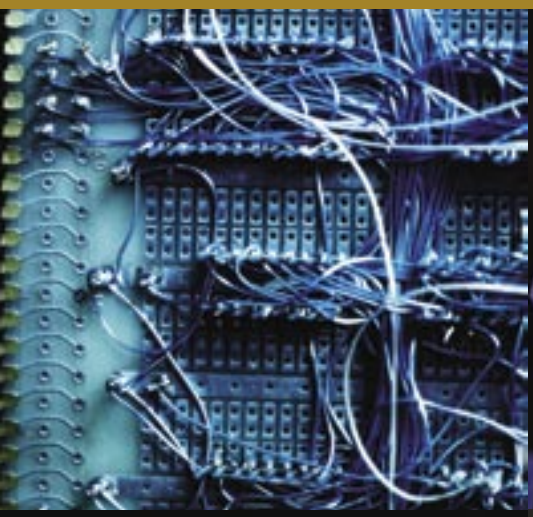


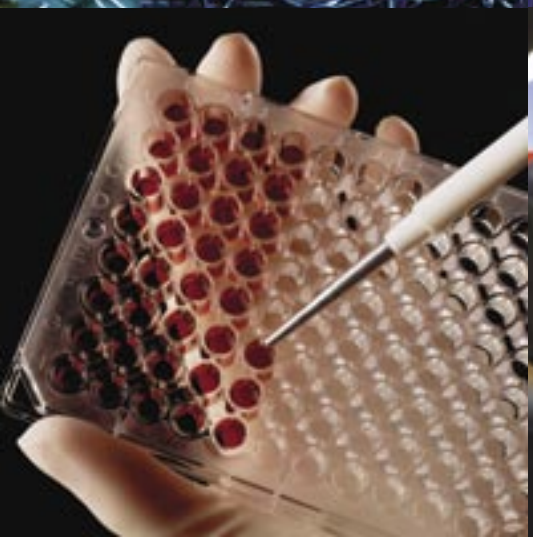
Showcase of Undergraduate Research Excellence

Celebrating undergraduate research and creativity across the curriculum.

University of Central Florida
Undergraduate Studies

Thursday, March 30, 2006 • 2-5 P.M. • Student Union, Pegasus Ballroom



SHOWCASE OF
UNDERGRADUATE RESEARCH EXCELLENCE

Celebrating undergraduate research and creativity across the curriculum.

UNIVERSITY OF CENTRAL FLORIDA
UNDERGRADUATE STUDIES

ORDER OF EVENTS

ACKNOWLEDGEMENTS ..... **2 P.M.**

Dr. John F. Schell
Vice Provost for Academic Affairs
and Dean of Undergraduate Studies
Professor of English

WELCOME ..... **2:10 P.M.**

Dr. John C. Hitt
President
Professor of Psychology

STUDENT PRESENTATIONS ..... **2-5 P.M.**

REMARKS AND PRESENTATION OF SCHOLARSHIPS ..... **4:15 P.M.**

Dr. Terry L. Hickey
Provost and Vice President for Academic Affairs
Professor of Psychology

During the Showcase, the *University of Central Florida Undergraduate Research Journal* will be on display at <http://ejournal.ucf.edu>. The *Journal*, established in 2005, facilitates faculty and undergraduate student interactions through research and a mentored publication process.

2006
UCF RESEARCH WEEK
THE BEST NEW MINDS IN ACTION

SHOWCASE JUDGES

The Office of Undergraduate Studies and the Showcase Coordinators are indebted to the following UCF faculty for devoting a substantial amount of their time serving as Showcase Judges.

Manoj Chopra
Tace T. Crouse
Ida J. Cook
Michael D. Hampton
Roger B. Handberg
Kevin Haran
Jana L. Jasinski
Bernard J. Jensen
Jeffrey S. Kaplan
Robert F. Kenny
Frank B. Kujawa
Connie L. Lester
Leslie Sue Lieberman
Alison Morrison-Shetlar
Julia J. Pet-Armacost
Elizabeth Rash
J. Blake Scott
David M. Segal
Alvin Y. Wang
Antonis S. Zervos

SHOWCASE BENEFACTORS

Through the generosity of the following organizations and individuals, substantial scholarships will be awarded to students adjudged to have the best projects presented at the Showcase. The Office of Undergraduate Studies is grateful to these benefactors for their encouragement and support of undergraduate research at UCF.

Randolph E. Berridge and the Florida High Tech Corridor Council, Inc.
Richard H. Harrison II
Bernadette M.E. Jungblut
Leslie Sue Lieberman and the UCF Women's Research Center
Douglas F. Long and The Pinnacle Companies
Michael Murray and the UCF Federal Credit Union
John H. Rogers and Rogers, Lovelock and Fritz, Inc.
Sandra Saft and Window Interiors, Inc.
John F. Schell
Sigma Xi
Tupperware Brands Corporation
UCF Office of Undergraduate Studies
UCF Student Government Association
James Wright, Jana L. Jasinski, and the UCF Institute for Social and Behavioral Sciences

SHOWCASE COORDINATORS

Bernadette M.E. Jungblut
Richard H. Harrison II

FACULTY MENTORS

The faculty is a university's paramount asset, and the Office of Undergraduate Studies salutes the following UCF faculty mentors who have advised, counseled, tutored, encouraged, and—perhaps—cajoled the students presenting at today's Showcase.

Eileen M. Abel
Jeffrey S. Bedwell
Kevin D. Belfield
Steven L. Berman
Melody Bowdon
Cristina E. Bradatan
Alexander Brice
Ryan Burkhart
John F. Butler
Anna Campbell
Po-Ju Chen
Lee Chow
Louis Chow
Steven Collins
Annabelle Conroy
Niels da Vitorio Lobo
Andrew Daire
Tracy L. Dietz
Eduardo Divo
Spencer Downing
Tosha L. Dupras
Ronald D. Eaglin
Costas Efthimiou
Terri Susan Fine
Stephen M. Fiore
Barbara Fritzsche
Shaun Gallagher
Denise Gammonley
David Gay
Avelino J. Gonzalez
Anthony Grajeda
Cheryl E. Green
Scott C. Hagen
Chan Ham
Charles E. Hughes
David G. Jenkins
Bernadette M.E. Jungblut
Jayanta S. Kapat
Naim Kapucu
James A. Katt
Richard Kenney
Jennifer Kent-Walsh
Joo Kim
Mary P. Kosarzycki
Ranganathan Kumar
Shawn A. Lawrence
Ralph A. Llewellyn
Martha S. Lue
Weili Luo
John P. Manning
Artem Masunov
Pamela R. McCauley-Bell
Kevin Meehan
Cecilia Y. Rodríguez Milanés
Kevin J. Miller
Eugene Montague
Michele M. Montgomery
J. Michael Moshell
Karen Mottarella
Jennifer Mundale
Elizabeth Mustaine
Jeanette A. Nadeau
Dawn M. Oetjen
Christopher L. Parkinson
Sumanta Pattanaik
Marianna Y. Pensky
Eric L. Petersen
Otto Phanstiel
Carla Poindexter
Fritz G. Polite
Albert V. Pryor
Mark D. Rapport
M. Shawn Reichert
Kimberly Renk
Beatriz Roldán Cuenya
Michael Rothenberg
Houman A. Sadri
Hari P. Saha
Patrick K. Schelling
Alfons Schulte
Sudipta Seal
David M. Segal
Thomas Selby
William T. Self
Z. John Shen
Valerie K. Sims
Stephen A. Sivo
Eileen Smith
Kiminobu Sugaya
Stacey Tantleff-Dunn
Dawn Trouard
Raj Vaidyanathan
Mary P. Van Hook
Laurence H. von Kalm
Linda J. Walters
Lori C. Walters
Shannon N. Whitten
Cynthia Y. Young
Kurt B. Young

ARTS AND HUMANITIES

John R. Anderson
Different Bodies, Different Selves: Physical Disability and Its Effect on Personal Identity

Mentor(s): *Shaun Gallagher, Jennifer Mundale, Stacey Tantleff-Dunn*
Mentor(s) Department(s): *Philosophy, Psychology*

Project Objective: *During the course of my research, I have examined myriad ways in which the presence of physical disability affects four main facets (physical, psychological, social, and performative/agentive) of the self-identity that one possesses.*

Meagan C. Arrastia
The State of Service-Learning and Civic Engagement in Florida

Mentor(s)*: Melody Bowdon*
Mentor(s) Department(s): *English*

Project Objective: *The researcher developed two surveys after several focus groups with volunteers. One survey focuses on the benefits of volunteering and the other focuses on alternative spring break. The researcher also performed several interviews with student volunteers from across the state and developed a booklet to promote civic engagement across Florida.*

Daniel D. Beck
The Rhetoric of the "War on Terror"

Mentor(s): *Anthony Grajeda*
Mentor(s) Department(s): *English*

Project Objective: *Through several prominent examples, the discourse brought about by the "war on terror" and the war in Iraq will be examined and analyzed to better understand changes in the English language in the current war-time environment.*

