UNIVERSITY OF CENTRAL FLORIDA | ORLANDO, FLORIDA

SHOWCASE OF UNDERGRADUATE RESEARCH EXCELLENCE
Celebrating undergraduate research and creativity across the curriculum.
OFFICE OF UNDERGRADUATE RESEARCH

FRIDAY, APRIL 1, 2011 • 1:30–5:00 P.M.
Pegasus Ballroom–UCF Student Union
Welcome to the Eighth Annual Showcase of Undergraduate Research Excellence.

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

The Showcase is part of the 2011 Student Research Week at UCF: www.ResearchWeek.ucf.edu

www.Showcase.ucf.edu
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ORDER OF EVENTS

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

Dr. Elliot Vittes
Interim Vice Provost and Dean of Undergraduate Studies
Associate Professor of Political Science

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

President John C. Hitt
Professor of Psychology

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

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

Student Undergraduate Research Council

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

Dr. Elliot Vittes
Interim Vice Provost and Dean of Undergraduate Studies
Associate Professor of Political Science

STUDENT RESEARCH WEEK 2011
SHOWCASE JUDGES

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

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<th>Tareq Ahram</th>
<th>Jana Jasinski</th>
<th>Erin Saitta</th>
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<td>Yuanli Bai</td>
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SHOWCASE BENEFACCTORS

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

Kenneth Fedorka
Florida High Tech Corridor Council
Richard H. Harrison II in honor of Mr. and Mrs. Phillip M. Rosenberg
Jana Jasinski
Progress Energy
John (Rick) Schell
Kimberly R. Schneider
UCF Burnett Honors College
UCF Chapter of Sigma Xi
UCF Federal Credit Union
UCF Institute for Social and Behavioral Sciences, Department of Sociology
UCF Office of Research and Commercialization
UCF Office of Undergraduate Studies
UCF Student Government Association
UCF Women’s Research Center
Laurence von Kalm
The faculty is a university’s paramount asset, and the Office of Undergraduate Research recognizes the following UCF faculty mentors who have advised, counseled, tutored, and encouraged students presenting at today’s Showcase.

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**RACHEL BOTSFORD**  
*Interactive Fiction: Koios*  
*Mentor:* Dr. Natalie Underberg (Visual Arts and Design)  
An interactive fiction piece that is meant to blend science fiction with fantasy and explore the inherent value of truth.

**RICHARD BRICKEY**  
*Knight Navigator*  
*Student Co-Authors:* Gabriel Sanchez, Phillip Thompson, Robert Aviles  
*Mentor:* Dr. Robb Lindgren (Visual Arts and Design)  
Knight Navigator is an application for smartphones that guides users unfamiliar with the UCF campus to their desired on-campus destination. It is an augmented reality application that draws directions on top of the camera and contains an interactive map of campus that highlights and updates the user’s location in real-time.

**PHILIP CARTER**  
*Dancing the Earth*  
*Mentors:* Dr. Robb Lindgren, Dr. Michael Moshell (Visual Arts and Design)  
The objective is to study the feasibility of different approaches to creating a virtual docent for an interactive Science Center exhibit. Interactive design methodologies are being applied to determine the most effective technical solution to creating a conversational, telepresent avatar in a museum environment.

**KELLEY DUDA**  
*It’s a Man’s World and Rosie the Riveter Built Ships: World War II’s Traditional Florida Women, 1939-1945*  
*Mentor:* Dr. Connie Lester (History)  
I researched Floridian women during World War II, primarily those who worked in the factories and shipyards. I conducted research through UCF’s resources, FSU, and the Institute on WWII and the Human Experience. I analyzed and conducted research with historians pertaining to WWII being a watershed event for women.

**CHELSEY ECHEVARRIA**  
*Global, Transnational Perspectives and Sexual Trafficking*  
*Mentor:* Dr. Cecilia Rodriguez-Milanes (English)  
Beginning with a feminist analysis, I have studied the work of various post-colonial, transnational theorists such as Trinh T. Min-ha, Chandra Mahanty, Audre Lorde and various authors from Global Feminism: Transnational Women’s Activism, Organizing and Human Rights. I will employ this theoretical foundation in my approach to the issue of human trafficking.

**DREW FEDORKA**  
*Charles de Gaulle and the Resurgence of France: French Foreign Policy From 1958 to 1963*  
*Mentor:* Dr. Amelia Lyons (History)  
This project studied how, between 1958 and 1963, French president Charles de Gaulle utilized foreign policy and diplomacy in an effort to redefine the French postwar national identity, as well as satisfy a quest for leadership in the era of decolonization, European integration, and the Cold War.

**JOHN GIESELMANN**  
*Video Games: Their Role in Cognitive Development*  
*Mentor:* Mr. Dan Novatnak (Visual Arts and Design)  
This study aims to combine video gaming technologies with research based in cognitive development to produce a game prototype capable of assessing the development of critical thinking skills.

**GABRIEL GONZALEZ**  
*Learning Arousal Study*  
*Student Co-Authors:* Jeff Younger  
*Mentor:* Dr. Robb Lindgren (Visual Arts and Design)  
This study examines cognitive and physiological responses to video games through the use of a custom interactive experience, physio metrics, and a series of memory tests. It also aims to determine the most effective elements in a game that engages a player, and how to later implement them in an educational environment.

**HOWARD HARRINGTON**  
*Shifts in Pronunciation Patterns and Prestige in Peninsular Spanish*  
*Mentor:* Dr. Gregory Thompson (Modern Languages and Literatures)  
The initial part of the project has consisted of analyzing prerecorded interviews with the people of Andalusia, and identifying and recording data based on speech patterns contained therein.

**CHARLES JOHNSON**  
*Electronic Circuits Learning Application*  
*Student Co-Authors:* Carlos Lopez, Monica Espinoza, Shanice Ward  
*Mentor:* Dr. Robb Lindgren (Visual Arts and Design)  
This study explores the possibility of teaching the basic concepts of electronic circuits to students between the ages of eight and twelve through the use of a metaphor implemented in a video game.

**MEGAN KIZZORT**  
*Visual Math Lessons for Students With Learning Disabilities*  
*Mentor:* Dr. Joo Kim (Visual Arts and Design)  
Our goal was to create games and educational resources for young students, particularly those with math disabilities or difficulties. Weaknesses in math ability can affect students throughout their lives. We created additional resources for students, parents, and teachers that would prepare the students for standardized tests and future experiences.

**WHITNEY LAWSON**  
*Jagged Little “Blue” Pill: The Allure of Beta-Blockers in Helping Musicians Cope With Performance Anxiety and the Drug Free Alternatives*  
*Mentor:* Dr. Johnny Pherigo (Music)  
The purpose of this study is to investigate research regarding the use of various antianxiety medications and the drug-free alternatives to dealing with performance anxiety.

**CAROLINE McFADDEN**  
*Invisible Ink: Whiteness, Young Women Leaders, and Bridging Difference to Build Community*  
*Mentor:* Ms. Meredith Tweed (Women’s Studies)  
Adolescent girls are emerging leaders, and it is important to investigate their leadership development in an increasingly diversified world. This research specifically explores local middle school girls’ racial and ethnic identities and the influence of those identities on girls’ thoughts, perceptions, and leadership styles.
How should we best understand love? I have researched the growing area of the philosophy of love in the attempt to determine whether there is an ascent through multiple spheres of love, beginning with the aesthetic sphere, including narcissism and self-love, and moving toward an ethico-religious love of the other.

ELISABETH MENDES  
**Current and Past Meanings of the Music of Capoeira**  
*Mentor*: Dr. Sally Hastings (Communication)  
The objectives are twofold. First, to explore historical uses of the music of Capoeira as a form of argot or a secretive language. Second, this project explores how mestres see the meanings of music of Capoeira changing over time as the context changes and the music crosses cultural boundaries.

BENJAMIN MICHEL  
**The Black Power Movement Through the Arts**  
*Mentor*: Mr. Anthony Major (Visual Arts and Design)  
This research examines the influence of Black art during the Black Power Movement in the U.S. and Latin America.

SARAH PARKER  
**Development of a Map Application of Environmental, Energy, and Sustainability Initiatives at UCF**  
*Mentor*: Dr. Michael Hampton (Chemistry)  
Our objective is to design a campus map highlighting sustainable practices and environmental initiatives underway at UCF. We will test and develop the map website and application to provide campus visitors, students, and faculty an inside look at research, projects, and facilities aligned with UCF’s commitment to becoming climate-neutral.

ROBERT-CHRISTIAN SANCHEZ  
**The Effect of Mechanical and Musical Tempo on Physiological Responses and Self-Perceived Mood**  
*Mentor*: Dr. Karen Large (Music)  
I have researched studies relating to the physiological responses to music. Looking closely at heart rate and self-perceived mood as my variables, I have an experimental plan to measure the differences between musical tempo and mechanical tempo.

CHRISTOPHER SARDINAS  
**World’s Fair Tour**  
*Mentor*: Dr. Charles Hughes (Electrical Engineering and Computer Science)  
We created 3D models of the various world’s fairs for Google Earth.

SAMANTHA SCHROEDER  
**The Ascent of Love: On the Movement of Love, From the Aesthetic to the Transcendent**  
*Mentor*: Dr. Michael Strawser (Philosophy)  
How should we best understand love? I have researched the growing area of the philosophy of love in the attempt to determine whether there is an ascent through multiple spheres of love, beginning with the aesthetic sphere, including narcissism and self-love, and moving toward an ethico-religious love of the other.
JOHN BRATOS
Micro-Raman Spectroscopy of Hydrated Polymer Electrolyte Fuel Cell Membranes
Mentor: Dr. Alfonso Schulte (Physics)
The Nafion membrane is a key component in a Proton Exchange Membrane Fuel Cell as it controls proton flux. The main focus of my research is to study how the microscopic structure of the membranes changes when hydrated, using micro-Raman spectroscopy as a molecular probe.

