

# SHOWCASE OF UNDERGRADUATE RESEARCH EXCELLENCE

Celebrating undergraduate research and creativity across the curriculum

Friday, April 9, 2004  
1 - 4 p.m.  
Education Complex Gymnasium

## Order of Events

ACKNOWLEDGEMENTS.....1 p.m.

Dr. John F. Schell  
*Dean of Undergraduate Studies*  
*Professor of English*

WELCOME.....1:10 p.m.

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

STUDENT POSTER PRESENTATIONS.....1-4 p.m.

REMARKS AND PRESENTATION OF SGA SCHOLARSHIPS.....3 p.m.

Dr. M.J. Soileau  
*Vice President for Research*  
*Professor of Physics and of Optics*

Through the generosity of the UCF Student Government Association (SGA), three scholarships will be awarded to the best projects presented at the Showcase: \$2,500 for First Place, \$1,500 for Second Place, and \$1,000 for Third Place. The Office of Undergraduate Studies and the Showcase Planning Subcommittee are grateful to the SGA for its support and encouragement of undergraduate research at UCF. The Office of Undergraduate Studies has underwritten several Honorable Mention awards that will be presented to worthy projects.



**UNIVERSITY OF CENTRAL FLORIDA**  
UNDERGRADUATE STUDIES

## Faculty Sponsors

*A strong teaching and research faculty is a university's paramount asset. The Office of Undergraduate Studies and the Showcase Planning Subcommittee salute the following UCF faculty sponsors who have mentored, advised, encouraged, and – perhaps – cajoled the students who are presenting today.*

Wilma Anton  
Carol M. Bast  
Issa E. Batarseh  
Kathleen Bell  
Clint Bowers  
John E. Brandenburg  
Alejandro Brice  
Daniel Britt  
James C. Brown  
Andres Campiglia  
Mason Cash  
Matthew Chin  
Hyoung Jin Cho  
S. Roy Choudhury  
Lee Chow  
Kristin G. Congdon  
Andrew Daire  
Henry Daniell  
Tracy L. Dietz  
Tosha L. Dupras  
Julie D. Eberwein  
Julie A. Elston  
Barry G. Fookes  
Barbara Fritzsche  
Denise Gammonley  
Avelino J. Gonzalez  
Maria de Jesus Gonzalez  
Cheryl E. Green  
Glenda A. Gunter  
Chan Ham  
Lorrie L. Hoffman  
Steven Hornik  
Susan S. Hubbard  
Larry R. Hudson  
Jana H. Jasinski  
Bobby Jeanpierre  
Roger W. Johnson  
Alain J. Kassab  
Jennifer Kent-Walsh  
Stephen M. Kuebler  
Lisa Logan  
Cecilia Rodriguez Milanés

D. Howard Miles  
Michael A. Mullens  
Charles Negy  
Christopher Niess  
Chad Nye  
Dawn M. Oetjen  
Christopher L. Parkinson  
Robert E. Peale  
Eric Petersen  
Janice Z. Peterson  
Otto Phanstiel  
Fritz G. Polite  
Kenneth Reynolds  
Kathleen Richardson  
Kenyatta O. Rivers  
Craig Saper  
Alfons Schulte  
Jamie Schwartz  
Sudipta Seal  
Thomas Selby  
William T. Self  
Mubarak A. Shah  
Valerie Sims  
Frances B. Smith  
Janan A. Smither  
Yong-Ho Sohn  
Kristina Tollefson  
Dawn Trouard  
Barbara F. Turnage  
Randall S. Upchurch  
Mary P. Van Hook  
Martine Vanryckeghem  
Alvin Y. Wang  
Martin P. Wanielista  
Jane M. Waterman  
Roseann S. White  
Timothy Wieck  
Thomas Andrew Winningham  
Earl Wright II  
Cynthia Young  
Antonis Zervos  
Elayne Zorr

# College of Arts and Sciences

**Jeremy R. Bassetti**

***Florida's Roots and Rhizomes: Art Online***

*Faculty Sponsor:* Kristin G. Congdon

*Sponsor's Department:* Film and Digital Media

*Co-Authors:* Jeff Beekman, Kristin Congdon, Devin Dominguez, Chantale Fontaine, Alex Katsaros, Melissa LeClair, Kevin Rose, Craig Saper, Lynn Thomlinson, Natalie Underberg

*Project Objective:* This project uses digital media technology in new and meaningful ways. Our goal in the creation process is to convey the story each folk artist would tell if they had the technological background to create the site themselves. The question we are constantly asking is "How would the artist do this?"

**Syreeta P. Brown**

***Social Attitudes and Race-Based Affirmative Action***

*Faculty Sponsor:* Alvin Y. Wang

*Sponsor's Department:* Psychology

*Project Objective:* Race-based affirmative action will be examined in relationship with social attitudes such as political ideology and social dominance orientation.

**Clare E. Bush**

***Undergraduate Math Education: Bridging the Gap Between High School and College***

*Faculty Sponsor:* Cynthia Young

*Sponsor's Department:* Mathematics

*Project Objective:* We are researching the different teaching/learning styles and seeing what can be used in the area of mathematics.

**Horacio A. Carlas**

***Differential Uptake of Fluorescent Polyamine Conjugates in A375 Melanoma Cells***

*Faculty Sponsor:* Otto Phanstiel

*Sponsor's Department:* Chemistry

*Co-Author:* Otto Phanstiel

*Project Objective:* The objective of the project was to better understand which polyamine sequences were optimal for entering cancer cells via the polyamine transporter. The goal was to develop a polyamine-drug conjugate approach to enhance delivery of chemotherapeutics. A success in this area would dramatically reduce the side-effects associated with modern chemotherapy.

**Nathan A. Carlie**

***New Germanium-Based Sulfide Glasses for Telecommunications Applications***

*Faculty Sponsor:* Kathleen Richardson

*Sponsor's Department:* Chemistry

*Co-Authors:* L. Petit, K. Richardson, T. Cardinal, M. Couzi, F. Guillen, P. Vinatier, B. Campbell, G. Orveillon

*Project Objective:* Novel compositions of germanium based sulfide and oxysulfide glasses have been developed for optical applications as waveguides. These compositions will result in materials with high non-linear optical properties and high luminescence at 1.5  $\mu\text{m}$ .

**William J. Carrier**

***Ultraviolet Induced Infrared-Absorption Lines in U:CaF<sub>2</sub>***

*Faculty Sponsor:* Robert E. Peale

*Sponsor's Department:* Physics

*Co-Authors:* S.H. Withers-Kirby, G. Braunstein, R.E. Peale, M. Birnbaum

*Project Objective:* Understanding the energy spectrum of U<sup>2+</sup>, U<sup>3+</sup>, and U<sup>4+</sup> ions in crystals is important both for optical technology and environmental remediation efforts. This work provides precise information on energy levels and charge-state conversions in the model host crystal CaF<sub>2</sub>.

**Melissa R. Castora**

***The Assessment of University Students' Knowledge, Attitudes, and Behaviors about Sex***

*Faculty Sponsor:* Jana H. Jasinski

*Sponsor's Department:* Sociology

*Co-Author:* Ben Whidden

*Project Objective:* The purpose of this project is to evaluate college students' knowledge about sexual topics, their attitudes toward condom use, and comparing these with the assessments of students' sexual behaviors.