Traci M. Burchard
Communicating the Modern Nouveau

Mentor(s): *Joo Kim*
Mentor(s) Department(s): *Art*

Project Objective: *The general focus of this project – how can I communicate ideas of the art nouveau movement in the design of a modern textile – was resolved through research in art history traditions and current style trends in the retail industry. The compiled information ultimately determined the graphic design elements included in the final design.*

Indiana Y. de la Cruz
Making a Place for Latino/a Writers

Co-Author(s): *Stephanie Gonzales*

Mentor(s): *Cecilia Y. Rodríguez Milanés*
Mentor(s) Department(s): *English*

Project Objective: *The "Making a Place" site was created to provide information on contemporary Latino/a writers so that users will read their works and urge others to do so too. We strive to create an attractive, user-friendly site that exposes users to unfamiliar writers and enhances their experience with established writers.*

Shanett L. Dean
Francis Bok, Contemporary Abolitionist Movements, and the Re-Emergence of the Slave Narrative Genre

Mentor(s): *Kevin Meehan*
Mentor(s) Department(s): *English*

Project Objective: *Using Francis Bok's text,* Escape from Slavery: The True Story of My Ten Years in Captivity*, in addition to seminal works in the slave narrative genre, the researcher provides a rhetorical and materialist analysis of the modern slave narrative.*

Christine J. Dellert
News Media Construction of Life and Death: The Impact of Language in Coverage of the Terri Schiavo Case

Mentor(s): *Richard Kenney*
Mentor(s) Department(s): *Communication*

Project Objective: *This textual analysis of Florida newspapers explored the ethical impact of the value-laden terms journalists used to report on the Terri Schiavo case and provides reporters with guidelines for decision-making that should be applied to future end-of-life stories.*

Melissa Diaz
Art and Healing

Mentor(s): *Carla Poindexter*
Mentor(s) Department(s): *Art*

Project Objective: *Our objective is to implement a program through the UCF Art Department that incorporates art making and art activities as vehicles for healing in local hospitals, schools, and other environments.*

Gonzalo David Escalona
Art Nouveau Organic Ornamental Design

Mentor(s): *Joo Kim*
Mentor(s) Department(s): *Art*

Project Objective: *The main objective of this project is to emphasize and show the highly decorative power of art nouveau. Its decorative distinction mostly based on organic curvilinear lines generates visual movements which are very attractive, elegant, and energetic.*

Catherine L. Gargiulo
Rhythmic Oppression, Conflict, and Confrontation: Rhythmic Manipulation and Structure in Early String Quartets of Béla Bartók

Mentor(s): *Eugene Montague*
Mentor(s) Department(s): *Music*

Project Objective: *This project's goals: 1) to investigate and discover the significance of rhythmic patterns, structures and conflicts in String Quartet No. 1 and String Quartet No. 2, by Béla Bartók; 2) to describe the correlation between harmonic and rhythmic events; and 3) to present these findings using strategies derived from modern writings and theories on rhythm.*

Jennifer N. Goodin
Materialism Substitutes Emotions for Ann Beattie's Characters

Mentor(s): *Dawn Trouard*
Mentor(s) Department(s): *English*

Project Objective: *The purpose of this project is to show the connection of material objects and emotions in short stories "Distant Music" and "A Vintage Thunderbird" by Ann Beattie. Her characters often lack stated emotions and feelings, are externally focused, and their emotional relationships are represented by an attachment to an object.*

John J. Gorman
Evolutionary Change versus Scientific Progress: Gould versus Popper

Mentor(s): *Jennifer Mundale*
Mentor(s) Department(s): *Philosophy*

Project Objective: *To be summarized in poster form is my creation of a Platonic dialogue between Stephen Jay Gould and Karl Popper on the following questions: is there anything like progress in Darwin's theory of evolution via natural selection, and how does the answer to this question impact a philosophy of psychology?*

Amber L. Hand
Flying Horse Editions: Combining Traditional Hand Printing Techniques and Modern Technology

Mentor(s): *Ryan Burkhart*
Mentor(s) Department(s): *Art*

Project Objective: *Flying Horse Editions (FHE) publishes limited edition prints and books with leading international artists and authors, seeking to combine the traditional hand printing process with modern technology. During the 2005-2006 academic year, FHE has worked with artists such as Al Souza, Steven Sorman, Karen Kunc, and David Shapiro.*

Edwin B.P. Hayes
Does Human Moral Ontogeny Recapitulate Cultural Anthropological Phylogeny?

Mentor(s): *Jennifer Mundale*
Mentor(s) Department(s): *Philosophy*

Project Objective: *The stages of moral development conceived by developmental psychologist Lawrence Kohlberg will be examined alongside the development of Western social civilization in an attempt to find an alignment between the order of an individual's moral stages and the social patterns and beliefs of an evolving human race.*

Laurence R. Honderick
Extending Wilson's Thought to Contemporary Issues Surrounding Homosexuality

Mentor(s): *Jennifer Mundale*
Mentor(s) Department(s): *Philosophy*

Project Objective: *I will examine the contemporary issue of intolerance of homosexuality in America. Using the works of Edward O. Wilson as a socio-biological guide to why homosexuality exists and why it is deemed unacceptable by so many, I will call into question the logical validity of the negative attitudes surrounding it.*

Alice F. Kramer
Shadows of Canaveral: A New Dawn

Co-Authors: *Christian Franqui, Michael A Carney, Lillian Vincent, Max Ferrer*

Mentor(s): *Lori C. Walters, Eileen Smith*
Mentor(s) Department(s): *Institute for Simulation & Training and History, Digital Media and Institute for Simulation & Training*

Project Objective: *This project will recreate a rich virtual learning experience of launch complex 14 in Cape Canaveral accessible through the Internet. The goal is to preserve both cultural and historical data using available resources.*

Jennifer L. Murdock
An Evaluation of the Accuracy of PowerPoint Prescriptions

Mentor(s): *John F. Butler, James A. Katt, Albert V. Pryor, Steven Collins*
Mentor(s) Department(s): *Communication*

Project Objective: *Many prescriptions for the design of PowerPoint presentations were found to be based on opinion rather than research. This study tested the validity of two common prescriptions (the number of lines per slide and the manner in which bullet-points are displayed) and may affect PowerPoint design for classroom instruction.*

John L. Nohlgren
The Unwritten Rules of Public Transportation: What Are the Implications of an Increasingly Anti-Social Society?

Mentor(s): *Jennifer Mundale*
Mentor(s) Department(s): *Philosophy*

Project Objective: *What role does socialization play in the cognitive development of a human being? This is the heart of the nature versus nurture debate. Researching behavioral and cognitive psychologists such as B.F. Skinner and Matt Ridley, I will address the ramifications of increasingly anti-social societies.*

Cally D. Orr
The History of Educational Technology: 1900-1940

Mentor(s): *Spencer Downing*
Mentor(s) Department(s): *History*

Project Objective: *This project is part of a larger endeavor to study the history of educational technology in the United States. Technology holds more influence than ever, and by studying the history of technology in the schools, it possible to predict the impact of educational technology in the future.*

Regina N. Rosecrans
Mind-Body Conundrum

Mentor(s): *Jennifer Mundale*
Mentor(s) Department(s): *Philosophy*

Project Objective: *The project outlines the debate of how the mind affects bodily functions. There have been some cases of people with positive attitudes overcoming cancer at a better rate than those without such attitudes. This project looks at what some well known philosophers and psychologists such as Freud and Skinner would say on the topic.*

Emily J. Scott
Avant-Garde Across a Century: Erik Satie and Sonic Youth

Mentor(s): *Eugene Montague*
Mentor(s) Department(s): *Music*

Project Objective: *This project will investigate the important connection between both visual and performance art and the compositions of two musical artists separated by the span of a century: Erik Satie beginning in fin de siècle Paris and Sonic Youth beginning in late twentieth century New York.*

Hoa T. Van
The Necessity of Both Environmental and Innate Factors on Human Development

Co-Author(s): *Haily Le*

Mentor(s): *Jennifer Mundale*
Mentor(s) Department(s): *Philosophy*

Project Objective: *Our research is focused on how the combination of nature and nurture influences human development. Although psychologists in the past have fought over which component was more important, our goal is to convey the fact that nature is equivalent to nurture on the level of necessity.*

Brian C. Becker
Ontology-Based Search Engine for a Real-World Decision Support System

Co-Author(s): *Christina M. Vargas*

Mentor(s): *Avelino J. Gonzalez*
Mentor(s) Department(s): *Electrical and Computer Engineering*

Project Objective: *As part of a pre-existing research project to acquire, preserve, and re-use knowledge, this project researched the effects of adding a domain-specific ontology to a search engine within a Decision Support System (DSS) with the hypothesis that such an approach will increase search result relevancy.*

Catherine N. Bewerse
Thermo-Mechanical Cycling in Shape Memory Alloys Investigated using Differential Scanning Calorimetry and Transmission Electron Microscopy

Mentor(s): *Raj Vaidyanathan*
Mentor(s) Department(s): *Advanced Materials Processing and Analysis Center and Mechanical, Materials, and Aerospace Engineering*

Project Objective: *The objective of this work was to examine the effect of different heat treatments on the thermo-mechanical response of shape memory alloys using Differential Scanning Calorimetry and Transmission Electron Microscopy. Shape memory springs were shape set at different temperatures and then subjected to thermal cycling under load for subsequent investigation.*

Wilquins Charleston
Florida Integrated Network for Data Exchange and Retrieval (F.I.N.D.E.R.)

