

SHOWCASE OF
UNDERGRADUATE RESEARCH EXCELLENCE

Celebrating undergraduate research and creativity across the curriculum.



UNIVERSITY OF CENTRAL FLORIDA
UNDERGRADUATE STUDIES

FRIDAY, APRIL 15, 2005 1-4 P.M.
STUDENT UNION, PEGASUS BALLROOM



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ORDER OF EVENTS

- ACKNOWLEDGEMENTS** 1:00 p.m.
Dr. John F. Schell
Assistant Vice President for Academic Affairs and Dean of Undergraduate Studies
Professor of English
- WELCOME** 1:10 p.m.
Dr. John C. Hitt
President
Professor of Psychology
- STUDENT POSTER PRESENTATIONS** 1:00-4:00 p.m.
- REMARKS AND PRESENTATION OF SCHOLARSHIPS** 3:00 p.m.
Dr. Terry L. Hickey
Provost and Vice President for Academic Affairs
Professor of Psychology

During the Showcase, the inaugural issue of the *University of Central Florida Undergraduate Research Journal* will debut at <<http://ejournal.ucf.edu>>. The *Journal* has been established to facilitate faculty and undergraduate student interactions through research and a mentored publication process.

SHOWCASE JUDGES

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

Subir K. Bose
Alexander Brice
Emma J. Brown
Jay Corzine
David R. Dees
Costas Efthimiou
E. Taylor Ellis
Roger B. Handberg, Jr.
Katherine H. Ingram

Bernadette M. Jungblut
Robert Kenny
Joo H. Kim
Stephen M. Kuebler
Wendell C. Lawther
Pamela McCauley-Bell
David K. Rollins
Richard D. Tucker
Gary E. Whitehouse

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 of undergraduate research at UCF.

Patrick Barnes and Barnes, Ferland & Associates, Inc.
Randolph E. Berridge and
the Florida High Tech Corridor Council, Inc.
John P. Caparella and Gaylord Entertainment
Richard H. Harrison II
John H. Rogers and Rogers, Lovelock & Fritz, Inc.
UCF Office of Undergraduate Studies
UCF Student Government Association

FACULTY MENTORS

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

Carole E. Adams
Issa E. Batarseh
Jeffrey S. Bedwell
Randal Blades
David F. Bowie
Gabriel Braunstein
Alexander Brice
Daniel Britt
John F. Butler
F. Necati Catbas
Debopam Chakrabarti
Arlen F. Chase
Diane Z. Chase
Matthew Chin
Lee Chow
Kristin G. Congdon
Richard C. Crepeau
Lesia Crumpton-Young
Niels da Vittorio Lobo
Andrew Daire
Tracy L. Dietz
Aristide Dogariu
Tosha L. Dupras
Julie D. Eberwein
Costas Efthimiou
Terri S. Fine
Randy D. Fisher
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Samar Joyti Kalita
David Kaup
Robert Kenny
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Richard E. Lapchick
Alexander Leonessa
Aaron Liberman

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Pamela R. McCauley-Bell
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Mustapha Mouloua
Charles Negy
Chad Nye
Dawn M. Oetjen
Christopher L. Parkinson
Sumanta Pattanaik
Robert E. Peale
Eric Petersen
Otto Phanstiel
Fritz G. Polite
Albert V. Pryor
Tison Pugh
Pedro F. Quintana-Ascencio
Kenneth Reynolds
Kathleen A. Richardson
Kenyatta O. Rivers
Beatriz Roldan-Cuenya
Houman A. Sadri
Alfons Schulte
Sudipta Seal
William T. Self
John Wayne Shafer
Elzbieta Sikorska-Simmons
Valerie K. Sims
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Kiminobu Sugaya
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AND OPTICS

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Johnathan D. Hamilton
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Courtney A. Howard
Kent A. Lamers
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Erin L. Langsdorf
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Nicole Xiques

ARTS AND HUMANITIES

JENNIFER M. KRACHT
Production Requirements: A Costume Plot Database

Co-Author(s): Markisha Cobourne, Mike Quinones, Emily Smeraldo

Mentor(s) Name(s): Kristina Tollefson
Mentor(s) Department(s): Theatre

Project Objective: This project encompassed the design, development and research of a costume plot database, which provides in-depth costuming requirements to the professional and educational theatre communities. Written scripts and documentation from actual productions provided the basis for the research. In coming months, the Website will be accessible at www.costumeplotdatabase.com.

KYLE ANN LACERTOSA
Advanced Study of Musical Theatre Script Analysis

Co-Author(s): James Mosser

Mentor(s) Name(s): Earl D. Weaver
Mentor(s) Department(s): Theatre

Project Objective: I have researched eight characters of the American musical theatre. After researching and analyzing each role, I have chosen a song for each character. The final presentation will be a cabaret of eight roles, to be performed for an audience.

MELISSA E. LOPEZ
Genre Criticism: Is Testimonial a Part of Creative Non-Fiction?

Mentor(s) Name(s): Cecilia Rodriguez Milanés
Mentor(s) Department(s): English

Project Objective: The aim of my research is to determine whether the literary technique, the testimonial of Latino literature, can be considered its own genre or a sub-genre of creative nonfiction. A form review and literary analysis will be compared. Lastly, two personal essays inspired by the forms will be included.

SARA V. MARTI
Communication Apprehension and Honors Students

Mentor(s) Name(s): John F. Butler, Albert V. Pryor
Mentor(s) Department(s): Communication

Project Objective: Communication apprehension (or speech anxiety) levels were tested between honors and non-honors students enrolled in fundamental speech courses at UCF. The resulting data indicated a higher apprehension score for honors students than non-honors students. Conclusions were discussed in reference to personality and social factors common to high academic achievers.

BRITTANY M. BERNSTEIN
All Deliberate Delay: Desegregating the Public Schools of Orange County, Florida

Mentor(s) Name(s): Richard C. Crepeau
Mentor(s) Department(s): History

Project Objective: This undergraduate thesis attempts to contribute to the scholarly discourse about race in Central Florida by investigating the desegregation of Orange County public schools. The study is devoted to the 1962 case *Ellis v. Board of Public Instruction of Orange County* and how the case eventually desegregated the county's schools.

JASON E. BOGDEN
A History of Pepino: A Commedia Clown's Role in the Spanish Conquest of Bolivia

Mentor(s) Name(s): John Wayne Shafer
Mentor(s) Department(s): Theatre

Project Objective: Research will trace the development and transition of Pepino from his Italian origins, through colonial Spain, and into his modern day Bolivian incarnations.

JOSEPH B. FLETCHER
John and Jen: A Musical Theatre Direction Lab

Mentor(s) Name(s): Earl D. Weaver
Mentor(s) Department(s): Theatre

Project Objective: This was an applied study of musical theatre directing and other theatre techniques to create an organic presentation of the first act of Andrew Lippa's *John and Jen*.

NICHOLE T. GETZ
Using Original Sources in Patternmaking and the Construction of 1940s Period Costumes

Mentor(s) Name(s): Randal Blades
Mentor(s) Department(s): Theatre

Project Objective: To construct two 1940s period costumes for the production *Guys and Dolls*, I researched the period and how dresses were originally patterned. I then took the knowledge that I gained from my research and combined it with the modern flat-patterning and draping methods to create the costumes.

