SHOWCASE OF UNDERGRADUATE RESEARCH EXCELLENCE

Celebrating undergraduate research and creativity across the curriculum.

OFFICE OF UNDERGRADUATE RESEARCH

THURSDAY, APRIL 1, 2010 • 1:30–5:00 PM
PEGASUS BALLROOM–UCF STUDENT UNION
Welcome to the Seventh Annual Showcase of Undergraduate Research Excellence.

The Showcase is a poster- or display-based forum for University of Central Florida undergraduates to present their research and creative projects to the broader university community. Undergraduates from all disciplines are encouraged to present current or recently completed academic projects showcasing the diversity of topics, approaches, and interests at UCF. The Showcase serves as a resource for undergraduates not yet engaged in research and creative pursuits to learn how fellow students have developed their intellectual interests, current projects, and faculty connections. The Showcase also demonstrates to students, faculty, staff, alumni, and the greater Central Florida community that student research builds upon and enriches the UCF undergraduate experience. The Showcase is sponsored by the Office of Undergraduate Research which is a unit of Undergraduate Studies. For more information about undergraduate research at UCF please visit the Office of Undergraduate Research's Web site at www.OUR.ucf.edu.

The Showcase is part of the 2010 Student Research Week at UCF: www.ResearchWeek.ucf.edu

www.Showcase.ucf.edu
UNIVERSITY OF CENTRAL FLORIDA | ORLANDO, FLORIDA

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ORDER OF EVENTS

ACKNOWLEDGEMENTS ........................................... 1:30 P.M.

Dr. Alison Morrison-Shetlar
Vice Provost and Dean of Undergraduate Studies
Professor of Biology

WELCOME ......................................................... 1:35 P.M.

President John C. Hitt
Professor of Psychology

STUDENT PRESENTATIONS .................................. 1:40-4:15 P.M.

FACULTY MENTOR OF THE YEAR ............................ 4:15 P.M.

Student Undergraduate Research Council

REMARKS AND PRESENTATION OF SCHOLARSHIPS .... 4:30 P.M.

Dr. Alison Morrison-Shetlar
Vice Provost and Dean of Undergraduate Studies
Professor of Biology

STUDENT RESEARCH WEEK 2010
SHOWCASE JUDGES

The Office of Undergraduate Research is indebted to the following faculty for devoting a substantial amount of their time serving as Showcase judges.

Nancy Ahern
Kathleen Bell
Bill Blank
Manoj Chopra
Jay Corzine
Will Crampton
Tace Crouse
Ali Gordon
Roger Handberg
Eric Hoffman
Jana Jasinski
Bernie Jensen
Bernadette Jungblut
Joo Kim
Barbara Lange
Gary Leavens
John Malala
Nancy Marshall
Rudy McDaniel
Mansooreh Mollaghasemi
Nancy Moore
Sean Moore
Karen Mottarella
Elizabeth Mustaine
Chad Nye
Christopher Parkinson

Phil Peters
Patrick Schelling
William Self
Dinender Singla
Jennifer Sumner
Yaliang Tang
Kerry Welch
Shannon Whitten
Kevin Woo
Peter Yuan
Antonis Zervos
Lei Zhai

SHOWCASE BENEFACTORS

Through the generosity of the following organizations and individuals, substantial scholarships will be awarded to students judged to have the best projects presented at the Showcase. The Office of Undergraduate Research and the planners of Student Research Week are grateful to these benefactors for their encouragement and support of student research at UCF.

Florida High Tech Corridor Council
Kenneth Fedorka
Richard H. Harrison II in memory of Richard H. and Joan Prince Harrison
Progress Energy
John “Rick” Schell
Kimberly Schneider
Alison Morrison-Shetlar and Robert Shetlar
UCF Chapter of Sigma Xi
UCF Faculty Center for Teaching and Learning
UCF Federal Credit Union
UCF Burnett Honors College
UCF Institute for Social and Behavioral Sciences, Department of Sociology
UCF Learning Institute for Elders
UCF Office of Research and Commercialization
UCF Office of Undergraduate Studies
UCF Student Government Association
The faculty is a university’s paramount asset, and the Office of Undergraduate Research recognizes the following UCF faculty mentors who have advised, counseled, tutored, and encouraged students presenting at today’s Showcase.

Hadi Abbas
Eileen Abel
Charles Ahn
Mia Alexander-Snow
Kelly Allred
Thad Anderson
Pamela Ark
Issa Batarseh
Heather Batchelder
Jeffrey Bedwell
Aman Behal
Kathleen Bell
Steven Berman
Aniket Bhattacharya
Robert Bledsoe
Daniel Britt
Patricia Brosnan
Sylvester Butler
Humberto Campins
Mason Cash
Debopam Chakrabarti
Ratna Chakrabarti
Sic Chan
Po-Ju Chen
Manoj Chopra
Alexander Cole
Joshua Colwell
Jane Compson
Kristin Congdon
Maureen Covelli
Libby Cowgill
Andrew Daire
Henry Daniell
Leslie DeChurch
Mark Dickie
Duncan Dickson
Eduardo Divo
Amy Donley
Michael Dunn
Steven Duranceau
Steven Ebert
Ken Fedorka
Terri Fine
Martha Garcia
David Gay
Cherie Geiger
Michael Georgiopoulos
Avelino Gonzalez
Ali Gordon
Mary Guimond
Scott Hall
Joseph Harrington
Stephen Heglund
James Hickman
Ross Hinkle
Eric Hoffman
David Houghton
Rosalyn Howard
Charles Hughes
Gail Humiston
Robert Igarashi
Keith Ireton
Masahiro Ishigami
Jana Jasinski
Florian Jentsch
Kimberly Jentsch
Bernadette Jungblut
Abdelkader Kara
Alain Kassab
Saiful I. Khondaker
Joo Kim
Pappachan Kolattukudy
Alice Korosy
Stephen Kuebler
Ranganathan Kumar
Karen Large
Jacqueline Lamanna
Mark Lanier
Peter Larson
Maria Lavooy
Leslie Lieberman
Kuo-chi Lin
Robb Lindgren
Victoria Loerzel
Kevin Mackie
Matthew Mahutga
Carolyn Massiah
Ty Matejowsky
Ann Maukoner
Lisa Mills
Olga Molina
Michele Montgomery
Brian Moore
Sean Moore
Mike Moshell
Bahman Motlagh
Karen Mottarella
Toshio Murase
Erlin Murdoch
Chad Nye
Dawn Oetjen
Fevzi Okumus
Nina Oriolovskaya
Christopher Parkinson
Mariana Pensky
J. Manuel Perez
Johnny Pham
Philip Pollock
Tison Pugh
Pedro Quintana-Ascencio
Seetha Raghavan
Andrew Randall
Debra Reinhart
Kimberly Renk
Martin Richardson
Marianne Rodgers
Cecelia Rodriguez-Milanes
Houman Sadri
Eduardo Salas
Maria Cristina Santana
Swadeshmukul Santra
Mohtashem Samsam
Kristen Schellhase
Kimberly Schneider
Winston Schoenfeld
Alfons Schulte
William Self
Denver Severt
Kimberly Severt
Bhismen Shivamoggi
Eileen Smith
Janan Smith
JoAnne Stephenson
Kiminobu Sugaya
Kalpathy Sundaram
Suren Tatulian
Ken Teter
Gregory Thompson
Alexander Tovbis
Mary Vander Heiden
Eleazar Vasquez
Betsy Von Holle
Laurence von Kalm
Parveen Wahid
John Walker
Linda Walters
Lori Walters
Marty Wanielista
Harry Weger
John Weishampel
Shannon Whitten
Bruce Wilson
Cynthia Young
Jiongmin Yong
Kurt Young
Antonis Zervos
Elayne Zorn
Cliff Zou
**ARTS AND HUMANITIES**

**DALE ABOY**
*Your Life is in Your Hands*
*Student Co-Authors:* Matthew Liebl, Chip Stubbs, Lara Disch
*Mentor:* Ms. Eileen Smith (Digital Media)
The focus of “Your Life is in Your Hands” was the Web delivery of nutritional information through a video podcast and the effectiveness in educating the audience on how to make informed food selection and purchasing decisions.

**JORDAN ANDERSON**
*Online Portals and Mobile Technologies*
*Student Co-Authors:* Gian Galliani, Justin Rhodes, Sooksan Wongmanee, James Neumayer
*Mentor:* Ms. Eileen Smith (Digital Media)
We are researching how online portals like the National Science Digital Library (NSDL) can be used with mobile technology. We are also investigating if learners can use online portals to enhance their experience in the real world. We will have created a preliminary mock-up of a mobile application for the NSDL.

**JESSICA AUZ**
*Man vs. Beast: The Human-Animal Boundary in J. K. Rowling’s Harry Potter Series*
*Mentor:* Dr. Tison Pugh (English)
The boundary between humans and animals within J. K. Rowling’s Harry Potter series will be examined so as to determine the series’ relationship to its medieval source material as well as its relationship to the trends of literature in popular culture.

**KAYLA CLARK**
*A Golden Fibonacci Waltz*
*Mentors:* Mr. Thad Anderson, Dr. Karen Large (Music)
By harnessing patterns found in the world around us, this research will show an intuitive transfer from nature to music using mathematical formulas and reasoning.

**NATALIA DA SILVA**
*Community Wellness Through Artistic Votive Practices*
*Mentor:* Dr. Kristin Congdon (Philosophy)
Votive offerings are gifts created in thanksgiving for answered prayers. During community art workshops, individuals from the Coalition for the Homeless of Central Florida participated in this practice, communicating their experiences with homelessness, addiction, or violence. Pieces are on display in the exhibition Requesting Miracles at Crealdé School of Art.

**AUDRA DARBYSHIRE**
*A Search for the Ceramic Surface*
*Mentor:* Mr. Hadi Abbas (Art)
Through the process of testing several ceramic raw materials, I am developing surfaces that hold the potential to further enhance my work as an artist.

**FRANCISCO DENIS**
*“Early Start”: Youth Care Continuum*
*Student Co-Authors:* David Auguste, Ivelisse Figueroa, Kevin Burrell, Alex Benitez
*Mentor:* Ms. Eileen Smith (Digital Media)
“Early Start” is an educational interactive Web application that efficiently and accurately informs legislators of the short and long term impact of their decisions on youth programs based in Florida.

**CHRISTINA DEPARIS**
*Long Exposure Photography at UCF*
*Mentor:* Dr. Maria Cristina Santana (Communication)
I researched long exposure photography using library resources, reading Web sites, and through practice. This form of photography, designed for the night, allows cameras to capture frames of movement over a certain time, creating something new with each shot.

**KENDYL DRAYER**
*Ants Attack a Small Child*
*Mentor:* Mr. Scott Hall (Art)
Echoing the old Disney animators, I created this work entirely by hand. As I worked on it, I gained a great appreciation for this method of animation. I learned a surprising amount of acting, math, and observation was involved.

**AMBER DUKES**
*Evolution and the Seven Deadly Sins*
*Mentors:* Dr. Mason Cash (Philosophy), Dr. Bernadette Jungblut (Political Science)
For centuries, scholars have sought to explain morality from various viewpoints. In doing so, certain things have been deemed worthy of condemnation, perhaps most notably, the Seven Deadly Sins. Using these Seven as a starting point, I will explain morality from an angle that is becoming more prevalent: evolutionary psychology.

**KATHERINE ELSEA**
*Norma & Irving: The Steel Butterfly and the Boy Wonder*
*Mentor:* Dr. Tison Pugh (English)
Film actress Norma Shearer and producer Irving Thalberg were plagued with rumors about their marriage. Shearer was accused of marrying for power within the MGM studio, while Thalberg was charged with favoritism. Sadly, they have largely been forgotten by today’s audiences, individuals lost in the conglomerate of the film studio.