**Genie D. Chartier**

***Discrimination Against Asian Americans: Possible Negative Outcomes Associated with the Model Minority Stereotype***

*Faculty Sponsor:* Barbara Fritzsche

*Sponsor's Department:* Psychology

*Project Objective:* The Model Minority Stereotype associated with Asian Americans is considered a positive stereotype. Assessing these attitudes and how they affect employee ratings will allow us to dispel the myth that positive stereotypes do not hinder the growth of Asians in the workforce.

**Mallyn L. Chen**

***Gender Stereotyping and Membership Bias in Greek Organizations***

*Faculty Sponsor:* Janan A. Smither

*Sponsor's Department:* Psychology

*Co-Authors:* Genie Chartier, Patrick Williams, Jason Metzger

*Project Objective:* The purpose of this study was to determine whether or not Greek organizations discriminate against individuals based on sexual orientation. It was predicted that fraternity and sorority members would deny membership to those they perceive as gay or lesbian based on physical appearance.

**Lauren J. DeBellis**

***Cultural Byways on the Information Highway***

*Faculty Sponsor:* Kristin G. Congdon

*Sponsor's Department:* Film and Digital Media

*Project Objective:* Cultural Byways is a multimedia project created by UCF students and faculty to display historical, folklife, and health video segments that are shown on ADA (Americans with Disabilities Act) video equipment on the downtown Orlando LYNX buses. These segments showcase Orlando's built environment and rich cultural story.

**Devin Dominguez**

***Florida's Roots and Rhizomes: Art Online***

*Faculty Sponsor:* Kristin G. Congdon

*Sponsor's Department:* Film and Digital Media

*Co-Authors:* Jeremy R. Bassetti, Jeff Beekman, Kristin Congdon, Chantale Fontaine, Alex Katsaros, Melissa LeClair, Kevin Rose, Craig Saper, Lynn Thomlinson, Natalie Underberg

*Project Objective:* This project uses digital media technology in new and meaningful ways. Our goal in the creation process is to convey the story each folk artist would tell if they had the technological background to create the site themselves. The question we are constantly asking is "How would the artist do this?"

**Melissa S. Duchene**  
***Perceived Control in Youth Sports and Its Future Effects***

*Faculty Sponsor:* Valerie Sims  
*Sponsor's Department:* Psychology

*Project Objective:* To examine how parents' and coaches' perceptions of control affect a child's level of commitment and motivation to participate in youth sports. This level of control is used as a predictor to estimate a child's willingness to remain active not only in their adolescent years, but well into adulthood.

**Lisa M. Durrance**  
***Proficiency as a Predictor of Lexical Representation in English Speakers Learning German***

*Faculty Sponsor:* Valerie Sims  
*Sponsor's Department:* Psychology

*Project Objective:* Beginner, intermediate, and advanced English speakers learning German completed a bilingual lexical decision task in which they had to determine if two words were both in English or German. Analyses indicated that while lexical representations are similar between the groups, the organization and functionality of their second language lexicons differ.

**Rhea M. Emery-Morris**  
***Updating History: Elizabethan Queen Barbie® and the Normalization of a "Great Era"***

*Faculty Sponsor:* Lisa Logan  
*Sponsor's Department:* English/Women's Studies

*Project Objective:* I researched the Elizabethan Queen Barbie and its claim to "represent" Queen Elizabeth I. In addition, I researched Elizabeth Tudor's sanctioned self-representations in order to highlight the inconsistencies between the doll and the historical figure. I examined Mattel's doll, rhetoric, and Elizabeth Tudor's portraits and attempts to regulate her image(s).

**Keith O. Evans**  
***Determination of Dibenzo[a,h]pyrene in Cigarette Smoke Via Laser Induced Time-Resolved Shpol'skil Spectrometry***

*Faculty Sponsor:* Andres Campiglia  
*Sponsor's Department:* Chemistry  
*Co-Authors:* Shenjiang Yu, Andres Campiglia

*Project Objective:* To develop an analytical methodology capable to provide unambiguous determination of Dibenzo[a,h]pyrene in complex samples, such as cigarette smoke.

**Loma L. Evans-Stinson**  
***Diversity Curricula Mandates in Higher Education: A Student Impact Assessment***

*Faculty Sponsor:* Matthew Chin  
*Sponsor's Department:* Psychology

*Project Objective:* University of Central Florida undergraduate students were surveyed to assess their levels of agreement with diversity education as a graduation requirement, and the degree to which this mandate's goals are being met through current diversity curricula.

**Yanina L. Fidel**

***Do Family-Friendly Marketing Materials Increase Organizational Attractiveness?***

*Faculty Sponsor:* Barbara Fritzsche

*Sponsor's Department:* Psychology

*Co-Authors:* Kara Cerabino, Dr. Barbara Fritzsche, Heather Seiser

*Project Objective:* Research suggests that the number of women entering the workforce is on the rise. Moreover, women react more favorably to organizations that appear to be diverse (Perkins, Thomas, & Taylor, 2000; Thomas & Wise, 1999). Very little research is available on recruitment advertisements and their relationship to perceptions of organizational attractiveness and on how to recruit women into an organization. For this reason, this study seeks to examine the relationship between marketing materials that differ with regards to "family friendliness" and perceptions of organizational attractiveness, as well as the relationships between work-family conflict, perceptions of affirmative action, and organizational attractiveness.

**Paul C. Fisk-Humbert**

***Intercultural Bilingual Education and Traditional Arts: The Place of Indigenous Knowledge and Cultural Heritage in Bolivia***

*Faculty Sponsor:* Elayne Zorn

*Sponsor's Department:* Sociology and Anthropology

*Project Objective:* Collaborative research was conducted on cultural heritage and indigenous knowledge in Bolivia. We examined two components of heritage and knowledge – language and textiles – by analyzing published research on Bolivia's unique intercultural bilingual education (IBE) program, and by analyzing and photographing handwoven textiles from the Sakaka ethnic group.

**Chantale Fontaine**

***Florida's Roots and Rhizomes: Art Online***

*Faculty Sponsor:* Kristin G. Congdon

*Sponsor's Department:* Film and Digital Media

*Co-Authors:* Jeremy R. Bassetti, Jeff Beekman, Kristin Congdon, Devin Dominguez, Alex Katsaros, Melissa LeClair, Kevin Rose, Craig Saper, Lynn Thomlinson, Natalie Underberg

*Project Objective:* This project uses digital media technology in new and meaningful ways. Our goal in the creation process is to convey the story each folk artist would tell if they had the technological background to create the site themselves. The question we are constantly asking is "How would the artist do this?"

**Erin E. Garrett**

***Mariana Yampolsky: Portraits of Women***

*Faculty Sponsor:* Maria de Jesus Gonzalez

*Sponsor's Department:* Art

*Co-Author:* Maria de Jesus Gonzalez

*Project Objective:* The self-proclaimed Mexican, Mariana Yampolsky, has become an important figure in the art world. Her photographs of Mazahua women are sensitive and monumental in form. The research for this project will examine her contribution to photography as it applies to the expression of the social conditions of these indigenous Mexicans.

**Emily L. Gollnick**

***Leprosy in the Dakhleh Oasis (Egypt) during Roman Rule***

*Faculty Sponsor:* Tosha Dupras

*Sponsor's Department:* Sociology and Anthropology

*Project Objective:* Ancient dentin of four lepomatous individuals from the Dakhleh Oasis, Egypt (ca. 150 A.D.), was analyzed for carbon and nitrogen isotope markers. These markers are used as identifiers of geographic origin, and the results indicate that three of the four individuals studied originated from outside the Oasis.