ROBERT R. GRASSEL
Between Modernism and Postmodernism: Examining Epochal Markers

Mentor(s) Name(s): Kristin G. Condgon
Mentor(s) Department(s): Film and Digital Media

Project Objective: I conducted an analysis of characteristics associated with modernism and postmodernism as manifested in areas such as art, science, and politics. Once identified, I use these manifestations as epochal markers, the concentration of which suggest a period between 1968 and 1974 when modernism declines and a postmodern paradigm takes hold.

SARA V. MARTI
Communication Apprehension and SOAR Students

Mentor(s) Name(s): John F. Butler, Albert V. Pryor
Mentor(s) Department(s): Communication

Project Objective: Marginally qualified college students invited to participate in UCF's SOAR (Seizing Opportunities for Academic Retention) were tested for communication apprehension. This research attempted to determine and confirm previous research that shows a correlation between high communication apprehension and lower grades and SAT scores.

CONSTANCE A. MCINTOSH
Comparisons in Anglo-Saxon Poetry

Mentor(s) Name(s): Tison Pugh
Mentor(s) Department(s): English

Project Objective: This project's objective is to examine and evaluate the thesis that the Anglo-Saxon elegies "The Wife's Lament" and "The Husband's Message," found in the Exeter Book codex, are in fact two parts to a single elegy written to provide a Germanic equivalent to the allegory of the Song of Songs.

DANA S. MOTT
The Dramatic Interactive Imagination: Researching the Next Generation Immersive and Interactive Story Experience

Co-Author(s): Christopher Stapleton, Kirsten Kischuk

Mentor(s) Name(s): Christopher Stapleton
Mentor(s) Department(s): Film and Digital Media

Project Objective: This research explores the convergence of traditional and emerging artistic conventions and technical implementation of interactive narrative. The research applies techniques from hypertext, video games and interactive theater to create the next generation prototype of a fully immersive, interactive, non-encumbered, multi-sensory simulated story experience, transforming a traditionally passive audience.

LIANIS OLIVA
Avatars (Digital Booktalk)

Mentor(s) Name(s): Robert Kenny
Mentor(s) Department(s): Film and Digital Media

Project Objective: A study of the growing usage of animated characters over the Web as a marketing technique and the possible applications in the educational field.

KIMBERLY A. PRYOR
Another Look at Ulysses S. Grant and His Family

Mentor(s) Name(s): Carole E. Adams
Mentor(s) Department(s): History

Project Objective: The main objective of this project was to search for documents that would show another side to Ulysses S. Grant, from both the standpoint of his presidency as well as his family life.

MELANIE ROMNEY
Binding the Pieces

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

Project Objective: Creating a book that consists of interviews with Ann Beattie. Interviews are collected and permissions to republish the pieces are requested. Once permission is granted, the pieces will be copy edited and formatted to the specific guidelines that are required by the press which will publish the work.

EMILY D. STRICKLAND
Guys and Dolls Costume Design

Mentor(s) Name(s): Kristina Tollefson
Mentor(s) Department(s): Theatre

Project Objective: To design the costumes for *Guys and Dolls*, I researched the history and style of 1940s and 1950s fashion, read about the Damon Runyon characters the musical was based on, analyzed the script, designed the complete look for each character, oversaw the creation of all costumes, and personally constructed specialty items.

MATTHEW L. WALSH
Digital Booktalk

Co-Author(s): H. Adam Lenz, Justin Pegram, Jonathan Gabriel

Mentor(s) Name(s): Robert Kenny
Mentor(s) Department(s): Film and Digital Media

Project Objective: The student-driven productions of Digital Booktalk focus on skills taught in the digital media curriculum to design dynamic elements in an effort to encourage K-12 students to read, therefore taking a proactive step in combating the problem of reading comprehension and instituting new methodologies of utilizing an interactive learning environment.

CYNTHIA N. ZAMMINER
A Monument to Lost Data

Mentor(s) Name(s): Barry J. Mauer
Mentor(s) Department(s): English

Project Objective: The research being conducted is for a proposal for a monument to lost data. We are studying the effects of data/memory loss with individuals and society. We are also analyzing how society copes with loss individually and collectively in relation to mourning and monumentality.

BRIAN C. BECKER
Internet Wizard for Industry/University Cooperative Research Center (I/UCRC) Proposals

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

Project Objective: This research project created a web-based system utilizing expert knowledge to assess universities interested in establishing an I/UCRC. Though an interactive interview, the wizard gathers relevant information to provide advice that enables universities to decide whether an I/UCRC best suits their needs and then to write better I/UCRC proposals.

TIMMY CLEMENT
System Integration Issues for Structural Health Monitoring

Mentor(s) Name(s): F. Necati Catbas
Mentor(s) Department(s): Civil and Environmental Engineering

Project Objective: The objective of this study is to design and demonstrate a structural health monitoring system on a laboratory bridge model and address some of the critical issues regarding structural health monitoring.

JULIAN DUARTE
Microemulsion Derived Nanocrystalline Barium and Strontium Cerate Thin-Films and Powders for Gas Sensing Application

Co-Author(s): Satyayit Shukla, Sudipta Seal

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

Project Objective: Created Nanocrystalline thin-films based on barium cerate (BaCeO₃), for gas sensing application. The barium cerate was synthesized via microemulsion. Each set has an increasing ratio within the amount used for each element, which will bring a different particle size.

TIFFANY ENGLISH
Human Impact on Information Security

Mentor(s) Name(s): Pamela McCauley-Bell
Mentor(s) Department(s): Industrial Engineering and Management Systems

Project Objective: To evaluate the human factors impact on human networking security.

JESSICA M. FLOYD
Evaluation of Human Impact of Password Authentication Practices on Information Security

Mentor(s) Name(s): Pamela McCauley-Bell
Mentor(s) Department(s): Industrial Engineering and Management Systems

Project Objective: The objective of this research is to develop a quantifiable methodology to utilize human factors principles in the development of secure password authentication procedures.

VADIM V. LITOSHIK
Design and Development of Biological Structures via Fused Deposition Modeling

Mentor(s) Name(s): Samar Joyti Kalita
Mentor(s) Department(s): Mechanical, Materials, and Aerospace Engineering

Project Objective: The goals were to accumulate information on present biomedical applications of Fused Deposition Modeling (FDM), and to create three-dimensional anatomical models and porous ceramic bone grafts using specialized software and FDM procedure.

DAVID E. MACNEVIN
A Device for the Measurement of Head Loss Across Pipe Coupons

Mentor(s) Name(s): James S. Taylor
Mentor(s) Department(s): Civil and Environmental Engineering

Project Objective: The objective of this research was to develop a bench-scale device useful for the measurement of head losses across pipe coupons. This device will be used to measure the effectiveness of corrosion inhibitors in protecting, or improving pipe surfaces, and thus preserving or increasing their hydraulic capacity.

JENNIFER S. MATHIS
Developing of Taxonomy for Using Task Demands to Describe Total Body Fatigue

Mentor(s) Name(s): Lesia Crumpton-Young
Mentor(s) Department(s): Industrial Engineering and Management Systems

Project Objective: This research involved understanding fatigue mentally and physically at the same time. Depending on the work one does and the tasks associated with their job aids in assessing their overall fatigue level and job performance. Researching the Army's software, IMPRINT, allowed me to comprehend how they measure a soldier's performance by using a generic taxonomy to classify a soldier's task.