**EMILIE FINNEY**
*Learn a Foreign Language Through an Interactive Game*
*Mentor:* Dr. Joo Kim (Art)
Learning methods will be researched to come up with the best interactive system to teach a child the fundamentals of a foreign language.

**KRISTY GILLETTE**
*Latinos on Broadway: An Analysis of the Representation of Latino Culture and Stereotypes in Major Broadway Musicals*
*Mentor:* Dr. Cecilia Rodriguez-Milanes (English)
The depiction of Latino characters and culture in major Broadway musicals, from West Side Story to In the Heights, was examined based on characterization, themes, nationality, language, and background research so as to analyze the evolution of Latino stereotypes and their representations on Broadway.
The Castration of Peter Abelard: How Male Identity was Shaped in the Middle Ages  
**Mentor:** Dr. Peter Larson (History)  
Medieval philosopher Peter Abelard (1079-1142) was castrated against his will in 1118. The following study examines medieval opinions on sexuality and masculinity, focusing primarily on 12th century northern Christian France. Different thoughts on castration are presented, including the views of Abelard’s contemporaries, northern French citizens, and the Catholic Church.

Cultural Rhetoric: The Evolution of BMW Advertisements  
**Mentor:** Dr. Kathleen Bell (English)  
My research and analysis of BMW advertisements on the internet, television, and in print yielded insight into how one of the world’s most successful automakers is able to tailor advertisements to address the needs of America and Germany; two countries that have parallel admiration but distinct historical connections to automobiles.

Views of Trojan War Women  
**Mentor:** Ms. Ann Maukonen (Philosophy)  
Representations of women of the Trojan War within literature, art, and film will be analyzed in order to discover how they are portrayed by their creators. Helen, Clytemnestra, Penelope, Hecuba, and Cassandra are the characters I will explore.

Is Folk Art Postmodern?  
**Mentor:** Dr. Kristin Congdon (Philosophy)  
Despite an ongoing philosophical debate, the art world has embraced postmodern theory and witnessed the legitimation of folk art forms. By juxtaposing the postmodern aesthetic theory of John Dewey to personal interviews conducted with five folk artists, I will argue that our understanding of folk art is not strictly postmodern.

Authenticity of Female Representation in Hispanic Advertisements: A Comparison Between Hispanic and American Methods of Market Segmentation  
**Mentor:** Dr. Martha Garcia (Modern Languages and Literatures)  
Examinations of commercial advertisements from regions within the Hispanic world demonstrate levels of misrepresentation of the actual demographic makeup, coupled with its influence on female perception and self-assessment. The marketing techniques utilized in the areas of concentration echo the movement towards more universal advertising as international business continues to prevail.

Water’s Journey Through the Everglades  
**Mentor:** Dr. Joo Kim (Art)  
Produced by a team of students as the focus of an honors interdisciplinary seminar, *SLICE* magazine explores the hidden treasures of Orlando. With no money and raw talent, we wrote, photographed, designed, edited, and sold advertising space to publish a magazine distributed in orientation packets to incoming honors freshman.

World War I: The Trenches and the Sky  
**Student Co-Authors:** Sean Davis, Doug Millett, Alvaro Florez, Kristen Evans  
**Mentor:** Dr. Lori Walters (History)  
Our World War I project enhances the relevance of a near century old conflict to today’s youth. We intend to examine trench life and period culture through a virtual archeological dig. The research is presented on a Web site, containing production documents, history, and a video depicting the Great War experience.

Multi-subject Game Demo for Lower-Level Elementary Students: “Frog Dissection”  
**Mentor:** Dr. Joo Kim (Art)  
Through research, analysis, and consultation with elementary education majors, the creation of “Frog Dissection” aims to assist lower-level elementary students practice and demonstrate their proficiency in subjects such as phonics, mathematics, geography, and astronomy all the while subtly introducing the student to the advanced science of educational frog dissection.

Concept Albums: The Past, Present, and Future  
**Mentor:** Dr. Lisa Mills (Film)  
The concept album is one way that allows musicians to combine music, themes, and stories. This project investigated techniques that past musicians have used to create their concept albums. In addition, these techniques were compared to the techniques that I used to create three of my concept albums.

Carol Mundy Virtual Museum  
**Mentor:** Dr. JoAnne Stephenson (African American Studies)  
An African American history archive in the form of a fully 3D virtual museum. All showcased objects are historical documents, antiques, and artifacts from Carol Mundy’s archives.
Nowhere
STEFAN KRAFT
The Mechanical Behavior of a Twill Dutch Woven Wire Mesh Under Plane Stress Conditions
Mentor: Dr. Ali Gordon (Mechanical, Materials, and Aerospace Engineering)
The mechanics of SS 316 twill Dutch-woven wire mesh are studied to characterize the elastic-plastic behavior of this class of materials. FEA and tensile experiments are used to develop a failure criterion based on Hill’s Analogy, which can be used to design against failure.

COREY MCCALL
A Prototype Device That Implements RFID and Remote Monitoring Technology to Track Medications for Elderly Healthcare Patients
Mentor: Dr. Cliff Zou (Electrical Engineering and Computer Science)
The prototype device developed in this project implements RFID identification and remote monitoring technology to manage complex medication schedules. This allows otherwise unable healthcare patients to live independently while eliminating medication errors and reducing the burden on the healthcare system.

BRITNEY MENDEZ
Integrating Multi-touch Table and DICOM Readers
Mentor: Dr. Charles Hughes (Electrical Engineering and Computer Science)
To program an application for a multi-touch table using TACTICUS that will improve DICOM reader user interface.

NIKOLA NAJDOVSKI
Pervious Pavement System’s Porosity Results and Subsequent Design Considerations
Mentor: Dr. Manoj Chopra (Civil, Environmental, and Construction Engineering)
Sustainable porosity tests of both pavement components and systems were conducted on a plethora of samples. A new testing methodology was created to test full pavement systems, and mathematical interpolation was utilized to develop curve numbers which assist greatly with design considerations.

JESUS OZUNA
Use of Polymers for Erosion Control
Mentor: Dr. Manoj Chopra (Civil, Environmental, and Construction Engineering)
The present research is aimed at determining the proper dosage for site specific polymer use for stormwater treatment.

MICHAEL PEFFERS
Optically Transparent Thin Film Antennas
Mentor: Dr. Parveen Wahid, Dr. Kalpathy Sundaram (Electrical Engineering and Computer Science)
Antennas made using optically transparent thin films are being fabricated and tested. The first part of this research project involves the fabrication of zinc oxide (ZnO) thin films on glass substrates. The second part involves the design, fabrication and analysis of patch antennas on the optically transparent thin film.

CHRISTOPHER PENNY
Fabrication of Nano-Alumina Filled Epoxy Composites for Piezospectroscopic Studies
Mentor: Dr. Seetha Raghavan (Mechanical, Materials, and Aerospace Engineering)
The potential of alumina nanoparticles in an epoxy matrix to provide stress and integrity information, through piezospectroscopy, indicates possibilities for stress-sensitive adhesives and coatings. Calibration studies to achieve this requires the fabrication of nano-alumina filled epoxy composites with controlled volume fraction and effective dispersion, the goal of the work described.

LESLEY PETERSON
E-ternally Yours: The Case for the Development of a Reliable Repository for the Preservation of Personal Digital Objects
Mentor: Dr. Bahman Motlagh (Engineering Technology)
As an increasing number of personal materials—photos, documents, music, etc.—are being stored in digital format, the ability to preserve them for future generations is vital. This project examines the feasibility of establishing reliable repositories intended for the long term preservation of such personal digital materials.

RYLEE PIVARNIK
Acute and Chronic Toxicity Testing of Polyacrylamide Using Pimephales Promelas (Fathead Minnow)
Student Co-Author: Jamie Capra
Mentor: Dr. Manoj Chopra (Civil, Environmental, and Construction Engineering)
The intent is to determine the acute (LC50) and chronic (NOEC/LOEC) toxicity of different PAM mixes within the range of doses recommended for effective field application. This information can be used to determine what does is acceptable for use with little to no effect on the surrounding environment.

ADRIANO RAMPOLLA
Correlation Between Surface Energy and the SCC Behavior of Solid-liquid Couples
Student Co-Author: Adriano Rampolla
Mentor: Dr. Ali Gordon (Mechanical, Materials, and Aerospace Engineering)
The surface energy of a material plays a great role in stress corrosion cracking. This energy can be experimentally measured, and then used to mathematically determine how and when a material will fail under corrosive conditions. Calculations from sessile drop experiments correlate strongly with fracture data.

BRANDON REEVES
Quantifying the Naturalness of Autonomous Agents Based Off of Force-Feedback Learning
Mentor: Dr. Avelino Gonzalez (Electrical Engineering and Computer Science)
The researcher examined the human-like qualities of autonomous agents that have been produced by machine learning algorithms that were based on human-trainers. Data was collected from a car simulation where the agent maneuvered the vehicle around track. Analysis software was then used to compare the agents to the human drivers.

RICARDO RODRIGUEZ
Effects on an Optical Wave Propagating through Earth’s Atmosphere
Mentor: Dr. Cynthia Young (Mathematics)
The focus of this project is to test a mathematical model that predicts angle of arrival fluctuations on a beam light traveling through random media and over open water. This is an attempt to predict the effects different atmospheric turbulences have on an optical signal.
TALITHA RUBIO
The Multi-Objective Evolutionary Probabilistic Neural Network
Mentor: Dr. Michael Georgiopoulos (Electrical Engineering and Computer Science)
I am designing, implementing, and testing the effectiveness and efficiency of a PNN (probabilistic neural network) classifier whose design relies on an evolutionary multi-objective optimization approach. The effectiveness and efficiency of the classifier will be tested on a variety of benchmark problems and compared with the original PNN.

AMBER SCHEURER
Cubic Oxide Semiconductors for Deep Ultra-Violet Applications
Mentor: Dr. Winston Schoenfeld (Electrical Engineering and Computer Science)
The goal of this project was to characterize fabrication techniques and photoresponse testing methods in regards to ZnMgO and NiMgO thin films, as well as analyze the photoresponse results for further research into use as ultra-violet detectors.

ROBERT SLADE
GFRP Bridge Deck Systems for Skewed Bridges: An Analytical Investigation on Deck Orientation
Mentor: Dr. Kevin Mackie (Civil, Environmental, and Construction Engineering)
The local and macro effects of bridge skew on Glass Fiber Reinforced Polymer (GFRP) bridge decks will be analytically studied and compared to current design standards. The SR-15 Bridge in Belle Glade, Florida, was recently retrofitted with a skewed GFRP deck and will be the basis for comparative evaluation.

SEBASTIAN SOTELO
Fluid-Structure Interaction Analysis of Arterial Compliance
Mentor: Dr. Eduardo Divo (Engineering Technology)
This research focuses on the computational study of fluid-structure interaction on the ascending aorta. The methodology resulting from this study will be incorporated in analysis that entails optimized surgical implantation of cannuales and bypass grafts to both minimize thrombo-embolic events and improve blood distribution in congenitally affected cardiovascular systems.

ELIZABETH STARNES
Gestures for Multi-Touch Applications
Mentor: Dr. Charles Hughes (Electrical Engineering and Computer Science)
Gestures in multi-touch will be analyzed by objective data and subjective measurements. Objective data captured will include speed of performing tasks; subjective metrics will include perceived comfort and intuition. A program will be created for the task of observing and recording these measurements.

PETER TONNER
Adding System Controls and Automated Behavior to Enhance the “TeachMe” Training Experience
Mentor: Dr. Charles Hughes (Electrical Engineering and Computer Science)
“TeachMe” is a mixed reality experience to train teachers in classroom environments. This program is run by an interactor controlling student puppets to present different personalities encountered in teaching experiences. Additions will be implemented to automate the preprogrammed movements (e.g., fidgeting) of uncontrolled avatars and simplify the puppeteering process.