**Renee R. Gosnell**  
***Interrogation Techniques***

*Faculty Sponsor:* Dawn Trouard  
*Sponsor's Department:* English

*Project Objective:* To develop an original interview for use with contemporary writer Ann Beattie (*Chilly Scenes of Winter, The Doctor's House*, and many other novels and short story collections), the infamous but reluctant "spokesperson for her generation."

**Sandy M. Griffith**  
***A Cross-Ethnic Study of the Attitudes Towards Domestic Violence within the American and Trinidad and Tobago Cultures***

*Faculty Sponsor:* Valerie Sims  
*Sponsor's Department:* Psychology

*Project Objective:* The different attitudes towards domestic violence between America and Trinidad and Tobago will be studied. I plan to design surveys for college students here on campus, as well as college students at the University of West Indies in Trinidad in order to investigate the differences in attitudes towards the subject.

**Jennifer S. Harrison**  
***Commitment and Acceptance of Relationship Violence***

*Faculty Sponsor:* Jana H. Jasinski  
*Sponsor's Department:* Sociology

*Project Objective:* The relationship between commitment and attitudes toward violence in romantic relationships, specifically dating relationships, was examined to shed light on this relatively untouched area of domestic violence that is particularly applicable to college students here at the University of Central Florida.

**Robin M. Horn**  
***The Voice of Lockheed Martin***

*Faculty Sponsor:* Kathleen Bell  
*Sponsor's Department:* English

*Project Objective:* My research involves an in-depth study of the corporate voice of Lockheed Martin Corporation. I have gained permission to analyze a variety of non-proprietary documents using a stylistic rubric based on Thomas Gibson's "Style Machine." The analysis will result in a statistical picture of Lockheed Martin's written voice.

**Julie O. Iromuanya**  
***Head Above Water***

*Faculty Sponsor:* Susan S. Hubbard  
*Sponsor's Department:* English

*Project Objective:* *Head Above Water* explores the essence of what it means to be a woman. Retracing the lives of three young women from different generations of an Igbo family, *Head Above Water* focuses on the liberating and restricting roles that cultural identity plays in personal growth.

**James J. Janesko**  
***Novel Derivatives of Tetraphenylnaphthalene***

*Faculty Sponsor:* D. Howard Miles  
*Sponsor's Department:* Chemistry

*Project Objective:* The objective of this work is to synthesize novel derivatives of tetraphenylnaphthalene using standard aromatic electrophilic substitution reactions. The structures of the derivatives will be elucidated using chromatography and spectroscopy techniques. The novel compounds will then be evaluated for anticancer activity.

**Charles S. Knause**  
***Sports Performance Rituals: Help or Hindrance?***

*Faculty Sponsor:* Julie D. Eberwein  
*Sponsor's Department:* Psychology

*Project Objective:* The purpose of this project, titled "Sports Performance Rituals: Help or Hindrance?" is to try to understand from a psychological perspective what mental, psychological, and emotional forces are at work with the individual who produces this phenomenon.

**Kyle A. Lacertosa**  
***I Know Things Now: A Discovery of Self-Awareness Presented through Selected Characters of the American Musical Theatre***

*Faculty Sponsor:* James C. Brown  
*Sponsor's Department:* Theatre  
*Co-Authors:* Jim Brown, James Mosser

*Project Objective:* I have created a cabaret that combines songs from the American Musical Theatre and a personal monologue that I have written. I completed in-depth research of three musical theatre characters that aided in the study of my personal experiences. I have combined research and the arts to create a show.

**Jennifer L. Lalble**  
***Body Size Estimation in Polar Bears***

*Faculty Sponsor:* Jane M. Waterman  
*Sponsor's Department:* Biology  
*Co-Authors:* J.M. Waterman, J.D. Roth, A. Eckhardt

*Project Objective:* The accuracy of non-invasive measurement techniques is tested using two different camera lenses and application of these techniques in evaluating body size of large animals will be determined using polar bears as a model.

**Erin L. Langsdorf**  
***Periglacial Processes in the Southern Hemisphere of Mars***

*Faculty Sponsor:* Daniel Britt  
*Sponsor's Department:* Physics  
*Co-Author:* D.T. Britt

*Project Objective:* The objective of this research is to track the location of water on Mars. A classic example of the interaction of water-ice and soil in cold climates is the production of patterned ground. Our work maps the occurrence of patterned ground, and thus water, in the southern polar region of Mars.

**Sheryl L. Lanzel**  
***Identifiable Muslim Females: Reasons for Veiling and Reconsiderations after September 11, 2001***

*Faculty Sponsor:* Jana H. Jasinski



*Sponsor's Department:* Sociology

*Project Objective:* This study investigates discrimination or hostility towards veiled Muslim females on the University of Central Florida campus after September 11, 2001 (9-11) and chronicles their experiences. Next, this study seeks to discover if 9-11 influenced veiling practices. Finally, this study offers an understanding of specific motivations for the practice of veiling.

**Chrissie M. Lavender**  
**Back Story**

*Faculty Sponsor:* Craig Saper  
*Sponsor's Department:* English

*Project Objective:* Various narrative forms, such as: hypertext novels, graphic novels and video games were researched in hopes of determining how they will affect the way characters are created and written in the future, therefore, unveiling the different ways which films can be presented.

**Melissa E. Lopez**  
**Research of Latino/a Authors for 'Of Color Anthology'**

*Faculty Sponsor:* Cecilia Rodriguez Milanés  
*Sponsor's Department:* English  
*Co-Author:* Constance McIntosh

*Project Objective:* Research of Latino/a authors from various genres will be examined so as to develop a table of contents for the *Of Color Anthology*.

**Dan N. Maronde**  
**Study of the Diffusion Behavior of Lithium in Gallium Nitride**

*Faculty Sponsor:* Lee Chow  
*Sponsor's Department:* Physics  
*Co-Authors:* Fatma Salman, Lee Chow

*Project Objective:* Gallium Nitride (GaN) is an important material in the semiconductor industry. The diffusion of Lithium in GaN is critical during device fabrication. This diffusion behavior has been studied under various conditions to develop an understanding of the process.

**Constance A. McIntosh**  
**Of Color: Latino/a Literature – Critical Documents**

*Faculty Sponsor:* Cecilia Rodriguez Milanés  
*Sponsor's Department:* English  
*Co-Author:* Melissa Lopez

*Project Objective:* I am assisting Dr. Rodriguez Milanés in her current project, an anthology of Latino/a literature tentatively titled *Of Color: Latino American Literature*. My responsibilities in this project are: compiling the "Critical Documents" index to appear at the end of the anthology and formulating the author biographies to accompany each text.

**James E. McKnight III**  
**Symbolic Interaction**

*Faculty Sponsor:* Earl Wright II  
*Sponsor's Department:* Sociology  
*Co-Author:* Earl Wright II

*Project Objective:* Symbolic Interaction is how individuals interpret social messages and respond to day-to-day interactions. Symbolic Interaction focuses on communication in society. The effects of symbolic interaction in society will be researched.

**Jorge L. Montesino**

***The Effects on Attitude Caused by Affirmative Action***

*Faculty Sponsor:* Tracy L. Dietz  
*Sponsor's Department:* Sociology and Anthropology

*Project Objective:* Using the 1972-2000 General Social Survey responses given to a question regarding policies designed to aid minorities, specifically African-Americans, will be examined for any changes in attitude. The data gathered will be used to examine the changes in attitude over time as well as any differences existing on the basis of gender.