DENITSA M. MILANOVA

Chemical Aspects of Nanofluid Heat Transfer

Mentor(s) Name(s): Ranganathan Kumar

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

Project Objective: Nanofluids consisting of nanosized particles dispersed in base liquids proved to enhance the heat transfer characteristics more than three times. Heat transfer properties of conventional fluids are relatively poor compared with those of solids. Oxide nanoparticles like silica (SiO_2) and ceria (Ce_2O_3) at a very low concentration show a high surface-to-volume ratio when exist in the nanoscale. The presence or lack of free ions and salts in the suspension and their chemical reactivity can additionally enhance or hinder the thermal conductivity readings.

ERIC A. MOHLENHOFF

Improving Realism in an Interactive Forest Walkthrough

Mentor(s) Name(s): Charles E. Hughes

Mentor(s) Department(s): Computer Science

Project Objective: I am researching methods used to render complex outdoor environments in real-time. In addition to learning about these methods, I am drawing from other bodies of research to find new ways of improving them.

HECTOR G. MORATAYA

Health Monitoring

Co-Author(s): Timmy Clement

Mentor(s) Name(s): F. Necati Catbas

Mentor(s) Department(s): Civil and Environmental Engineering

Project Objective: The purpose of this research is to develop a health monitoring system that can be accessed via the Internet. The system will be used to perform a structural analysis of members that undergo static and dynamic loading.

JEAN-PHILIPPE LOUIS PERRAULT

Optoelectronically Automated System for CNT Synthesis Via Arc-Discharge in Solution

Co-Author(s): Debasis Bera, Erik Brinley, Sudipta Seal, Helge Heinrich

Mentor(s) Name(s): Sudipta Seal, Helge Heinrich

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

Project Objective: Because of increasing interest and demand in Carbon Nanotubes (CNTs), it is vital to be able to create them in an efficient and inexpensive way. Automated arc discharge in solution method used in a closed system set-up is therefore proposed. A new optimized machine is about to be created, revolutionizing the CNT fabrication and reducing extensively their cost of production.

MICHAEL C. PETROVICH

Algorithm for Generating a Microfabrication Path-Plan for a CAD-Designed 3-D Volumetric Structure

Co-Author(s): Stephen M. Kuebler, Ivan B. Divliansky, Toufic Jabbour

Mentor(s) Name(s): Stephen M. Kuebler

Mentor(s) Department(s): Chemistry

Project Objective: The objective was to develop a software algorithm that generates an array of line segments that map the interior volume of a closed, bounding surface comprised of edge-sharing triangles. This algorithm would process a CAD-designed surface to provide a path-plan for 3-D microfabrication.

ANDREIEV S. POWELL

Developing High Burn Rate Solid Rocket Propellant

Mentor(s) Name(s): Eric Petersen

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

Project Objective: The purpose of this research is to experimentally analyze the burn characteristics of solid rocket propellant developed through various mixture strategies. These analyses may help to create refined future mixing strategies which could eventually yield solid propellant of superior performance.

ERIC A. RISSE

Grass Mapping

Mentor(s) Name(s): Sumanta Pattanaik

Mentor(s) Department(s): Computer Science

Project Objective: This project seeks to develop a realistic real-time grass rendering using dynamic texture creation.

OLLIE D. RODRIGUEZ

Deriving and Implementing a Motion Controller for a Quad-Rotor Vehicle

Mentor(s) Name(s): Alexander Leonessa

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

Project Objective: Currently researching several quad-rotor vehicle control methods in the field. After analyzing this literature, a control algorithm will be derived and implemented for full dynamic system control.

BRYAN D. ROSANDER

Case-Based Reasoning

Mentor(s) Name(s): Avelino J. Gonzalez

Mentor(s) Department(s): Electrical and Computer Engineering

Project Objective: Case-Based Reasoning is a powerful problem solving technique that adapts previous solutions to solve current problems. It is vulnerable to erroneous data, however. An algorithm is being developed and tested that compares cases in the case library and removes inconsistent ones.

KYLE W. SCHROEDER

Florida University Satellite (FUNSAT) Design

Mentor(s) Name(s): Chan Ham

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

Project Objective: A student satellite design competition was created with analysis on construction, development, and implementation of small satellite technology.

CHRISTOPHER G. SCHWARZ

Segment-Based Hand Pose Recognition

Mentor(s) Name(s): Niels da Vittorio Lobo

Mentor(s) Department(s): Computer Science

Project Objective: The work presented here attempts to create a computer vision algorithm that expands on existing methods to identify the pose of a hand portrayed in video and still-frame inputs.

NICHOLAS S. SHORTER

Solar Array Inverter with Maximum Power Point Tracking

Co-Author(s): Adje Mensah, Keith Mansfield, Michael Pepper, Feng Tian, Charles Scholl, Wisam Munier Al-hoor, Hussam Al-Atrash

Mentor(s) Name(s): Issah F. Batarseh

Mentor(s) Department(s): Electrical and Computer Engineering

Project Objective: The prototyped 1kW solar array inverter will allow an individual to power a multitude of electronic devices off of power drawn from a solar array. Excess power drawn, which was not consumed, can be sold back to the utility company. The inverter can still provide power even during blackouts.

MATTHEW A. STEPHENS

Burn Rate Measurements of Bimodal Ammonium Percolate

Mentor(s) Name(s): Eric Petersen

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

Project Objective: Composite propellants are made of small solid particles suspended in a mesh of hydrocarbon chains. This project explored the use of two different sized oxidizers. This technique is not new but the formulas are. Results could enable better understanding of the oxidizer's behavior and also produce a more efficient propellant.

LIFE AND HEALTH SCIENCES

GLADYS V. BENITES

Bilingual Language Abilities in Gifted and Non-Gifted Hispanic Students

Mentor(s) Name(s): Alexander Brice

Mentor(s) Department(s): Communicative Disorders

Project Objective: The purpose of this project is to investigate the nature of pragmatics (i.e., how language is used in discourse) and code switching among two groups of bilingual (i.e., Spanish-English speaking) adolescent students. The groups consist of gifted and non-gifted students in an urban middle school in Florida.

BONNIE J. BERRY

Bacterial Growth in Martian Conditions

Faculty Mentor(s): Daniel Britt, Andrew Schuerger (NASA Kennedy Space Center)

Mentor(s) Department(s): Physics

Project Objective: The survivability of several strains of vegetative bacteria was tested at low pressures and pure carbon dioxide atmosphere. No previous research on bacteria reproducing in these conditions has been conducted. This information can tell us about the possibility of life on Mars and the risk of contamination.

KATHERINE R. BROWN

Retail, On-Line and Field Availability of Native Availability of Native versus Non-Native Forms of the Green *Macroalga caulerpa* in the State of Florida

Co-Author(s): Linda J. Walters, Christian G. Glardon, Paul E. Sacks

Mentor(s) Name(s): Linda J. Walters

Mentor(s) Department(s): Biology

Project Objective: This invasive species study was based on preventing killer algae, *Caulerpa taxifolia* (Mediterranean strain), from reaching Florida's waters. The availability and distribution of *Caulerpa* species in Florida was completed by collecting from coastal sites, local aquarium stores, and online commerce.

MARY E. CALOS

Biochemical Characterization of D-Proline Reductase from *Clostridium difficile*

Co-Author(s): Seth Trifiro, William T. Self

Mentor(s) Name(s): William T. Self

Mentor(s) Department(s): Molecular Biology and Microbiology

Project Objective: An essential enzyme in the amino acid fermentation pathways of *Clostridium difficile*, an emerging nosocomial pathogen, will be purified and characterized to gain a better physiological understanding of the energy metabolism of this pathogenic microorganism.