CARLOS VELEZ
Optimization of Alternative Wave Energy Converter
Mentor: Dr. Kuo-chi Lin (Engineering Technology)
Research has been conducted to design, build and test a novel wave energy converter mechanical system. Through the experimental results of the initial mechanical system several conclusions have been made to optimize the performance of the system. These conclusions have developed a theoretical design for a new prototype.

KEON VEREEN
Experiments for Heat Flux and Pressure Dependent Flow Boiling of R-134a
Mentor: Dr. Ranganathan Kumar (Mechanical, Materials, and Aerospace Engineering)
The bubble characteristics of refrigerant R-134a were determined in a vertical flow boiling system. The effect of pressure and heat flux was determined using high speed instrumentation to capture bubble nucleation, growth, and frequency. These results are applicable to electronic cooling and other heat exchangers.

ISABEL VIRAG
Heat Transfer in Porous Tissue Using a Localized Meshless Method
Mentor: Dr. Alain Kassab (Mechanical, Materials, and Aerospace Engineering)
Through this project, we will acquire an understanding of earth materials, plants and animal skin as thermoregulatory systems using the Localized Meshless Method to perform heat transfer analysis. This will ultimately provide scientific basis for developing the use of soils as effective building materials for energy-efficient indoor environments.

ANNE WEEKS
Using Estimated Values of Methane Gas Generation Potential and the Methane Gas Generation Rate to Determine Annual Generated Landfill Gas
Mentor: Dr. Debra Reinhart (Civil, Environmental, and Construction Engineering)
The purpose of this project is to determine how much methane gas a given sample of waste can generate in a particular time period. I will be using the estimated methane gas generation potential and the methane gas generation rate constant to determine the annual generated landfill gas.

RESHMA BALMICK
The Physical, Social, and Financial Implications of Hearing Loss Among the Elderly
Mentor: Ms. Alice Korosy (Modern Languages and Literatures)
Based on the rapid growth of older populations in America, further examination into the aging process identified the commonality of hearing loss. This study serves to highlight and clearly identify the newfound physical demands, social implications, and financial burdens of acquired hearing loss among the elderly.

HEALTH SCIENCES
JAMIE BIGLER  
Interventions to Improve Psychosocial Sequelae in Women with Ovarian Cancer  
**Mentor:** Dr. Victoria Loerzel (Nursing)  
The objective of this integrative review of literature was to evaluate interventions designed to improve psychosocial well-being in women with ovarian cancer experiencing distress.

MELISSA BLETTE  
Location Elements and the Effect on Home Health Care Success  
**Mentor:** Dr. Carolyn Massiah (Marketing)  
The marketing of home health care services is unique in its considerable variance in successes across geographic regions in the United States. Through surveys to home health companies, I intend to research questions that will answer whether location and differing marketing techniques affect the success of the companies nationwide.

AUDRIS BOL  
The Investigation of the Physician-Patient Relationship in the Hospital Setting  
**Student Co-Author:** Nikki Olson  
**Mentors:** Dr. Denver Severt (Hospitality Services), Dr. Duncan Dickson, Dr. Kimberly Severt (Tourism, Events and Attractions)  
The role of the hospitalist, a hospital-managed physician, is a recent addition to patient care in the hospital. The hospitalist model was created to alleviate primary-care physicians from patient care in the hospital for better efficiency. This project aims to investigate factors of hospitalist care that greatly impact patient satisfaction.

CHELSEA BRAMLLEY  
Distraction Interventions During Invasive Procedures to Improve Quality of Life in Pediatric Oncology Patients  
**Mentor:** Dr. Victoria Loerzel (Nursing)  
This integrated literature review examined evidence regarding the effects of distraction interventions used during invasive procedures performed on children with cancer.

JENNIFER CARDEN  
Complementary Therapies for Pain Management in Cancer Patients  
**Mentor:** Dr. Kelly Allred (Nursing)  
A comprehensive literature review was conducted examining a variety of complementary therapies for pain management among cancer patients with the goal of determining which complementary therapies are the most effective.

MICHELLE CARDONA  
Factors that Impact the Perception of Dysfluent Speakers  
**Mentor:** Dr. Chad Nye (Communication Sciences and Disorders)  
This research study analyzed how physical attractiveness, stuttering severity, and/or gender, either as individual or interactive factors result in a differential perception of individuals who stutter by non-stuttering observers.

CORRINE CASWELL-RILEY  
Nursing Interventions for Adolescent Substance Use  
**Mentor:** Dr. Pamela Ark (Nursing)  
Research has shown it is evident that adolescent substance use is a major issue. The purpose of this integrated literature review was to explore current nursing interventions for adolescent substance use. Earlier interventions are needed to target adolescents to prevent initiation and promote cessation of substance use.

ANGELA COLLIER  
Nursing Interventions to Improve Initiation and Continuation of Teenage Breastfeeding  
**Student Co-Author:** Angela Collier  
**Mentor:** Ms. Mary Guimond (Nursing)  
The purpose of this thesis is to provide a comprehensive review of research findings to describe how support and educational interventions implemented by nurses during the prenatal, intrapartum, and postnatal period may increase the incidence of breastfeeding among teenagers while aiming to attain the current Healthy People 2010 breastfeeding goals.

ALEXA KRYGLOWSKI  
Recurrent Anterior Shoulder Instability of a Collegiate Football Athlete  
**Mentor:** Dr. Kristen Schellhase (Health Professions)  
The following information is a case study based on a 19-year-old collegiate football athlete who obtained a shoulder injury. He needed diagnostic imaging and an extensive surgical repair. This young athlete’s shoulder had degenerative changes comparable to that of an person who would need a total shoulder replacement.

DANIELLE LOVOY  
Multiple Areas of Ulnar Nerve Compression in a Division 1, Collegiate Softball Player  
**Mentor:** Dr. Kristin Schellhase (Health Professions)  
The purpose of this research study was to present a case of multiple sites of ulnar nerve compression in a collegiate softball player. There was an analysis of the initial injury and its mechanism, the physical signs and symptoms, differential diagnosis, and the surgical and rehabilitative treatment.

FRANCESCA NUTTA  
Comparing and Contrasting Hospital Service to Disney Service  
**Mentors:** Dr. Denver Severt (Hospitality Services), Dr. Duncan Dickson (Tourism, Events, and Attractions)  
The purpose of this research was to investigate Disney service standards, comparing them to hospital service standards to determine which of Disney’s best practices are applicable to the health field. Through interviews with Disney and healthcare managers, I gathered service models information that can be transferred to the hospital environment.

MICHAEL RAPE  
The Utility of Hospital Report Cards on Consumer Decision-Making  
**Mentor:** Dr. Dawn Oetjen (Health Management and Informatics)  
Consumer-driven healthcare has increased the amount of power consumers have on their care, which led to the creation of this research. The influence on consumer decisions on care is the topic of this research.

SHANNAN SHERMAN  
Nursing Interventions to Manage Community-acquired *Clostridium difficile*-Associated Disease  
**Mentor:** Dr. Pamela Ark (Nursing)  
A review of literature related to community-acquired *Clostridium difficile*-associated disease was conducted. Findings from this thesis demonstrate a mirroring of to community-acquired *Clostridium difficile*-associated disease to community-acquired Methicillin-resistant *Staphylococcus aureus* (MRSA). Therefore, recommendations for management of community-acquired *Clostridium difficile*-associated disease will be similar to recommendations for community-acquired MRSA.
Effectiveness of Mindfulness-Based Practices in Alleviating Perceived Stress in College Students

**Mentor:** Dr. Jane Compton (Philosophy)

The purpose of this study is to examine the effectiveness of mindfulness-based practices (MBP) in alleviating perceived stress in college students. Utilizing MBP may reduce perceived stress in college students related to semester-based stressors and may improve their ability to perform well in classes or daily life.

**KELLY SULLIVAN**
Nursing Interventions that Can Improve Coping Strategies of Women Who Miscarry

**Mentor:** Ms. Jacqueline Lamanna (Nursing)

Nurses who provide care to women following miscarriage must be aware of the potential physical and psychological repercussions of miscarriage. An integrative review of literature will be conducted, to explore evidence-based nursing interventions that promote effective coping following miscarriage, particularly those relative to early involuntary loss of pregnancy.

**MELISSA TIMSON**
Systematic Review: Assessing the Efficacy of Stuttering Treatments Using Single Subject Design

**Student Co-Author:** Megan Glancy

**Mentor:** Dr. Chad Nye (Communication Sciences and Disorders)

The purpose of this study is to determine the efficacy of the many fluency treatments available. This study is a systematic review and meta-analysis of single-subject design type studies focused on children and adults separately.

**CATALINA TORRES**
How to Reduce Surgical Site Infections (SSIs) in the Operating Room (OR)

**Mentor:** Dr. Dawn Oetjen (Health Management and Informatics)

This researcher proposes to identify and evaluate the main causes for SSIs in the OR of three hospitals in three different counties in the Orlando area and to develop improved means of implementing surveillance of healthcare workers to ensure compliance of new methods in order to reduce SSIs.

**NIKOLAS TURNER**
Lisfranc Sprain in a Division I Collegiate Football Player

**Mentor:** Ms. Mary Vander Heiden (Student Athletics)

The project was done on a collegiate football player who sustained an injury to his midfoot. This led to surgery and rehabilitation. The athlete tried to return to play; however, the weight bearing hardware broke and had to be removed.

**LYDIA WATKINS**
Improving Nonverbal Communication Between Nurses and Deaf and Hard-of-Hearing Children

**Mentor:** Mr. Stephen Heglund (Nursing)

Hospitalized deaf and hard-of-hearing children are at an increased risk for misguided treatment of health disorders, especially the under-treatment of pain, due to their inability to communicate verbally. This project describes strategies nurses can use to communicate nonverbally with these children through a variety of simple methods.

**MAUREEN WOODMAN**
Fertility Awareness-Based Methods of Avoiding and Achieving Pregnancy: An Effective Means of Family Planning and Promoting Women’s Empowerment

**Mentors:** Ms. Mary Guimond, Dr. Maureen Covelli (Nursing)

To determine health care providers’ views on fertility awareness-based methods of family planning, the challenges encountered by those who choose to use such methods, and how such methods empower women.

**JULIE WUNDERLICH**
Nursing Interventions to Promote Coping Strategies in Adolescent Oncology Patients

**Mentor:** Dr. Pamela Ark (Nursing)

The objective of this research was to review existing literature and research evidence on the topic of coping strategies in adolescents with cancer. Information was gathered from CINAHL, PubMed, and Medline and was analyzed to identify effective nursing interventions and their outcomes.

**SABIKHA ALAM**
Influence of the Potent Vitamin A Derivative, Retinoic Acid, on Cardiac Rate, Rhythm, and Electrical Conduction Properties During Embryogenesis

**Mentor:** Dr. Steven Ebert (Biomedical Sciences)

The objective is to test the hypothesis that retinoic acid promotes development of the cardiac electrical conduction system during the embryonic period. We will test this hypothesis by measuring heart rate, rhythm, and conduction speed in isolated embryonic mouse hearts treated with or without retinoic acid receptor blockers.

**CARLY BADER**
The Role of Host Chaperones in Cholera Intoxication

**Mentor:** Dr. Ken Teter (Molecular Biology and Microbiology)

The objective of this project is to examine the roles of host chaperones Bip and Hsc70 in cholera intoxication. Determining the role of these host chaperones could allow more precise therapeutics to be created.

**JENNIFER BAZEMORE**
Effects of 4-Phenylbutyrate and Geldanamyacin in Cholera Intoxication

**Mentor:** Dr. Ken Teter (Molecular Biology and Microbiology)

The purpose of this project is to determine whether two drugs, 4-phenylbutyrate and geldanamyacin, confer resistance to cholera intoxication.