Co-Author(s): *Kunal Motwani, Jonathan S. Nichols*

Mentor(s): *Ronald D. Eaglin*
Mentor(s) Department(s): *Engineering Technology*

Project Objective: *Because the program is created at the University, technical support was provided to participating members when they had problems with the program. I was one of the three members that worked at the tech support level. I was responsible for resolving some questions that could be intercepted at the tech support level.*

Dahinys Diaz
The Impact of Extended Blackberry Use on the Musculoskeletal System of the Forearm and Hand

Mentor(s): *Pamela R. McCauley-Bell*
Mentor(s) Department(s): *Industrial Engineering and Management Systems*

Project Objective: *The objective of this research is to perform an ergonomic analysis of the physical requirements for the use of handheld computers with the intent to qualify suspected cumulative trauma risk factors.*

Tiffany S. English
The Development of a Quantifiable Fuzzy Model for Secure Password Authentication Procedures

Mentor(s): *Pamela R. McCauley-Bell*
Mentor(s) Department(s):
Industrial Engineering and Management Systems

Project Objective: *To develop a quantifiable fuzzy model for the authentication of passwords, to make passwords more secure.*

Michael J. Hellmann
Characterization of a New Shock-Tube Facility for Combustion Chemistry Measurements at Elevated Temperatures

Mentor(s): *Eric L. Petersen*
Mentor(s) Department(s): *Mechanical, Materials, and Aerospace Engineering*

Project Objective: *A characterization of the shock-tube facility allows for controlled and repeatable test conditions for study of chemical kinetic reaction rates, ignition delay times of fuel/oxidizer mixtures, and soot formation of prime interest to the fields of power generation and aerospace propulsion applications which occur within the high-temperature combustion zone.*

James R. Hughes
Passive Liquid/Vapor Separation Using an Inertia Driven Rotating Drum

Co-Author(s): *Matthew Murrian*

Mentor(s): *Louis Chow*
Mentor(s) Department(s): *Mechanical, Materials, and Aerospace Engineering*

Project Objective: *To adopt the highly effective spray-cooling technology to remove high heat fluxes in aerospace systems, a gravity-independent phase separator is needed. This project developed a liquid-vapor phase separator to operate in variable gravitational directions and magnitudes without using external power. The concept was demonstrated to be highly successful.*

Daniel P. Hunnel
"Exploring the Bubble" – Producing Carbon Nanotubes with an Underwater Carbon Arc Discharge

Mentor(s): *Sudipta Seal*
Mentor(s) Department(s): *Advanced Materials Processing and Analysis Center*

Project Objective: *Prototype next-generation "carbon-arc-discharge in water-bath" reactor vessel for production of Carbon Nanotubes (CNTs): improve control of process parameters, provide access to "exploration within the plasma bubble," and manipulate variables to enhance the qualitative and quantitative yield of desirable reaction products. Finally, document optimized reactor vessel for bulk production of CNTs.*

Mansoor Illahi
An Internet-Based Comparison of Gaged and Modeled Astronomic Tides

Mentor(s): *Scott C. Hagen*
Mentor(s) Department(s): *Civil and Environmental Engineering*

Project Objective: *This research effort involves the development of a web page to display astronomic tidal results through a comparison of model output to historical records at 151 gaging locations. The gages are located in the Western Atlantic Ocean and along the East Coast of the United States, in the Gulf of Mexico, and the Caribbean Sea.*

Stephanie M. Kersten
Study on Film Cooling Effectiveness Near Airfoil Stagnation Region

Mentor(s): *Jayanta S. Kapat*
Mentor(s) Department(s): *Mechanical, Materials, and Aerospace Engineering*

Project Objective: *This study of the effects near the stagnation region of an airfoil on film cooling effectiveness in the absence and presence of wake utilizes an obstacle upstream simulating wake and an airfoil downstream simulating a stagnation region to understand these influences on film cooling for gas turbine engines.*

Edward J. La Fave
MMORPG for Educational Purposes

Mentor(s): *J. Michael Moshell*
Mentor(s) Department(s): *Computer Science and Digital Media*

Project Objective: *My research focuses on the creation of video games. Initially I created a single level video game with an elementary game engine titled* Alice. *Since then my efforts have shifted towards finding an engine to developing a multiplayer online game for the use of public school(s) in the Orlando area.*

Alexander R. LePage
High-Pressure Testing of Advanced HTPB/AP/Al-Based Composite Solid Propellants

Mentor(s): *Eric L. Petersen*
Mentor(s) Department(s): *Mechanical, Materials, and Aerospace Engineering*

Project Objective: *Investigation of the burn rate of HTPB/AP/Al-based composite solid propellants using a high-pressure strand burner with optical instrumentation for emission spectroscopy.*

Drew D. Liles
Electrical Design and Analysis of a Novel Wirebondless, Dual Leadframe Power Module

Mentor(s): *Z. John Shen*
Mentor(s) Department(s):
Electrical and Computer Engineering

Project Objective: *Designing the electrical layout for the leadframes of a Novel Hybrid Power Module, as well as modeling the design and measuring the prototype for parasitic impedance (especially interconnect inductance) to benefit future design and research in high temperature electronics, specifically with the Novel Hybrid Power Module.*

Denitsa M. Milanova
Effect of Surface Hydration of Suspended Silica Nanoparticles and Ag Decorated Carbon Nanotubes on Heat Transfer

Mentor(s): *Ranganathan Kumar*
Mentor(s) Department(s): *Mechanical, Materials, and Aerospace Engineering*

Project Objective: *Low concentrations of nano-oxide suspensions have very high thermal conductivities due to large surface area to volume ratio, good suspension characteristics, surface hydration and interfacial chemistry. In this work, we report these effects on amorphous silica and silver decorated Single-Walled Carbon Nanotubes (SWNTs) suspensions, in enhancing thermal properties.*

Eric A. Mohlenhoff
A Distributed Architecture for Evolving Artificial Neural Networks

Mentor(s): *Charles E. Hughes*
Mentor(s) Department(s): *Computer Science*

Project Objective: *Recent research by Dr. Ken Stanley has resulted in a system called NEAT (NeuroEvolution of Augmenting Topologies) for evolving the structure as well as weights of artificial neural systems. This project proposes to develop a distributed architecture (DNEAT) that improves NEAT's performance on the evolution of large systems.*

Linda K. Nguyen
Nanocrystalline Cerium Oxide: Synthesis and Characterization

Co-Author(s): *Saritha Samudrala, Satyanarayana Kuchibhatla*

Mentor(s): *Sudipta Seal*
Mentor(s) Department(s): *Mechanical, Materials, and Aerospace Engineering*

Project Objective: *Ceria nanocrystalline powders have been synthesized using a room temperature wet chemical synthesis. These nanoparticles were precipitated in solution and dried under appropriate conditions. The growth, agglomeration, and corresponding changes in various features have been studied as a function of aging in solution.*

Andrés F. Osorio
Analysis and Optimization of Anchor Sails in a Boat Using Computational Fluid Dynamics (CFD)

Mentor(s): *Eduardo Divo*
Mentor(s) Department(s): *Engineering Technology*

Project Objective: *This project is using Computational Fluid Dynamics (CFD) to examine the performance of an existing anchor sail that aligns a boat in the wind direction and to explore how the changes in the geometric configuration of the sail affect its performance, with the ultimate purpose of developing an improved, better performing sail.*

Andreiev S. Powell
Research on High Burn Rate Solid Rocket Propellant Using Nanoparticle Additives

Mentor(s): *Eric L. Petersen*
Mentor(s) Department(s): *Mechanical, Materials, and Aerospace Engineering*

Project Objective: *This particular research currently underway at UCF involves the testing of 6 propellant factors via a Level 8 Taguchi technique testing regime. Theses experiments are meant to assess the performance of varied smokeless propellant compositions under the controlled conditions within a high-pressure strand burner.*

Jan Prokaj
Scale Space Based Grammar for Hand Detection

Mentor(s): *Niels da Vitoria Lobo*
Mentor(s) Department(s): *Computer Science*

Project Objective: *In this project we developed a new algorithm to detect an open hand. The algorithm uses a scale space edge detection to find features. A grammar using these features as tokens identifies possible hand patterns. These patterns are found using a graph based approach. The detection rate is over 70%.*

Shatra C.S. Reehal
Chemical Kinetics Mechanism for Highly Diluted Hydrogen and Oxygen Reactions