**Jennifer Ann Persell**

***Defending the Personhood of Artificial Intelligence***

*Faculty Sponsor:* Mason Cash  
*Sponsor's Department:* Philosophy

*Project Objective:* This project takes a look at what it means to be a person. I have come to believe, through research, that personhood can be extended to non-human beings. This project is aimed at expanding the concept of personhood and showing why artificial intelligence may some day qualify as having personhood.

**Stephen Pham**

***Return to the Red Planet: A Dome Theatre Experience***

*Faculty Sponsor:* Michael Moshell  
*Sponsor's Department:* Film and Digital Media  
*Co-Authors:* Sarah Freeman, Lafcadio Hess, Dan Salas, Jesse Bond, Joel Wilson, Justin Welzien, Tim Hall, Christina Grace, Adam Flores, Chris Murray, Jon Nadeau

*Project Objective:* *Return to the Red Planet* is a CG ride film that is projected onto a dome screen. The basic plot is that excavators have found ancient ruins on Mars. Viewers are actually passengers on a space cruise to the planet's surface to see these ruins. There are plans for integrating the film into a 3D projection system similar to that of the Spiderman ride at Islands of Adventures.

**April K. Pope**

***Near-Infrared Raman Spectroscopy of Chalcogenide Waveguide Structures***

*Faculty Sponsor:* Alfons Schulte  
*Sponsor's Department:* Physics  
*Co-Authors:* A. Schulte, K. Richardson, C. Rivero, Yu Guo

*Project Objective:* Structural modifications in chalcogenide waveguide structures are investigated by near-infrared Raman spectroscopy. Specific bonding changes are correlated with composition, processing, and in-use laser conditions. The application of chalcogenide waveguides as probes for bio-molecular assemblies is explored.

**Adam B. Powell**

***Protease Specificity***

*Faculty Sponsor:* Thomas Selby  
*Sponsor's Department:* Chemistry

*Project Objective:* This project's purpose is to aid in the development of treatments of cancer and other tobacco related diseases by comprehending the specificity and signaling mechanism of the poorly characterized class of type two serine proteases.

**Caitlyn J. Pruiksma**

***Understanding Academic Reputation***

*Faculty Sponsor:* Clint Bowers  
*Sponsor's Department:* Psychology

*Project Objective:* By examining large ranking data bases and the values and opinions of UCF faculty and students, academic reputation will be understood and therefore be able to be changed in order to improve the reputation of UCF's Psychology Graduate Program.

**Elayne Reiss**

***Comparative Rankings: Ascertaining Pre- and Post-Test Differences in a Survey Instrument***

*Faculty Sponsor:* Lorrie L. Hoffman  
*Sponsor's Department:* Statistics and Actuarial Science  
*Co-Author:* Lorrie Hoffman

*Project Objective:* This research extended an existing survey method relying on question rearrangement. Previous results (Critchlow and Verducci, 1992) were developed for four question surveys. Four questions can be rearranged in 24 ways. The present survey had 25 questions with more than 15,500,000,000,000,000,000,000,000 (1.55 x 10<sup>25</sup>) rearrangements. The challenge was to find a manner of analysis that could handle this enormity.

**Zanetta A. Rivers**

***Genetic Identity of 'Mus' (house mouse) populations on Buck Island, Buck Island Reef National Monument***

*Faculty Sponsor:* Christopher L. Parkinson  
*Sponsor's Department:* Biology  
*Co-Authors:* Z. Hillis-Starr, K.K. Woody, C.L. Parkinson

*Project Objective:* We investigated the genetic identification of mice inhabiting Buck Island in the U.S. Virgin Islands to determine if this species is a naturally occurring taxon or is an invasive species. These data will be used to determine if this species deserves conservation or eradication.

**Heather M. Rozelle**

***Attitudes Toward Corporal Punishment as a Function of Ethnicity***

*Faculty Sponsor:* Charles Negy  
*Sponsor's Department:* Psychology

*Project Objective:* This study examined non-Hispanic White, African American, and Hispanic parents' attitudes toward corporal punishment to determine if their attitudes vary as a function of their socioeconomic status, religiosity, gender and ethnicity, and their own experiences with being punished corporally as children.

**Forrest R. Ruhge**

***Copper Doped GaAs Infrared Filter for the 8-13  $\mu$ m Atmospheric Window***

*Faculty Sponsor:* Robert E. Peale  
*Sponsor's Department:* Physics  
*Co-Author:* Robert E. Peale

*Project Objective:* This project investigates novel low cost far infrared bulk absorption filters for the 8-13 $\mu$ m atmospheric transmission window. These filters display process dependant cutoff wavelength, resistance to surface damage and good thermal conductivity.

**Rachel M. Russo**

***Hanging by a Thread: Assessing the Ability of Modern Forensic Methods to Discriminate Dyed Fibers in Criminal Investigations***

*Faculty Sponsor:* Barry G. Fookes  
*Sponsor's Department:* Forensic Science/Chemistry

*Project Objective:* This project examines the capability of UV-visible microspectrophotometry (for dye *in situ* and/or extracted) to discriminate between fibers from sources known to be different. When these methods fail to adequately distinguish the fibers, alternative techniques – such as fluorescence microscopy and liquid chromatography mass spectrometry – are employed and evaluated.

**Zuzana Segev**

***Investigation of Reaction Times for True and False Memories***

*Faculty Sponsor:* Alvin Y. Wang  
*Sponsor's Department:* Psychology

*Project Objective:* In my experiment, I study the creation of false memories. I measure and compare the reaction times of true and false memories. In addition, I study the correlation between susceptibility to form false memories and personality traits, such as extraversion, dissociation tendencies, and absorption.

**John A. Stevens**

***A Flower with Many Petals: Contemporary Implications of C.G. Jung and Jane Roberts***

*Faculty Sponsor:* Kristin G. Congdon  
*Sponsor's Department:* Film and Digital Media

*Project Objective:* I explored the published writings of Carl Gustav Jung and Jane Roberts; also contemporary works by Jungian psychologists Calvin S. Hall and Vernon J. Nordby, Anthony Stevens, Robert Hopcke, Renos K. Papadopoulos, and Samuel Kimbles. Also political scientist Jurgen Habermas, physicist Norman Friedman, and social scientist Barry Glassner, among others.

**David B. Torrance**

***Exploratory Studies of Polypeptide Nano-Templating***

*Faculty Sponsor:* Stephen M. Kuebler  
*Sponsor's Department:* Chemistry  
*Co-Authors:* Daniel L. Huffman, Stephen M. Kuebler

*Project Objective:* This project involves exploratory studies for testing the viability of a new method of nanofabrication called Polypeptide Nano-Templating (PPNT). In PPNT, the secondary conformations of homogenous polypeptides are used as templates for the creation of accurately designed 3D nanostructures bonded to a surface.

**Jesse J. Urban**

***Micromechanical Displays: Travelling Optical Phenomenon and Electrolatching Interferometers***

*Faculty Sponsor:* Thomas Andrew Winningham  
*Sponsor's Department:* Physics

*Project Objective:* Various unconventional flat panel display methods of the mechanical nature were theoretically analyzed, the most feasible then experimentally tested. A proof-of-concept system worked successfully, yet demonstrated limitations of the purely mechanical approach. Research continues on a more conventional mechanical-electrostatic hybrid approach with several unique features.