**BRADLEY BELOUS**
Identifying the Functions of Conserved, Essential Proteins in *Escherichia coli* in an Effort to Understand Physiological Processes in Higher Organisms

**Mentor:** Dr. Sean Moore (Molecular Biology and Microbiology)

The objective of this project is to identify the function of several evolutionarily conserved, essential proteins in *Escherichia coli*. The functions of these proteins may lead to the identification of novel physiological processes that can be targeted to combat infectious disease and uncover new therapeutic strategies.
CHRIS BERNDT
Anti-toxin Therapeutic Effects of Polyphenolic Compounds in Grape Seed and Grape Pomace Extracts
Mentor: Dr. Ken Teter (Molecular Biology and Microbiology)
We will determine which of the specific polyphenolic compounds found in grape seed and grape pomace extracts is responsible for conferring resistance to different bacterial toxins.

SPENCER BEZALEL
Role of the Homocysteine-Inducible ER Stress Protein (Herp) in Cancers
Mentor: Dr. Sic Chan (Biomedical Sciences)
Homocysteinemia is an oncogenic risk factor. Recent evidence suggests that endoplasmic reticulum (ER) stress is a marker for faster-growing tumors. The project objectives are to examine the expression of the homocysteine-inducible-ER-stress protein (Herp) in tumors and to determine whether targeting Herp represents an effective strategy to inhibit tumor growth.

KELLY BRESLIN
Understanding Patterns of Reproduction: A Monthly Field Recruitment Study of an Invasive Bivalve, Mytella charruana
Mentors: Dr. Kimberly Schneider, Dr. Linda Walters, Dr. Eric Hoffman (Biology)
Mytella charruana is an invasive species native to South and Central America that has recently colonized the southeastern coast of the United States. This project monitors the arriving individuals per month from reproduction over a year to determine recruitment patterns and the potential for population growth in non-native environments.

SASHA BRODSKY
Cold Temperature Effects on Byssal Thread Production by the Native Mussel Geukensia demissa and the Non-Native Mussel Mytella charruana
Mentors: Dr. Linda Walters, Dr. Eric Hoffman, Dr. Kimberly Schneider (Biology)
Invasive species can be detrimental to an ecosystem as they can compete with native species for resources. The introduction of the charru mussel, Mytella charruana, has raised concern for the native ribbed mussel, Geukensia demissa. Here we investigate differences in these species by examining temperature effects on byssal thread production.

LUZ CASTRO-MORALE
Germination and Early Survival of Carolina Willow (Salix caroliniana) Along Gradients of Soil Moisture and Texture.
Mentor: Dr. Pedro Quintana-Ascencio (Biology)
To evaluate the effect of water availability and soil texture on germination and early seedling survival of willow, Salix caroliniana to better understand environmental conditions controlling the increasing spread of this species along the St. Johns River, Florida.

KELLY COBAUGH
Bactericidal Effects of Auranofin on Clostridium difficile
Mentor: Dr. William Self (Molecular Biology and Microbiology)
To study the mechanism of action of the gold compound Auranofin on Clostridium difficile.

OCEAN COHEN
Population Analysis of the Titan Acorn Barnacle, Megabalanus coccopoma, throughout the Southeastern United States
Mentors: Dr. Eric Hoffman, Dr. Linda Walters (Biology)
The aim of this study is to assess genetic variation within and between populations of the invasive Titan Acorn barnacle, Megabalanus coccopoma. This information can be used to identify source populations and to understand distribution patterns of invasive populations.

JAMIE CONKLIN
Effects of Species Diversity and Nutrient Availability on the Establishment of the Invasive Guinea Grass (Panicum maximum)
Mentor: Dr. Betsy Von Holle (Biology)
Florida experiences severe economic and ecological problems by nonnative species. The objective of this study is to explore how the environmental factors of native species diversity and nutrient availability impact the establishment of the invasive guinea grass (Panicum maximum), thereby providing direction for protecting Florida’s diverse ecosystems.

ALLISON CONNER
Responses of Red Mangroves Rhizophora mangle to Sea Level Rise and Changes in Salinity
Student Co-Presenters: Emily Ouellette, Heather Flynn, Violette Gibbs, Brianna Brigandi, Jane Conrad, Gregory Griffin
Mentor: Dr. Linda Walters (Biology)
To determine the effects of water depth and salinity on the net growth and survivorship of the red mangrove (Rhizophora mangle) which is indigenous to the Indian River Lagoon, and to provide vital information for future conservation decisions concerning climate change impacts on this keystone species.

TAYLER CROOM
ABCE1: Essential for Ribosome Biogenesis
Mentor: Dr. Robery Igarashi (Chemistry)
Determining where and how the ABC Fe-S protein ABCE1 functions in the synthesis of ribosomes can provide insight into ribosome biogenesis as well as the potential for pharmacological applications and development of novel methods in cancer chemotherapy.

ADAM EL KOMMOS
Altered Numb Protein Expression in Alzheimer’s Disease
Mentor: Dr. Sic Chan (Biomedical Sciences)
Numb is an endocytic adapter that exists in four spliced isoforms. We reported that stress increases the expression of Numb isoforms that promote production of the amyloid-D peptide, the principle component of senile plaques in Alzheimer’s disease (AD). We examined Numb isoforms in brains of AD patients/AD transgenic mice.

HEATHER FLYNN
Interactions Between Native Species Diversity and Mycorrhizal Fungal Associations on Guineagrass (Panicum maximum) Invasiveness
Mentor: Dr. Betsy Von Holle (Biology)
Invasive species drastically decrease ecosystem function, biodiversity, and endemic species’ habitats. This experiment investigates the role native species diversity and mycorrhizal fungal associations play in facilitating the establishment of the invasive species, guinea grass (Panicum maximum), in scrubby flatwoods communities and provides information to develop restoration methods for Florida ecosystems.
DOMINIQUE GHANNAM
Enhancement of Patterned Cardiac Myocytes on Multielectrode Arrays for High-throughput Drug Testing
Mentor: Dr. James Hickman (Biomedical Sciences)
Cardiac side effect testing is required for all developmental drugs prior clinical trials. The common in vivo methods are slow and costly. In this project, neonatal rat cardiac myocytes are patterned on multi electrode arrays and in vitro high-information content method will be optimized for pharmaceutical side effect testing.

AARON GODWIN
Understanding the Potential Impact of an Invasive Marine Mussel: a Field Study on the Growth and Survival of Mytella charruana
Mentors: Dr. Kimberly Schneider, Dr. Eric Hoffman, Dr. Linda Walters (Biology)
Mytella charruana, a bivalve native to South and Central America, has recently been introduced to the southeastern coast of the United States. This project monitors the growth and survival of M. charruana under natural field conditions in order to understand the invader’s biology and explore its potential for range expansion.

JAMES GROSSO
Altered Expression of Calcium Channel Proteins in Parkinson’s Disease
Mentor: Dr. Sic Chan (Biomedical Sciences)
The etiology of neuronal death in Parkinson’s disease (PD) still remains unclear. Considerable evidence suggests that oxidative stress and deregulation of calcium homeostasis play key roles in the pathogenesis of PD. Here, we determine the molecular mechanisms whereby intracellular calcium homeostasis is altered in cell and animal models of PD.

JESSICA KENYON
Genetic Relatedness and Parentage in Disney’s Animal Kingdom Population of Greater Flamingos
Mentor: Dr. Eric Hoffman (Biology)
We have examined DNA from the population of greater flamingos (Phoenicopterus ruber roseus) from Disney’s Animal Kingdom. We used microsatellite molecular markers to determine parentage and to find a cause for abnormalities showing up in some of the offspring.

RACHEL KING
The Influence of Intralocus Sexual Conflict on Sex-Specific Immune Investment Strategies
Mentor: Dr. Ken Fedorka (Biology)
I am studying how intralocus sexual conflict influences sex-specific immune investment using hemicyclone analysis in fruit flies.

JESSICA LAB
Carbon Dynamics in Rapidly Urbanizing Landscapes—A Pilot Study on the Urban to Rural Gradient in Eastern Orlando, Florida
Mentor: Dr. Ross Hinkle (Biology)
This study of a rural to urban gradient within a 200-square-kilometer area of eastern Orlando, Florida, will evaluate changes in the landscape’s capacity to sequester carbon as urbanization has spread over the past 31 years.

JOSEPH LAMATTINA
Characterization of Pre-replication and Replication Protein Complexes in Plasmodium falciparum
Mentor: Dr. Debopam Chakrabarti (Molecular Biology and Microbiology)
The goal of this research is to define the molecular architecture of protein complexes regulating the onset of DNA replication in the malaria parasite.

LIFE SCIENCES II

ROBERT LORCH
MicroRNA Regulation of Prostate Cancer Desensitization to Androgen Receptor Antagonist Drugs during Androgen Deprivation Therapy
Mentor: Dr. Ratna Chakrabarti (Molecular Biology and Microbiology)
The involvement of microRNAs in regulating the desensitization of prostate cancer cells to androgen receptor antagonists will be investigated by screening genome-wide microRNA expression levels and validating the expression of the target proteins and mRNAs regulated by the candidate microRNAs.

HOLLY MCARDLE
Pollination Biology of Polygonella myriophylla
Mentor: Dr. Pedro Quintana-Ascencio (Biology)
The primary goals of this project are to gather information on the phenology of Polygonella myriophylla’s flowers and the effects of differing pollinator species, visitation rates, and local environment on its seed set.

ZACHARY MOYE
A Genetic Screen for Genes Involved in the Epithelial Development of Drosophila
Mentor: Dr. Laurence von Kalm (Biology)
The purpose of this project was to identify genes of the model organism Drosophila melanogaster that interact genetically with the trypsin-like type II transmembrane serine protease (TTSP) designated Stubbie in order to better understand the role of TTSP activity in development and human pathology.

MICHAEL NAPOLITANO
Power Relation and Dominance Hierarchy Correlations in Primates
Mentor: Dr. Libby Cowgill (Anthropology)
To better understand primate power relations and dominance hierarchies and discover possible biological or ecological correlations which may lead to more insight on primate societies and the origins of human social organization patterns.

JAMES NEW
Plant-Made Oral Vaccines: Evaluation of Capsules
Mentor: Dr. Henry Daniell (Molecular Biology and Microbiology)
The effects of lyophilizing vaccine antigens made in lettuce will be evaluated for stability and immunogenicity to develop a prototype formulation for an oral vaccine. The usage of excipients will be investigated, with special consideration to efficacy and durability of the vaccine product.

ALEXANDER NOLL
Hypoxia Induces Lipid Droplet Accumulation in THP-1 Derived Macrophages
Mentor: Dr. Pappachan Kolattukudy (Molecular Biology and Microbiology)
The two specific aims of this study were to determine if and how THP-1 derived macrophages accumulate lipid droplets under hypoxic conditions as well as to determine if MCP-1 induced protein is involved in triggering lipid droplet accumulation under hypoxia in THP-1 derived macrophages.
DAVIDSON PEREIRA
Preventing Marine Invasions: Disposal Methods for Aquarium Strains of Chaetomorpha linum
Student Co-Presenters: Justin Collins, Catherine Jeske, Joshua Solomon, Kali Standorf, Christopher Palmioti, Brittany Gann, Brett Larose
Mentor: Dr. Linda Walters (Biology)
Release of aquarium organisms poses a threat to coastal and estuarine ecosystems. Our goal was to determine the effectiveness of four disposal methods—freezing, boiling, desiccation and desalination—for aquarium strains of the green alga Chaetomorpha linum in order to prevent its introduction into natural environments.

MARIO PITA
Neural Stem Cells and a Potential Treatment for Parkinson’s Disease: Evaluating the Therapeutic Effects of a Novel Compound
Mentor: Dr. Kiminobu Sugaya (Biomedical Sciences)
Current treatments for Parkinson’s disease lack the ability to fundamentally restore the brain. A small molecular compound has been shown to induce proliferation of endogenous stem cells which naturally restore brain tissue. This project assesses the therapeutic potential of this novel compound using behavioral tests, protein assays, and immunohistochemical analysis.