Mentor(s): *Eric L. Petersen*
Mentor(s) Department(s): *Mechanical, Materials, and Aerospace Engineering*

Project Objective: *The purpose of this project is to determine whether the difference between the ignition times predicted by a computer model for high dilution hydrogen and oxygen reactions and those actually seen in experiments can be attributed to inaccuracies in the actual mechanisms used to create the model.*

Eric A. Risser
Interval Mapping

Mentor(s): *Sumanta Pattanaik*
Mentor(s) Department(s): *Computer Science*

Project Objective: *Efficient ray line-segment interval refining intersection test used for per-pixel displacement mapping.*

Brandon M. Rotavera
Experimental Study of Coaxial Rocket Injectors Using Reflected-Shock Heating

Mentor(s): *Eric L. Petersen*
Mentor(s) Department(s): *Mechanical, Materials, and Aerospace Engineering*

Project Objective: *A coaxial rocket injector is designed for use in conjunction with a shock tube to replicate phenomena characteristic to that of a rocket engine. Primary objectives include: flame stabilization, characteristic ignition times, and visualization of the mixing and burning at rocket temperatures.*

Kyle W. Schroeder
Inductrack MAGLEV Test Bed

Co-Author(s): *Younggon Kim*

Mentor(s): *Chan Ham*
Mentor(s) Department(s): *Mechanical, Materials, and Aerospace Engineering*

Project Objective: *A reconfigurable MAGLEV test bed that provides six degrees of freedom motion was designed and constructed to study the dynamics of an Inductrack magnetic train or launch assist system.*

Stefanie L. Simmons
Higher-Order Hydrocarbon Fuel Blend Ignition Times

Mentor(s): *Eric L. Petersen*
Mentor(s) Department(s): *Mechanical, Materials, and Aerospace Engineering*

Project Objective: *Blends composed of methane and higher order hydrocarbons are of interest due to their ability to be used as fuel sources. The ignition data and analysis concerning these fuels under engine-like conditions gives valuable information for potential applications, such as alternative engine fuels.*

Matthew A. Stephens
Production and Analysis of Smokeless Composite Propellants

Mentor(s): *Eric L. Petersen*
Mentor(s) Department(s): *Mechanical, Materials, and Aerospace Engineering*

Project Objective: *Composite propellants that contain minute or no metals are classified as smokeless propellants. This research effort explored the lab scale production of such propellants and analyzed their burn rates and physical properties. The composite propellant used had a Methyl Diisocyanate-cured HTPB binder and Ammonium Perchlorate as the oxidizer.*

Maya S. Alphonse
The Widespread Effects of Brazilian Pepper on its Environment

Mentor(s): *Linda J. Walters*
Mentor(s) Department(s): *Biology*

Project Objective: Schnius terebinthifolius*, Brazilian pepper, is an exotic, invasive species that is replacing native species in Florida. This study examined whether Brazilian pepper affects an aquatic invertebrate organism by determining toxicity to multiple parts of the Brazilian pepper tree.*

Billie Jo P. Beats
The Function of MUS-Like Receptor Kinases in the *Arabidopsis thaliana*

Co-Author(s): *Johnny Nguyen*

Mentor(s): *Jeanette A. Nadeau*
Mentor(s) Department(s): *Biology*

Project Objective: *The objective of this research is to characterize the functional role of genetic redundancy of receptor-like kinases.*

Brandon R. Bergan
If Only We Could Change: A Study of the Ethical Standing of UCF Students on Genetic Engineering

Mentor(s): *Dawn M. Oetjen*
Mentor(s) Department(s): *Health Professions*

Project Objective: *The opinions of UCF students on manipulation of themselves, their children, and on genetic engineering in general will be examined to determine overall student stance on genetic engineering at UCF.*

Natalia Blanco
The Proliferative Effect of Cerium Oxide Nanoparticle Treatment in Human Keratinocytes

Mentor(s): *William T. Self*
Mentor(s) Department(s): *Molecular Biology and Microbiology*

Project Objective: *The primary goal of this project is to determine how Cerium Oxide (CeO_2) nanoparticles affect the metabolic activity and proliferation rate of human keratinocyte epithelial cells. The mechanism that results from this interaction is essential to the overall assessment of ceria nanoparticles as free-radical scavengers and their acclaimed antioxidant properties.*

Katherine R. Brown
Herbivory in the Indian River Lagoon: A Study of Potential Biocontrol for Invasive Seaweeds in the Genus *Caulerpa*

Mentor(s): *Linda J. Walters*
Mentor(s) Department(s): *Biology*

Project Objective: *This study quantifies herbivory of the native* Caulerpa *in the Indian River Lagoon system in an effort to predict how the native specialist sacoglossans* (Elysia subornata *and* Oxynoe antillarium)*, the two most promising biocontrol organisms, and other possible herbivores could combat an invasion of the invasive* Caulerpa *in Florida.*

Philip J. Burke
Adult Stem Cells and Nanotechnology Combined in Bone Replacement

Mentor(s): *Kiminobu Sugaya*
Mentor(s) Department(s): *Biomolecular Science Center*

Project Objective: *The use of adult stem cells and a certain nano-material are being investigated as potential therapies to provide patients who have sustained a bone injury with a technology which will decrease the time needed to heal the injury while conserving the bone structure/function relationship.*

Christopher S. Davis
Identification of Protein Interactions with a Novel Domain of the LRR Receptor-Like Protein 'Too Many Mouths'

Mentor(s): *Jeanette A. Nadeau*
Mentor(s) Department(s): *Biology*

Project Objective: *I will use a yeast two-hybrid screen to identify proteins that interact with my NNL domain of the 'Too Many Mouths' gene. This gene controls stomatal orientation and spacing, which I have researched to better understand. I will also attempt to gain an insight to how my domain functions.*

Jennafer A. Evans
Phylogenetic Relationships Among Venomous Pitvipers of the South American Genus *Bothrops*

Mentor(s): *Christopher L. Parkinson*
Mentor(s) Department(s): *Biology*

Project Objective: *The subfamily* Crotalinae *consists of a diverse group of venomous pitviper species, many of which are known to inflict bites fatal to humans. This study uses DNA sequence data to rectify relationships among these taxa. An understanding of these relationships will impact medical aspects of venomous snakebite.*

Julie A. Gaskins
English Speech Perception and Lexical Retrieval Among Older Adults

Mentor(s): *Alexander Brice*
Mentor(s) Department(s)*: Communicative Disorders*

Project Objective: *The purpose of this project is to investigate the nature of speech perception, speech production, and lexical retrieval (i.e., how speech is processed and produced and how words are retrieved) in monolingual elderly adults. Participants will consist of 6-10 normal English-speaking adults between 50 and 69 years of age.*

Nancy K. Gillis
Effectiveness of Ferrate (FeO_4^{2}) as a Ballast Water Disinfectant

Co-Author(s): *Michele Yeargain, Linda J. Walters, Debra Reinhart*

Mentor(s): *Linda J. Walters*
Mentor(s) Department(s)*: Biology*

Project Objective*: Discharged ballast water from transoceanic ships is a major cause of invasive species introductions. We tested the ability of ferrate (FeO_4^{2}) to kill a wide diversity of common ballast water species. A range of dosages, salinities, and exposure times were tested to find the minimal treatment for 100% mortality.*

Daniel A. Hernandez
ISLANDS Version 2.0

Mentor(s): *David G. Jenkins*
Mentor(s) Department(s): *Biology*

Project Objective: *The intention of* ISLANDS *version 2.0 is to update the existing* ISLANDS *version 1.0 Java program to allow greater user control and incorporate more sophisticated algorithms. The* ISLANDS *program is a research and educational tool to understand metapopulation dynamics.*

Virnalisa Jimenez
Spanish Speech Perception, Speech Production, and Lexical Retrieval Among Older Adults

Mentor(s): *Alexander Brice*
Mentor(s) Department(s): *Communicative Disorders*

Project Objective: *The purpose of this project is to investigate the nature of speech perception, speech production, and lexical retrieval (i.e., how speech is processed and produced and how words are retrieved) in monolingual older adults. Participants will consist of 6-10 normal Spanish-speaking adults between 50 and 70 years of age.*

Erin C. Keller
Withholding Information About an STD Infection as an Ethical Factor Contributing to the Spread of STDs

Mentor(s): *Dawn M. Oetjen*
Mentor(s) Department(s): *Health Professions*

Project Objective: *The purpose of my study was to analyze the degree to which withholding information about an STD infection contributes to the spread of STDs. I surveyed a wide range of men and women on their ethical perspective towards telling a partner about an STD prior to intercourse. I then compared the results of my study with the current statistics on STD infection rates.*

Kristen M. Kesser
Molecular Analysis of Mutations in Broad, a Global Regulator of *Drosophila* Metamorphosis