THOMAS BREEN
Remote Telemetry Design for Sustainable Energy Testing
Student Co-Author: Emilio Vinueza
Mentor: Dr. Larry Chew (Mechanical, Materials, and Aerospace Engineering)
The project’s objective was to develop small and inexpensive wireless data loggers to collect experimental data which could be implemented in sustainable energy testing.

BRITTANY BRODER
Unifying the Theta-Projection and the Kachanov-Rabotnov Creep Models
Student Co-Author: Kelly Townsend
Mentor: Dr. Ali Gordon (Mechanical, Materials, and Aerospace Engineering)
We used regression analysis to find the constants in the Theta projection model to couple mathematically with the Kachanov-Rabotnov model for creep deformation.

CARA BROWN
Effect of Environmental Conditioning on Mechanical Properties of Polyurethane Carbon Composites
Mentor: Dr. Kevin Mackie (Civil, Environmental, and Construction Engineering)
It has been shown that exposure to moisture, UV light, and fluctuating temperature can have a negative effect on the stiffness and strength of CFRP repairs. This research investigates how continuous exposure to various environmental conditions affects the mechanical behavior of CFRP when the laminate is adhered with polyurethane adhesive.

JOSHUA BURBRIDGE
A Cryptographic Analysis of Lattices and Elliptic Curves, and the Appropriate Contexts for their Use
Mentor: Dr. Ratan Guha (Electrical Engineering and Computer Science)
Given the variability in the architecture of modern electronic communications devices, the RSA algorithm may not always be the most appropriate encryption method of choice. This study aims to analyze the security and efficiency of lattice and elliptic curve-based algorithms and to determine their proper role in information security.

JAMIE CAPRA
Performance Evaluation of the Efficiency of Two Sediment Control Techniques Under Field Conditions
Mentor: Dr. Manoj Chopra (Civil, Environmental, and Construction Engineering)
The goal of this study is to conduct a performance evaluation of two geosynthetic fabrics for sediment control application. The analysis will determine the efficiency of reducing pollution and turbidity discharges caused by sediment transport from construction sites using a field-scale test bed and rainfall simulator.

BRADLEY CLYMER
Processing, Evaluating, and Summarizing Data Recorded From Microelectrode Arrays
Mentor: Dr. Aman Behal (Electrical Engineering and Computer Science)
I developed mathematical tools for a meaningful evaluation of the activity of neural networks, monitored by substrate-integrated microelectrode arrays.

KELLY COX
Improving Coronary Blood Flow in Neonate Circulation With Hypoplastic Left Heart Syndrome
Mentor: Dr. Alain Kassab (Mechanical, Materials, and Aerospace Engineering)
A vascular graft apparatus will be tested to see if it is possible to occlude flow synchronous with patient heart rate through a Blalock-Taussig Shunt used in the Norwood Procedure for neonates with Hypoplastic Left Heart Syndrome to therefore improve coronary blood flow and thus life expectancy.

RENÉ DÍAZ
Processing of Commercial Grade Fe-Based Structural Amorphous Steels
Mentors: Dr. William Johnson, Dr. Marios Demetriou (California Institute of Technology)
Fe-based metallic glasses have been previously developed using premier grade (>99.95% purity) constituent elements (>99.95%), but to provide commercial structural amorphous steels, commercial grade (<99% purity) constituent elements are used. Glass transition, crystallization, and melting events of the amorphous alloys are characterized using a differential thermal analyzer (DTA).

JAMES DINAN
Stress and Temperature Effect on the Structure and Vibrational Properties of LaCoO₃ Based Ceramic Perovskite
Student Co-Author: Nathan Fister
Mentor: Dr. Nina Orlovskaya (Mechanical, Materials, and Aerospace Engineering)
Experiments were conducted to determine the vibrational properties in the structure of LaCoO₃ upon heating with a solid silicon 532nm laser using Raman Spectroscopy. In addition, LaCoO₃ placed under in-situ three-point bending to study vibrational properties under stress.

JOSHUA DIXON
Extended Contextual Game Observation (eCONGO)
Mentor: Dr. Avelino Gonzalez (Electrical Engineering and Computer Science)
The goal of this particular research is to introduce human-like characteristics into computer game agents. The first person shooter game (Quake 2) is an open-source multi-agent environment that allows humans to manipulate and train non-playable characters (agents) using artificial neural networks and context-based reasoning.

BENJAMIN ESLAHPAZIR
In-Vitro Predictor of Stroke Trajectory Generated by the Continuous-Flow LVAD Prosthesis
Mentor: Dr. Alain Kassab (Mechanical, Materials, and Aerospace Engineering)
Cerebral stroke occurs in approximately 20 percent of left ventricular assist device recipients. The circulatory conditions generated by the LVAD will be reproduced using user-defined flow parameters integrated into a bench-top replica of the arterial circulation and aid in a personalized approach to LVAD implantation to reduce cerebrovascular events.
**ALYSSA FEARS**

**Synthesis of Controllable Phantoms for the Study of Viscoelasticity of Complex Media Using Low Coherence Dynamic Light Scattering**

*Mentor: Dr. Aristide Dogariu (Electrical Engineering and Computer Science)*

We synthesized a phantom whose material properties can be easily manipulated for studying dynamic light scattering in complex media such as human blood.

**ANTON FEDOTOV**

**Monitoring Health and Behavior of Offshore Platforms Using Non-Destructive Technique Such as Brillouin Optical Time Domain Analysis (BOTDA) Systems**

*Mentor: Dr. Necati Catbas (Civil, Environmental, and Construction Engineering)*

Off-shore platform type, design criteria, load impacts, failure modes, and failure causes, along with monitoring technique overview, will be observed to determine weak links of the structure and application of newly developed fiber optic BOTDA system.

**TALIA FIELD**

**Synchrotron Studies of Trimodal Metal Matrix Composites**

*Student Co-Author: Ashley Jones*

*Mentor: Dr. Seetha Raghavan (Mechanical, Materials, and Aerospace Engineering)*

The objective of this research is to determine the best thermo-mechanical condition for prevention of metal matrix composite grain growth to retain the strength advantage of the smaller grain sizes.

**SPENCER FRONTE**

**Facial Recognition in Social Networks Using Image and Social Features**

*Mentor: Dr. Marshall Tappen (Electrical Engineering and Computer Science)*

This project will investigate facial recognition on images from social networking sites, such as Facebook. More specifically, it will investigate how information from these sites, such as friendship information and album information, can be used to increase accuracy.

**SPENCER FRANK**

**Computational and Experimental Comparison for the Prediction of Turbine Blade Flutter**

*Mentor: Dr. Seetha Raghavan (Mechanical, Materials, and Aerospace Engineering)*

The goal of this study is to improve the prediction of turbine blade flutter by comparing the computational prediction of the reduced frequency (Strouhal Number) and unsteady pressures to experimental results.

**DANIELLE FRANTZ**

**Vocal Affect Recognition: Training a Neural Network to Recognize Crowd Emotions**

*Mentor: Dr. Avelino Gonzalez (Electrical Engineering and Computer Science)*

This project proposes a method for recognizing emotions through acoustical correlates analyzed in non-verbal crowd vocalizations.

**MATTHEW GOLSEN**

**Impact of Rotational Wakes on Film Cooling Effectiveness in an Annular Sector**

*Mentor: Dr. Jayanta Kapat (Mechanical, Materials, and Aerospace Engineering)*

The high temperatures in modern gas turbines necessitate advanced cooling techniques, including covering the exposed surfaces with a thin film of cooler air. This study investigates the impact of rotating wakes from upstream components, which can significantly influence the effectiveness of this cooling method.

**JOSEPH HAMILTON**

**Microstructural Understanding of High-Rate Severe Plastic Deformation in Magnesium Alloys**

*Mentor: Dr. Yongho Sohn (Mechanical, Materials, and Aerospace Engineering)*

The effects of high-rate severe plastic deformation on the microstructure of a magnesium alloy were examined to better understand how the materials deform under a large magnitude of stress induced with extreme strain rate. Findings are valuable for processing of nanostructured grains and production of impact-resistant materials.

**BIYUN HUANG**

**Characterizing the Covariation Between Coastal Forest Vegetation Cover and Sea Surface Temperature Using Multi-Sensor Remote Sensing Images**

*Mentor: Dr. Ni-Bin Chang (Civil, Environmental, and Construction Engineering)*

This research aims to characterize the causal inferences to explain why covariation occurs between Sea Surface Temperature (SST) and vegetation cover in coastal forest under climate change impact using multi-sensor satellite remote sensing images and modeling.

**PATRICK HYNES**

**Low-Latency Action Recognition Based on Skeletal Data**

*Mentor: Dr. Marshall Tappen (Electrical Engineering and Computer Science)*

This research project will investigate methods of decreasing the time in which a human action can be recognized as part of a set of learned actions. These actions were recorded using a camera that measures objects’ distance from the camera and displays that information as an image.

**LORENA JARAMILLO-MAJANO**

**The Effectiveness of a Chitosan-Based Polymer Treatment System for Turbidity Reduction in Stormwater Runoff**

*Mentor: Dr. Manoj Chopra (Civil, Environmental, and Construction Engineering)*

A dual bio-polymer system is used in the removal of suspended particles which negatively impact the water quality and increase turbidity. This treatment system achieves removal by flocculation of particles. This project will determine the effectiveness of the system in reducing the turbidity of stormwater using soils common in Florida.
LINA JOundy
Operational Research and Sustainable Energy Systems
Mentor: Dr. Dima Nazzal (Industrial Engineering and Management Systems)
As an industrial engineer, Operations Research (OR) is an important aspect of our field to master, as it optimizes the system analyzed. My project focuses on the rising issue of today's world, environment, as I explore how OR can be used to develop a sustainable energy plan for a system.

PIERRE LABORDE
Facilitating Efficient Parallelization of Information Storage and Retrieval on Large Data Sets
Student Co-Author: Steven Feldman
Mentor: Dr. Damian Dechev (Electrical Engineering and Computer Science)
We have created a data structure that will allow data to be stored and retrieved more efficiently than other similar implementations that are commonly used today. Our data structure can have a large performance impact when applied to large data sets such as Google's search index and computer vision algorithms.