ELENA CHOUMKINA

Novel Function of Amyloid Precursor Protein in Neural Stem Cell Differentiation

Co-Author(s): Young-Don Kwak

Mentor(s) Name(s): Kiminobu Sugaya

Mentor(s) Department(s): Biomedical Sciences

Project Objective: Alzheimer's disease is a dementia associated with memory loss and affects about five percent of men and women. Amyloid precursor protein (APP) is found in excess in Alzheimer's brain patients. Here, we show that secreted APP (sAPP) function as a signaling molecule that induce glial differentiation in human neural stem cells.

MEGAN L. CLARK

Gay Rights, Discrimination, and the Public Opinion

Mentor(s) Name(s): Dawn M. Oetjen

Mentor(s) Department(s): Health Services Administration

Project Objective: This research seeks to determine if lawmakers' opinions of rights with regard to sexual orientation accurately match those of the general population, particularly university students. The results help to better understand discrimination against homosexuality and illustrate how those opinions are formed.

HEIDI A. DEUTSCH

Dispersal and Recruitment of Red, Black, and White Mangroves in the Indian River Lagoon

Co-Author(s): Sarah Johnson, Linda J. Walters

Mentor(s) Name(s): Linda J. Walters

Mentor(s) Department(s): Biology

Project Objective: In this study, we examined whether red, black, and white mangrove seeds would be retained and germinated on pristine versus disturbed oyster reefs in Indian River Lagoon. We also measured and compared the dispersal distances of all three seed types.

JENNIFER M. EATRIDES

Characterization of a PRL Protein Tyrosine Phosphatase from *Plasmodium falciparum* that Exhibits Farnesylation-dependent Subcellular Localization

Co-Author(s): Prakash Rao Pendyala, Timothy Love

Mentor(s) Name(s): Debopam Chakrabarti

Mentor(s) Department(s): Molecular Biology and Microbiology

Project Objective: A thorough understanding of the in vivo farnesylation (lipid modification) of proteins in the malaria parasite will be a key to the development of pharmacological intervention of malaria targeting inhibition of farnesylation. With this goal in mind we have taken a systematic approach to characterize farnesylated proteins of the malaria parasite.

JENNAFER A. EVANS

Evolutionary History of the Venomous Stiletto Snake

Mentor(s) Name(s): Christopher L. Parkinson

Mentor(s) Department(s): Biology

Project Objective: We used PCR, molecular cloning, and automated DNA sequencing techniques to obtain a large sample of DNA sequences from several *Atractaspis* species. We used these data determine the evolutionary history of the venomous snake genus *Atractaspis* and elucidate the evolution of their unique venom delivery system.

JOHNATHAN D. HAMILTON

Uncompensated Healthcare: A Growing National Challenge

Mentor(s) Name(s): Aaron Liberman

Mentor(s) Department(s): Health Services Administration

Project Objective: The research project will be conducted primarily by research of library sources, Internet, books, magazines, journals, periodicals, and newspaper articles. The researcher will attempt to find a solution to the national challenge of uncompensated health care, and will uncover problems with the insured, uninsured, under-insured, and the reasons why health care costs so much.

KATRINA M. HOLTEN

Plant Growth and Demography of the Rare, Epiphytic Fern *Ophioglossum palmatum* (*Cheroglossa palmata*) at Tosohatchee State Reserve

Co-Author(s): Eliane M. Norman (Professor Emerita, Stetson University)

Mentor(s) Name(s): Pedro F. Quintana-Ascencio

Mentor(s) Department(s): Biology

Project Objective: *Ophioglossum palmatum* (*Cheroglossa palmata*), hand fern, is a rare and endangered epiphytic fern that is found, in Florida, only growing on Sabal palmetto, cabbage palm. My goal was to evaluate variation in growth, survival and fecundity of *Ophioglossum palmatum* between seasons and habitats.

AMY K. HOOVER

Snake Mitochondrial Genomics

Mentor(s) Name(s): Christopher L. Parkinson

Mentor(s) Department(s): Biology

Project Objective: Prior to my joining the lab, approximately half of the 17,000 b.p. mitochondrial genome of the snake *Agkistrodon piscivorous* (cottonmouth) was completed. My research goal was to fill the many gaps in this partially sequenced genome.

LIFE AND HEALTH SCIENCES

COURTNEY A. HOWARD

The Efficacy of Treatment of Childhood Stutters

Mentor(s) Name(s): Chad Nye

Mentor(s) Department(s): Communicative Disorders

Project Objective: This project will examine the effectiveness of stuttering treatment for children 2- to 14-years of age using systematic review and meta-analysis procedures for studies utilizing a single subject design methodology. A summary of treatment program characteristics and effectiveness along with evaluation of the strengths and weaknesses of the existing research will be presented.

KENT A. LAMERS

GAMES Lab: A Virtual Forest Project

Co-Author(s): Kevin Kramer, Shaun Wightman

Mentor(s) Name(s): John F. Weishampel

Mentor(s) Department(s): Biology

Project Objective: For an Orlando Science Center exhibit, we created a computer-generated, virtual diorama of the most threatened temperate natural community, the longleaf pine forest. The centerpiece of this environment is a construction crane, based on systems currently employed by scientists to study 3-D canopy habitats. Visitors riding inside the gondola go on a photo-safari as they explore the ecosystem.

AARON M. MYERS

Text to Personalized Speech Synthesis: Motivation, State of the Art, and Proposed Techniques

Mentor(s) Name(s): Wasfy B. Mikhael

Mentor(s) Department(s): Electrical and Computer Engineering

Project Objective: In this research topic we have discussed the potential benefits of having more personalized speech that is generated from text.

HA-LONG P.- NGUYEN

Identification of Potential Apoptotic Inhibitors in Natural Extracts

Mentor(s) Name(s): Antonis Zervos

Mentor(s) Department(s): Biomedical Sciences

Project Objective: The objective is to identify potential inhibitors of apoptosis from a collection of 150 natural extracts, which may eventually be used as therapeutic agents. This will be done via high throughput assay, with subsequent testing of the candidate inhibitor(s) specificity for Omi and *in vivo* protection in apoptosis-induced models.

ROSALIE A. PERKINS
Pre-Professional Speech-Language Pathologists and Audiologists: Knowledge and Views about Death and Dying in Terminally-Ill Clients

Mentor(s) Name(s): Kenyatta O. Rivers
Mentor(s) Department(s): Communicative Disorders

Project Objective: The objective of this study was to identify the death and dying knowledge and views of pre-professional speech-language pathologists and audiologists. Two-hundred sixty-six undergraduate and graduate students enrolled in communication disorders courses in a metropolitan university completed a survey. Results revealed significant differences among participants: ethnicities, spiritual beliefs, and views.

BLAIR H. RYAN
How Personality Shapes Our Ethics

Mentor(s) Name(s): Dawn M. Oetjen
Mentor(s) Department(s): Health Services Administration

Project Objective: Can personality be a factor into how someone feels about certain ethical issues? This research project will test this idea and see if a correlation exists between people with the same personality types and their ethical stances on specific issues.