**Lauren Watanabe**

***County Level Differences in Property and Violent Crime Rates: A Test of Three Criminological Theories***

*Faculty Sponsor:* Jana H. Jasinski  
*Sponsor's Department:* Sociology and Anthropology

*Project Objective:* Three criminological theories, Routine Activities, Social Disorganization, and Strain Theory, were tested to see how well they could explain violent and property crime rates for the 67 counties in Florida.

**Natalie E. Weiss**

***Unicornicopia: A Metamorphosis***

*Faculty Sponsor:* Christopher Niess  
*Sponsor's Department:* Theatre

*Project Objective:* Ancient puppetry and mask work will be fused with modern music and dance to create an original performance art piece entitled *Unicornicopia: A Metamorphosis* that will premiere in the 2004 International Fringe Festival.

**Scott H. Wells**

***Lillian Hellman's Capitalist America as Portrayed In The Little Foxes***

*Faculty Sponsor:* Kristina Tollefson  
*Sponsor's Department:* Theatre

*Project Objective:* The objective of my research is to explore the American Playwright: Lillian Hellman; and to examine closely how Socialism and Capitalism influenced her writing, especially in the case of the 1939 production of *The Little Foxes*.

**Daniel L. Yates**

***Imaging Nano Particles with Photon and Electron Beams***

*Faculty Sponsor:* Alfons Schulte  
*Sponsor's Department:* Physics

*Project Objective:* One and two photon excitation techniques are applied to imaging of materials on the sub-micron scale. The use of electron-beam excitation techniques to achieve sub 50 nanometer resolution is explored.

**Ryan E. Yordon**

***Children's Beliefs of Individuals Engaging in Acts of Animal Cruelty***

*Faculty Sponsor:* Valerie Sims  
*Sponsor's Department:* Psychology

*Project Objective:* The main purpose of this study is to investigate whether the age and sex of the participants play a role in how they view individuals engaging in acts of cruelty against an animal based on the social status of the individual committing the crime, and the type of animal involved.

**Ryan E. Yordon**

***Predicting Justified Punishments for Individuals Found Guilty of Animal Cruelty***

*Faculty Sponsor:* Valerie Sims  
*Sponsor's Department:* Psychology

*Project Objective:* The purpose of this experiment was to examine an individual's beliefs about how crimes against animals should be punished based on the age of the individual committing the crime, the type of animal involved, and the place where the crime was committed.

# College of Business Administration

**Marylou L. Alvarez**  
***German Firms of the Neuer Market***

*Faculty Sponsor:* Julie A. Elston  
*Sponsor's Department:* Economics

*Project Objective:* German Firms listed on the Neuer Market were analyzed to determine whether or not shareholders' characteristics, the firms' relationships with banks and capital structure were significant catalysts of firm performance.

**Hala Mouri**  
***How Does the Design of an Environmental Management System Evolve?***

*Faculty Sponsor:* Wilma Anton  
*Sponsor's Department:* Economics  
*Co-Author:* Wilma Anton

*Project Objective:* Because firms have considerable flexibility in choosing the management practices that comprise their environmental management systems, this study examines the factors that determine the types of practices that firms are likely to adopt.

**Kenya A. Pinkston**  
***Playing the Game or Being Played: The Realities of Race in the Media***

*Faculty Sponsor:* Fritz G. Polite  
*Sponsor's Department:* Devos Sports Business Management

*Project Objective:* The purpose of this study is to examine the ways in which the media, in its various forms, portrays the Black athlete to the American public and the underlining affects it has on society's perception of Black Americans overall.

**Anna Tupchiy**  
***Toward an Explanation of the Effect of an Individual's Culture on Learning Outcomes in a Distance Education Environment***

*Faculty Sponsor:* Steven Hornik  
*Sponsor's Department:* Management Information Systems (MIS)

*Project Objective:* This research will demonstrate whether cultural traits (individualistic-collectivistic) have an impact (directly or indirectly) on learning outcomes (perceived satisfaction, perceived learning and objective performance) in distance education environment. Also, this research will look at the difference between an individual's inherent culture and the emergent culture characterized by class community.

# College of Education

**Meredith L. Baker**

***Transition from Craftsperson to CTE Teacher: A Qualitative Study of Prior Mentoring Experiences***

*Faculty Sponsor:* Larry R. Hudson

*Sponsor's Department:* Teaching and Learning Principles

*Project Objective:* The question arises pertaining to the reasons behind the choice of making a career change into teaching. The purpose of this study was to determine the nature of their previous mentoring experiences behind such conscious choices.

**Althea M. Bryant**

***The Impact of Personal Influences on the Level of Career Readiness in Black/African American College Students***

*Faculty Sponsor:* Andrew Daire

*Sponsor's Department:* Child, Family, and Communities

*Project Objective:* To investigate the relationship among family, mentor, and other influences on the level of negative career thoughts in Black/African-American college students. Identification of influences can lead to targeted educational opportunities to best impact the career readiness of these and other students.

**Katherine M. Kaag**

***Examining the Effects of Instructional Methods and Class Size on Learning of Preservice Teachers Enrolled in an Undergraduate Technology Course***

*Faculty Sponsor:* Glenda A. Gunter

*Sponsor's Department:* Educational Research, Technology, and Leadership

*Co-Author:* Kristi Bordelon

*Project Objective:* Instructional methods and the class size will be examined to determine their effects on student acquisition of 21<sup>st</sup> century skills, student achievement, and student perceptions of technology classes.

**Angela Templeton**

***Evaluating the Effectiveness of Synthetic Learning Environments***

*Faculty Sponsor:* Bobby Jeanpierre

*Sponsor's Department:* Teaching and Learning Principles

*Project Objective:* Complete formative and summative evaluations of an emerging synthetic learning environment (virtual technology field trip) where technology is used to affect reading comprehension among a group of second grade students.

# College of Engineering and Computer Science

**Kevin J. Erhart**

***A Parallel Domain Decomposition Boundary Element Method Technique for Large-Scale Transient Heat Conduction Problems***

*Faculty Sponsor:* Alain J. Kassab

*Sponsor's Department:* Mechanical, Materials, and Aerospace Engineering

*Co-Authors:* Eduardo Divo, Alain Kassab

*Project Objective:* This research details the development of a numerical algorithm for the solution of the transient heat conduction equation. The algorithm was implemented in parallel allowing for the solution of large complex problems using a small cluster of desktop computers, and example problems were tested against known solutions to verify the techniques.

**Brian M. Fein**

***Inflatable Solar Sail Missions to Asteroids***

*Faculty Sponsor:* John E. Brandenburg

*Sponsor's Department:* Mechanical, Materials, and Aerospace Engineering

*Project Objective:* An asteroid mission parameter study using solar sailing as the primary form of propulsion and also utilizing gravity gradient attitude control will be optimized for cost, time, payload value, and  $\Delta V_{\text{Encounter}}$ .

**Barbara Franke**

***Non-Destructive Evaluation of Thermal Barrier Coatings as a Function of Thermal Cycling by Photostimulated Luminescent Spectroscopy***

*Faculty Sponsor:* Yong-Ho Sohn

*Sponsor's Department:* Mechanical, Materials, and Aerospace Engineering/AMPAC

*Co-Author:* Balaji Jayaraj

*Project Objective:* Residual stresses within thermally grown oxide in electron beam physical vapor deposited thermal barrier coatings will be analyzed with a non-destructive technique, photostimulated luminescent spectroscopy, as a function of thermal cyclic oxidation and observations correlated to microstructural development, damage initiation and failure characteristics for the TBC system.