QIAN MA
A Preliminary Investigation of the Structural Health Monitoring for Energy Systems
Student Co-Author: Dustin Forsyth
Mentor: Dr. Necati Catbas (Civil, Environmental, and Construction Engineering)
This study attempts to identify the common failure modes of energy systems, namely wind turbines and nuclear power plants. After identifying these failure modes, structural health monitoring methods and technologies are explored to detect damage and deterioration to prevent any major failures and maximize the service life of these structures.

ALICIA McDOUGAL
Water Quality of Infiltrated Stormwater Through Pervious Pavement Systems
Mentor: Dr. Manoj Chopra (Civil, Environmental, and Construction Engineering)
Pervious pavement has been developed to minimize the consequences of stormwater runoff due to traditional non-pervious pavements. This research project evaluates the quality of stormwater in a controlled system that infiltrates through different pervious pavement systems as well as the benefits of adding a sub-base pollution control layer.

KUNAL NAYEE
Exploring Nutrient Dynamics in Tampa Bay via Sea-Land Interactions Using MODIS Images and Data Mining
Mentor: Dr. Ni-Bin Chang (Civil, Environmental, and Construction Engineering)
The study will monitor the nutrient impact in Tampa Bay using satellite remote sensing and data mining models.

CHRISTOPHER NERGARD
Refractive Index Profiling Using Transport-of-Intensity Equation and Abel Inversion
Mentor: Dr. Martin Richardson (Electrical Engineering and Computer Science)
Three intensity images of a modification in transparent material at varying focal depths allow an optical phase-shift map to be calculated by solving the transport-of-intensity equation. The refractive index profile over that modification is obtained from an Abel inversion taking in the phase-shift map among other physical measurements.

THUYTIEN NGUYEN
In Situ Neutron Diffraction Study of an Aluminum 10 vol.% Nano-Alumina Composite during Compressive Loading
Mentors: Dr. Raj Vaidyanathan, Dr. C. Suryanarayana (Mechanical, Materials, and Aerospace Engineering)
The objective of this work is to study the load transfer between the metal matrix and reinforcement of an aluminum 10 vol.% nano-alumina composite through neutron diffraction measurements under compressive loading.

EMANUEL OZUNA-VARGAS
A Study of the Effect of Bleach on Citric Acid’s Anticoagulant Properties
Mentor: Dr. Steven Duranceau (Civil, Environmental, and Construction Engineering)
Citic acid and bleach are used to clean synthetic ultrafiltration membranes (UF) membranes when used as filters in a conventional surface water treatment plant. Once cleaned, the UF backwash is “recycled” into the incoming raw water. This study investigated the effects of this blended “recycled” water on the coagulation process.

SHANE PARKER
Human-Robot Interaction in a Cultural Context
Mentor: Dr. Lotzi Boloni (Electrical Engineering and Computer Science)
The goal of this project is to teach a robot to understand Middle-Eastern cultural norms in order to better interpret the actions of people and help prevent violence.

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

CHRISTOPHER ROSS
Creativity in Massively Multiplayer Games
Student Co-Author: Ross Arena
Mentor: Dr. Joseph LaViola (Electrical Engineering and Computer Science)
Concept-Oriented Design has the ability to facilitate creativity through user-created content. It is being incorporated into Lunar Quest, an NSF-sponsored Serious Massively Multiplayer Online Game (MMOG) designed to teach physics.

TALITHA RUBIO
Multi-Objective Evolutionary Optimization of Exemplar-Based Classifiers: A PNN Test Case
Mentor: Dr. Michael Georgiopoulos (Electrical Engineering and Computer Science)
The objective of this work was to design a multi-objective probabilistic neural network classifier. We compared this classifier with a number of other classifier models and we found it to be very competitive.
AMBER SCHEURER  
Assessing the Viability of Sol-Gel NiMgO Films for Solar Blind Detection  
Mentor: Dr. Winston Schoenfeld (Electrical Engineering and Computer Science)  
Smooth crystalline semiconductor thin films were grown by inexpensive solution deposition for their potential to detect and emit high energy ultraviolet (UV) photons. Wide band gap materials can enable the efficient and affordable development of currently unavailable UV LEDs and lasers.

KEVIN SCHILLO  
KnightSat II  
Student Co-Author: Christopher Valle  
Mentor: Dr. Kurt Lin (Mechanical, Materials, and Aerospace Engineering)  
The objective of the KnightSat II project is to design and build a fully functional nanosatellite that, once in orbit, will deploy a gossamer sail, which will increase aerodynamic drag acting on the satellite and reduce the time it will take to de-orb.

GILLIAN SMITH  
Improved Gas Turbine Efficiency Through Experimentally Validated Modeling of Film Cooling Techniques  
Mentor: Dr. Jayanta Kapat (Mechanical, Materials, and Aerospace Engineering)  
To increase the efficiency of turbines, cooling methods are used to allow for higher cycle temperatures. To predict the performance of these cooling techniques, numerical simulations, such as computational fluid dynamics, are used. This study compares the results of different solvers to experiments to judge the effectiveness of the solvers.

KYLE SNETHEN  
Femoral Vectoring For Hip Dysplasia In Neonates: A Finite Element Analysis of the Pavlik Harness Aimed to Reduce Treatment Failures  
Mentor: Dr. Alain Kassab (Mechanical, Materials, and Aerospace Engineering)  
This study attempts to quantify the output resultant loads of the Pavlik harness on neonate hips affected by hip dysplasia using the Finite Element Method (FEM) on a Computer Tomography (CT) reconstructed hip model, aiming to understand the mechanics of this treatment and decrease its rate of failure by developing patient-specific treatments plans.

KRISTIN SORIANO  
Interactively Breeding Three-Dimensional Objects  
Mentor: Dr. Kenneth Stanley (Electrical Engineering and Computer Science)  
The main objective of Picbreeder3D is to allow online users to breed 3D objects similar to how animal breeders breed animals. Several technologies are being combined to realize this objective, including an evolutionary algorithm, an online service, and an algorithm for displaying arbitrary three-dimensional forms.

LISA SOROS  
Comparing Corporal and Network-Based Ontologies in Embodied Conversational Agents  
Mentor: Dr. Avelino Gonzalez (Electrical Engineering and Computer Science)  
Two embodied conversational agent prototypes—one with a corpus-based ontology and one with a network-based ontology—are compared to assess performance on question-answering tasks.

RICHARD STADELMANN  
Effects of Neutron Radiation on Mechanical Properties of B4C  
Student Co-Author: Thomas Rosenbarger  
Mentor: Dr. Nina Orlovskaya (Mechanical, Materials, and Aerospace Engineering)  
The purpose of this study is to determine the effect of soft neutron radiation on the mechanical properties of boron carbide.

PETER TONNER  
Capture Analysis and Synthesis of Virtual Character Behaviors  
Mentor: Dr. Charles Hughes (Electrical Engineering and Computer Science)  
To increase the believability of a virtual character’s behavior, this project will analyze data of how these characters are controlled by humans. An effective learning algorithm must be identified to act on this information, and methods for new behavior synthesis will be explored.

LUCKY TRAN  
Heat Transfer and Friction Augmentation in High Aspect Ratio, Ribbed Channels With Dissimilar Inlet Conditions  
Mentor: Dr. Jayanta Kapat (Mechanical, Materials, and Aerospace Engineering)  
Heat transfer and pressure-loss characteristics of ribbed, internal cooling channels, typical of rotating electrical machinery, were studied experimentally and numerically. A segmented copper-block test section was used for the experiments and a computational fluid dynamics study was performed for additional insight into the flow characteristics.

AMANDA TRITINGER  
Energy Recovery From the Florida Current  
Mentor: Dr. Scott Hagen (Civil, Environmental, and Construction Engineering)  
The aim of this research is to ask and answer questions related to energy recovery from the Florida Current.

ANNE WEEKS  
Varying Values of Methane Gas Generation Potential and Methane Gas Generation Rate to Determine Their Effects on Generated Landfill Gas  
Mentor: Dr. Debra Reinhart (Civil, Environmental, and Construction Engineering)  
The purpose of this project is to predict the amount of methane gas a given sample of waste can generate in a particular time period. The methane gas generation potential and the methane gas generation rate constant are varied to determine the effects on the actual landfill gas generated.

HEALTH SCIENCES

CODY AMATO  
Effectiveness of Subglottic Suctioning in the Prevention of Ventilator Associated Pneumonia  
Mentor: Dr. Mary Lou Sole (Nursing)  
The objective of this integrative review of literature was to examine the removal (suction) of subglottic secretions that accumulate above the cuff of an endotracheal tube to prevent ventilator-associated pneumonia. The role of the critical care nurse with subglottic secretion removal is also described.
KRYSALT CHRISTOPHER
Representations of Breastfeeding in the United States: An Analysis of American Newspaper Articles
Mentor: Dr. Shannon Carter (Sociology)
This paper will assess the nature and portrayal of information regarding breastfeeding and its portrayal to the general public. This will be achieved through an analysis of national newspaper articles.

ANASTASIA CREASY
Criteria to Identify Language Disordered Children: Evaluating the National Standard
Mentor: Dr. Chad Nye (Communication Sciences and Disorders)
This study will collect, index, and evaluate the standards and criteria defined by the 50 state Departments of Education to identify language disordered children eligible for intervention service in the public schools. These data will benchmark the characteristics of language disordered children identified as participants in published research.

LAUREN FLAHERTY
Effectiveness of Nonpharmacological Techniques for Procedural Analgesia in the NICU
Mentors: Dr. Kelly Allred, Ms. Sigrid Ladores (Nursing), Dr. Jeffery Cassisi (Psychology)
For this research, I studied the effectiveness of nonpharmacological techniques for procedural analgesia in the Neonatal Intensive Care Unit. I reviewed 18 research studies using the following nonpharmacological interventions: Kangaroo Care, swaddling, facilitated tucking, positioning, music, non-nutritive sucking, and sucrose.