Mentor(s): *Laurence H. von Kalm*
Mentor(s) Department(s): *Biology*

Project Objective: *Mutations at the broad locus have been widely used in developmental studies for more than 30 years, yet in most cases the molecular lesions associated with these mutations are unknown, limiting the conclusions that can be drawn from their phenotypes. To address this problem we are systematically sequencing a number of commonly used broad alleles.*

Hope A. Mcleod
Children's Performance and Reactions within a Simulated Pet Shop Intervention: A Pilot Investigation Targeting Comprehension of Preposition Concepts

Co-Author(s): *Christopher Stapleton, Eileen Smith*

Mentor(s): *Jennifer Kent-Walsh*
Mentor(s) Department(s): *Communicative Disorders*

Project Objective: *Case studies with typically developing children were completed to evaluate an intervention program involving a simulated pet shop visit targeting children's comprehension of preposition concepts. This pilot study was completed to inform future investigations with children who have severe communication disabilities who use augmentative and alternative communication (AAC) technologies.*

Amaneh S. Moulavi
The Rights of Pharmacists versus the Rights of Patients: The Dispensing of Birth Control Pills

Mentor(s): *Dawn M. Oetjen*
Mentor(s) Department(s): *Health Professions*

Project Objective: *The rights of pharmacists to refuse to dispense legally prescribed emergency contraception, like the "morning-after" pill, and other forms of birth control, due to their religious or ethical values will be examined in order to gain a better understanding of what role a pharmacist's personal beliefs play in the pharmacy.*

Brian C. Schanen
Role of Selenium in Arsenic-Induced Cancer

Mentor(s): *William T. Self*
Mentor(s) Department(s): *Molecular Biology and Microbiology*

Project Objective: *Arsenic, the most extensively studied metalloid in drinking water, is a public health issue worldwide due to water contamination. Arsenic exposure has been linked to cancers of the skin, lung, liver, and renal organs. The molecular mechanism of arsenic induced carcinogenesis is still unknown. Recent in vitro cell culture model studies indicate treatment with arsenite, a trivalent inorganic form, results in significant oxidative stress. Arsenite is known to interact with selenium compounds upon co-treatment of animals with these toxic metalloids generating a mutual sparing effect. Current research in our lab indicates that arsenite blocks the use of selenium in its radioactive form as selenite. This study uses promoter gene fusions to determine the ability of mammalian cells in culture to incorporate selenocysteine. The overall results indicate that arsenite does not block the incorporation of selenium during translation of the UGA codon, suggesting that there is an arsenite-resistant pathway not represented by radioisotope-labeled selenite. Elucidation of this arsenite-resistant pathway will lead to the development of selenium nutritional supplements that may provide protection against the carcinogenic nature of arsenicals.*

Chaya A. Stark
Augmentative and Alternative Communication Service Delivery: Pilot Survey of Speech-Language Pathologists

Mentor(s): *Jennifer Kent-Walsh*
Mentor(s) Department(s): *Communicative Disorders*

Project Objective: *Augmentative and alternative communication (AAC) is an area of clinical practice in speech-language pathology involving clients with disabilities who cannot use speech to communicate. A survey methodology was employed in this pilot investigation to examine the AAC experiences and training needs of speech-language pathologists working in a local school district.*

Ashley N. Startzman
The Correlation Between an Individual's Ethical Position Regarding Embryonic Stem Cell Research and the Hypothetical Situations of the Same Individual Who Would Directly Benefit from Embryonic Stem Cell Research

Mentor(s): *Dawn M. Oetjen*
Mentor(s) Department(s): *Health Professions*

Project Objective: *The aim of this project is to determine if an individual's ethical position regarding embryonic stem cell research changes if the individual, or a person loved by the individual, is directly affected by a disease that would benefit from embryonic stem cell research.*

Justin Howard Trotter
Reelin Function in Stem Cell Biology

Co-Author(s): *Emmanuel Vrotsos*

Mentor(s): *Kiminobu Sugaya*
Mentor(s) Department(s): Biomolecular Science Center

Project Objective: *To define reelin function in neural stem cell biology.*

Chung Tsen
A Model System to Study the Delivery of Anti-Cancer Compounds Targeting the Polyamine Transporter

Mentor(s): *Otto Phanstiel, Laurence H. von Kalm*
Mentor(s) Department(s): *Chemistry, Biology*

Project Objective: *To develop a novel organ-based assay to screen for anti-cancer compounds that utilize the polyamine transporter for cellular entry.*

Tammy Useman
Patient Compliance and Recovery Outcomes in Rehabilitation Therapy

Mentor(s): *David M. Segal*
Mentor(s) Department(s): *Health Professions*

Project Objective: *This study investigated the relationship between patient compliance and recovery outcomes in rehabilitation therapy. The results suggest that a decrease in psychological barriers along with an increase in motivation show positive compliance rates and positive outcome measures. These findings should prove useful for rehabilitation therapists in determining appropriate therapy regimens.*

PHYSICAL SCIENCES AND MATHEMATICS

Pontus Ahlqvist
Force Distribution on Surface of Accelerated Box

Mentor(s): *Costas Efthimiou*
Mentor(s) Department(s): *Physics*

Project Objective: *In introductory physics, one often deals with contact forces. Although presented in a very simplistic manner, it serves the purpose of the course very well. However, in all reality material is being overlooked. We will demonstrate how taking into account the distributions of forces rather than treating them as point forces will give a more complete understanding of the relatively standard problems in introductory physics. As an example we will take a box being accelerated by a car at a high enough rate for the box to stick in front of the car.*

Jonathan P. Arnold
Diffusion of Implanted Ti and Cr in Polysilicon Films

Mentor(s): *Lee Chow*
Mentor(s) Department(s): *Physics*

Project Objective: *The main objective of the research was to analyze data for Cr and Ti impurities diffused into polysilicon. The reason for this research is due to the fact there is very little research done in polysilicon, although in recent years there has been a new interest for its applications to solar-cells.*

Naomi C. Brownstein
Transformation of Variables in Statistics

Mentor(s): *Marianna Y. Pensky*
Mentor(s) Department(s): *Mathematics*

Project Objective: *The objective of this research is to simplify construction of statistical procedures using the method of statistical transformations. Using this technique and inferences for well known distributions, we derived in just a few lines results for more complex distributions. These calculations normally take up numerous pages in statistical journals.*

Adam C. Cankaya
Hubble Tuning Fork in Near-Infrared Light

Mentor(s): *Michele M. Montgomery*
Mentor(s) Department(s): *Physics*

Project Objective: *To create a Hubble Tuning Fork diagram in the near-infrared band for galaxies with $z < 0.3$ and subsequently compare and contrast it with the standard visible band diagram.*

Mohamed H. Elzooghby
Hubble Tuning Fork for Ultraviolet Wavelength Band

Mentor(s): *Michele M. Montgomery*
Mentor(s) Department(s): *Physics*

Project Objective: *This project constructed a Hubble Tuning Fork in the ultraviolet wavelength band and compared it to the visible wavelength band. The research was concerned with points of similarities and differences and the conclusions that could be drawn from it.*

Matthew T. Falanga
Hartree-Fock Calculations of Transitions in the Argon Sequence

Mentor(s): *Hari P. Saha*
Mentor(s) Department(s): *Physics*

Project Objective: *In view of recent controversy concerning space shuttle Discovery and its thermally exerting flight through the upper atmosphere, the electric dipole transition probabilities of the ground and excited configurations in the locally abundant argon will be investigated as an attempt to lend correlative data to NASA scientists.*

Jonathan David Fraine
Magnetic Body Force Sustained Temperature Gradient

Mentor(s): *Weili Luo*
Mentor(s) Department(s): *Physics*

Project Objective: *A theoretical model was proposed to introduce a non-uniform driving force to control the heat transfer in fluid with appreciable magnetic susceptibility, which has diverse applications in heat transfer, crystal growth, and heat devices. Our experimental results show qualitative agreements with the model.*

Sohang C. Gandhi
Topological Generalization of the Heisenberg Uncertainty Relations

Mentor(s): *Costas Efthimiou*
Mentor(s) Department(s): *Physics*

Project Objective: *We will present optimal uncertainty relations for particles moving in compact, homogenous topologies.*

Katelyn J. Grayshan
Laser Propagation through Terrestrial and Marine Atmospheres

Mentor(s): *Cynthia Y. Young*
Mentor(s) Department(s): *Mathematics*

Project Objective: *To predict the behavior of a laser in the atmosphere, a minimization program was adapted to solve two sets of nonlinear equations. The first set was used to derive three atmospheric parameters of laser propagation over land and the second to develop an atmospheric spectrum to model propagation over water.*

Jenna J. Hall
Hubble Tuning Fork in the Radio Wavelength Band

Mentor(s): *Michele M. Montgomery*
Mentor(s) Department(s): *Physics*

Project Objective: *A Hubble Tuning Fork in the radio wavelength band is presented.*

Michelle L. Josey
Synthesis and Characterization of a Versatile Intermediate for the Preparation of Two-Photon Absorbing Fluorescent Probes