SETH J. TRIFIRO
Isolation of Strict Anaerobes from Marine Sponges

Co-Author(s): Mary Calos, Daniel Cook, William T. Self

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

Project Objective: The aim of this research project was to isolate and identify strict and facultative anaerobic bacteria from deep-sea sponges, harvested in collaboration with Harbor Branch Oceanographic Institute (HBOI). Once these bacteria were cultured and single colonies were isolated, samples were sent to HBOI for 16S ribosomal DNA sequencing.

JUSTIN H. TROTTER
Reelin Function in Stem Cell Biology

Mentor(s) Name(s): Kiminobu Sugaya
Mentor(s) Department(s): Biomedical Sciences

Project Objective: To elucidate molecular mechanisms of the reelin signaling pathway associated with neuronal stem cell migration.

TRACIE L. WILBUR
Optical Hematorheology: An In Vitro Fiber Optic Analysis of Variations in Human Blood Viscosity

Mentor(s) Name(s): Aristide Dogariu
Mentor(s) Department(s): Optics and Photonics

Project Objective: Assess the sensitivity of a fiber optic probe to changes in blood viscosity by real-time measurements under flow conditions corresponding to peripheral human blood vessels. Develop an endoscopic probe suitable for continuous monitoring and capable of detecting changes in the viscoelastic properties of blood, known to indicate several disease processes.

KAREN M. YEARGAIN
Effectiveness of Ferrate as a Ballast Water Disinfectant

Co-Author(s): Linda J. Walters, Debra R. Reinhart

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

Project Objective: To determine the efficacy of ferrate as a disinfectant in ballast water to prevent the spread of nonindigenous species in ports worldwide. In laboratory bioassays, ferrate efficacy was tested on multiple macro-organisms, including brine shrimp (*Artemia salina*), green macroalgae (*Caulerpa mexicana*) and purple sea urchin eggs (*Arbacia punctulata*).

NAOMI C. BROWNSTEIN
Transcendental Numbers

Mentor(s) Name(s): David Kaup
Mentor(s) Department(s): Mathematics

Project Objective: I analyzed algebraic and transcendental numbers and investigated whether linear combinations of such numbers are algebraic or transcendental.

HORACIO A. CARIAS
Development of Nanomaterials for Applications in Negative Refraction

Mentor(s) Name(s): Florencio E. Hernandez
Mentor(s) Department(s): Chemistry

Project Objective: The ultimate goal of this project is the demonstration of negative refraction at optical frequencies. To this end we have devised several methods for the construction of gold nanorings. When ordered in a periodic lattice these structures should provide a metamaterial with an effective index of refraction less than unity.

NATHAN A. CARLIE
Anion Exchange Processes in Germanium-Based Bulk Glasses and Thin-Films

Mentor(s) Name(s): Kathleen A. Richardson
Mentor(s) Department(s): Optics and Photonics

Project Objective: Two anion exchange processes, oxygen for sulfur and sulfur for selenium, have been examined, respectively, in film and bulk glasses for laser waveguide writing for telecommunication application. The compositional dependence of the physical and structural properties is examined using IR and Raman spectroscopy.

JUSTIN W. CLEARY
UV-Induced Reduction of U3+ and U4+ Ions in Calcium Flouride

Mentor(s) Name(s): Robert E. Peale
Mentor(s) Department(s): Physics

Project Objective: A study of spectral changes induced in U:CaF₂ by ultraviolet light which demonstrates that published assignments of absorption lines to charge states are wrong.

SOHANG C. GANDHI
Inverse Scattering and the Inversion of Gamow's Tunneling Formula

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

Project Objective: The objective of this project was to invert Gamow's tunneling formula and compare the issue of uniqueness in the solution thus obtained to that in the method of Gelfand and Levitan.

BENJAMIN H. HUDSON
Electro-Chemical Deposition of Carbon at Room Temperature

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

Project Objective: A determination of the characteristics and visual properties of electro-chemically deposited carbon at or around room temperature.

ALFRED L. KELLER
Evanescent Wave Raman Spectroscopy of Bacteriorhodopsin

Co-Author(s): Sonya Ortiz, April Pope, Yu Guo, Heidi Hockel, Eric Johnson, Leonid Chernyak, Alfons Schulte

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

Project Objective: Waveguide structures were created in gallium nitride thin-films and characterized. A thin layer of the photo-active protein bacteriorhodopsin was deposited on top and its photocycle initiated by a laser beam propagating in the waveguide. The initial light adapted state and the longest lived intermediate were probed by Raman spectroscopy.

ERIN L. LANGSDORF
Classification and Distribution of Patterned Ground in the Southern Hemisphere of Mars

Co-Author(s): Daniel Britt

Mentor(s) Name(s): Daniel Britt
Mentor(s) Department(s): Physics

Project Objective: In Arctic regions on Earth, several different types of polygons are formed through water-soil interactions. High resolution images of Mars have shown similar polygons. By classifying and mapping the distribution of these polygons on Mars, the water-soil interactions that currently may be occurring can be understood.

ENRIQUE G. ORTIZ

Preparation of Size Selected Au Nanoparticle Using Inverse Diblock Copolymer Micelles

Co-Author(s): Grady Slane

Mentor(s) Name(s): Beatriz Roldan-Cuenya

Mentor(s) Department(s): Physics

Project Objective: Narrowly distributed spherical Au nanoparticles have been produced by inverse micelle encapsulation. Subsequently, an H₂-plasma treatment was applied in order to reduce the gold nanoparticles and remove the capping polymer. The nanoparticle size, shape and 2D spatial arrangement were studied before and after polymer removal by atomic force microscopy (AFM).

APRIL K. POPE

Chalcogenide Waveguide Structures and Guiding Layers for Evanescent Wave Spectroscopy of Bio-Assemblies

Co-Author(s): Cedric Lopez, Kathleen A. Richardson, Beatriz Roldan-Cuenya

Mentor(s) Name(s): Alfons Schulte

Mentor(s) Department(s): Physics

Project Objective: Structural modifications in composite layers of chalcogenide waveguides and bio-assemblies are investigated with guided wave spectroscopy. The evanescent wave excited near-infrared Raman spectrum of the photo-active protein bacteriorhodopsin is measured in-situ providing a molecular probe of the light-adapted state. This newly developed approach offers potential for protein monolayer characterization and bio-sensors.

RACHEL M. RUSSO

Hanging by a Thread: Enhancing the Forensic Value of Dyed Cotton Trace Evidence through the Application of Novel Techniques in Fiber Discrimination

Mentor(s) Name(s): Barry G. Fookes

Mentor(s) Department(s): Chemistry

Project Objective: This thesis examines the capability of current techniques in fiber classification such as UV-visible microspectrophotometry (MSP) (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, novel alternative techniques, such as pulsed pumped laser-induced fluorescence spectroscopy (LIF) and liquid chromatography-mass spectrometry (LC-MS), are utilized to provide definitive forensic evidence.

CHRISTOPHER J. SUBICH

Simulation of Wave Propagation through Atmospheric Turbulence

Mentor(s) Name(s): Cynthia Y. Young, Stephen Watson

Mentor(s) Department(s): Mathematics

Project Objective: The objective of this project was to develop a simulation algorithm to numerically determine the wave structure function of an optical wave propagating through atmospheric turbulence. By applying the split-step phase screen simulation algorithm, we calculated the angle of arrival variance, which is directly related to the wave structure function.

KENNETH H. SWANGER

Laser Propagation through the Earth's Atmosphere

Mentor(s) Name(s): Cynthia Y. Young

Mentor(s) Department(s): Mathematics

Project Objective: The purpose is to compare recently developed theory to experimental data to assist the atmospheric propagation community in guiding engineers in developing free space laser systems.