AMY HOWARD
The Effects of Preoperative Education on Stress in the Pediatric Population
Mentor: Dr. Kelly Allred (Nursing)
The purpose of this research was to critically analyze relevant literature regarding the effects of preoperative education on levels of stress in the pediatric population.

GARDETT HUTTON
A Contemporary Update of Oral HPV, 2000-2010
Mentor: Dr. Annelise Driscoll (Dental Services)
Through a detailed literature review of HPV-related oral cancer and oral HPV (Human Papilloma Virus), the prior decade’s (2000-2010) research findings on oral HPV and its link to oral cancer are illustrated to establish the direction of the ten-year trends.

SHAHZIA LAKHANI
Preventing Neuromuscular Deconditioning in Critically Ill Patients
Mentor: Ms. Christina Amidei (Nursing)
Critically ill patients in an Intensive Care Unit (ICU) are prescribed bed rest which is beneficial to their medical condition. However, immobility is adverse to their overall quality of life and length of hospital stay. This literature review discusses the importance of mobility interventions and preventing negative outcomes of immobility.

CLAUDIA LARTEY
Perceived Barriers of Nutrition and Physical Activity Among African American College Women
Mentor: Dr. Joe Burden (Child, Family and Community Sciences)
The objective of our project is to better understand racial disparities in health by analyzing attitudes of African American women towards engaging in healthy eating and physical activity. Gaining genuine insight on perceived barriers that limit African American women’s health and physical activity behaviors is important in addressing these disparities.

MARI LUNA
Nasal Obturation in Young Children: Two Case Studies
Mentor: Dr. Cecyle Carson (Communication Sciences and Disorders)
Velopharyngeal dysfunction (VPD) results from inadequate closure between the oral and nasal cavities. This study will determine the efficacy of a nasal obturator to treat this condition in two young children who have VPD due to genetic conditions and describe perceived advantages and disadvantages of the obturator.

MICHELLE MARIOTTI
Using the Storytelling Invention Process to Improve the Literacy, Communication, and Social Skills of Children With Autism
Mentor: Dr. Glenda Gunter (Teaching, Learning, and Leadership)
The meStories intervention is a student-centered project that uses digital narrative and technology tools to increase student literacy, communication, and social skills. This project will focus specifically on improving these skills to significantly change the life of children with autism.

MARLAIN MONROIG
Associations Between Positive Health Behaviors and Psychological Distress
Mentor: Dr. Jeffrey Bedwell (Psychology)
An exploratory study was conducted that included self-report measures of a wide range of positive health behaviors and a wide range of different types of psychological distress. Study results provide an initial model of the relationships of particular types of psychological distress that relate to particular types of health behaviors.

NIKKI OLSON
Exploring the Process of Discharge Within the Adult Hospital Setting
Student Co-Author: Audris Bol
Mentor: Dr. Denver Severt (Hospitality Services)
The hospital discharge process, an important transition between the hospital and a patient’s home, has been found to be inconsistent in communication between hospital staff, patients, and other clinicians. The study aims to understand the components involved in the discharge process and distinguish its potential areas of improvement.

MARIE SHULTZ
Factors Related to Stress in Nursing Students
Mentor: Dr. Maureen Covelli (Nursing)
The purpose of this review of literature was to explore and critically analyze literature identifying stress factors and consequences of stress in nursing students. Findings from this review of literature aimed to provide a better understanding of stress factors and the physical and psychological impact of stress on nursing students.
MOLLY WILHELM
Understanding the Experience of Being Diagnosed With Breast Cancer in Older Women
Mentor: Dr. Victoria Loerzel (Nursing)
The purpose of this project is to examine the experience of being diagnosed with early stage breast cancer in women age 65 and older. An increase in knowledge of the needs and concerns of this population will help make the transition into cancer treatment less burdensome for the patient.

ELLITA WILLIAMS
Comparing Middle School Latinas Who Have and Have Not Participated in Various Sexual Behaviors
Mentor: Dr. Anne Norris (Nursing)
To investigate relationships between individual (biologic and cognitive), social (peer norms and acculturation), and parental (monitoring and single versus dual parent home) factors and involvement in various sexual behaviors in middle school Latinas.

ANGELA ZIMMERMAN
Nursing Interventions in the Care of Patients Undergoing Induced Hypothermia
Mentor: Ms. Christina Amidei (Nursing)
This project will provide a review of research findings on the physiological complications associated with induced hypothermia for the purpose of directing future research and development of patient care protocols.

NEEMA ABDOLLAHZADEH
The Endoplasmic Reticulum Stress Inducible Protein Herp Counteracts Mutant α94S; Synuclein-Induced Cell Death via the Homeostatic Regulation of Calcium Channel Proteins
Mentor: Dr. Sic Chan (Biomedical Sciences)
The goal of this project is to determine whether, and if so how, the endoplasmic reticulum (ER) inducible stress protein Herp counteracts mutant alpha-synuclein-induced cell death.

SABIKHA ALAM
Stress Hormone Influence on Cardiac Conduction System Development: Evidence for Retinoic Acid-Dependent Mechanisms of Regulation
Mentor: Dr. Steven Ebert (Biomedical Sciences)
The objective is to test if stress hormones promote the development of the cardiac conduction system through mediation of retinoic acid signaling during the embryonic period.

ARIANA ALBORNOZ
Effects of Temperature and Underlying Substrate on the UV-Vis Spectroscopic Properties of Hemoglobin in Bloodstains Over Time
Mentors: Dr. Jack Ballantyne (Chemistry), Ms. Erin Hanson (National Center for Forensic Science)
The objective of the current research project is to evaluate the effects of temperature and underlying substrate on the UV-Vis spectroscopic properties of hemoglobin in bloodstains over time.

AZIZ AL’KHAFAJI
Targeting the Homocysteine-inducible Endoplasmic Reticulum Stress Protein Herp Leads to Chemotherapy Sensitization of Malignant Gliomas
Mentor: Dr. Sic Chan (Biomedical Sciences)
The objective of this study was to determine whether endoplasmic reticulum stress inducible proteins mediate chemoresistance in glioblastoma multiforme. We found that knockdown of Herp in malignant gliomas enhances chemosensitivity to temozolomide. This study uncovers a determinant role of Herp function in the growth and resistance of malignant gliomas.

WESLEY ANDERSON
Utilization of an Alveolar Bioreactor for Personalized Medicine and High-Throughput Drug Screening
Mentor: Dr. James Hickman (Biomedical Sciences)
A functional in vitro system was developed to model the function of an alveolus in the lung. The system utilizes a millimeter-scale bioreactor incorporating multiple cell types and has applications in personalized medicine and high-throughput drug testing.

CARLY BADER
An Investigation of a GTPase Signaling Network in Drosophila Wing Vein Development
Mentor: Dr. Laurence von Kalm (Biology)
The aim of this study is to investigate the organization of GTPase networks that regulate the vein pattern in the Drosophila wing.

LEE BARKER
Nutritional Enhancement of Vitamin E Content in Lettuce Through Genetic Modification
Mentor: Dr. Henry Daniell (Biomedical Sciences)
The purpose of this research is to produce genetically modified lettuce with the y-TMT gene in order to increase the α-tocopherol isoform of Vitamin E that gives higher anti-oxidative effects in the human body, thus leading to the improvement in the nutritional quality of this widely consumed crop.

TYLER CARNEY
Multiple Paternity in Podocnemis lewyana
Mentor: Dr. Christopher Parkinson (Biology)
This study employs microsatellite DNA to better understand the inheritance pattern of Podocnemis lewyana in an international effort to guide conservation efforts of this Colombian river turtle.

KELLY COBAUGH
Bacteriostatic Effects of Auranofil on Clostridium difficile
Mentor: Dr. William Self (Biomedical Sciences)
This study explores the mechanism of action of the gold compound Auranofil on Clostridium difficile.
**OCEAN COHEN**
Attacks of the Titans: Investigating Genetic Variation in the Global Exotic Titan Acorn Barnacle, *Megabalanus coccopoma*
*Mentor:* Dr. Linda Walters, Dr. Eric Hoffman (Biology)

I aimed to compare the genetic diversity between native and invasive populations of the Titan Acorn barnacle to better understand where the invasive individuals are coming from and to examine how genetic diversity in the exotic population compares to that of native populations.

**JANE CONRAD**
How Does the Red Mangrove Respond to Sea Level Rise and Changes in Salinity?
*Student Co-Author:* Violette Gibbs
*Mentor:* Dr. Linda Walters (Biology)

Conservation organizations predict mangrove ecosystems will be severely impacted by sea level rise and extremes in salinity associated with climate change. Our study tested interactive effects of salinity and water depth on Rhizophora mangle. Our results suggest Rhizophora mangle can tolerate near complete inundation at a range of salinities.

**CAITLYN DEBEVEC**
Testing Competitive Exclusion Compared to Environmental Change Based on Hutchinson’s “Paradox of the Plankton”
*Mentor:* Dr. David Jenkins (Biology)

The objective is to test Hutchinson’s (1961) hypothesis of competitive exclusion compared to environmental change, in the “Paradox of the Plankton.” This relationship used a new invention of a null-model algorithm (Rosario) and software (TempOverlap) from 2009 that maintains time series structure in its randomizations.

**KELLY DIAMOND**
Understanding Evolutionary Relationships of Rattlesnakes *Crotalus* and *Sistrurus*
*Mentor:* Dr. Christopher Parkinson (Biology)

We studied the evolutionary relationships of rattlesnakes (*Crotalus* and *Sistrurus*) through analysis of gene sequences for a better understanding of new species and to better resolve new species groups.

**CAMILA DÍAZ**
Bacterial Vaginosis Induces an Innate Immune Response in Female Reproductive Tract Epithelia That Enhances HIV Infection
*Mentor:* Dr. Alexander Cole (Biomedical Sciences)

Bacterial vaginosis (BV) is the most common vaginal infection, affecting as many as 30% of women in the United States. BV is known to increase the risk of heterosexual HIV acquisition by 60%. The aim of this study is to elucidate the molecular mechanism by which BV increases HIV infection.