Mentor(s): *Kevin D. Belfield*
Mentor(s) Department(s): *Chemistry*

Project Objective: *Perform organic synthesis reactions to elucidate methodology for functionalizing the 7 position of fluorene derivatives. This chemistry could then be utilized to create fluorene derivatives with extended conjugation to produce higher two-photon absorption cross sections for optical imaging and/or biological applications.*

Christopher Lorscher
Cosmological Constant and Galactic Evolution

Mentor(s): *Ralph A. Llewellyn*
Mentor(s) Department(s): *Physics*

Project Objective: *In my research, I seek to find a correlation between the energetics of the different types of galaxies, and the energy density of the universe at the redshift that these galaxies happened to be the most abundant. Galactic evolution will then fall as a consequence of stability/equilibrium statements. Therefore, the expansion of the universe, which is intimately related to the energy density of the universe, has complete control over galactic evolution and their energetic stability.*

Barbara C. Mascareno-Shaw
Computational Simulation of Natural Mutants of Zinc-Finger DNA Proteins

Mentor(s): *Thomas Selby*
Mentor(s) Department(s): *Chemistry*

Project Objective: *My research entails the collaboration between Dr. Selby and Dr. von Kalm to use computational analysis to construct hypothetical models of Z1-Z4 proteins from known crystal structures and residue sequences. We will study the conformational structures for Z1-Z4 based on molecular mechanics to observe differences between wild type and mutants.*

Jason A. Moore
Hubble Tuning Fork in the X-Ray Band

Mentor(s): *Michele M. Montgomery*
Mentor(s) Department(s): *Physics*

Project Objective: *We researched images from x-ray telescopes to replicate a Hubble Tuning Fork for the x-ray band. We compared the results to the Hubble Tuning Fork in the visible band.*

Simon Mostafa
Decomposition of Methanol on Size Selected Iridium Nanoparticles

Co-Author(s): *Jason Croy*

Mentor(s): *Beatriz Roldán Cuenya*
Mentor(s) Department(s): *Physics*

Project Objective: *A high-pressure reactor has been designed and built to study catalytic activity and selectivity of size-selected Ir nanoparticles for the decomposition of methanol. We seek to optimize the conditions for this reaction in order to maximize hydrogen production while minimizing energy input.*

Enrique G. Ortiz
Fundamental Reaction Processes for Co Oxidation at Gold Nanoparticles Studied Using Density Functional Theory

Co-Author(s): *Santosh Kumar*

Mentor(s): *Patrick K. Schelling*
Mentor(s) Department(s): *Physics*

Project Objective: *Gold nanoparticles have been experimentally shown to be good catalysts for the oxidation of carbon monoxide (Co). However, the exact mechanisms at work are not entirely understood. Using density-functional theory (DFT) calculations, we have studied some possible fundamental reaction steps for Co oxidation at a gold nanoparticle Au_6. We have made preliminary determination about the rate-limiting step for the reaction.*

Jennifer L. Scott
Amyloid Fibrils and Their Correlation with Parkinson's Disease

Mentor(s): *Artem Masunov*
Mentor(s) Department(s): *Physics*

Project Objective: *Protein misfolding (formation of Amyloid fibrils) are closely correlated with Parkinson's, Alzheimer's, and other neurodegenerative diseases. This poster presents recent advances in Amyloid structure determination, obtained by X-ray diffraction and solid state NMR methods. Understanding Amyloid fibril structure will help in the design of small molecules which inhibit the fibril formation and help in the prevention and cure of neurodegenerative diseases.*

Yogesh A. Sharma
Calculation of Atomic Properties for Atoms from Helium to Radon using the Hartree-Fock Method

Mentor(s): *Hari P. Saha*
Mentor(s) Department(s): *Physics*

Project Objective: *We used the Hartree-Fock equations to calculate atomic properties (such as energy levels E_{n}, wave functions P_{n}(r) and radial density functions \rho(r)) for many atoms in the periodic table lying between Helium and Radon.*

Kenneth H. Swanger
Atmospheric Parameters: Experimental vs. Theory

Mentor(s): *Cynthia Y. Young*
Mentor(s) Department(s): *Mathematics*

Project Objective: *The purpose of the project is to optimize aperture sizes across a 16.2 km range depending upon the optical turbulence present at Chesapeake Bay. In addition the inner scale, outer scale, and the index of refraction structure parameter will be determined by the downhill simplex method.*

Robert A. VanGorder
Hubble Tuning Fork in the Mid- and Far-Infrared Bands of the Electromagnetic Spectrum

Mentor(s): *Michele M. Montgomery*
Mentor(s) Department(s): *Physics*

Project Objective: *Hubble Tuning Fork (HTF) diagrams for galaxies were developed to show similarities and differences between galaxy types in the mid- and far-infrared regimes of the electromagnetic spectrum. These are compared to the traditional HTF diagram composed of galaxies observed in the visible band.*

Daniel L. Yates
Imaging and Spectroscopy of Nanoparticles

Mentor(s): *Alfons Schulte*
Mentor(s) Department(s): *Physics*

Project Objective: *Cathodoluminescence, fluorescence, and Raman spectroscopy are employed to image and characterize nanoparticles. Resolution and detection limits of the various techniques are investigated.*

SOCIAL SCIENCES I

Jonathan D. Adams
The Globalization of the National Basketball Association

Mentor(s): *Fritz G. Polite*
Mentor(s) Department(s): *DeVos Sport Business Management*

Project Objective: *The National Basketball Association has experienced a strong influx of players from outside the United States, particularly players from Europe. I am assisting Dr. Polite in compiling a SWOT analysis of the impact of these new players on NBA teams, as well as the impact it has had globally.*

Susan K. Bodner
Gender-Biased Language and Its Influence on the Perceptions of Intra-Gender Violent Crimes

Mentor(s): *Anna Campbell*
Mentor(s) Department(s): *Sociology*

Project Objective: *The purpose of this project is to explain how language is an element of patriarchal culture and how patriarchal culture negatively influences individuals' perceptions of intra-gender crimes. Specifically, I examine the use of gender-biased language and how that usage influences perceptions of intra-gender crimes among University of Central Florida students.*

Elizabeth A. Burwell
Post-Abortion Syndrome

Mentor(s): *Dawn M. Oetjen*
Mentor(s) Department(s): *Health Professions*

Project Objective: *The main focus of this research is to discover if college age women are aware of the emotional, psychological, and sometimes physical effects of the intentional termination of a pregnancy.*

Luis A. Caraballo
Caricom: The Need for Regional Integration

Mentor(s): *Houman A. Sadri*
Mentor(s) Department(s): *Political Science*

Project Objective: *I researched the Caribbean Community and Common Market (Caricom), a regional integration project undertaken by several Caribbean nations in the 1970s. The relationships that have been created through regional cooperation in the Caribbean have produced greater economic prowess for the region and over time will demonstrate the viability of further integration.*

Angela B. Carter
Relax Your Brain: Observing the Impact of Meditation CDs on College Students' Wellbeing and Performance

Mentor(s): *Shannon N. Whitten*
Mentor(s) Department(s): Psychology

Project Objective: *Students' stress levels and academic performance will be observed before and after a meditation intervention to determine whether meditation could be a useful tool for college students to decrease symptoms of stress and improve their academic performance.*

Darcy J. Cope
The Effects of Household Corrosive Chemicals on Human Bone and Teeth: A Murderer's Attempt to Mask the Identity of Their Victim

Mentor(s): *Tosha L. Dupras*
Mentor(s) Department(s): *Anthropology*

Project Objective: *Murderers often attempt to conceal the identity of their victims by using a corrosive substance. This research project examines the effects of various household corrosive products on human bone and teeth. It is hypothesized that possible identification of the chemical can be obtained through the unique effects each chemical displays.*

Amy N. Elias
Compassion Fatigue and Satisfaction in Child Welfare Workers: Implications for Practice and Organization

Co-Author(s): *Stephanie Helton, Seanna Williams, Suehaily Pena, Michelle Scott, Alexandra Gregory*

Mentor(s): *Michael Rothenberg, Mary P. Van Hook*
Mentor(s) Department(s): *Social Work*

Project Objective: *We are conducting a study with child welfare workers in terms of their compassion fatigue and satisfaction related to working with traumatized individuals, their ways of dealing with stress, and organizational suggestions to reduce staff turnover.*

Stephanie C. Ernst
Relationships Among Parenting Style, Parental Self-Efficacy, Parents' Perceptions of Children, and Preschoolers' Emotion Regulation

Mentor(s)*: Kimberly Renk, Valerie K. Sims, John P. Manning*
Mentor(s) Department(s): *Psychology and Child, Family, and Community Sciences*

Project Objective: *Parenting style, parental self-efficacy, parents' perceptions of children and emotion regulation in preschoolers will be examined so as to determine the relationships among these constructs. Results are hypothesized to help identify factors that are critical in the development of emotion regulation in children.*

D. Jeannine Escobar
An Analysis of the Front Covers of *Cosmopolitan* Magazine and Its Reflection of the Changing Roles of Women in Society

Mentor(s): *Tracy L. Dietz*
Mentor(s) Department(s): *Sociology*

Project Objective: *To discover the relationship between the front covers of* Cosmopolitan *magazine and how the roles of women in society have progressed.*

Renea A. Forde
The Path to Victory: Examining Factors That Have Positive Impact on the Career Path of African American Women in Higher Education Administration

Co-Author(s): *Ashley Green*

Mentor(s): *Cheryl E. Green*
Mentor(s) Department(s): *Social Work*

Project Objective: *This study examined personal and professional factors that appear to have a positive impact on the career paths of African American women in higher education administration.*

Julia M. Fullick
Does Teacher Support Directly Change One's Academic Resiliency and One's Ability to Sustain Competence Under Pressure?