EMILY PITCAIRN
Colors, Bands, and Scales: Do the Genes Agree?
Mentor: Dr. Christopher Parkinson (Biology)
We investigated the relationships between two species of coral snakes, Micruroides fulvius and Micruroides tener, using nuclear and mitochondrial data. We evaluated phylogenetic relationships among individuals and the genetic distance between species. We compared our results to the current morphological species designation to determine if species status is warranted.

LANCE RADFORD
Novel Antimalarials from Marine Natural Products
Mentor: Dr. Debopam Chakrabarti (Molecular Biology and Microbiology)
Identification of novel lead antimalarial compounds from marine natural products utilizing SYBR Green-I based high throughput screening and evaluating the potency and efficacy of positive hits.

CHRIS REILLY
Effects of Site Specific Tryptophan Mutations on Human Group IIA Phospholipase A2
Student Co-Presenter: Erica Jackson
Mentor: Dr. Suren Tatulian (Physics)
Our project studies the structural basis underlying interfacial activation of Group IIA PLA2 and two mutants containing tryptophan at close positions within the N-terminal helix. These structural changes will be correlated with the respective activities and thermal stabilities of the enzymes. Potential practical applications of the results will be discussed.

LAUREN RIVERA
Utilization of Viral Vector to Analyze the Neuroprotective Wallerian Degeneration Slow Gene Expression in Neural Stem Cells
Mentor: Dr. Mohtashem Samsam (Biomedical Sciences)
The Wallerian degeneration slow gene (WldS) has demonstrated significant protection from degeneration of nerve cells in neurodegenerative diseases. By introducing the neuroprotective gene into a viral vector we will be able to transfect neural stem cells and introduce the transformed cells into an animal model to analyze its gene expression.

SARA ROBISON
A Novel K63-Specific Deubiquitinating Complex and Its Potential Involvement in Stress Signaling and Cell Death
Mentor: Dr. Antonis Zervos (Biomedical Sciences)
The objective of this project is to identify potential partners of the protein ABRO1 in order to help characterize the normal function of the BRISC enzyme and its role in stress signaling and/or cell death.

ANGELICA ROMERO
Interaction of a Virulence Factor of the Bacterial Pathogen Listeria monocytogenes With a Human Protein Regulating Intracellular Protein Trafficking
Mentor: Dr. Keith Irton (Biomedical Sciences)
We will examine the interaction of Listeria monocytogenes virulence factor InIC with the human protein Sec31 to understand how this interaction might regulate sec31 function and ultimately enhance bacterial virulence.

LOGAN SCHAEFER
Identifying Cellular Targets of Plasmodium falciparum CDK-like Kinases
Mentor: Dr. Debopam Chakrabarti (Molecular Biology and Microbiology)
The objective of this study is to understand the physiological function of Plasmodium CDKs through their substrate identification and to develop novel malaria therapeutics targeting Plasmodium CDK-substrate interactions.

ALLEN SEBA
Epidemiology of Nasal Carriage Strains of Staphylococcus aureus: Identifying Genetic Diversity and Putative Genetic Determinants of Carriage
Mentor: Dr. Alexander Cole (Molecular Biology and Microbiology)
The objective of this study was to examine genotypic diversity of nasal carrier strains of Staphylococcus aureus from an ethnically diverse cohort of donors. Methicillin resistance and virulence genes were analyzed in concert to differentiate strains of S. aureus and to identify putative genetic determinants for nasal carriage.

SAMANTHA SPINUZZI
Tracking the Invasion of Three Non-native Marine Species, Mytella charruana, Perna viridis, and Megabalanus coccopoma, along the Southeastern United States
Mentors: Dr. Kimberly Schneider, Dr. Linda Walters, Dr. Eric Hoffman (Biology)
Three non-native species, Mytella charruana, Perna viridis, and Megabalanus coccopoma, continue to expand their range along the coast since their recent establishment in the southeastern United States. This project tracks the spread and abundance of these species over 81 locations along the southeastern coast to understand their invasive pattern.

MARTIN STERLICCHI
Function of THAP5 Protein and its Potential Involvement in Heart Disease
Mentor: Dr. Antonis Zervos (Biomedical Sciences)
Apoptosis refers to programmed cell death, and is often the result of environmental stress upon a cell. Omi/HtrA2 is a pro-apoptotic protein found to interact with a novel cardiac-specific nuclear protein, Thanatos associated protein 5 (THAP5). I investigated the function of THAP5 under normal or apoptotic cellular conditions.
MELISSA USSA
Multiplying System Engineers: Does Oyster Restoration Compliment Seagrass Retention?
Student Co-Presenters: Jeb Eubanks, Justina Napoli, John Cunningham, Marc Kemper, Kyle Iketani, Jonathan Winfrey, Cassandra Dickerson, Andrew Howard
Mentor: Dr. Linda Walters
To determine if restored oyster reefs are able to retain fragments of seagrass Halodule wrightii more successfully than naturally occurring oyster reefs. H. wrightii, an indicator species, has been absent from many regions of the Mosquito Lagoon ecosystem but is now making a comeback.

NEYDA VANBENNEKOM
Identification of Human Signaling Proteins that Promote Entry of the Bacterial Pathogen Listeria monocytogenes
Mentor: Dr. Keith Iretton (Molecular Biology and Microbiology)
Human signaling proteins that promote entry of the bacterial pathogen Listeria monocytogenes into host cells are being identified in order to lead to a better understanding of host-Listeria interactions that contribute to disease.

KORTNI WATKINS
Characterization of Novel Vesicle Transport Proteins in Plasmodium falciparum
Mentor: Dr. Debopam Chakrabarti (Molecular Biology and Microbiology)
The aim of the study is to identify the intracellular localizations of the PfVAMPs and determine their role in vesicle-mediated trafficking in the malaria parasite.

WEI YUAN
Where Do We Go From Here? Abiotic Factors Affecting Range Limits of Two Introduced Bivalves, Perna viridis and Mytella charruana
Mentors: Dr. Linda Walters, Dr. Eric Hoffman, Dr. Kimberly Schneider (Biology)
To examine the interaction between temperature and salinity tolerances of two non-native mussels, Perna viridis and Mytella charruana in order to determine potential range expansion.

CAROLINA ACEVEDO
Degradation of Chlorinated Aromatics Found in Contaminated Paint and Soil
Mentor: Dr. Cherie Geiger (Chemistry)
The goal of this research is to degrade polychlorinated biphenyls from contaminated paints and soil through the use of activated metal treatment system.

CHRISTOPHER CAMPO
Two Multichannel Spitzer Secondary Eclipses of WASP-18b
Mentor: Dr. Joseph Harrington (Physics)
We studied the secondary eclipse of the exoplanet WASP-18b, resulting in an atmospheric and dynamical analysis of the planetary system.

EMMANUEL CRUZ
Modeling Saturn's Rings to Predict Optical Depth at a Given Geometry
Mentor: Dr. Joshua Colwell (Physics)
To develop a 3D array that takes into account the radial distance from Saturn, a model of the self-gravity wakes, and the viewing geometry, to predict the optical depth of Saturn's rings at any given geometry for use in analyzing images of the rings.

DANIEL FREPPON
Optimization of SU-8 Photoresist for Fabrication of High-Fidelity Nanostructures
Mentor: Dr. Stephen Kuebler (Chemistry)
The objective of this study is to determine how solvent content and oligomer molecular weight distribution affect the performance of SU-8 photoresist as a material for fabrication of three-dimensional nanostructures by multi-photon direct laser writing.

LEON GUERRERO
Optimization of Some Behavioral Portfolio Selection Problems in Mathematical Finance
Mentor: Dr. Jiongmin Yong (Mathematics)
We seek to formulate and analyze a general discrete-time behavioral portfolio selection model, featuring s-shaped utility functions and probability distortion functions used to model inherent human factors in investment decisions. We address the problems of existence, characterization, and computation of optimal solutions, and study possible connections with other existing models.

SANTIAGO GUISASOLA
Integrable Perturbations of the Nonlinear Schrodinger Equation and its Applications to Bose-Einstein Condensation
Mentor: Dr. Alexander Tovbis (Mathematics)
It is accepted that Bose-Einstein condensation is described by the Gross-Pitaevskii equation, a non-integrable equation. Integrability is desired when analyzing a Bose-Einstein condensate because it guarantees an effective method of finding solutions. Perturbing the nonlinear Schrodinger equation in a way that preserves integrability may offer better insight into Bose-Einstein condensation.

RYAN HARDY
On the Precession of the Close-in Exoplanet WASP-12 b
Mentor: Dr. Joseph Harrington (Physics)
We combine transit, eclipse, and radial velocity data to detect and measure the apsidal precession of the short-period exoplanet WASP-12 b and constrain its interior structure.

KELSEY HARGROVE
The First Detection of Ice and Organic Compounds on an Asteroid: A Possible Link to the Origin of Earth's Water
Mentor: Dr. Humberto Campins (Physics)
We are the first to detect water ice and organic compounds on an asteroid. Our rotationally-resolved spectra (data sets taken over time) show that they are not only present, but widespread on the surface. This discovery may provide a link to the bulk source of earth's water.

JUSTIN HODGES
Characteristics of Disks around Stars Explained by Fluid Dynamics
Mentor: Dr. Michele Montgomery (Physics)
The objective of our research is to explain the occasional tilt of accretion disks that surrounded dense matter in space.
WHITNEY KEITH
Simulating the Effects of Rocket Exhaust on Cratering
Mentor: Dr. Brian Moore (Mathematics)
The objective of this research is to numerically approximate the conditions under which a crater will form on the Moon or Mars by using a math model of soil displacement and rocket exhaust pressure.

AARON KOCH
Determining the Heat Capacity of Meteorites through a Non-Destructive Method
Mentor: Dr. Daniel Britt (Physics)
This research is devoted to inventing a new method in which to determine thermal properties of solids, in which the sample is not permanently altered. This method is designed specifically to determine the heat capacity of meteorites due to their limited availability and their value.

KRISTY KORMONDY
High Yield Semicontacting Local-Gated Carbon Nanotube Field Effect Transistors
Mentor: Dr. Saiful I. Khondaker (Physics)
We utilize a semiconducting-enriched single-walled carbon nanotube (SWNT) solution in combination with ac-dielectrophoresis to assemble individual semiconducting SWNTs between electrodes with a 1 um gap with a 100 nm wide local Al/AI2O3 gate in the middle. We present scanning electron micrographs, full electronic characteristics, and statistics on the FET devices.

DAVID LEHKUHL
Cerium Oxide Nanoparticles as a Sensitive Nanoprobe for Cellular ELISA: Hydrogen Peroxide Independent ELISA
Mentor: Dr. J. Manuel Perez (Chemistry)
I have analyzed and participated in investigating cerium oxide nanoparticles oxidase-like behavior at acidic pH microenvironments. These findings have been applied to creating a practical cellular ELISA.

MICHAEL LODGE
Characterization of Carbon Nanotube Polymer Electrolyte Membranes Using Raman and FTIR Microscopy
Mentor: Dr. Alfonso Schulte (Physics)
Investigate the molecular structure of carbon nanotube membranes on a micron scale for applications in fuel cells using micro-Raman and FTIR spectroscopy.

DAVID MAILEY
Dancing the Earth: Full Body Motion
Student Co-Presenters: David Mailey, Brandon Stull, Justin Link
Mentors: Dr. Mike Moshell, Dr. Robb Lindgren (Digital Media)
Our research investigates several methods exploring the utility of full body motion. These methods will implicitly enable the learning process in the field of physical science.

JERONIMO MATOS
Adsorption and Diffusion of Sexithiophene on Ag(110)
Mentor: Dr. Abdelkader Kara (Physics)
We use density functional theory to simulate the adsorption of sexithiophene (6T) molecules on silver surfaces. Our purpose is to analyze this system in various configurations with the goal of gaining an understanding of the electronic properties and energy landscape. This system has applications in organic electronic devices.