**LAUREN DICKSON**
Biofuel and Biomass: Genetic Modification of Cotton to Increase Biomass and Confer Insect Resistance
*Mentor:* Dr. Henry Daniell (Biomedical Sciences)

This study aims to produce genetically modified cotton with the α-Glucosidase enzyme in order to increase its biomass and confer insect resistance thus leading to a novel strategy for maximizing the efficiency of biofuel crops.

**TAMARA DOWNS**
*Mentor:* Dr. Eric Hoffman (Biology)

This study strives to determine how the nonnative mussel *Mytilopsis charruana* arrived along the southeast coast of the United States. By comparing genetic diversities and creating a haplotype network of the native and nonnative populations, I hope to discern which of the native populations are contributing to the U.S. populations.

**ALEXANDER FAGENSON**
A Class of Biometallo-Organic Compounds That Target Human Topoisomerase II
*Mentor:* Dr. Mark Muller (Biomedical Sciences)

Cancer is a disease which costs an excess of $200 billion a year, accounting for 1 in 4 deaths in America. The focus of my research is to discover highly specific drugs with a known mode of action to fight the chemotherapeutic resistance we are currently faced with.

**MARIA CAMILA GARCIA**
Grape Extracts Provide Broad-Spectrum Toxin Resistance
*Mentor:* Dr. Ken Teter (Biomedical Sciences)

The aim of this project is to determine if grape extracts confer broad-spectrum resistance to AB toxins and, if so, which components of the extract are responsible for toxin resistance.

**LOUIS GERENA**
Comparison of the Specificity and Activity of High-Temperature Requirement Factor A1 (HrA1), HrA2, and HrA3 Proteases
*Mentor:* Dr. Antonis Zervos (Biomedical Sciences)

The high-temperature requirement factor A (HrA) family of serine proteases are involved in many diverse processes. I made HrA3’s recombinant protein and purified it. We tested the serine protease activities of HrA1, 2, and 3 against generic and specific substrates to see how similar or different these proteins are.

**CIELO GNECCO**
A Novel Assay for the Activity of DNA Methyltransferases
*Mentor:* Dr. Mark Muller (Biomedical Sciences)

The aim of this study is to develop an assay in which one can identify the activity of DNA Methyltransferases (DNMTs) in cancer. This will be essential for performing future experiments in which different compounds that potentially represent novel anti-tumor therapeutics can be tested.

**ERIC GOLDSTEIN**
Inducing Cancers Repair Through Homologous Recombination Using Topoisomerase II Poisons
*Mentor:* Dr. Mark Muller (Biomedical Sciences)

The objective of my project is to create a model in which cervical cancer cell repair through homologous recombination can be monitored, quantified, and adjusted. This ultimately can make chemotherapy more effective, requiring less poison when working in combination with a repair pathway inhibitor.

**STEVEN GOTHAM**
A Preliminary Phylogeny of the Lubber Grasshopper Family Romaleidae (Insecta: Orthoptera) Based on Molecular Data
*Mentor:* Dr. Hujon Song (Biology)

We have reconstructed a phylogenetic hypothesis of the grasshopper family Romaleidae based on molecular data from nuclear and mitochondrial loci to test monophyly of the family and the subfamilies within Romaleidae.
Drosophila melanogaster was given a choice of three mussel species as prey. The objective of this project is to do a yeast-two hybrid screening to determine if the API family members that interact with ABRO1 also bind to ABRAXAS, and, if so, whether the interaction is mediated through the coil-coil domain.

**RIKKI LANG**

**Parentage in Captive-Bred Populations**

Are You My Mother? Who’s Your Daddy? Establishing Parentage in Captive-Bred Populations

Mentor: Dr. Kenneth Fedorka, Dr. Wade Winterhalter (Biology)

We report progress in preventing the oxidation with the use of cerium oxide nanoparticles to make for a more effective drug.
Marilyn Mosquera
Cloning of nifLA
Mentor: Dr. Robert Igarashi (Chemistry)
The genes *nifL* and *nifA* of *Azotobacter vinelandii* (*Av*) have been amplified and will be ligated into the pT7 plasmid. The product will then be used to transform an *E. coli* strain called JM109. The goal of this project is to mutate the regulatory genes of nitrogen fixation, *nifLA*, of *Av*.

Jennifer Nergard
PRSS8 and RUNX3 Promoters Are Appropriate Markers for Monitoring Epigenetic Changes in Urothelial Cells Undergoing Cigarette Smoke Extract (CSE) Treatment
Student Co-Author: Robert Burdine
Mentor: Dr. Karl Chai (Biomedical Sciences)
The objective of this project is to determine whether the PRSS8 and RUNX3 promoters are appropriate markers for monitoring epigenetic changes in urothelial cells undergoing CSE treatment, in addition to determining the best model cell line in which to observe these changes.

James New
Lyophilization Facilitates Stabilization and Formulation of Orally Deliverable Vaccine Antigens Bioencapsulated Within Plant Cells
Mentor: Dr. Henry Daniell (Biomedical Sciences)
Lyophilization was utilized to dehydrate plant cells expressing recombinant proteins and develop a formulation suitable for the oral-delivery of therapeutic proteins.

Camha Nguyen
A Tripartite Biosensor for Real-Time SNPs Detection in DNA Hairpin Motif
Mentor: Dr. Dmitry Kolpashchikov (Chemistry)
First, molecular beacon-based tripartite biosensor can report the presence of stem-loop folded DNA sequence regardless of the stem lengths. Second, single nucleotide polymorphisms (SNPs) in secondary structure-folded nucleic acid analytes will be genotyped. High signal is expected in the presence of true target, while the mutants will have low signal.

Antonio Ortiz
*Mytella charruana*: The Mechanism of Sex Reversal in Response to Food Availability
Mentor: Dr. Cristina Calestani (Biology)
This study examines the reproductive biology of the invasive mussel *Mytella charruana* and the mechanism of sex reversal in response to food availability.

Melinda Osborne
Controllable Degradation of Essential Proteins
Mentor: Dr. Sean Moore (Biomedical Sciences)
The aim of this project is to create tagged versions of selected essential proteins within *Escherichia coli* and test the recombination efficiency of these modified proteins into the bacterial chromosome.

Alana Persaud
Longitudinal Genetic Analyses of *Staphylococcus aureus* Reveal Variability Between Nasal Carriage Strains, as Well as Similarity to Epidemic Isolates
Mentor: Dr. Alexander Cole (Biomedical Sciences)
The objective of this study is to examine the behavior of *Staphylococcus aureus* in nasal carriers over a longitudinal period. This will contribute to knowledge regarding evolutionary patterns of the bacterium as well as the genetic determinants influencing persistent and intermittent nasal colonization.

Emily Pitcairn
Species Are More Than Skin Deep So What Do the Genes Say?
Mentor: Dr. Christopher Parkinson (Biology)
The goal of this project is to evaluate the relationship between *Micrurus fulvius* and *Micrurus tener* using a combination of mitochondrial and nuclear data.

Kristi Ray
Are New Restoration Techniques Always Better?: A Functional Analysis of Concrete Grates for Intertidal Oyster Reef Restoration
Mentor: Dr. Linda Walters (Biology)
This project focuses on finding a low cost and non-labor-intensive method of restoring intertidal oyster reefs through the use of concrete grates that are embedded with oyster shell dust and fragments.

Kali Standorf
Preserving a Keystone Species: Analyzing Genetic Diversity of the Long-Spined Sea Urchin *Diadema antillarum* After a Disease-induced Bottleneck Event
Mentor: Dr. Linda Walters (Biology)
The long-spined sea urchin *Diadema antillarum* was a keystone species in Caribbean waters until the 1980s when an unknown pathogen eliminated 98% of those individuals. With numbers slowly recovering, this project aims to utilize microsatellites to determine current genetic diversity in *Diadema antillarum* populations to aid future management decisions.

Breena Stoner
Selection of the Specific RNA-Binding Antibodies: Towards Crystallization of the Glycine Riboswitch
Mentor: Dr. Jingdong Ye (Chemistry)
My research is focused on determining the high-resolution crystal structure of the *Vibrio cholerae* glycine riboswitch using chaperone-assisted RNA crystallography. To this end, I selected specific RNA-binding Fabs via phage display, determined their binding affinity and specificity, established crystal trays screening nearly 3600 conditions, and optimized initial hits.

Lauren Stroud
Arthropod and Crustacean Predation on Red Mangrove Propagules in Mosquito Lagoon, Florida
Mentor: Dr. Linda Walters (Biology)
The red mangrove *Rhizophora mangle* reproduces by producing buoyant, viviparous propagules, which may be damaged by predators and negatively affect growth of *Rhizophora mangle* propagules. In 2009 and 2010 we identified potential predators and monitored growth and damage to *Rhizophora mangle* propagules in Mosquito Lagoon, Florida.

Catherine Sullenberger
Identification of Physiological Substrates of *Plasmodium falciparum* PFK5, a CDK-like Kinase
Mentor: Dr. Debopam Chakrabarti (Biomedical Sciences)
The goal of this project is to determine potential cellular substrates of the Plasmodium kinase PFK5 in order to elucidate its role in the parasite’s unusual life cycle.

Stephanie Thurmond
MiR-1 Transfected ES Cells Resist Apoptosis Under Oxidative Stress
Mentor: Dr. Dinender Singla (Biomedical Sciences)
The objective of this project is to determine the exact role of miR-1 in H2O2 induced apoptosis in ES cells.
Kortni Watkins
Characterization of the Atypical Plasmodium falicparum SNARE PfVti1b
Mentor: Dr. Debpam Chakrabarti (Biomedical Sciences)
The aim of this study is to identify the localization and expression dynamics of PfVti1b during the various stages of the malaria intraerythrocytic life cycle.

