaranta utilizes acts of penance to purify herself and views herself as a martyr for her virginal cause, resembling the Church's absolution rituals and emphasis on martyrdom. Amaranta's insistence on embodying these traditional virginal values ultimately suppresses herself sexually, dooms her romantic relationships with her lovers Pietro Crespi and Gerineldo Márquez, and leads to near-incestual relationships with children Aureliano José and José Arcadio. The importance of Amaranta's role becomes clear once we understand how deeply Amaranta represents virginal values.

When used as frameworks, vestal virginity and Roman Catholicism—ironically thought to preserve societies with their chastity regulations—allow us to see Amaranta's virginity in a new light: as a destructive force in the novel.

A12 Samantha Williams (Dr. Julia Schmitt)
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Styles of Management and Communication Applied to the Production Manager within the Theatrical Production Process

Theatre is a business, and successful businesses are run by good managers. The way that a production manager communicates and how they choose to manage each stage of the production process helps formulate the culture and productivity of a production. Production managers are leaders and are the communication link between all departments in the theatre. In order to be successful they need to effectively facilitate the production process while fostering a collaborative and creative environment in which multiple personalities can thrive. This research examines each stage of the production process, and, using Fiedler's Contingency model and six different management and communication styles, makes recommendations as to which style would be most effective at each stage of the theatrical process.

A14 Samantha Zarek (Dr. Michael McFarland)
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Black Sunday: NASCAR's public relations strategies in response to Dale Earnhardt Sr.'s death

This research is a case study that examines NASCAR's public relations and crisis management strategies in response to the events surrounding Dale Earnhardt Sr.'s fatal crash at Daytona International Speedway. On February 18, 2001, one of NASCAR's most successful and accomplished drivers, Dale Earnhardt Sr., was killed on the last lap of the Daytona 500; this day became known within the racing community as "Black Sunday." NASCAR's announcement of Earnhardt's death, the Safety Revolution, autopsy photo controversy, and NASCAR's final report will be analyzed through image restoration theory. NASCAR's state of being as an organization will be analyzed through the various properties of rhetoric of renewal. An evaluation will be made of the way in which NASCAR handled the crisis, as well as a final word on the events of Black Sunday through the personal experience of Tony Stewart, a fellow driver.

Stetson Undergraduate Research Committee:

- Kimberly Reiter, Ph.D., Associate Professor of History – Committee Chair
- Karen Ryan, Ph.D., Dean, College of Arts & Sciences
- Carol Corcoran, Ph.D. Professor of Teacher Education
- Melissa Gibbs, Ph.D., Associate Professor of Biology (Sabbatical)
- David Hill, Ph.D. Associate Professor of Political Science
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- Ken McCoy, PhD, Professor of Theater
- Kevin Riggs, Ph.D., Professor of Physics
- David Schmidt, Assistant Professor of Music
- Jean Wald, Assistant Professor and Music Librarian
- John York, Ph.D., Assistant Professor of Chemistry

**The illustrations are the work of the mid-eighteenth century astronomer Abbé Nicolas-Louis de Lacaille, noted for his attempt to find stellar alignments that matched the mood of the Enlightenment and the Scientific Revolution.*

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