SARAH NYMeyer
Two Secondary Eclipses of HAT-P-7b in Four Wavelengths
Mentor: Dr. Joseph Harrington (Physics)
We observed two secondary eclipses of the transiting exoplanet HAT-P-7b using the Infrared Array Camera on the Spitzer Space Telescope. HAT-P-7b is a hot Jupiter that lies approximately 0.04 AU from its parent star. It has a circular orbit and an equilibrium temperature of 2139 K.

RYAN PATRICK
Using LiDAR to Detect Caves Below Rainforest Canopy in the Karst Topography of Caracol, Belize
Mentor: Dr. John Weishampel (Biology)
Mesoamerican caves often have both archaeological and biological importance because they represent sites of rituals and local biodiversity hotspots, respectively. LiDAR, unlike traditional remote sensing methods, pierces the rainforest canopy allowing clear views of sub-canopy features. We wish to assess the prospecting ability of LiDAR to identify these geomorphologic features.

COURTNEY PAULSON
Statistical Analysis of Light Intensity Observations to Determine Areas of Constant Properties in Saturn’s Rings
Mentor: Dr. Marianna Pensky (Statistics)
The objective of the project is to use statistical analysis to study the structure of Saturn’s rings. To uncover areas in each ring with constant properties like density and composition, the data (light intensity observations in the form of Poisson counts) must be denoised.

KYLE REGER
Numerically Analyzing Hall Magnetohydrodynamics Near an X-type Neutral Line
Mentor: Dr. Bhimsen Shivamoggi (Mathematics)
The Hall magnetohydrodynamic (MHD) model describes fast magnetic reconnection processes. This project focuses on the current sheet formation at X-type magnetic neutral points in Hall magnetohydrodynamics. Numerical and asymptotic solutions are developed for this situation, which are compared against previous analytical results on this problem.

ANTHONY ROBLEDO
Patterned Structures Through Ballistic Growth and Applications to Electroless Deposition of Metals
Mentors: Dr. Aniket Bhattacharya (Physics)
Universal growth models, such as random deposition (RD) and ballistic deposition (BD), are relevant to understanding the evolving morphologies obtained during electroless deposition of metals onto polymeric surfaces (EMPS). We studied these models with several adjustable parameters, such as sticking probabilities and surface diffusion, in the presence of impurities.

ELIOT SILBAR
High Yield Assembly and Transport Properties of Semiconducting Carbon Nanotubes
Mentor: Dr. Saiful Khondaker (Physics)
We studied large scale fabrication techniques of single walled carbon nanotubes (SWNTs) as transistors. With commercially available SWNT solutions it’s not typical to have a high yield of gate dependent carbon nanotubes from assembly by AC-dielectrophoresis. We report a yield of up to 87% semi-conducting devices.
CHRISTIAN SMITH
Impact of Coulomb Impurities on Transport Properties of Graphene Nanoribbons
Mentor: Dr. Masahiro Ishigami (Physics)
We have fabricated and performed transport measurements on graphene nanoribbons. Our results shed light on recent predictions that attempt to explain the mechanisms behind transport in graphene nanoribbons. We probe the underlying factors that contribute to the formation of a transport gap seen in similar studies.

CARLOS SOLANO
Atomic Force Microscopy Study of Colossal Magnetoresistive Oxide Thin-Film Surface Roughness
Mentor: Dr. Charles Ahn (Physics, Yale University)
The morphology of the CMR oxide lanthanum strontium manganite (LSMO, La0.65Sr0.35MnO3) has been studied using atomic force microscopy (AFM). Substrate-induced strain was studied by growing the LSMO on different substrates; namely, strontium titanate (STO, SrTiO3) and lanthanum aluminate (LAO, LaAlO3). New thickness vs. roughness information was obtained.

ANDREW TEBLUM
Effects of Alloying and Doping in Semiconductor Nanowires: CdxZn1-xS:Mn, A Case Study
Mentor: Dr. Swadeshmukul Santra (Chemistry)
Fabrication of Mn2+ doped ternary alloy semiconductor CdxZn1-xS nanowires by a simple synthesis route is reported. We have successfully tailored the growth environment to incorporate Mn2+ into these alloy nanowires and bypass self-purification process. Formation of various new morphological and optical phenomena related to alloying and doping was observed.

SHAINNA ALI
Contemporary Hijra Identity in Guyana: Colonial and Postcolonial Transformations in Hijra Gender Identity
Mentor: Dr. Elayne Zorn (Anthropology)
This project examines the possible existence of hijra, a third gender status from India in contemporary early twenty-first-century Indo-Guyanese society, as an identity that survived the transatlantic separation from India, colonialism and postcolonial oppression.

GRAHAM ALTAMURA
The Relationship Between Collectivism and Team Performance
Student Co-Author: Kevin Rutherford
Mentor: Dr. Leslie DeChurch (Psychology)
Collectivism and individualism are terms used to describe the level of concern an individual has for group goals over personal goals. This study attempts to explain the relationship between levels of collectivism and team performance by examining the success of teams on tasks given to them in a computer simulation.

KEVIN ALVAREZ
Where Has the Revolution Gone? Gender and Politics in Contemporary Nicaragua
Mentor: Dr. Bruce Wilson (Political Science)
Since the revolution, there has been an overall increase in women’s political organization. The priority of women’s issues in Nicaragua have been subject to the political goals and ideologies of the administrations in power, and that greater participation in non-governmental organizations have followed these periods of neglect.

JANET RENEA ANDERSON
Consumer Perceptions of Environmentally Friendly Lodging
Mentor: Dr. Po-Ju Chen (Hospitality Services)
The consumer’s perceptions of environmentally friendly lodging as well as whether the perceptions differ along generational lines were studied in order to demonstrate continued demand of hotels to engage in sustainable practices. The findings of the study could translate into hospitality and tourism marketing strategies.

AMBERLE ASBELL
The Effects of Birth Order on Transformational Leadership and Effectiveness
Student Co-Authors: Michael Aponte, Kelly Hannahan, Lisa Mortimore
Mentor: Mr. Toshio Murase (Psychology)
Leadership is a real and vastly consequential phenomenon, perhaps the single most important issue in the human sciences. Our goal is to examine prior research and conduct our own research to determine how birth order relates to an individual’s effective leadership skill and type.

GHISLAINE ATKINS
The Dichotomy of the African-American Persona: The Progressive vs. The Regressive
Mentor: Dr. Kurt Young (Political Science)
Examining the differences in behavior and social interaction and how the “two types” are perceived. Are African Americans who “act white” better received by mainstream society (those outside their race)? And, are they still able to retain respect by their fellow African Americans?

MICHELLE ATTIA
Homosexuality Career Bias
Mentor: Dr. Amy Donley (Sociology)
This project employed qualitative methodologies to look at how homosexuals are treated in careers and hiring based solely on sexual orientation. Areas researched were hiring preferences, pay, promotions, and workplace treatment.

SHANNON BAILEY
Observations on Modern American Paganism
Mentor: Dr. David Gay (Sociology)
The purpose of this research is to observe Pagan culture, beliefs, and practices to provide a more accurate view of Paganism today. This paper traces the evolution of Paganism in America through literature review, while exploring the current trends in the subculture by observing the Florida Pagan Gathering.

ASHLEY BENNETT
Effects of Pre-Enrollment Efforts on Retaining Low-Income Married Couples with Children in a Marriage and Relationship Education Program
Mentor: Dr. Andrew Daire (Child, Family and Community Sciences)
We will analyze the influence of pre-enrollment efforts on retaining low-income married couples with children as a part of a national experimental design study. This data will provide insight for the best practices in recruiting and retaining low-income married couples with children in a marriage and relationship education program.
ANJELICA BLUM
Leadership Proneness in Students
Student Co-Author: Sarah Nordgren
Mentor: Mr. Toshio Murase (Psychology)
The objective of our research is to examine the relationship between specific personality characteristics and proneness towards careers in leadership-involved fields. We plan to administer a personality scale and a career interest questionnaire to college students attending the University of Central Florida.

STEPHANIE BOOTHBY
A Bird’s Eye View: Using Satellite Imagery to Map and Analyze the Forest Islands of the Llanos de Mojos, Bolivia
Mentor: Dr. John Walker (Anthropology)
The imprint of pre-Hispanic modifications on their environment can still be seen today. By mapping natural and artificial landscape features with Google Earth, the spatial data can be analyzed with a GIS program. This information can reveal pre-Hispanic settlement patterns and can be applied to modern issues in the Amazon.

CRISTINA BRYAN
Did Choice of News Media Correlate with Psychopathology and Altruism during the Haitian Earthquake Disaster?
Mentors: Dr. Shannon Whitten, Dr. Karen Mottarella (Psychology)
The hypothesis of this study sustains that certain media patterns correlate with psychopathology. Participants will be asked to provide information about where they obtained information about the Haitian earthquake. Psychopathology and altruism will be dependent measures. It is predicted that patterns of media choices will predict psychopathology and altruism.

AMELIA CAREY
Religious Affiliation and Religiosity: Variations on Perceptions of Domestic Violence
Mentor: Dr. Jana Jasinski (Sociology)
In order to better understand the predispositions to acceptance of domestic violence, this research will use a secondary data analysis to garner an understanding about any possible effect religiosity and religious affiliation may have on the acceptance of myth-based verses empirically based statements about domestic violence.

JENNIFER CARTER
The Relationship Between Identity Formation and Interpersonal Aggression
Mentor: Dr. Steven Berman (Psychology)
The relationship between identity formation and interpersonal aggression has been suggested theoretically, but not thoroughly investigated. High school students completed self report surveys on identity, peer conflict, and adjustment. Multiple regression analyses revealed that identity variables predicted aggression while controlling for psychological adjustment. Implications are discussed.

LAUREN Catenacci
An Examination of College Students’ Beliefs and Attitudes Surrounding the Casey Anthony Case
Mentor: Dr. Mark Lanier (Criminal Justice and Legal Studies)
This study will analyze beliefs and attitudes that undergraduates hold about Casey Anthony based on media exposure.

CAITLIN CHASE
Factors of Visual Intelligence and Their Influence on Performance with Unmanned Systems
Mentor: Dr. Florian Jentsch (Psychology)
The objective of this work focuses on discussing the application of specific factors of visual intelligence (VI) including closure speed, flexibility of closure, and perceptual speed in unmanned vehicle (UV) research.

MATTHEW COHN
The Effect of Leader and Follower Performance on Leader’s Moods
Student Co-Author: Erika Gordon
Mentor: Mr. Toshio Murase (Psychology)
Participants will rate a past experience where they had to follow someone else’s directions, specifically their leader’s performance and their performance. Performance is then going to be compared with leader’s perceived mood.

DEANN COLLINS
Investigating Predictors of Ageism: Relationship with Older Adult Wanted
Mentors: Dr. Shannon Whitten, Dr. Erin Murdoch, Dr. Karen Mottarella (Psychology)
This study investigated predictors of ageism. Specifically, does exposure to stereotypically negative images of older adults correlate with ageist responses among individuals viewing these images? Results indicate that a supportive relationship with an older adult is more important in reducing ageism than exposure to random positive images of older adults.

KAITLYN CRANDALL
French Colonialism in North Africa: Morocco, Algeria, and Tunisia
Mentor: Dr. Houman Sadri (Political Science)
This project analyzes the effects of French colonialism on the current political stability of the Maghreb countries of Morocco, Algeria, and Tunisia with the goal of gaining an enhanced understanding of the region in order to build more effective Middle Eastern policies.

ARIEL DANSKY
Sderot: Living with Rocket Attacks for Nearly a Decade
Mentor: Dr. Houman Sadri (Political Science)
This project consists of an analysis of the experience of individuals in the Israeli town of Sderot who endured rocket attacks for nearly a decade, the response of the Israeli government to these attacks, and the extent to which the attacks affected the international perspective of the Israel-Palestinian conflict.