**Suruchi Garg**

***Development of a Portable Surveillance System (PSS) for Airborne Biological/Chemical Warfare Agents Based on Wireless Sensor Network***

*Faculty Sponsor:* Chan Ham

*Sponsor's Department:* Mechanical, Materials, and Aerospace Engineering

*Project Objective:* We will develop a portable surveillance system for airborne biological/chemical warfare agents utilizing distributed cell-based biosensors and wireless data networks. The project is to realize distributed wireless cell-based biosensors for their real-time operation to monitor the warfare agents to protect our citizens and military personnel.

**Zachary T. Haeussner and Felix H. Martinez**

***Quality of New Homes in Central Florida***

*Faculty Sponsor:* Michael A. Mullens

*Sponsor's Department:* Industrial Engineering and Management Systems

*Co-Author:* Isabelina Nahmens



*Project Objective:* The objective was to benchmark the quality of new homes in Central Florida and provide the citizens of Central Florida with an accurate evaluation of Builders' performance.

**Ewoud Hulstein**

***Excess Nitrate Control by Using Storm Water as Irrigation Source***

*Faculty Sponsor:* Martin P. Wanielista

*Sponsor's Department:* Civil and Environmental Engineering

*Project Objective:* The control of excess nitrate in the rainfall runoff from a developed area by the use of storm water for irrigation will be considered. The research is intended to provide a general model to predict the nitrate removal from irrigation and to suggest a controlled experiment to prove the hypothesis.

**Alfred K. Levy**

***Object Tracking in Low Frame-Rate Video***

*Faculty Sponsor:* Mubarak A. Shah

*Sponsor's Department:* Computer Science

*Project Objective:* A novel method is presented which allows tracking of moving objects in video sequences with low frame refresh rates. The method is based on correlation search and a clustering algorithm.

**Matthew L. McCutchen**

***In-Situ Synthesis of Palladium Filled Carbon Nanotubes in Solution by Arc-discharge Method***

*Faculty Sponsor:* Sudipta Seal

*Sponsor's Department:* Mechanical, Materials, and Aerospace Engineering

*Co-Authors:* Debasis Bera, Sudipta Seal, Suresh Kuiry

*Project Objective:* Nanomaterials is a rapidly growing exciting field filled with innumerable possible developments. Nanotubes in particular will be examined, the arc-discharge method of CNT creation and its advantages and drawbacks as well as developments made toward the improvement of the technique as well as the experimental results of the process within a solution saturated with metal nanoparticles.

**Viglione U. Mejia**

***New Sol-Gel Coating Techniques to Enhance Hg<sub>2</sub> Detectors Properties and Applications***

*Faculty Sponsor:* Sudipta Seal

*Sponsor's Department:* Mechanical, Materials, and Aerospace Engineering

*Co-Authors:* Petya Georgieva, S.C. Kuiry, S. Seal, A. Arodzero

*Project Objective:* Using liquid solutions to fabricate solid films on a variety of substances; variation of sol-gel composition: concentration, water content, type of solvent and inclusions to control the structure of the coating; effectiveness of the coating thickness, the ratio of the delivered coating solution, and the coating speed on the stability of the Hg<sub>2</sub> coating.

**Adje F. Mensah**

***Solar Array Modeling for Maximum Power Point Tracking***

*Faculty Sponsor:* Issa E. Batarseh

*Sponsor's Department:* Electrical and Computer Engineering

*Project Objective:* Polycrystalline silicon solar cells will be analyzed and a solar array computer model will be developed for simulation and design of photovoltaic systems working in Maximum Power Point Tracking (MPPT) mode.

**Benjamin J. Pernezny**

***Efficacy of Electrolyzed Oxidizing Water for Inactivation of Cyanobacteria and Destruction of Toxic Metabolites***

*Faculty Sponsor:* Martin P. Wanielista  
*Sponsor's Department:* Civil and Environmental Engineering

*Project Objective:* The objective of this research project is to explore the efficacy of electrolyzed oxidizing water, a disinfection technology developed by the Japanese in the early 1990's, for inactivation of the cyanobacteria *Microcystis aeruginosa* and *Anabaena flos-aquae* and oxidation of the toxic metabolites microcystin and anatoxin.

**Andrelev S. Powell**

***High Burn Rate Solid Propellant Research***

*Faculty Sponsor:* Eric Petersen  
*Sponsor's Department:* Mechanical, Materials, and Aerospace Engineering  
*Co-Authors:* Dr. Eric Petersen, Matthew Stephens, Rodolphe Carro, Raymond Simeone, Jason Arvantes

*Project Objective:* The overall objective of the project is to optimize the burn rate of experimental solid rocket propellants given unique mixing processes and ingredient combinations.

**Jan Prokaj**

***Multirate Numerical Techniques for Linear and Nonlinear Diffusion Problems in One Spatial Dimension***

*Faculty Sponsor:* S. Roy Choudhury  
*Sponsor's Department:* Mathematics

*Project Objective:* In this project we used a multirate numerical algorithm to solve a one-dimensional diffusion equation. This algorithm achieved the objective of a significant speedup over a numerical scheme with single rate timestepping. Major factors affecting the performance of this algorithm were diffusion speed and size of the different timestepping blocks.

**Marin Z. Racic**

***Enhancement of Inertial Electrostatic Confinement (IEC) Fusion through High Frequency Electromagnetic Fields***

*Faculty Sponsor:* John E. Brandenburg  
*Sponsor's Department:* Mechanical, Materials, and Aerospace Engineering  
*Co-Author:* John E. Brandenburg

*Project Objective:* An Inertial Electrostatic Confinement (IEC) fusion device is built and operated in a lower voltage, glow discharge mode, sustaining a confined plasma. Microwave fields are then added to enhance the plasma compression, suggesting a potential increase in fusion reaction rates. Plasma compression effects are theoretically predicted, modeled, and experimentally verified.

**Keith E. Rea**

***"Fishing in the Hole" In-Situ Focused Ion Beam Liftout for Transmission Electron Microscopic Analysis***

*Faculty Sponsor:* Sudipta Seal  
*Sponsor's Department:* AMPAC  
*Co-Authors:* B. Kempshall, S. Schwarz, S. Seal

*Project Objective:* Transmission Electron Microscopy (TEM) requires a specifically tailored specimen for proper transmission of the accelerated electrons. TEM sample preparation is always a challenge and needs innovative techniques to overcome the problem. Two separate approaches are described that would enable the metallurgist to investigate the microstructure of a sample using TEM.

**Ollie D. Rodriguez**  
***Satellite Health Monitoring System***

*Faculty Sponsor:* Roger W. Johnson  
*Sponsor's Department:* Mechanical, Materials, and Aerospace Engineering

*Project Objective:* In an effort to monitor the health or robustness of a satellite's performance, transient response models were developed and compared with actual system responses in real time using an error detection filter so as to determine whether the use of the response models is viable.

**Bryan D. Rosander**  
***Pruning of Case Libraries in Case Based Reasoning***

*Faculty Sponsor:* Avelino J. Gonzalez  
*Sponsor's Department:* Electrical and Computer Engineering  
*Co-Author:* Avelino Gonzalez

*Project Objective:* An algorithm will be created that searches the Case Library of a Case Based Reasoning System for redundant cases, contradictory cases, and portions of the Case Library with too few cases.

**Roberto C. Sanchez**  
***Improving Computational Efficiency in Context-Based Reasoning Simulations***

*Faculty Sponsor:* Timothy Wieck  
*Sponsor's Department:* Mechanical, Materials, and Aerospace Engineering  
*Co-Author:* Avelino Gonzalez

*Project Objective:* To facilitate an improvement in the state-of-the-art of computer simulation, the context-based reasoning paradigm requires significant improvements in computational efficiency.