Mentor(s): *Shannon N. Whitten, Karen Mottarella*
Mentor(s) Department(s): *Psychology*

Project Objective: *Positive reinforcement increases resiliency which leads to better performance. The independent variable was teacher support which can be positive and supportive or negative and unconstructive. The dependent variables were final exam score and the difference in resiliency score from baseline. Covariates were: Academic Self-Efficacy, Academic Locus of Control, and Academic Conscientiousness Scales.*

Christopher G. Gilhooley
The History of Planning for Catastrophes

Mentor(s): *Naim Kapucu*
Mentor(s) Department(s): *Public Administration*

Project Objective: *The focus of my research will be methods for planning for catastrophes. I intend to analyze different procedures taken by federal government agencies in response to catastrophic disasters such as Hurricane Katrina, and how the response could have been improved.*

Cynthia M. Gray
The Effects of Identity as a Potential Mediator of Parental and Romantic Attachments

Mentor(s): *Steven L. Berman*
Mentor(s) Department(s): *Psychology*

Project Objective: *This study aimed at integrating the attachment construct of Ainsworth with the psychosocial development theory of Erikson by testing the links between parent attachment, identity, and romantic attachment. We hypothesized that identity may be a mediating variable between young people's attachment to parents and their adult romantic attachment style.*

Eboni L. Gunn
At Risk Students and Early Educational Intervention Approaches

Mentor(s): *Eileen M. Abel*
Mentor(s) Department(s): *Socail Work*

Project Objective: *The objective of this research project is to identify, investigate, and assess "best practices" for working with middle-school students who are at risk for educational failure. Findings from this project will provide important information on practice effectiveness to social workers and others working with middle-school students.*

Joann R. Harvan-Chin
From Mom's Experience to My Experience: Identity as Breastfed Changes to Identity as Breast-Feeder

Co-Author(s): *Valerie K. Sims, Matthew Chin*

Mentor(s): *Valerie K. Sims*
Mentor(s) Department(s): *Psychology*

Project Objective: *The purpose of the present study is to examine the predictive value of having been breastfed on a mother's breastfeeding behavior. Successfully breastfeeding for at least six months demonstrates competence, in the absence of which the woman relies on her past experience (whether or not she was breastfed is key).*

Paul Heiken
Freud's New Brain Imaging Theory

Mentor(s): *Jennifer Mundale*
Mentor(s) Department(s): *Philosophy*

Project Objective: *The objective of my project is to help synthesize Freud's psychic theories with modern technology such as brain imaging technology, etc.*

Megan L. Howard
Understanding Autobiographical Memory of Children Through Self-Report

Mentor(s): *Stephen M. Fiore*
Mentor(s) Department(s): *Philosophy*

Project Objective: *This thesis explores autobiographical memory in children and the relational component between a child's and parent's memory to understand the personal events involved in memory and memory failures and to what extent children and adults realize what they have forgotten.*

Jason M. Hudson
Are Use-of-Force Policies Weighed Correctly?

Co-Author(s): *David Taylor*

Mentor(s): *Dawn M. Oetjen*
Mentor(s) Department(s): *Health Professions*

Project Objective: *The purpose is to study different use-of-force policies and matrices from military police and Central Florida law enforcement agencies along with public surveys to correctly judge whether the policies should be changed based on legal or moral standpoints.*

Sobiah Imam
The Moral Compass of College Students

Mentor(s): *Dawn M. Oetjen*
Mentor(s) Department(s): *Health Professions*

Project Objective: *Is there a correlation between different demographic features and moral orientation? This project will test this idea as it seeks to find the moral compass of college students of different demographic backgrounds.*

Sarah E. Jensen
How Does the Health of Individuals Shape Their Ethical Viewpoints? The Relationship Between Physical Health and Ethics

Mentor(s)*: Dawn M. Oetjen*
Mentor(s) Department(s): *Health Professions*

Project Objective: *The objective of this study was to determine whether or not there is a correlation between the health of an individual and that individual's ethical views. A survey was given to UCF students to determine their health levels and stances on ethical issues so the results could then be compared.*

Amanda D. Johnson
Psychosocial Characteristics of Elders with Severe Mental Illness Residing in Nursing Homes

Mentor(s): *Denise Gammonley*
Mentor(s) Department(s): *Social Work*

Project Objective: *A literature review was conducted on the subgroup of the elderly mentally ill in nursing homes. The main focus of the review was the residents' psychosocial well-being and overall status. Other important factors such as availability of mental health services, behavior problems, functional status, co-morbid health problems, and facility characteristics were included in getting the overall picture of this subgroup.*

Ethan M. Kennedy
Between the Lines: Depictions of Transgender Victims in News Print Media

Mentor(s): *Elizabeth Mustaine*
Mentor(s) Department(s): *Sociology*

Project Objective: *This study examines how transgender victims of crime are portrayed in news print media. Each article was analyzed as to the type of terminology used to talk about the victim, the names and pronouns used to identify the victim, and whether or not the article perpetuates myths about transgender individuals.*

Aida M. Latorre
The Global Migration Crisis: Its Effects on Terrorism

Mentor(s): *Houman A. Sadri*
Mentor(s) Department(s): *Political Science*

Project Objective: *As globalization continues spreading, the risk of an increase in transnational crime becomes a greater reality. The purpose of this research is to study the relationship between the global migration crisis and its affects on terrorism.*

Meredith M. Legg
The Rising Presence of Republican Women in U.S. Congress

Mentor(s): *Terri Susan Fine*
Mentor(s) Department(s): *Political Science*

Project Objective: *The growing Christian conservative movement within the Republican Party affects Republican congresswomen twofold: they must identify with their party's issue positions as well as women's issues. These two differing policy priorities create a unique issue agenda for Republican women in Congress and may additionally affect women's representation in Congress.*

Ericha J. Loch
Terrorism: Does the End Justify the Means?

Mentor(s): *Annabelle Conroy*
Mentor(s) Department(s): *Political Science*

Project Objective: *The research examines the nature, activities and evolution of terrorist organizations, including organizations motivated by ethnicity, nationalism, religion, economic/ financial issues, and social/political conflicts. The research also examines domestic and international responses by both governmental and intergovernmental organizations (e.g., the United Nations) to terrorist activities.*

Yannick J. Louis-Charles
The Experiences of Teachers Diagnosed with Attention Deficit Disorder (ADD)

Mentor(s): *Kevin J. Miller*
Mentor(s) Department(s): *Child, Family, and Community Sciences*

Project Objective: *This study examines the impact of ADD characteristics on the roles and responsibilities of teachers. Findings will help teacher education programs, administrators, educators, students, and parents better understand the experiences and implications of being a teacher with ADD.*

SOCIAL SCIENCES II

Jessica C. Matthews
Domestic Violence: Does Cohabitation Matter?

Mentor(s): *Andrew Daire*
Mentor(s) Department(s): *Child, Family, and Community Sciences*

Project Objective: *The purpose of our research was to examine the nature of domestic violence with respect to the victim's martial status in an effort to further research the different types of abuse that these women endure.*

Sarah L. Mendoza
Animal Abuse in the Clinical Setting

Mentor(s): *Valerie K. Sims*
Mentor(s) Department(s): *Psychology*

Project Objective: *This study examines the beliefs of mental health professionals concerning animal abuse. We created a survey, which inquires about the importance of specific variables in cases of animal abuse. Results indicate significant differences in opinions between students in mental health programs and working mental health professionals.*

Andrew W. Myers
Can Germany Ever Forget Its Past? A Look at Opinions on Germany's Foreign Aid to Israel

Mentor(s): *Dawn M. Oetjen*
Mentor(s) Department(s): *Health Professions*

Project Objective: *To determine public opinion of whether or not Germany should continue its reparation payments now, and if so, how far into the future. Determine if there are negative social stereotypes against Germans. Understand how the Holocaust is viewed in comparison to other genocides.*

Sara E. Neuenschwander
Who Are the Others? The Highly Educated Immigrants in the U.S.