Donevan Westerveld
Inhibition of Neurodegeneration Caused by Alzheimer’s Disease Using a Plant-Derived Therapeutic Protein
Mentor: Dr. Henry Daniell (Biomedical Sciences)
This study explores the expression and purification of a plant-derived therapeutic protein for Alzheimer’s disease.

Christophe Campo
WASP-12b: Discovery of the First Carbon-Rich Planetary Atmosphere
Mentor: Dr. Joseph Harrington (Physics)
We observed multiple secondary eclipses of the exoplanet WASP-12b using the Spitzer Space Telescope. Atmospheric analysis of the dayside eclipse photometry revealed that WASP-12b’s atmosphere is greatly enhanced in carbon. This marks the discovery of the first carbon-rich planet, setting the stage for future observations and research.

Christopher Clukay
Effect of Select Chemical Components on the Morphology of Electrolessly Deposited Silver
Mentor: Dr. Stephen Kuebler (Chemistry)
We have investigated how physical and chemical parameters affect and can be used to control the nano-scale morphology of silver that is deposited onto a glass or polymeric surface via electroless plating.

Christine Comfort
A New Method for Measuring Heat Capacity in Meteorites
Mentor: Dr. Daniel Britt (Physics)
We propose a method to determine the heat capacity of meteorites by placing samples in a non-reactive cryogenic liquid. It is possible to measure the amount of energy released from samples as they transition from a controlled initial temperature to the temperature of the cryogenic fluid without altering the samples.

Angela Crotty
Exploring Organic Solar Cell Material: Emission Lineshapes of Semiconducting Polymer P3HT
Mentor: Dr. Artem Masunov (NanoScience Technology Center)
Semiconducting organic polymers are promising solar cell materials, provided substantial improvement in energy conversion efficiency is achieved. The efficiency of the polymeric solar cell strongly depends on specific morphology of the material. This project aims to understand the relationship between the morphology of the polymer material and its optical properties.

Jonathan Edminson
Lithography-Free Graphene Device Fabrication
Mentor: Dr. Masahiro Ishigami (Physics)
We designed and implemented a new lithography-free device fabrication technique for use with thin film semiconductors, like graphene.

Kenneth Etcheverry
Doping Liquid Crystal With Graphene for Imaging
Mentor: Dr. Lei Zhai (Chemistry)
This study aims to perform a fundamental study of liquid crystal conductivity and their performance to guide the formulation of LC for more efficient displays.

Daniel Freppon
Electroless Deposition of Platinum Onto Polymer by Reductive Metal Replacement of Silver
Mentor: Dr. Stephen Kuebler (Chemistry)
The objective of this study is to develop a procedure for the reductive metal replacement (RMR) of silver by platinum on a polymer and to characterize the resulting surface. The results will be used to determine if the replacement reaction can be an effective method of controlled platinum deposition.

Christopher Frye
Which String Breaks? Revisited
Mentor: Dr. Costas Efthimiou (Physics)
Many have seen the introductory physics demonstration in which a heavy ball hangs from a string, with another string hanging freely from the ball. When the instructor pulls on the bottom string, the speed at which he pulls determines which string breaks. I present a quantitative analysis of this demonstration.

Travis Gabriel
Dependence of Plume Dynamics on Incident Angle of Jovian Impacts
Mentor: Dr. Csaba Palotai (Physics)
An exploratory study was conducted that included self-report measures of a wide range of positive health behaviors and a wide range of different types of psychological distress. Study results provide an initial model on the relationships of particular types of psychological distress that relate to particular types of health behaviors.

Kyle Giesler
Mechanochemical Degregredation of Cellulose and Synthesis of Sodium Tantale Photocatalysts
Mentor: Dr. Richard Blair (Chemistry)
The goal of this research is to develop new synthetic methods for producing cellulose depolymerization catalysts and photocatalysts for water splitting. Ultimately, these catalysts will allow direct utilization of biologic and synthetic feedstocks for advanced fuels and basic chemicals.
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**Social Sciences I**

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<td>David Ackerman</td>
<td>International Contracts: A Quantitative Analysis of International Contracts</td>
<td>Dr. Cynthia Brown (Legal Studies)</td>
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Global relationships are often made or broken on the strength of the agreements that memorialize them. This mixed method study examines challenges to effective global contracting. Comparing perceptions of attorneys in public service, private practice and academia, the empirical results may help businesses and their counsel advance successful international collaborations.
of crafting expertise with performance on spatial tasks. This study assesses the correlation between spatial ability and gender. The purpose of this experiment is to determine if there is a positive correlation between the amount of details pertaining to conservative material and how conservative one is.

Mentor: Dr. Janan Smither (Psychology)

The relationship between a person's level of spatial ability and their ability to accurately recognize upright and inverted faces was investigated in this study.

Mentor: Dr. Robert Dipboye (Psychology)

The objective of this experiment is to determine if there is a positive correlation between the amount of details pertaining to conservative material and how conservative one is.

Mentor: Dr. Valerie Sims (Psychology)

Visual object representations are computer models that can be manipulated and viewed from different angles. These are typically designed for everyday items sold online. In this project, this will be expanded upon through an examination of online views of room design and the influence of spatial ability, knowledge, and workload.

Mentor: Dr. Valerie Sims (Psychology)

The relationship between a person's level of spatial ability and their ability to accurately recognize upright and inverted faces was investigated in this study.

Mentor: Dr. Robert Dipboye (Psychology)

The purpose of the study is to determine if discrimination occurs against Arabs and Muslims in hiring decisions and the relative influence of national origin and religious affiliation on discrimination against Arabs and Muslims. Furthermore, the study seeks to understand how perceived job fit relates to discrimination against these groups.

Mentor: Dr. Naim Kapucu (Public Administration)

This study aims to identify key networks and partnerships which assist in carrying out responsibilities related to a county’s Emergency Support Functions. Eleven counties in Central Florida will be examined using their Comprehensive Emergency Management Plan as the key document for creating a network analysis as an asset-based approach to the findings.

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VANESSA DOMINGUEZ
Family Adjustment Measure (FAM): Scale Construction and Preliminary Validation
Mentor: Dr. Andrew Daire (Educational and Human Sciences)
The Family Adjustment Measure Project aimed to develop and validate a formal assessment that measures relational adjustment specific to parents of children with special needs. This poster presentation will highlight scale construction, preliminary validation with the Relationship Assessment Scale and Perceived Stress Scale, and implications for future research and practice.

ANNA ESKAMANI
Iranian Women: The Expansion of Feminism Within an Anti-Feminist Regime
Mentor: Dr. Houman Sadri (Political Science)
This research focuses on the role of feminist ideas (or thoughts) among Iranian women. I argue that the expansion of feminist thoughts in Iran is a function of theocratic restrictions, changing social norms, and globalization (of cultural values).

IDA ESKAMANI
The Political Potential of Iran’s Youth
Mentor: Dr. Houman Sadri (Political Science)
The purpose of this research is to provide evidence that Iran’s youth hold great political potential within the country. The hypothesis of this research is as follows: Iranian youth counter-culture, youth discontent, and modern technologies have created a youth with enormous political potential within Iran.

TIFFANY GEORGE
Community Initiatives in Oakland, Florida, Bring Lake Apopka Tourism Back to Life
Mentor: Dr. Ty Matejowsky (Anthropology)
My objective for completing this anthropological study is to investigate the extent to which Oakland, Florida, has attracted tourists to the area following major ecological restoration initiatives completed in the town.

SABRINA GHIM
A Simple Method of Making Dopand Based CdS:Mn/ZnS Quantum Dots (Qdots) at Room Temperature for Educational Purposes
Student Co-Authors: Ashton Lee, Andrew Teblum
Mentor: Dr. Swadeshmukul Santra (Chemistry)
The objective of this project is to develop a simplified method of making CdS:Mn/ZnS quantum dots which can be implemented in chemistry undergraduate teaching laboratory curriculum.

JENNIFER GONZALEZ
The Research and Evaluation of Children Exposed to Abuse and Family Violence Project
Mentor: Dr. Andrew Daire (Educational and Human Sciences)
The Research and Evaluation of Children Exposed to Abuse and Family Violence Project examined the influence family and victim demographic factors and abuse-related factors have on treatment completion and treatment duration. Programmatic and clinical implications will be presented along with implications for future research in this area.

KATE GRIFFIN
Go Green!: The Impact of Messaging on College Students’ Attitudes and Beliefs about the Environment
Mentor: Dr. Amy Donley (Sociology)
This research project will examine college students’ responses to questions about their beliefs and attitudes regarding the environment and their assessment of environmental messaging.

JANNA GROVE
From Tools to Teammates: Toward the Development of Appropriate Mental Models for Intelligent Robots
Mentor: Dr. Florian Jentsch (Psychology)
In an effort to understand the impact of human mental models in human-robot teams, a review of the literature was conducted. The project objective was to explore and demonstrate the importance of appropriate mental model development for intelligent robots, resulting in a theoretical paper. Future experiments are planned.

MARIE GUALTIERI
If You Got It, Flaunt It!: College Women’s Perceptions of “Real Women” in Print Advertisements
Mentor: Dr. Amy Donley (Sociology)
This study examines college women’s reactions to print advertisements from campaigns that seek to overturn the body standard for women.

LEON GUERRERO
A Differentiation Between Bayesian Updating and Model-Free Reinforcement Learning in Human Choice Under Uncertainty
Mentor: Dr. Peter Bossaerts (California Institute of Technology)
Advances in neuroscience, and more recently, in neuroeconomics, have started to expose the underlying neurological and behavioral mechanisms in simple decision-making processes. We study two major learning frameworks under uncertainty, Bayesian updating and model-free reinforcement learning, and seek to differentiate them in human choice during a simple experiment.

JANISSE GUZMAN
Adolescent Mothers in an Intervention Study: A Qualitative Analysis of Variables Relating to Their Teaching Interactions With Their Infants
Mentor: Dr. Anne Culp (Child, Family and Community Sciences)
This is a qualitative study in which the home visit interaction activities of four first-time adolescent mothers and their children will be studied in depth. I will be examining differences between mothers who did well with teaching through play and those who did not do as well.