**Christopher J. Subich**  
***Numerical Simulation of Intensity and Phase of Propagating Waves***

*Faculty Sponsor:* Cynthia Young  
*Sponsor's Department:* Mathematics  
*Co-Authors:* Cynthia Young, Stephen Watson

*Project Objective:* This project will build a simulation framework capable of modeling the propagation of electromagnetic waves in atmospheric turbulence. This framework will be used to analyze intensity and phase behavior of waves propagating through moderate and strong atmospheric turbulence.

**Andrea S. Wesser**  
***Design, Fabrication, and Testing of a 2-Dimensional, Passive Micro-fluidic Mixer***

*Faculty Sponsor:* Hyoung Jin Cho  
*Sponsor's Department:* Mechanical, Materials, and Aerospace Engineering

*Project Objective:* Several different micro-channels were analyzed during this experiment to find the design that most efficiently induces turbulence in a micro-fluidic environment. Both generic shapes and original designs were tested using various micro-fluidic testing devices and numerical/theoretical analysis.

---

# College of Health and Public Affairs

**Melanie M. Baez**

***The Effects of Language Intervention for Children with Autism***

*Faculty Sponsors:* Chad Nye and Jamie Schwartz

*Sponsors' Department:* Communicative Disorders

*Project Objective:* Studies that report on the different language interventions for children with autism will be identified and collected with the purpose of conducting a systematic review of the research studying the effects of language intervention for children with autism.

**Sarah R. Body**

***Benefits of Dietary Counseling for Patients with Hyperlipidemia***

*Faculty Sponsor:* Frances B. Smith

*Sponsor's Department:* Nursing

*Co-Authors:* Maureen Covelli, Jeffery Ludy

*Project Objective:* The purpose of this study is to identify the different types of dietary counseling and their benefits in the treatment of hyperlipidemia as demonstrated through research.

**April A. Bradley**

***Pain Control in Pediatric Patients with Cancer: Recognition and Treatment***

*Faculty Sponsor:* Janice Z. Peterson

*Sponsor's Department:* Nursing

*Co-Author:* Janice Peterson

*Project Objective:* The purpose of this integrated research review is to analyze management and treatment strategies for pain in children diagnosed with cancer. Pain control is significant in children as their suffering may go under treated. The inability or decreased ability to communicate pain makes children more susceptible to painful episodes.

**Mary E. Calos**

***Selenium-Dependent Stickland Reactions in Clostridium Difficile***

*Faculty Sponsor:* William T. Self

*Sponsor's Department:* Molecular Biology and Microbiology

*Co-Author:* William T. Self

*Project Objective:* *Clostridium difficile*, an intestinal pathogen, will be cultured in a Selenium-deficient medium to determine if Selenium-dependent Stickland Reactions occur in this organism.

**Venkata S. Cherukumilli**

***Expression of Human Interferon in Transgenic Tobacco Chloroplasts***

*Faculty Sponsor:* Henry Daniell

*Sponsor's Department:* Molecular Biology and Microbiology

*Co-Authors:* Regina Falconer, Henry Daniell

*Project Objective:* The main objective is to analyze the quality and quantity of Interferon  $\alpha 2b$  expression in chloroplasts of different varieties of transgenic tobacco under various conditions. Polymerase chain reactions, Immunoblots, Enzyme linked Immunosorbent assays and various tissue culture techniques will be used to fulfill the objective.

**Suki K. Conrad**

***ABORT- Access Bordering on Reproductive Tyranny: Restrictions on Emergency Contraception***

*Faculty Sponsor:* Dawn M. Oetjen  
*Sponsor's Department:* Health Services Administration

*Project Objective:* Current policies and limitations on access to emergency contraception, especially on college campuses, will be analyzed to give a unique perspective to the pending FDA ruling on whether to allow over-the-counter sales. Anonymous feedback from students at UCF regarding personal opinions and experiences will add specific references.

**Katherine A. Daniels**  
***Difficulties Investigating and Prosecuting Heroin Overdose Cases***

*Faculty Sponsor:* Carol M. Bast  
*Sponsor's Department:* Criminal Justice and Legal Studies

*Project Objective:* Heroin is widespread in central Florida. This research addresses heroin overdoses and the federal statute holding drug dealers responsible for injury or death resulting from heroin sold. By examining the difficulties in carrying out the statute, this study hopes to bring about understanding and possible recommendations for successful prosecutions.

**Jennifer L. Dennis**  
***Language Disruptions Associated with Retrieval Deficiencies in Alzheimer's Disease Patients***

*Faculty Sponsor:* Alejandro Brice  
*Sponsor's Department:* Communicative Disorders

*Project Objective:* The purpose of this project is to investigate word retrieval mechanisms in Alzheimer's dementia (AD) in monolingual speaking participants. It is believed that participants with damage resulting from neurofibrillary tangles and plaques (AD) will show difficulties at the phonetic, and semantic levels when memory and processing tasks are increased.

**Natalie M. Doyal**  
***Catch Them While You Can: When an Alzheimer's Client Falls Down Fast***

*Faculty Sponsor:* Dawn M. Oetjen  
*Sponsor's Department:* Health Services Administration

*Project Objective:* This culmination of research helps the Speech-Language Pathologist better treat Alzheimer's clients. By reviewing the American Speech-Language Hearing Association's code of ethics, gathering information about the assessment and treatment of Alzheimer's disease, and analyzing the Functional Assessment Staging scale, the CATCH Method for Treating Alzheimer's clients was created.

**Ashley N. Green**  
***Career Advancement of Black Female Administrators in Social Work, Education, and Nursing: A Review of the Literature***

*Faculty Sponsor:* Cheryl E. Green  
*Sponsor's Department:* Social Work

*Project Objective:* Literature published since 2000 will be examined to identify variables that have positively influenced and been barriers to the career advancement of Black females who hold administrative positions in the fields of social work, education, and nursing.

**Carl L. Herder**  
***A Normative and Comparative Investigation of Speech-Associated Coping Behaviors of Stuttering and Non-stuttering Children by Means of the Behavior Checklist***

*Faculty Sponsor:* Martine Vanryckeghem  
*Sponsor's Department:* Communicative Disorders

*Project Objective:* The use of speech-associated coping behaviors among stuttering and non-stuttering children will be studied by means of the Behavior Checklist, a self-report test for children (Brutten & Vanryckeghem, 2003). This research will fill a void relative to the nature and number of speech aids employed by both groups of children.

**Mary M. Mann**

***Experiences of Violence in the Lives of the Female Participants in an Abuse Prevention Program***

*Faculty Sponsor:* Barbara F. Turnage  
*Sponsor's Department:* Social Work

*Project Objective:* Identifying and becoming familiar with the insidious nature of the totality of violence in the lives of the study's participants; to encourage social workers and professionals in the field to develop collaborative approaches to addressing and preventing the multiple forms of violence that may impact clients.

**Leanne Mescavage**

***Cross Reactivity of Paspalum notatum and Melaleuca leucadendron Pollen Proteins to Antibodies to Phleum pratense***

*Faculty Sponsor:* Roseann S. White  
*Sponsor's Department:* Molecular Biology and Microbiology

*Project Objective:* Reactivity of proteins from the pollen of bahia grass (*Paspalum notatum*) and the paperbark tree (*Melaleuca leucadendron*) to antibodies specific to allergens of Timothy grass (*Phleum pratense*) pollen was analyzed.