SERGIO TAFUR

The Ascending Double-Cone: A Closer Look at a Familiar Demonstration

Co-Author(s): Sohag Gandhi, Costas Efthimou

Mentor(s) Name(s): Costas Efthimou

Mentor(s) Department(s): Physics

Project Objective: The conceptual explanation for a double-cone ascending an inclined V-rail is well-known — a widening ramp allows the center of mass of the cone to drop, over-balancing the increase in altitude due to the inclination of the ramp — this project extracts the rich physical content through deeper exploration.

DAVID B. TORRANCE

Material Systems for Selective Electroless Deposition of Silver Metal onto Poly(acrylate) Micro-Scaffolds

Co-Author(s): Yun-Shen Chen, Stephen M. Kuebler

Mentor(s) Name(s): Stephen M. Kuebler

Mentor(s) Department(s): Chemistry

Project Objective: The objective was to formulate and characterize solutions and processes that enable selective electroless deposition of silver onto chemically functionalized micro-scale structures. Structures created via multi-photon initiated three-dimensional microfabrication (3-DM) in acrylate polymer resins containing thiol, thioether, cyano, or amine additives are expected to promote silver binding and deposition.

JOHN B. TURPISH

Simple Metal Contacts for ZnO THIN Films

Co-Author(s): Andrey Muraviev

Mentor(s) Name(s): Gabriel Braunstein

Mentor(s) Department(s): Physics

Project Objective: Formed and characterized metal contacts to ZnO, a wide band gap semiconductor.

NATHAN Z. WEAGRAFF

Synthesis and Bio-Evaluation of Polyamine

Mentor(s) Name(s): Otto Phanstiel

Mentor(s) Department(s): Chemistry

Project Objective: Polyamines are important growth factors to help cells grow. Many cancer cells contain active polyamine transporters (PAT) which allow them to import exogenous polyamines. The goal of this project is to synthesize new polyamine-drug conjugates and to evaluate their bioactivity as anticancer agents.

DANIEL L. YATES

Analysis of Silicon Nanoparticles using Multiple Imaging Techniques

Mentor(s) Name(s): Alfons Schulte

Mentor(s) Department(s): Physics

Project Objective: A variety of imaging techniques were used to analyze a sample of silicon nanoparticles with an ultimate goal of obtaining an optical image of a particle whose small size makes its resolution normally impossible due to the diffraction limit of light.

DANIELLE M. ABERNATHY
Sexual Double Standards

Co-Author(s): Charles Benton, Michelle Russell

Mentor(s) Name(s): Randy D. Fisher
Mentor(s) Department(s): Psychology

Project Objective: We attempted to determine the existence and abundance of a sexual double standard here on campus. Through our in-depth questionnaire many conclusions were determined; however, our primary focus was on students' perceptions of a double standard and their personal endorsement of the double standard.

MEAGAN C. ARRASTIA
Vegetarianism and Authoritarian: A Look at Sexual Orientation

Mentor(s) Name(s): Jana H. Jasinski
Mentor(s) Department(s): Sociology and Anthropology

Project Objective: This study examines the link between social structural variables (sex, age, religion, race/ethnicity, and sexual orientation), individual social psychological variables (authoritarianism), and dietary preferences (vegan, vegetarian, and omnivore). This could provide more information and social insight to the subculture of vegetarians.

NICOLE C. BAUER
College Age Students' Religiosity and Its Relationship to Substance Abuse

Mentor(s) Name(s): Jana H. Jasinski
Mentor(s) Department(s): Sociology and Anthropology

Project Objective: Religious variables, including the impact of different religious affiliations along with the importance of parent's roles in their children's life, will be examined to determine its influence on the behavior of college age students' substance use.

RYAN P. BENEFIEL
The Franco-German Machine and European Integration

Mentor(s) Name(s): Kerstin Hamann
Mentor(s) Department(s): Political Science

Project Objective: I examine the historical ways in which Germany and France have responded to constraints and opportunities provided by European integration. The project looks at the impact of the Franco-German relationship on the European Union and identifies the motivations behind these countries' European policies by looking at important treaties and initiatives.

CHARLES L. BENTON
A Factor Analytic Study of Aggressive Driving

Co-Author(s): Meredith Bell, Chelsey Chase, Mustapha Mouloua, Davin A. Pavlos, Genna Reichstein, Heather Rivers, Edwin Shirkey

Mentor(s) Name(s): Mustapha Mouloua
Mentor(s) Department(s): Psychology

Project Objective: Five previously developed scales relating to driver anger and performance were given to students. Their responses were then entered into a principal components analysis. The analysis results are to be used to develop a condensed scale for the purposes of determining driver performance in future research.

MONICA L. BOX
Staff Perceptions of Resident Autonomy in Assisted Living

Co-Author(s): Laura Crowley

Mentor(s) Name(s): Elzbieta Sikorska-Simmons
Mentor(s) Department(s): Sociology and Anthropology

Project Objective: The primary objective of this survey of 150 staff members in nine assisted living facilities is to examine factors associated with staff attitudes toward resident autonomy. It is hypothesized that staff's positive attitudes toward resident autonomy will be associated with younger age, greater education, and higher job satisfaction.

ERIC R. BRATCHER
Risk Behaviors: Differing Perceptions of Risk

Mentor(s) Name(s): Tracy L. Dietz
Mentor(s) Department(s): Sociology and Anthropology

Project Objective: The purpose of the research was to see if people of differing sexual orientations felt differently towards HIV/AIDS. Another purpose was to exam the percentage of times differing sexual orientations use condoms.

SYREETA P. BROWN
The Relationship Between Social Attitudes and Race-Based Affirmative Action

Mentor(s) Name(s): Alvin Y. Wang
Mentor(s) Department(s): Psychology/Burnett Honors College

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

ALTHEA M. BRYANT
The Impact of Personal Influences on the Level of Career Readiness in College Students

Mentor(s) Name(s): Andrew Daire
Mentor(s) Department(s): Education

Project Objective: This study investigates the relationship among influences on the level of negative career thoughts. Identification of influences can lead to targeted educational opportunities that will have an impact on the career readiness of these and other students. The comparison of two data collections will show which differences exist among groups of students.

SIMONE L. CHIN
Working Memory in Bilinguals and Second Language Learners

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

Project Objective: My honors thesis is examining the working memory in English-French bilinguals and English speakers learning French. The main hypothesis is there should be a significant difference in working memory abilities between true bilinguals and those learning a second language.

DARCY J. COPE
The Effects of Household Corrosive Substances on Human Bone and Teeth

Mentor(s) Name(s): Tosha L. Dupras
Mentor(s) Department(s): Sociology and Anthropology

Project Objective: Murderers often attempt to conceal the identity of their victims by using some sort of corrosive substance. These corrosive chemicals can be found in household products, such as drain cleaners or toilet bowl cleaners. This research project explores how such household chemicals affect bone and teeth in a forensic setting.

JAMES M. CRANDALL
Research on the Ancient Maya, Caracol, Belize: 2005

Co-Author(s): Sean Timothy Kopaniasz, Patrick Carr Rohrer

Mentor(s) Name(s): Diane Z. Chase, Arlen F. Chase
Mentor(s) Department(s): Sociology and Anthropology

Project Objective: To learn about Maya archaeological field techniques and hypothesis testing from a practical hands-on perspective, as compared to a classroom setting. The objectives of the 2005 Caracol Archaeological Project included testing for the latest Maya remains at the site before it was abandoned at 900 a.d.