Co-Author(s): *Cristina E. Bradatan*

Mentor(s): *Cristina E. Bradatan*
Mentor(s) Department(s): *Sociology*

Project Objective: *In this project I plan to answer questions such as: What are the demographic characteristics of the highly educated immigrants in the US? Where do they come from, and where do they eventually settle in the US? Which theory of immigration can best explain why the highly educated immigrants leave their country of origin?*

Jake M. Novak
Highly Qualified Teachers In Hard-to-Staff Schools

Mentor(s): *Martha S. Lue*
Mentor(s) Department(s): *Educational Studies*

Project Objective: *Student achievement has been positively correlated with teacher quality. The higher the level of preparation of the teacher (master's degree, National Board certification) and the length of time that a teacher has been in the profession are often linked to student achievement. Teachers make a difference, and their impact is even more significant in hard-to-staff schools, especially those teachers who are highly qualified.*

Melissa Nunally
Call to Conscience: Introducing Homosexuality-Friendly Curriculums

Co-Author(s): *Megan Crandall*

Mentor(s): *Dawn M. Oetjen*
Mentor(s) Department(s): *Health Professions*

Project Objective: *Educators encourage children to be kind and tolerant towards one another. They are taught to respect minorities and those that are different from themselves. If we are to raise our children to be unbiased and morally upstanding then we must infuse into the curriculum a general understanding of the difference in gender issues.*

Jennifer L. Obrosky
Public Misconception Created by the Media

Co-Author(s): *Lindsey Smith*

Mentor(s): *Dawn M. Oetjen*
Mentor(s) Department(s): *Health Professions*

Project Objective: *This research seeks to determine whether people who hear disturbing information through public media, presented as fact, seek to find further answers, or accept all statements as is. The results attempt to show that the media may be a source of widespread human confusion about many current controversial issues.*

Rebekah L. Perdue
Comparative Political Stability in Latin America: Case Studies in Costa Rica, Argentina, and Cuba

Mentor(s): *Houman A. Sadri*
Mentor(s) Department(s): *Political Science*

Project Objective: *This research design is an analysis that hopes to compare states across broader Latin America. The project hopes to discover factors contributing to increased political stability within a country, and it focuses on the areas of economic development, colonial history, political structure, and the role of leaders to do so.*

Cindy Poliah
Work Values

Mentor(s): *Po-Ju Chen*
Mentor(s) Department(s): *Hospitality Management*

Project Objective: *The objective of this study is to understand hospitality employees' work values. The findings of this study will contribute to employee selection and retention strategies in the hospitality industry.*

Preston C. Redman
School Shootings on the Rise: A Behaviorist Approach

Mentor(s): *Jennifer Mundale*
Mentor(s) Department(s): *Philosophy*

Project Objective: *How would B.F. Skinner explain the drastic increase in school-related shootings over the past two decades? What environmental factors have changed? Are children more genetically predisposed to violent behavior now than they were 50 years ago?*

Heather M. Rivers
Does Implied Diversity Inclusiveness Influence Organizational Attraction?

Mentor(s): *Barbara Fritzsche*
Mentor(s) Department(s): *Psychology*

Project Objective: *The growing number of minorities and women has greatly influenced diversity in the workplace. This study examines what attracts applicants to an organization catering to their different preferences in regard to what the organization offers: family friendly benefits, affirmative action statement, no statement or family friendly benefits, or both.*

Brian Rizo
Hyperactivity: A Core Deficit or Byproduct of Visuospatial Working Memory Deficiency

Mentor(s): *Mark D. Rapport*
Mentor(s) Department(s): *Psychology*

Project Objective: *Recent models of ADHD posit that increased motor activity may be secondary to cognitive demands placed on children's working memory, particularly the visuospatial subsystem hypothesized by Baddeley (2001). This study investigates whether motor activity is a by-product of working memory deficiency in children.*

Jeremy S. Roth
The Political Economy of WTO Trade Dispute Resolution

Mentor(s): *M. Shawn Reichert*
Mentor(s) Department(s): *Political Science*

Project Objective: *Employing Putnam's Two-Level Game framework, we analyzed the role of domestic interest groups in supernational dispute settlement. Observations unearthed WTO trade dispute settlement as a highly politicized process rather than an unbiased economic evaluation.*

Kimberlie I. Saint Louis
Haiti: A Nation Fallen from Grace and Into Despair

Mentor(s): *Bernadette M.E. Jungblut*
Mentor(s) Department(s): *Political Science*

Project Objective: *This research examines the potential causes of Haiti's extreme under-development since independence a little over two hundred years ago. The relationships among the nation-state's political and economic instabilities, civil strife, external intervention, and the effects of these phenomena on the Haitian people are examined.*

Sonide Simon
Black Femininity vs. Athleticism

Mentor(s): *David Gay*
Mentor(s) Department(s): *Sociology*

Project Objective: *This is a qualitative study of Patricia Collins' Black femininity and its role with African American sports women. This study examines whether a difference is found between hegemonic femininity and black femininity, and what role femininity plays with athleticism.*

Denise L. Stearns
UCF Students' Perception of Diversity

Mentor(s): *Shawn A. Lawrence*
Mentor(s) Department(s): *Social Work*

Project Objective: *Colleges have attempted to reduce homophobia and to support students with various sexual orientations. The purpose of this research is to understand how students from various UCF College of Health and Public Affairs disciplines view the concept of diversity. Students will respond to survey instruments to determine if they consider sexual orientation an aspect of diversity.*

Michael T. Strand
Interactions Between Visuo-Spatial Working Memory, Activity, and Ratings of ADHD

Mentor(s): *Valerie K. Sims, Mark D. Rapport, Stephen A. Sivo*
Mentor(s) Department(s): *Psychology and Educational Research, Technology, and Leadership*

Project Objective: *This research is based on a working memory (WM) model of ADHD which posits that WM is a core deficit of ADHD, and that increased activity serves a self-stimulating function. In this experiment, students with varying attentional abilities completed visuospatial WM tasks at variable difficulty levels while activity was measured.*

Scott R. Sutterby
Attentional Bias Across the Dimension of Social Anxiety

Mentor(s): *Jeffrey S. Bedwell*
Mentor(s) Department(s): *Psychology*

Project Objective: *To examine attentional bias for threat in relation to social anxiety. Past research focuses only on individuals ranked in the lowest and highest percentiles of any particular social anxiety measure, failing to consider those having median scores. The current study includes participants representing the full range of socially anxious individuals.*

Frances M. Torres
The Relationship Between Familiarity with the Hispanic Culture and Attitudes Toward Spanish Speakers

Co-Author(s): *Kenny Tello, Prince Philips*

Mentor(s): *Mary P. Kosarzycki*
Mentor(s) Department(s): *Psychology*

Project Objective: *This exploratory study focuses on how cultural familiarity can determine a positive or negative attitude towards the Hispanic culture. Discrimination continues to affect an ever-growing Hispanic population. Negative attitudes can be reduced if native English speakers would exhibit more interest in becoming more familiar with the Hispanic culture.*

Norma R. Toussaint
Vodou, Gender, and Sustainability: Critical Factors in Haitian Development

Mentor(s): *Kevin Meehan, Kurt B. Young*
Mentor(s) Department(s): *English, Political Science*

Project Objective: *Within the context of international relations theory, culture is rarely considered an additional variable that affects a nation-state. Analyzing the correlation between political leadership, development, and Vodou will illuminate previous successes and failures and help clarify the challenges faced by Haitian people in the struggle to achieve sustainable development.*

Traci L. Wain
Is It Really the Thought That Counts?

Co-Author(s): *Samantha Ferrel*

Mentor(s): *Dawn M. Oetjen*
Mentor(s) Department(s): Health Professions

Project Objective: *The object of our research is to see whether or not people act according to their morals.*

Cathleen E. Webster
Personality Traits Related to Vengeance Propensity

Co-Author(s): *Jeffrey S. Bedwell*

Mentor(s): *Jeffrey S. Bedwell*
Mentor(s) Department(s): *Psychology*

Project Objective: *This study attempted to investigate the relationship of scales from the Personality Assessment Inventory to the Vengeance Scale. Regression modeling was used to explore the interaction of select personality features. It was hypothesized that depression, anxiety, antisocial features, nonsupport, and aggression would display a positive relationship with the Vengeance Scale scores.*

Rachel E. Wiley
Psychological Correlates of the Quality of Life in Children and Adolescents with Cerebral Palsy

Mentor(s): *Kimberly Renk*
Mentor(s) Department(s): *Psychology*

Project Objective: *Children and adolescents with cerebral palsy have to cope with psychological, social, and physical consequences related to their condition. Given this range of consequences, identifying potential predictors of quality of life could contribute greatly to identifying treatments that may improve the functioning of these children and adolescents.*

Pamela M. Youmans-Hernandez
The Doctrine of Odious Debt as a Solution for Post-Apartheid South Africa

Mentor(s): *Kurt B. Young*
Mentor(s) Department(s): *Political Science*

Project Objective: *My research focuses on using this doctrine as a possible means to cancel the apartheid debt passed down to the South African nation. It explores the history of the doctrine and its benefits to South Africa.*

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 Studies as to policies and programs that pertain to undergraduate research at UCF.

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