LINDSAY DHANANI
Homeless Perception Based on Religious Affiliation
Mentor: Dr. Amy Donley (Sociology)
This study explored how religion impacts the way people perceive the homeless.

AMANDA DIAZ
An Analysis of Personal Content, Contraband, Explicit Photos, and Symbols Indicative of Drug Use on MySpace between Sexes
Student Co-Author: Moheshwari Nauth
Mentor: Ms. Gail Humiston (Criminal Justice and Legal Studies)
Many young adults share information that could put their safety at risk when using MySpace.com. The research was designed to study personal information MySpace users chose to make public on profiles as well as on inappropriate information: evidence of contraband, evidence of drug use, use of profanity, and explicit photos.
ILEANA I. DIAZ  
The Ethnoprimateology of Limón, Costa Rica: A Survey in Conservation  
Mentor: Dr. Leslie Lieberman (Anthropology)  
This project explored human-nonhuman primate interactions in the eastern region of Costa Rica. The goals of this research are to investigate deforestation phenomena and the impacts of forest clearing for local fruit plantations on Alouatta palliata, Ateles geoffroyi, and Cebus capucinus. This research aims to further encourage nonhuman primate conservation.

KASSANDRA DIXON  
Individual’s Self-Constructual Efficiency of Assertive Versus Aggressive Leadership Style  
Student Co-Author: Daniel Martinez  
Mentor: Mr. Toshio Murase (Psychology)  
Studies have described aggressive leaders negatively; nevertheless, they are goal-oriented. Desirable leaders are assertive where communication is open and interpersonal relationships are developed. The purpose of this study is to examine individual’s perception based on their gender on which type of leadership (assertive or aggressive) can produce an effective leader.

ILIANI GIANNONI-MUNIZ  
The Perceptions of Hospitality Human Resource Managers on Social Media Networks, Along with Students Awareness  
Mentor: Dr. Fevzi Okumus (Hospitality Services)  
What I have been researching is information about the perceptions of how social media content is being viewed by HR managers in hospitality companies. My research will bring awareness to privacy laws and case studies as well as provided individuals with suggestions about how to manage their media content.

CHRISTINE GARNETT  
How to Engage and Retain Low-Income Families: Three Practical Factors that Influence Participation in a Marriage Education Program  
Student Co-Author: Jennifer Gibson  
Mentor: Dr. Andrew Daire (Educational Studies)  
In this research, we found three practical factors—orientation attendance, participation in program services within three weeks of random assignment, and ethnicity—that we expect are influential in engagement and retention in marriage education programs. This research has potential implications related to engaging and retaining low-income families in marriage education programs.

Bianca Fortis  
Pedagogical Trends in Journalism: Trauma Reporting  
Mentor: Dr. Maria Cristina Santana (Communication)  
The goal of this project is to design a new journalism course in trauma reporting for schools throughout the United States. Few journalism schools offer courses in trauma reporting, thus not adequately preparing students for the stress or trauma of a career as a reporter or photographer.

Vanessa Dominguez  
The Family Adjustment Measure Project: The Norming and Validation of the Family Adjustment Measure  
Mentor: Dr. Andrew Daire (Child, Family and Community Sciences)  
The purpose of the Family Adjustment Measure Project is to develop an assessment that measures family adjustment specific to parents of children with special needs based on these four possible domains: social support, positive coping skills, family and marital adjustment, and effective parenting.

Jennifer Feliciano  
The Utilization of Authentic Assessment in Early Childhood  
Student Co-Authors: Rosemarie Dunn, Janey Mercadante  
Mentor: Dr. Heather Batchelder (Child, Family and Community Sciences)  
The objective of this project was to create and pilot an instrument to measure and document levels of student participation and mastery of learning objectives through natural observation for the Mommy and Me Program at the MOTE Marine Laboratory in Sarasota, Florida.

Kelin Flanagan  
Ethno-Botany in Florida: Seminole Cosmology and Medicinal Plant Use  
Mentor: Dr. Leslie Lieberman (Anthropology)  
Botanical species used by traditional Seminole healers will be studied for their medicinal properties and compared to the metaphysical constructs assigned to them by the Seminole. A chart comparing these two properties will be composed based on findings within literature, mythology, oral histories, artwork, and possible interviews.

Michael Gibby  
Cave Diving Risk Perception and Behavior  
Mentor: Dr. Mark Dickie (Economics)  
Divers’ perceptions of the risk of various activities, as well as information about their behavior as reported via surveys was analyzed to better understand cave diving risk perception.

Christian Gonzalez  
Perceptual Training with Visual Aids: Their Role in Aviation  
Student Co-Author: Steven Estes  
Mentor: Mr. Toshio Murase (Psychology)  
The effectiveness of training with visual aids to reduce perceptual errors in a visual aviation task will be examined. We predict that the amount of information provided by each visual aid will positively correlate to higher performance during testing.

Garrett Grainger  
National and Structural Explanations for Income Inequality: An Exploratory Analysis  
Mentor: Dr. Matthew Mahutga (Sociology, University of California-Riverside)  
An internal development model was constructed to control for state-level variables that often confound the relationship between systemic factors and income inequality. The model consisted of five variables. The external factors of interest were world-system position and foreign capital penetration.
The purpose of this study is to investigate common factors that affect women staying in relationships with abusive partners. A comprehensive literature review will be completed. Data collected from selected domestic violence shelters in the state of Florida that focused on shelter residents’ experiences with domestic violence will be analyzed.

**MEGAN GREGORY**
The Role of Transactive Memory in Work Teams: A Review

*Mentor:* Dr. Leslie DeChurch (Psychology)

Relevant literature on Transactive Memory (TMS) in work teams will be examined in order to better understand this construct and provide a framework for future research.

**JENNIE HAYES**
Communication Between America’s First Couple: How the First Ladies Have Shaped the World through Pillow Talk

*Mentor:* Dr. Harry Weger (Communication)

Should the American voter concern him or herself with the communication that exists within the marriage of America’s first couple? By examining the marriages of five former first couples through levels of self-disclosure and subsequent intimacy as well as communicative power within the relationship, the answer is “yes.”

**JUSTIN HEFFERAN**
Looking for Angola: The Quest to Locate an Historic Black Seminole Settlement in the Tampa Bay Area

*Mentor:* Dr. Rosalyn Howard (Anthropology)

This project is part of an inter-institutional collaborative research project entitled “Looking for Angola” (LFA). Its goal is to assist the LFA research team with data collection, including the organization of historic maps and a review of relevant literature.

**ASHLEY HUGHES**
Stress and Alcohol Consumption in Different Personality Types

*Student Co-Author:* Justin Weinstein

*Mentor:* Dr. Janan Smither (Psychology)

The purpose of this study is to determine a possible existing relationship(s) between alcohol consumption, levels of stress, and neurotic personality trait. Individual differences highlight important strategies in coping with stress and according to copious prior research, alcohol consumption has been strongly related to reduction in negatively arousing emotional stimuli.

**WHITNEY JOHNSON**
The Effects of Age, Relationship Status, and Pet Ownership on Survivors of Intimate Partner Violence Who Seek Shelter

*Mentors:* Dr. Eileen Abel, Dr. Olga Molina (Social Work)

The purpose of this study is to investigate common factors that affect women staying in relationships with abusive partners. A comprehensive literature review will be completed. Data collected from selected domestic violence shelters in the state of Florida that focused on shelter residents’ experiences with domestic violence will be analyzed.

**RUTH JOSEPH**
The Relationship Between Homelessness and Incarceration

*Mentor:* Dr. Amy Donley (Sociology)

The purpose of this research is to understand what role incarceration plays in current homeless status and what could be in place to help prevent people being released from becoming homeless.

**BROOKE LAJOIE**
Never Too Old, Never Too Young? Exploring Stereotypes in the Mixed-Age College Classroom

*Mentor:* Dr. Karen Mottarella (Psychology)

In today’s mixed-age classroom, negative age-based stereotypes that college students hold of each other have the potential to interfere with an optimal learning environment for all. This study empirically investigates the presence of such stereotypes and serves as a step toward increasing awareness and support within the college classroom.

**AMANDA LECHEMINANT**
The Changing Political World: How and Why Young People Vote

*Mentor:* Dr. Philip Pollock (Political Science)

This is a study of the efficacy of voter contact as a method of mobilization for young American voters. Contact as an effective form of mobilization is considered as it relates to Election Day turnout and vote choice. Also studied is the future role of technology in mobilization techniques.

**SAMMANTHA LEE**
Concepts of Poverty in the Developing World: A Look at the Ladakhi

*Mentor:* Dr. Ty Matejowsky (Anthropology)

This research project will analyze the effects that the Western concepts of poverty have on cognition and culture in developing contexts specifically rural and small indigenous groups. The project will also examine the Ladakhis in northern India for past recorded effects of changes in a local concept of poverty.

**ROBERT MADDENS**
Compassion, Self Efficacy, and Morality as Predictors of Transformational Leadership

*Student Co-Author:* Cody Ott

*Mentor:* Mr. Toshio Murase (Psychology)

Transformational leadership style and the personality traits of compassion, self efficacy and morality will be examined to understand the relationship between them. Gender will also be explored as a moderator of this relationship.

**ABIGAIL MALICK**
Views on Gender at UCF

*Mentor:* Dr. Amy Donley (Sociology)

This study examines views on gender among students at the University of Central Florida. Specifically, the study examines if students believe that gender is primarily constructed by society or is inherent at birth. The study employed both quantitative and qualitative methods through surveys and interviews.
### SOCIAL SCIENCES III

**DANIEL MARTINEZ**  
*Personality and Team Performance: Looking at Team Traits and Team Members’ Similarity*

*Student Co-Authors:* Kathryn Dalrymple, Thomas Borawski  
*Mentor:* Dr. Leslie DeChurch (Psychology)

Focusing on two popular theories, the five factor model and the similarity attraction theory; team performance was assessed by personality traits evaluated with team motivation, conflict, and cooperation, while team members with similar personality traits are evaluated via team conflict, creativity, strain and likeability.

**ALLISON MATOS**  
*Exposing the Maya: Using LiDAR to Identify Hidden Archaeological Features in Caracol, Belize*

*Mentor:* Dr. John Weishampel (Biology)

This LiDAR study represents most ambitious use of this technology in an archaeological context. Identifying below-canopy features will help archaeologists understand the political complexity of the Maya in Caracol, as well as help preserve an important part of Belizean history that has been hidden for centuries.

**DAVID MIHM**  
*Screening Out Potentially Aggressive Teammates Using Situational Judgment Tests*

*Mentor:* Dr. Kimberly Jentsch (Psychology)

An SJT (Situational Judgment Test) was created in which a participant was cast in the role of a hospital customer service representative. Aggressiveness was then implicitly assessed based on participant’s evaluations of responses to situations in the SJT and compared to peer ratings of the participant’s aggressive behavior.

**JILLIAN MITCHELL**  
*Native American Portrayal in Textbooks*

*Mentor:* Dr. Amy Donley (Sociology)

This project consists of a content analysis examining how Native Americans are consistently portrayed in current elementary and secondary textbooks used in the Florida public school system and how this may affect the individual’s perception of the culture as they grow up.

**MARTHA MOLFETAS**  
*Resource Conflict in the Caspian Sea Basin*

*Mentors:* Dr. Houman Sadri, Dr. Robert Bledsoe (Political Science)

By examining past and current policies in the Caspian Sea Basin, we can incorporate the successes and failures into other conflicts around the world. This research will add to my discipline a new synthesis of different types of conflict for similar finite resources.

**STEPHANIE PARENTI**  
*The Role of Ideas in History*

*Mentor:* Dr. David Houghton (Political Science)

I have created a model of how the ideas, people, and elite have created our history and are interdependent on one another to have done so. For my research, I have applied this model to the Cold War era to explain the American understanding of it.