JERRY DESRAVINES
The Higher Standard

Mentor(s) Name(s): Richard E. Lapchick
Mentor(s) Department(s): Devos Sport Business Management Program

Project Objective: This study is on the impact of minority head coaches on minority athletes, both on and off the field. When complete it will address if any positive or negative correlations minority head coaches have on their minority players.

LUIS A. DIAZ
Platinum Property Designs

Mentor(s) Name(s): Kathie K. Holland
Mentor(s) Department(s): Business Administration

Project Objective: Establish and incorporate a business that will attend to the growing needs faced by the elderly population.

PAUL C. FISK
A Different Type of Bilingual Education: An Ethnography of Hillcrest Elementary

Mentor(s) Name(s): Elayne Zorn
Mentor(s) Department(s): Sociology and Anthropology

Project Objective: Bilingual education is controversial in the U.S. Diverse problems are associated with traditional bilingual education programs; bilingual education was banned in California and Arizona. Hillcrest Elementary in Orlando, Florida, has a unique immersion bilingual education program. Using cultural anthropology methodology, I examined Hillcrest to assess teaching of dual language proficiency.

LINDSAY G. GOFF
Preschoolers' Interactions with Live and Robotic Dogs

Mentor(s) Name(s): Valerie K. Sims, Matthew Chin
Mentor(s) Department(s): Psychology

Project Objective: The intention of this study was to examine how normally-developing children interact with both robotic and live dogs, particularly focusing on the questions of whether or not children's anthropomorphic tendencies differ from adults', and whether or not past interactions with animals influence development in this area.

CARLY S. GREENFIELD
With Liberty and Justice for ALL

Mentor(s) Name(s): Dawn M. Oetjen
Mentor(s) Department(s): Health Services Administration

Project Objective: In this project, I researched the issue of gay and lesbian marriage in America. I proctored a survey, which was given to a random selection of students at the University of Central Florida, and the results were analyzed to learn the views on gay and lesbian marriage from students of different backgrounds, ages, and genders.

KATIE A. KAPLAN
American Eugenics: The Race for the Perfect Race

Mentor(s) Name(s): Dawn M. Oetjen
Mentor(s) Department(s): Health Services Administration

Project Objective: The opinions on the ethical impact of eugenics on American society will be surveyed in order to predict future participation in reproductive manipulation and creation of a supposed perfect human race.

CHARLES S. KNAUSE
Exercise as a Cure for Depression, Anxiety, and Other Emotional/Psychological Problems

Mentor(s) Name(s): Julie D. Eberwein
Mentor(s) Department(s): Psychology

Project Objective: The purpose of this study was to consider the possibility of using a physical exercise program as a potential treatment paradigm in and for the treatment of a number of commonly diagnosed serious and chronic mental (i.e., emotional/psychological) disorders such as depression, anxiety, schizophrenia, and other commonly diagnosed conditions.

SHEA N. KNIGHT
Elephants, Donkeys, and the Animals in Between: A Glimpse of Student Political Opinions of the Issues and of Each Other

Mentor(s) Name(s): Dawn M. Oetjen
Mentor(s) Department(s): Health Services Administration

Project Objective: Student opinions concerning political issues as well as perception of those with opposing views will be examined, through the use of a survey instrument, so as to divulge and theoretically remove the chasm between extremists.

CATHERINE LONGA
The Relationship Between Academic Dishonesty and General Deviance

Mentor(s) Name(s): John M. McGuire
Mentor(s) Department(s): Psychology

Project Objective: Academic dishonesty and general deviance will be studied by surveying undergraduate students at the University of Central Florida. Students will be asked a variety of questions regarding their behavior — both in and out of the classroom — to determine if a relationship exists between the two variables.

ALINNE B. MAZE
Regional Integration among Post-Communist States: Integration Theories and ECO

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

Project Objective: The main objective of this research is to analyze six major theories of integration that were originally developed to explain the European experience and apply them to the study of the formation and development of other international regional organizations, such as the Economic Cooperation Organization (ECO).

JAMES E. MCKNIGHT
Influences of Confidence

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

Project Objective: In attempt to discover what influence people's confidence in institutions such as education, and medical facilities, data has been collected from the SPSS. The collected data was broken into demographic variables like age, sex, and race. The results of this collected data should illustrate what influence people's confidence in institutions.

SARAH L. MENDOZA
A Prospective View of Animal Abuse

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

Project Objective: This study examines the beliefs of mental health professionals concerning animal abuse. We have created a survey, which inquires about the importance of specific variables in cases of animal abuse. We hope to identify an important set of variables for clinicians to consider when working with animal abusers.

DIANA M. OREM
Visual Processing Performance as a Predictor of Risk for Future Onset of Schizophrenia

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

Project Objective: The purpose of this research is to identify a pattern of performance on a computerized visual processing task that relates to self-reported, subtle, schizophrenia-spectrum symptoms in an undergraduate population. This information will inform longitudinal studies that attempt to predict future onset of schizophrenia, a severe psychological disorder.

ADAM R. PASTERNAK
Social and Linguistic Perceptions Among Natives of Three States

Mentor(s) Name(s): David F. Bowie
Mentor(s) Department(s): English

Project Objective: This study analyzes linguistic and social attitudes of Californians, Floridians, and Utahans towards themselves and each other. The study is based on a survey covering national attitudes, but focusing on California, Florida and Utah. Correlations between social and linguistic attitudes were strong, with regional affiliation also playing a role.

DENISE N. PETRUNAK
Violence in Film: Narrative and Contextual Importance in Subjective Response

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

Project Objective: Narrative and context are largely ignored in psychological studies dealing with violent film. This study utilized film in its entirety to support the idea that narrative is more subjective in its effect. Methodology surrounding the importance of narrative is grounded in Freudian and Lacanian psychoanalytic theory and Zizek's cultural theory.

KEMBA A. PINKSTON
"I Am Not Where I Live": Parramore, A Case Study

Mentor(s) Name(s): Kurt B. Young
Mentor(s) Department(s): African American Studies

Project Objective: The objective of this research project is to investigate, critique, and suggest means of improving methods of relocation.

KENYA A. PINKSTON
Race, Media, and Marketing: The Strategic Positioning of the Black Athlete

Mentor(s) Name(s): Fritz G. Polite
Mentor(s) Department(s): Devos Sport Business Management Program

Project Objective: The focus of this research is to examine the relationship between the media, race, and marketing; and how the Black athlete and the non-black athlete are positioned in the minds of Americans.

EDWARD L. PLATT
Observing Misogynous Material and Its Relationship with Domestic Violence

Mentor(s) Name(s): Jana H. Jasinski
Mentor(s) Department(s): Sociology and Anthropology

Project Objective: The present study examined the relationship between viewing violent material and violent behavior. Surveys were distributed to a convenience sample of 300 University of Central Florida students in the Spring semester of 2005 to test the hypothesis that a positive relationship exist between domestic violence rates and viewing misogynous material.

RACHAEL A. RISCINTI
Measuring Outcome of a Mood Improvement

Mentor(s) Name(s): Larry Marks
Mentor(s) Department(s): UCF Counseling Center

Project Objective: Positive psychology seeks to build, nurture, and identify positive qualities in individuals. Based on the theory of positive psychology, this research project focused on measuring the impact of a psychoeducational mood improvement workshop on participants' mood. Depression, positive and negative emotions, optimism, and hope were the variables assessed.