SHANE HALSE
First Impressions: Is It You or the Things You’re With?
Mentors: Dr. Valerie Sims, Dr. Matthew Chin (Psychology)
The purpose of the present research was to examine whether the presence of extraneous items, whether anthropomorphic or not, have an effect on how a model is perceived by others.
AMANDA HAVILL
Relationships Among Child Abuse Experiences, Social Support, and Academic Success
*Mentor:* Dr. Kimberly Renk (Psychology)
This study seeks to examine the relationship among childhood experiences of abuse, social support, and success in academic performance. Furthermore, the current study seeks to determine if social support serves as a mediator in the relationship between childhood experiences of abuse and success in academic performance.

JUSTIN HEFFERAN
Community Assessment as an Empowerment Tool: Cultural Heritage Tourism Planning and Process in Red Bays, Andros Island, Bahamas
*Mentor:* Dr. Rosalyn Howard (Anthropology)
This project assesses the perspectives and needs of the residents of the community of Red Bays, Bahamas, relevant to their participation in a cultural heritage tourism development project. The data collected and disseminated will empower the community’s residents and is critical for the success of this tourism development project.

ELISE HERNANDEZ
Older Adults and Online Social Networking
*Mentor:* Dr. Janan Smither (Psychology)
This study aims to understand older adults’ experience with online social networking by describing how their attitudes towards online networking tools are related to their expertise levels. Furthermore, social connectedness and well-being are correlated to uncover whether this type of technology is helping older adults remain socially integrated.

HUNTER HERSKOWITZ
Thomas the Tank Engine, Emotion Recognition, and Autism
*Mentor:* Dr. Valerie Sims (Psychology)
I am studying the emotion recognition capabilities of individuals with autism. Are these individuals better able to recognize the emotions portrayed by Thomas & Friends characters than those portrayed by humans? I am attempting to find an effective way to train individuals with autism to better recognize human emotions.

CHRISTINE HIPPLER
The Relationship Between Genre Choice of Music and Altruistic Behavior
*Mentors:* Dr. Shannon Whitten, Dr. Karen Mottarella (Psychology)
The purpose of the current study is to expand on the prior research investigating the relationship between music and prosocial and altruistic behavior.

KEVIN HOPKINS
The Effect of Solitary and Group Interest as Antecedents for Task Conflict Management Time and Average Group Strain and Liking
*Student Co-Authors:* Lisa Gauvreau, Melissa Bleiberg
*Mentor:* Dr. Leslie DeChurch (Psychology)
This is an investigation of solitary and group interest as factors influencing task conflict, management time, and the average amount of strain liking amongst team members.

MICHAEL HRISTAKOPOULOS
Human Development and Institutional Design: The Comparative Performance of Presidential Regimes
*Mentors:* Dr. Bruce Wilson, Dr. Kerstin Hamann (Political Science), Dr. Maria Cristina Santana (Visual Arts and Design)
A large, puzzling gap in human development has grown between Costa Rica and Nicaragua since the end of WWII. This thesis aims to identify the causes of this phenomenon, as well as evaluate what the implications are for human development and institutional design of governments around the world.

ANTHONY KEEES
Collective Orientation and Group Performance
*Student Co-Author:* Mikael Cherry
*Mentor:* Dr. Leslie DeChurch (Psychology)
Utilizing data collected from a previous experiment involving multiple groups cooperating toward a common goal, we will research the relationships between collective orientation and group performance.

TRAVIS KENT
Can You Hear Me Now?: A Study on Vocal Input and Human Computer Interaction
*Mentor:* Dr. Valerie Sims (Psychology)
Human interactions with computers have traditionally been controlled via tactile input, either by mouse and keyboard or controller. Recently, however, new control methods have been implemented, such as kinesthetic and vocal control. The purpose of this study is to examine the effectiveness of voice control and its cognitive workload.

MATTHEW LANDON
Orange County Household Spending Patterns by Race, 2000-2009
*Mentor:* Dr. Heili Pals (Sociology)
I analyzed the ZIP code level aggregate data for Orange County in Florida from ESRI’s *Book of ZIP Codes*, as well as census data on the square footage of houses to determine differences in spending patterns on household repair, lawn care, and technological equipment by race.

JARED LINK
Using Smartphones as a Self-Monitoring Technique to Assess Stress, Emotions, and Binge Eating in University Students
*Student Co-Author:* Alex Eisenberg
*Mentor:* Dr. Jeffrey Cassisi (Psychology)
Self-monitoring is an assessment approach in which individuals record emotions and behaviors as they occur naturally. Self-monitoring applications have been developed recently for smartphones. This project focuses on self-monitoring of stress, emotion, and binge eating and will compare the traditional diary method with a smartphone application designed for mobile devices.

AMANDA LOWELL
The Mediating Role of Attachment in the Relationship Between Abusive Childhood Experiences and Eating Behaviors
*Mentor:* Dr. Kimberly Renk (Psychology)
The current study aims to examine the relationships among child maltreatment, attachment, and later emotional and behavioral functioning, particularly problematic eating behaviors. Additionally, this study will examine attachment as a mediator in the relationship between the experience of childhood maltreatment and later problematic eating behaviors.
 COREY LUGO  
Transactive Memory as a Predictor of Conflict Management in a Virtual Team Environment  
Student Co-Authors: Jennifer Ketcham, Ashley Horne, Jesse Gaperini  
Mentor: Dr. Leslie DeChurch (Psychology)  
Transactive memory and group interest will be examined to determine their effects on task-based conflict and cooperation in a team-based video game environment.

EMILY MADDOX  
Influence of a Spouse’s Reported Partner Agreement, Tension, Affection, and Common Interests on His or Her Partner’s Perceived Relationship Satisfaction  
Mentor: Dr. Andrew Daire (Educational and Human Sciences)  
Relationships consist of various factors that contribute to relationship satisfaction. Individuals in relationships inherently influence each other’s thoughts, emotions, and behaviors. Using dyadic data analysis, we analyzed how a spouse’s reported partner agreement, amount of tension, expression of affection, and shared interests influence his or her partner’s perceived relationship satisfaction.

GREGORY McDOWALL  
Clerics and Commanders: An Examination of the Evolution of the Iranian Revolutionary Guard Corps’ Role in the Iranian Political Economy  
Mentor: Dr. Houman Sadri (Political Science)  
The objective of this study is to examine the evolution of the Iranian Revolutionary Guard Corps’ position in Iran’s political economy to provide an explanation for how they came to their present position of power.

CAITLYN MCKINZIE  
Influence of a Spouse’s Reported Symptom Distress, Relationship Quality, and Social Conflict on His or Her Partner’s Overall Individual Distress  
Mentor: Dr. Andrew Daire (Educational and Human Sciences)  
This project examines the influences of one spouse’s differing levels of distress, such as commonly identified psychological disorders, perception of relationship quality, and ability to fulfill daily obligations related to work, school, and home on his or her partner’s overall individual distress.

CRISELY MELECIO-ZAMBRANO  
The Size That Counts?: A Comparative Study of Non-Governmental Organizations’ Effectiveness Based on Size Focused on Humanitarian Efforts in Haiti  
Mentor: Dr. Houman Sadri (Political Science)  
This thesis includes a comparative study of non-governmental organizations in order to find which is most effective in addressing humanitarian concerns in Haiti. The methodology of research is divided into case studies based on size. The three organizations in focus are the United Nations, Catholic Relief Services, and REBUILD Globally.

LAUREN MELTZER  
What We Eat: Restaurant Choices at Different Ages  
Student Co-Authors: Jennifer Murphy, Loc Pham, Lauren Rauch, Leanne Thompson, Kurison Young  
Mentor: Dr. Ze Wang (Marketing)  
The purpose of this research is to use social media to study three age groups, including teenagers, young professionals, and senior citizens, to determine restaurant preferences and the factors influencing these preferences at different stages of life.

JOSHDUB MESTER  
The Role of Identity Development in Alcohol and Drug Usage  
Mentor: Dr. Steven Berman (Psychology)  
This research examined the relationship between substance use and identity. The sample consisted of 76 university students. Identity commitment was found to be inversely correlated with use of alcohol and marijuana. Identity distress was positively correlated to alcohol and marijuana use and identity exploration was only correlated to alcohol use.

SOCIAL SCIENCES III

CYNTHIA OAKES  
Group Affiliation and Self-Esteem: How Our Social Identities Relate to Psychological Functioning  
Mentor: Dr. Matthew Chin (Psychology)  
This project investigated whether a relationship exists between certain group affiliations (being a member of a Greek organization, religious organization, or ethnic/cultural organization) and one’s individual self-esteem, collective self-esteem, and need to belong.

KATELYNN PALMER  
Media’s Influence on Men’s Body Image Perception  
Mentor: Dr. Amy Donley (Sociology)  
This study aims to determine if perceptions among college men with relation to body image are consistent with previous research. In addition, it will assess the participants’ overall opinions of featured advertisements and whether or not the men think that the muscular male model is the “ideal body” shape.

STEPHANIE PARENTI  
Neocolonialism: Social Construction and Solutions  
Mentor: Dr. David Houghton (Political Science)  
Neocolonialism is a socially constructed economic phenomena in Africa. It was created through historical, psychological, and educational means. The mechanisms of neocolonialism are detrimental to the development of nations, and therefore must be reconstructed to benefit all trading partners.
TIMOTHY PASKOWSKI
The Relationship Between Psychometrically-Defined Social Anxiety and Working Memory Performance
*Mentor:* Dr. Jeffrey Bedwell (Psychology)
This study provides an assessment of both auditory and visual working memory as they relate to psychometrically defined social anxiety, to help clarify whether deficits in these domains are related to the construct of social anxiety, or whether deficits are better explained by more general state and trait anxiety.