**Ha-Long P. Nguyen**

***Testing a Specific Inhibitor of Apoptosis, ucf-101, as a Way to Reduce Cellular Damage during Heart Attacks or Acute Renal Failure***

*Faculty Sponsor:* Antonis Zervos  
*Sponsor's Department:* Molecular Biology and Microbiology

*Project Objective:* The number of apoptotic cells in a model system of heart attack or acute renal failure (ARF) will be monitored in the presence or absence of ucf-101 to determine its potential as a general treatment in preventing major organ damage during these pathological events.

**Rosalie A. Perkins**

***Death and Dying: Pre-Service Professionals Perceptions, Knowledge, and Experience***

*Faculty Sponsor:* Kenyatta O. Rivers  
*Sponsor's Department:* Communicative Disorders  
*Co-Author:* Ermalynn Kiehl

*Project Objective:* To identify the death and dying perceptions, knowledge, and experiences of pre-service professionals, a bereavement survey was given to 146 undergraduate students in Nursing and Communicative Disorders. Results provided useful information for preparing and training eventual healthcare providers who will be working with terminally ill patients and their families.

**Jose Oscar Rivera**

***Coping with Difficult Life Transitions by Older Adults: The Role of Religion***

*Faculty Sponsor:* Mary P. Van Hook  
*Sponsor's Department:* Social Work  
*Co-Author:* Mary P. Van Hook

*Project Objective:* An anonymous study was conducted in central Florida with community-living older adults to identify how they coped with difficult life transitions. English and Spanish versions of the brief RCOPE scale developed by Pargament were used to identify how older adults coped and perceptions of helpfulness of religious coping.

**Susanne J. Rowe**

***Self-Esteem, Body Image, and Ethnic Identity Among College Students***

*Faculty Sponsor:* Barbara F. Turnage

*Sponsor's Department:* Social Work

*Co-Author:* Barbara F. Turnage

*Project Objective:* Explored was the relationship between global self-esteem, body image (appearance Evaluation and Appearance Orientation), and ethnic identity (Ethnic Identity Achievement). The participants were 260 undergraduate students (age 18-60). The results of the tests performed revealed a significant direct relationship between participant's global self-esteem and appearance evaluation ( $r=0.598$ ,  $p=0.000$ ).

**Evan Small**

***Enzyme Biosensing***

*Faculty Sponsor:* Thomas Selby

*Sponsor's Department:* Chemistry/Molecular Biology and Microbiology

*Project Objective:* The objective of this work is the development of an enzyme-based biosensor. This will be accomplished by determining kinetic parameters for 40 unique oxidation-reduction enzymes from a hyperthermophilic organism (*S. solfataricus*). The end product of this research will be a biological chip containing the immobilized enzymes, which is capable of both qualitative and quantitative measuring of biological fluids.

**Julie M. Taylor**

***Biological Ethics of Childbearing***

*Faculty Sponsor:* Dawn M. Oetjen

*Sponsor's Department:* Health Services Administration

*Project Objective:* For most women, having a child is a joyous occasion; however, it comes at a price to the Earth. Currently, the world's population is around 6.3 billion and will continue to rise each year. Our human population and environment will have a hard time sustaining itself at this rate, as any further increases in population will lead to further deterioration of the environment.

**Lauren R. Weiss**

***Paraprofessionals' Experiences Working with Students who use Augmentative and Alternative Communication***

*Faculty Sponsor:* Jennifer Kent-Walsh

*Sponsor's Department:* Communicative Disorders

*Project Objective:* A qualitative interview methodology was employed in this pilot investigation to examine the experiences of paraprofessionals working with students using augmentative and alternative communication (AAC). Participating paraprofessionals described their roles and recommendations, as well as benefits, supports, and barriers to working with students who use AAC in the classroom environment.

**Pamela K. Weyh**

***Attention Deficit Hyperactivity Disorder: A Social Worker's Perspective***

*Faculty Sponsor:* Barbara F. Turnage

*Sponsor's Department:* Social Work

*Project Objective:* This research provided a definition of Attention Deficit Hyperactivity Disorder (ADHD). Also provided were dynamics in the homes of individuals diagnosed with ADHD, and the usefulness of current treatment interventions provided to children diagnosed with ADHD and their families.

**Gena Marie Williams**

***Transnational Family Caregiving: A Content Analysis of the Literature in Social Work, Gerontology, and Psychology***

*Faculty Sponsor:* Denise Gammonley

*Sponsor's Department:* Social Work

*Project Objective:* Transnational Family Caregiving will be examined so as to analyze the effects of the responsibilities involved with providing care while also dealing with migration and acceleration patterns.

**Jessica L. Williams**

***Investigating the Scope and Impact of Criminal Mobility in Central Florida***

*Faculty Sponsor:* Kenneth Reynolds

*Sponsor's Department:* Criminal Justice and Legal Studies

*Co-Author:* Kenneth Reynolds

*Project Objective:* Examine empirical criminal offending data to understand the scope and extent of criminal mobility in central Florida. The frequency of movement and related number of out-of-home-jurisdiction offenses is relatively unknown. This study will produce new knowledge about criminal mobility.



---

# Rosen School of Hospitality Management

**Anne N. Cecil**

***ACE Tourism: Trekking in Nepal***

*Faculty Sponsor:* Randall Upchurch

*Sponsor's Department:* Rosen School of Hospitality Management

*Project Objective: Sustainable Tourism: Trekking in Nepal* is a research study that was undertaken as part of the Honors in the Major program. The purpose of this study is to provide a sustainable model for trekking operations in Nepal that does not threaten the environmental, social, economic, or cultural integrity of the tourism destination over time.

## Showcase Judges

Dr. Patricia J. Bishop  
*Vice Provost and Dean of Graduate Studies*  
*Professor of Mechanical Engineering*

Dr. John F. Schell  
*Dean of Undergraduate Studies*  
*Professor of English*

Dr. M.J. Soileau  
*Vice President for Research*  
*Professor of Physics and of Optics*

## Showcase Planning Subcommittee

Richard H. Harrison II  
Sherron Killingsworth Roberts

Jose A. Sepulveda  
Kristina Tollefson

## UCF Undergraduate Research Council

Alejandro Brice  
Debopam Chakrabati  
Henry Daniell  
Niels da Vitorio Lobo  
Jennifer L. Deets  
Michael E. Dunn  
Julie A. Elston  
William Gaudelli  
Avelino J. Gonzalez  
Scott C. Hagen  
Richard H. Harrison II  
Al D. Holcomb  
Jana H. Jasinski  
Roger W. Johnson  
Bernadette Jungblut  
Robert Kenny

Wendell C. Lawther  
Ana M. Leon  
Christopher L. Parkinson  
Sherron Killingsworth Roberts  
Lee Ross  
John F. Schell  
Sudipta Seal  
Jose A. Sepulveda  
Mubarak A. Shah  
Rebecca Sittler  
Stephen A. Sivo  
Kristina Tollefson  
Pallavoor N. Vaidyanathan  
Alvin Y. Wang  
Earl Wright II

## Special Thanks

Cynthia Burris Dancel  
Adiaak Gavarette  
Linda Hargreaves  
Benie Harris  
Jennifer Krolowitz  
Nancy Lynch

Ruth Marshall  
Office of Instructional Resources  
Alison Morrison-Shetlar  
Karen L. Smith Faculty Center for  
Teaching and Learning