HEATHER M. RIVERS
Road Rage: Investigation of Aggressive Behavior

Mentor(s) Name(s): Mustapha Mouloua
Mentor(s) Department(s): Psychology

Project Objective: UCF students volunteered to drive a PC-based computer game that was evaluated by videorecording and then correlating the results with a questionnaire they completed. This was intended to find if the survey/questionnaire could be used to predict aggressive driving behavior.

SUSANNE J. ROWE

Students' Perception of Future Financial Donations

Co-Author(s): Barbara F. Turnage

Mentor(s) Name(s): Barbara F. Turnage

Mentor(s) Department(s): Social Work

Project Objective: Explored were factors that may contribute to a student's desire to give financially to UCF after graduating. Two hundred and twenty-three students from three disciplines were surveyed. Students who felt that UCF is a good fit for them were more likely to report plans to contribute to the university.

HEATHER M. ROZELLE

Father-Daughter Relationships in Divorced and Non-Divorced Families with Respect to Self-Esteem, Fear of Intimacy, and Views on Relationships

Mentor(s) Name(s): Charles Negy

Mentor(s) Department(s): Psychology

Project Objective: Variables of interest include the women's self-esteem, fear of intimacy, negative views on marriage, and the number of romantic relationships the young women have had. The age of the participants when their parents got divorced, the level of conflict between the parents who are and are not divorced, familial support of the children, and the gender and ethnicity of the child will also be investigated. In regards to ethnicity, this study will also measure the acculturation of the African American and Hispanic participants.

ANASTASIA L. SEARFOSS

Computer Usage and Mental Health

Mentor(s) Name(s): Jana H. Jasinski

Mentor(s) Department(s): Sociology and Anthropology

Project Objective: Computer Usage and Mental Health analyzes self-administered surveys at UCF for possible correlations between the amount of time spent on computers and the rate at which one exhibits mental illnesses. Illnesses examined include: Internet addiction, anxiety, depression, bipolar disorder, and obsessive-compulsive disorder.

USAIMA NAVEED SIDDIQI

Research and Responsibility

Mentor(s) Name(s): Dawn M. Oetjen

Mentor(s) Department(s): Health Services Administration

Project Objective: I plan to survey random students and interview professors who are engaged in research on campus in order to analyze how this community feels towards the issues of research ethics and moral obligations. I hope to find examples from history to reinforce or negate the paradigm from current times.

PATRICK R. SIEBERT

Eating and Driver Distraction: An Experimental Analysis

Co-Author(s): Stephani N. Deese, Nick Barrese

Mentor(s) Name(s): Mustapha Mouloua

Mentor(s) Department(s): Psychology

Project Objective: The current study was designed to empirically examine the effect of eating on driving performance and workload. Based on previous research with telematic devices, it was expected that active food consumption would have a deleterious effect on driving performance and workload.

SAMANTHA D. STEFFEN

Alternative Treatment Programs for Offenders with Mental Illness and Substance Dependency in the Criminal Justice System

Mentor(s) Name(s): Laurie A. Gould

Mentor(s) Department(s): Public Administration

Project Objective: The objective of this project is to aid in the treatment of offenders — mainly those that have mental illness, substance dependency, or both — in order to reduce re-offending behaviors that are likely to be exhibited, save the federal and state governments money, and to protect society.

ERICA N. THOMAS

The Influence of Images Portrayed in Political Ads

Mentor(s) Name(s): Terri S. Fine

Mentor(s) Department(s): Political Science

Project Objective: This project explores the use of images in political ads generated by political and interest groups to influence target groups. The study is centered on the affect these images conjure up in target groups and explains the affect these images have on creating awareness or knowledge of politics on both domestic and foreign issues.

NORMA R. TOUSSAINT

Sustaining Development in Haiti: A Critical Analysis of Three Models in Haitian Development

Mentor(s) Name(s): Kevin Meehan, Kurt B. Young

Mentor(s) Department(s): English, African American Studies

Project Objective: Within the context of international relations theory, religion is not considered as an additional variable that influences behavioral dynamics of a state. I argue that in Haiti, the assessment of Vodun's space, the spiritual practice of the Haitian masses, has a significant role in shaping both domestic and international relationships.

JANEL VASALLO

Unearthing American History: Archaeological Excavation at the Historic Town of New Philadelphia, Illinois

Mentor(s) Name(s): Rosalyn Howard

Mentor(s) Department(s): Sociology and Anthropology

Project Objective: I researched the town of New Philadelphia, Illinois, one of the earliest racially mixed communities in America. I participated in an archaeological excavation of its remains and researched related historical documents. I used both methods to come to various conclusions about the town's physical existence and the living conditions.

MARLA R. WAGNER

Has Free Speech Gone Too Far?

Mentor(s) Name(s): Dawn M. Oetjen

Mentor(s) Department(s): Health Services Administration

Project Objective: The objective of this research is to look at the controversy surrounding freedom of speech and its limitations, specifically regarding anti-abortion protests, flag burning, Klu Klux Klan rallies, and other forms of hate speech.

LAUREN E. WATANABE

National Differences in Homicide, and Property and Violent Crime: A Test of Three Criminological Theories

Mentor(s) Name(s): Jana H. Jasinski

Mentor(s) Department(s): Sociology and Anthropology

Project Objective: Using existing statistics from public data sources, including the Census, the *United States Statistical Abstract*, the National Center for Education Statistics, and the *Sourcebook of Crime and Justice*, this project tested the ability of three theoretical frameworks: routine activities, social disorganization, and strain theory, to explain national differences in homicide, property, and violent crime.

WENDY N. WHITMAN

Is There a Flip-Flop Phenomenon at UCF?: Flip-Flops and Fads at the University of Central Florida

Co-Author(s): Nathan Burns, Jacob Thompson, Michael Jackson

Mentor(s) Name(s): Bernadette M. Jungblut

Mentor(s) Department(s): Political Science

Project Objective: The research team aimed to look at the predominance of flip-flop wear on the campus of UCF and to look at flip-flop wear through the framework of fads and trends. The team performed observational research and a review of relevant literature in order to research our topic.

JESSICA L. WILLIAMS

Victims' Rights and Support Services at UCF: A Student Survey Designed to Assist with the Development of Programs and Policies to Increase Student Awareness and to Reduce Injury Related to Sexual Victimization

Mentor(s) Name(s): Kenneth Reynolds

Mentor(s) Department(s): Criminal Justice

Project Objective: Examine the level of knowledge and attitudes of UCF students pertaining to victims' rights and the availability of support services at UCF.

MELISSA A. WITTE

Comparing the Prevalence of Sexual Harassment

Mentor(s) Name(s): Jana H. Jasinski

Mentor(s) Department(s): Sociology and Anthropology

Project Objective: The purpose of the present study it to examine the prevalence of gender inequality and sexual harassment among two types of students; students in the general university population in attendance at a public university and ROTC students in attendance at a public university.

NICOLE XIQUES

The Self Efficacy of Pre-Service Elementary Teachers

Mentor(s) Name(s): Bobby Jeanpierre

Mentor(s) Department(s): Education

Project Objective: This research focused on the science teaching beliefs of a group of pre-service elementary education teachers.

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