**JENNIFER PEREIRA**  
*Shared Ethnic Identity with Teammates: The Role of Surface-Level Similarities and Information Sharing*

*Mentor:* Dr. Eduardo Salas (Psychology)

This research aims to improve our understanding of the factors that influence information processing in multicultural teams. Specifically, the purpose is to determine if having a common ethnic identity instead of heterogeneous identity among members within a team can explain the amount of information shared.

**ANITA POUHAN**  
*Approaches to Masculinity in the 2008 Presidential Campaign*

*Mentor:* Dr. Terri Fine (Political Science)

The 2008 presidential candidates presented different perspectives on masculinity. Women outnumber men among eligible voters, and demonstrate higher turnout. This project explores how the female electorate perceived each candidate relative to qualities understood within the context of masculinity as well as how key women spoke of and about these candidates.

**MARCUS PRUITT**  
*Impact of High School Setting on College Prep Programs and Student Success at Colleges and Universities*

*Mentor:* Dr. Amy Donley (Sociology)

With this research I performed a quantitative study sampling 500 students from various Central Florida colleges and universities. I also conducted a qualitative study of eight focus groups consisting of six to ten students each. The study examines the impact high school setting has on college success.

**JAYME PUFF**  
*Relationships Among Parents’ Economic and Parenting Stress, Parenting Behaviors, and Ratings of Young Children’s Emotional and Behavioral Functioning*

*Mentor:* Dr. Kimberly Renk (Psychology)

The purpose of this study is to examine the relationships among economic stress, parenting stress, and parenting behaviors to determine which of these variables has the greatest predictive value for children’s emotional and behavioral functioning in a time of economic recession.

**LIANI RAMOS**  
*Gender Attitudes Toward What is Acceptable Sexual Behavior in Society*

*Mentor:* Dr. Amy Donley (Sociology)

This project studies the relationship between how males and females judge sexual behavior and what their attitudes are about what is acceptable sexual conduct in society. It explores the societal double standard and if people reinforce it in their personal lives.

**ANDREA RANIERI**  
*The Backward Masking Red Light Effect and Schizotypy*

*Student Co-Author:* Diana Hernandez  
*Mentor:* Dr. Jeffrey Bedwell (Psychology)

Previous research has demonstrated a unique effect of red light on visual processing in individuals with schizophrrenia. This study explores whether this same effect will be found in a nonpsychiatric sample of adults who report a high level of related personality traits (i.e., “schizotypy”).
if there is a link between sexual orientation and alcohol use. I surveyed 300 students on the UCF main campus to find out

Mentor: Dr. Amy Donley (Sociology)

Alcohol Use

HEIDI ROSS

The Relationship Between Sexual Orientation and Alcohol Use

Mentor: Dr. Amy Donley (Sociology)

I surveyed 300 students on the UCF main campus to find out if there is a link between sexual orientation and alcohol use.

CHRISTINA RESTREPO

Assessing Constructivist Teaching and Learning in the Ohio Mathematics Coaching Program

Mentor: Dr. Patricia Brosnan (Educational Studies, The Ohio State University)

This study analyzed the relationship between exposure to the Ohio Mathematics Coaching Program and achievement based on public record data. The program’s objective is to improve teacher content knowledge, assessment of student learning and improvement of individualized cognitive based instruction that may lead to student achievement.

JESSICA RIOFRIO

Follow My Lead: Authoritative Parenting and its Relation to Leadership Style

Student Co-Author: Kevin Hopkins, Elizabeth Krawiec

Mentor: Mr. Toshio Murase (Psychology)

The examination of the relationship between a parent’s use of authoritative parenting and development of a transformational or transactional leadership in their progeny along with an individual’s birth order contrasting their leadership style differences. Lastly, there will be an observation concerning an authoritative parenting-birth order interaction and leadership style.

DEANDRA ROBERTS

The Post-SOAR Experience: Determining the Perceived Needs of Students During the Second and Third Years of College

Mentor: Dr. Mia Alexander-Snow (Educational Studies)

This research explores students’ academic and social integration, persistence, and retention at UCF. It also seeks to identify the SOAR services in Post-SOAR participants’ learning and development; and investigates SOAR participants, faculty and staff perceptions, attitudes, and experiences at UCF.

JACQUELINE ROME

Leadership is Doing the Right Thing: Motivation and Self-Esteem as it Relates to Authentic Leadership

Student Co-Author: Ediana Feliciano

Mentor: Mr. Toshio Murase (Psychology)

Study of present research motivational differences, intrinsic vs. extrinsic, in relation to self-esteem measures to predict authentic leadership methods in organizations.

KEVIN RUTHERFORD

The Effects of Transactive Memory Systems on Team Performance

Student Co-Author: Graham Altamura

Mentor: Dr. Leslie DeChurch (Psychology)

A transactive memory system can be thought of as the unique knowledge of each member of a team, applied collectively to solve a problem. This study examines the common traits amongst individuals that perform highly in transactive memory systems, as well as its effects on team performance using computer simulation.

MARIE SABBAGH

Sexism: Who Will Speak Up?

Student Co-Author: Tess Hare, Erika Wheelhouse, Holly McFarland

Mentors: Dr. Erin Murdoch, Dr. Maria Lavooy (Psychology)

This study evaluated how willing a female participant was to confront sexist comments and whether she was more likely to verbally respond to the sexist comment after hearing another person confront the speaker. The participants’ choices to confront or self-silence were evaluated in terms of condition and questionnaire responses.

MELISSA SMITH

Applying Human Factors Psychology Principles to the Graphical User Interface of an Assistive Robot

Mentor: Dr. Aman Behal (Electrical Engineering and Computer Science)

The MANUS assistive robot is designed to be mounted on a wheelchair and used by persons with limited hand and upper-body dexterity. Human factors psychology principles were applied to the graphical user interface of the system in attempts to find the ideal layout.

SHANNON SMITH

Young America’s Perceptions of Homosexuals

Mentor: Dr. Amy Donley (Sociology)

This study analyzed the existing perceptions of homosexuals and homosexuality in America, pertaining to the status of homosexual marriage and other legal rights of homosexuals. It was designed to gauge the level of tolerance towards American homosexuals and determine key indicators for both accepting and non-accepting attitudes towards homosexuals.

SAMANTHA SNYDER

Impact of Sport Participation on Academic Achievement: A Look at Gender and Racial Inequalities

Mentor: Dr. David Gay (Sociology)

This thesis analyzes a nationally representative sample of American high school students to determine if there is a positive relationship between sport participation and average grades. It also examines potential gender and racial differences within this relationship.

MARCIA SORI

Perceived Parenting During Adolescence and College Alcohol Use

Student Co-Author: Maria Sori

Mentor: Dr. Michael Dunn (Psychology)

The objective of this research project is to examine the relationship between perceived parenting practices—specifically, parental monitoring and parent authority style—during adolescence and subsequent college alcohol use and alcohol expectancies.
JAZMIN TURK
Parental Bonding and its Effect on Adolescent Substance Use and Sexual Debut
Mentor: Dr. Andrew Daire (Child, Family and Community Sciences)
This study will examine what relationship exists between parental bonding factors and early onset of sexual behaviors and substance use.

MEG TWORKOWSKI
What Undergraduate Students Value Most in Faculty Research Mentors
Mentor: Dr. Karen Mottarella (Psychology)
This study explores what aspects of the research mentor relationship are perceived as most important from the student perspective. The results can be used to help faculty research mentors optimize their students’ undergraduate research experience.

ALEXIS VALLAS
The Big Five Personality Factors and Choice of News Outlet
Student Co-Author: Liddon Clare
Mentors: Dr. Shannon Whitten, Dr. Karen Mottarella, Dr. Jeff Bedwell (Psychology)
The present study explored whether personality characteristics are correlated with watching categories of media. Participants were asked to rate how frequently they watched or read 32 different news sources then the NEO personality inventory. Results indicate positive correlations between openness to experience and frequency of watching of comedy news programs.

VICTORIA VAN GAASBECK
Marajoara Ceramic Iconography: Analysis of Ceramic Burial Urns and Associated Burial Goods
Mentor: Dr. John Walker (Anthropology)
This research project will examine social structure and gender roles in Amazonian societies through the analysis of ceramics such as those found on Marajo Island, Brazil. It will test the hypothesis that gender roles in Marajoara culture are expressed through ceramic iconography.

JANELLE WADMAN
Identity and Adjustment in the New Millennium
Mentor: Dr. Steven Berman (Psychology)
This study investigated recent identity development trends among high school students. Data collection occurred in 2004 (n=140) and 2009 (n=133). The recent group had significantly less identity commitment and more psychopathology. Results are interpreted in regard to world changes (i.e., economic downturn, extended war, technological changes, texting, social networking).

ALEXANDRA WOODSIDE
Sexual Abuse as Potential Hindrance to Academic Achievement: A Study of Perception
Mentor: Dr. Sylvester Butler (Child, Family and Community Sciences)
This study investigates the perception of sexual abuse (SA) and its correlation to academic achievement. Sexual abuse may be seen as extremely negative. Do the negative consequences of this traumatic event affect the process of learning? Consequences of SA can be extremely negative, but does that necessarily affect academic achievement?
UNIVERSITY OF CENTRAL FLORIDA LIBRARIES
Annual Award for Excellence in Undergraduate Research Publishing in the
University of Central Florida Undergraduate Research Journal

UCF Libraries is pleased to announce that Antoinette Bazunu,
author of Are Florida’s Children Safe? Evaluating Safety in District 7 Privatized Child Welfare Services,
has won its 2009 Award for Excellence in Undergraduate Research Publishing.

Congratulations to Antoinette Bazunu and her mentor Dr. Wendell C. Lawther!

The University of Central Florida Undergraduate Research Journal encourages, recognizes, and rewards the intellectual scholarship of undergraduate students by providing a peer-reviewed forum to share their research. The journal accepts student articles, essays, and adapted thesis projects from all majors. Students who publish their work gain valuable academic experience, preparing them for future success. Collaborative research is always welcomed.

The University of Central Florida Undergraduate Research Journal is on display at www.urj.ucf.edu.
UCF Undergraduate Research Council

The Undergraduate Research Council promotes the involvement of undergraduates in the ongoing activities of the UCF research community and advises the Office of Undergraduate Research as to policies and programs that pertain to undergraduate research at UCF.

Nancy Ahern  Richard Harrison  Pedro Patino
Michael Aldarondo-Jeffries  Eric Hoffman  Tison Pugh
Kelly Astro  Peter Jacques  Robert Reedy
Monifa Beverly  Jana Jasinski  Martin Richardson
Paul Biscardi  Bernie Jensen  Kimberly Schneider
Bill Blank  Bernadette Jungblut  Denver Severt
Ratna Chakrabarti  Joo Kim  Kenneth Teter
Kendall Cortelyou-Ward  Mark Lanier  Kristina Tollefson
Niels da Vitoria Lobo  David Lee  Alexander Tovbis
Robert Dipboye  John Malala  John Walker
Amy Donley  Stacey Malaret  Linda Walters
Martin Dupuis  Rudy McDaniel  Scott Waring
Costas Efthimiou  Alison Morrison-Shetlar
Michael Georgiopoulos  Mark Muller

UCF Student Undergraduate Research Council (SURC)

SURC was formed to promote awareness about undergraduate research for students at UCF. Ten students actively engaged in research are selected each year to serve on this council. Through their support, the Office of Undergraduate Research has greater exposure on campus and gets continuous feedback on undergraduate research programs. Their help in promoting and running the Showcase of Undergraduate Research Excellence is greatly appreciated.

Paul Biscardi  Amber Dukes  Mario Pita
Melissa Blette  Aaron Godwin  Christina Restrepo
Sasha Brodsky  Karen Heine
Natalia Marques da Silva  Rachel King

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Sandra Cherepow  Martha H. Hitt  UCF Foundation
Denise Cristafi  Jana Jasinski  UCF Libraries
Michelle Fuentes  Carreen Krapf  UCF Marketing
Lauren Haar  Nancy Lynch  UCF Student Union
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