KELLY QUINTERO
Women Farmworkers: Dangers of Working on the Field
*Mentor:* Dr. Annabelle Conroy (Political Science)
Farmworkers face terrible hardships and deal with constant misrepresentation and mistreatment. Women farmworkers have it even worse, as they often have to not only take care and provide for their family while also facing the dangers of pesticides.

PATRISHA REYNOLDS
Variation of Grave Marker Attributes in Central and Southeast Florida
*Mentor:* Dr. John Schultz (Anthropology)
This research was designed to document the variation in grave marker attributes over time in central and southeast Florida. Preliminary analysis indicates a shift from slender tablet markers to more robust, ornate, slant style granite markers and flat ground markers.

MELISSA ROBIN
Effects of Navigational Interface on Distracted Driving
*Mentor:* Dr. Mustapha Mouloua (Psychology)
Little research exists on skill transfer between two-handed and one-handed keyboards, much less in the context of a high-load situation like driving. This research sought to show that GPS systems have an adverse impact on driving and to explore the distraction contributions of two diverse keyboard layouts: QWERTY and ABCD.

ANA RONDON
The Influence of Cohabitation on Marital Quality for Men and Women Prior to Attending Relationship Education Workshops
*Mentor:* Dr. Andrew Daire (Educational and Human Sciences)
We assessed 280 low-income married participants prior to involvement in marriage education workshops. We will examine differences in marital quality among those who cohabited before marriage with those who did not. Additionally, we will evaluate the relationship between marital quality and the length of time participants cohabited preceding marriage.

HEIDI ROSS
It's a Woman's World: Shelter Life for Homeless Fathers
*Mentor:* Dr. Amy Donley (Sociology)
The objective of this research is to increase the available knowledge and understanding of homeless fathers and their experiences in homeless shelters.

AMANDA RUSSELL
Perceptions of Fraternities and Sororities
*Mentor:* Dr. Amy Donley (Sociology)
This research explores stereotypes and misperceptions university students have about Greek-lettered societies. Analyses consider general perceptions, an organization’s value within the university, and the typical image of a fraternity/sorority member. Factorable descriptors such as gender, ethnicity, and age are considered influential to the individuals’ viewpoints of these societies’ members.

MARIE SABBAGH
Influence of Defendant Mental Illness on Jury Sentencing
*Mentor:* Dr. Erin Murdoch (Psychology)
This study analyzed the factors involved in the decision-making process of sentencing a criminal case involving a mentally ill defendant. Participants were randomly assigned to four different conditions and tested, alone or in a group of three, and were asked to sentence a defendant, who may or may not have been identified as suffering from schizophrenia.

KEVIN SANDKUHL
The Effects of Motivation, Ability and Opportunity (MAO) and Ad Complexity on Ad Recall and Evaluation
*Mentors:* Mr. Zachary Johnson, Dr. Huifang Mao (Marketing)
This study investigates the hypothesized influence of consumer motivation and ad content on consumer ad recall and perceptions of the ad. Hypotheses were tested using a 2 x 2 experimental design between subjects. Findings and future research are discussed.

SMIT SHAH
Moral Cognition of Children: An Examination of the Role of the School Environment
*Mentor:* Dr. Valerie Sims (Psychology)
The aim of the study is to analyze the effect that school teaching styles can have on the moral cognition of children. The three types of teaching styles used in the study are the public, Montessori, and Catholic parochial.

CHRISTOPHER SHARPE
iBully: The Impact of Gender of Bully and Victim on Perception of Cyberbullying and Its Consequences
*Mentor:* Dr. Karen Mottarella (Psychology)
My research analyzed the impact of bully and victim gender in cyberbullying on people’s perception of likability of the bully, punishment of the bully, impact on victim, and victim response.

STEPHANIE SHEPPARD
Social Media and Consumer Behavior
*Student Co-Author:* Chris Moore
*Mentor:* Dr. Ze Wang (Marketing)
Our project objective is to explore online tools for consumer research. More specifically, we hope to obtain a better understanding of consumer behaviors across one’s lifespan by comparing and contrasting consumers’ values and lifestyles among different age cohorts.
DARA SHORE  
A Meal Made Fit by a King: Influences of Production, Trade, Tribute, and Feasting on Anglo-Saxon Kingship  
**Mentors:** Dr. John Walker, Dr. Ty Matejowsky (Anthropology), Dr. Peter Larson (History)  
This project analyzes an oft-ignored factor in the development of kingship in Anglo-Saxon England. By discussing the influences of domestic production, international trade, food-based tribute, and royal feasting on Anglo-Saxon kingship from the fifth to the eleventh centuries, the role of food consumption in the development of kingship is articulated.

BRANDON SOLLINS  
Predictors of Presence in Virtual Reality  
**Mentors:** Dr. Deborah Beidel, Dr. Jeffrey Cassisi (Psychology), Dr. Lisa Mills (Visual Arts and Design)  
This project investigated potential personality and physiological correlates of presence in virtual reality.

GLADSTONE SOLOMON  
The Effects of Music on Driving Behavior  
**Mentor:** Dr. Mustapha Mouloua (Psychology)  
Our goal was to determine the effects that various genres of music had on student driving performance. By doing so, we hope to notify the general public about our results and inform them about safest genres of music to listen to while driving to make our roads safer.

DEBRA STAGMAN  
A Comparison of Traditional and Nontraditional College Students’ Stress and Its Relationship to Their Time Management and Overall Psychological Adjustment  
**Mentors:** Dr. Karen Mottarella, Dr. Shannon Whitten (Psychology)  
This research examines academic stressors, reactions to stress, and time management among college students to better understand the experience and needs of nontraditional students. This study will help to clarify the extent that variables such as degrees of “nontraditionality” and time management play in relation to stress levels and reactions.

VICTORIA SWEENEY  
Perceived Gender and Its Effect on Attributions toward Anthropomorphic Avatars  
**Mentor:** Dr. Valerie Sims (Psychology)  
Past research has shown that people attribute human traits to non-human avatars. Participants will rate human and animal features from the video-game Spore on masculinity, femininity, and likability. Perceived gender of participants is expected to match the gender of liked features. Low masculine/feminine features are expected to be least liked.

CANDICE TORRES  
Sex Trafficking: Florida’s Response to International Organized Crime  
**Mentor:** Dr. Houman Sadri (Political Science)  
This research will address the recruitment processes and strategies used to carry out sex trafficking, how it occurs within the United States and in Florida specifically, what occurs during sex trafficking, what the demand is, the harboring of victims, the rescue process, and the prosecution of criminals.
UNIVERSITY OF CENTRAL FLORIDA LIBRARIES
Annual Award for Excellence in Undergraduate Research Publishing in the
University of Central Florida Undergraduate Research Journal

UCF Libraries is pleased to announce that Jitka Perutkova,
author of Consumers’ Willingness to Pay and to Patronize According to Major Restaurant Attributes,
has won its 2010 Award for Excellence in Undergraduate Research Publishing.

Congratulations to Jitka Perutkova and her mentor Dr. H.G. Parsa!

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

The University of Central Florida Undergraduate Research Journal is on display at www.URJ.ucf.edu.
In January 2010, the Student Undergraduate Research Council, in collaboration with the Office of Undergraduate Research, developed the Undergraduate Researcher of the Month program. Each month a new student is honored with the award. Students are nominated by advisor, mentors, or peers.

**JANUARY**
Katherine R. Elsea (Creative Writing)  
*Norma & Irving: The Steel Butterfly and the Boy Wonder*  
*Mentor:* Dr. Tison Pugh (English)

**FEBRUARY**
Keon L. Vereen (Aerospace Engineering)  
*Experiments for Heat Flux and Pressure Dependent Flow Boiling of R-134a*  
*Mentor:* Dr. Ranganathan Kumar (Mechanical, Materials, and Aerospace Engineering)

**MARCH**
Michael Napolitano (Anthropology)  
*Archaeological GIS of Ben*  
*Mentor:* Dr. John Walker (Anthropology)

**APRIL**
Shainna Ali (Anthropology)  
*Contemporary Hijra Identity in Guyana: Colonial and Postcolonial Transformations in Hijra Gender Identity*  
*Mentors:* Dr. Elayne Zorn, Dr. Rosayln Howard (Anthropology)

**MAY**
Wei Yuan (Interdisciplinary Studies)  
*Testing Interactive Effects of Temperature and Salinity of the Asian Green Mussel (Perna viridis) and the Charru Mussel (Mytella charruana)*  
*Mentor:* Dr. Linda Walters (Biology)

**JUNE**
James Stewart New (Molecular Biology and Microbiology, and Biotechnology)  
*Plant-Made Oral Vaccines- Evaluation of Capsules*  
*Mentor:* Dr. Henry Daniell (Biomedical Sciences)

**JULY**
Deandra Jessica Roberts (Early Childhood Education)  
*The Post-SOAR Experience: Determining the Perceived Needs of Students During the Second and Third Years of College*  
*Mentor:* Dr. Mia Alexander-Snow (Education Research, Technology and Leadership)

**AUGUST**
Benjamin A. Eslahpazir (Molecular Biology and Microbiology)  
*In-vitro Trials of Novel Compounds to Induce Terminal Differentiation of GBM Brain Neoplasia*  
*Mentor:* Dr. Kuminobu Sugaya (Biomedical Sciences)

**SEPTEMBER**
Dominique Gelin (Sociology and Political Science)  
*Orlando’s Third Wave Feminism*  
*Mentor:* Dr. Maria Cristina Santana (Women’s Studies)

**OCTOBER**
Marie Sabbagh (Psychology)  
*Effects of Defendant’s Mental Illness on Jury Decisions*  
*Mentor:* Dr. Erin Murdoch (Psychology)

**NOVEMBER**
Maira Carrillo (Psychology)  
*EA Game-Play Test*  
*Mentor:* Dr. Valerie Sims (Psychology)

**DECEMBER**
Lindsay Dhanani (Psychology)  
*Discrimination of Arabs and Muslims in Hiring Decisions*  
*Mentor:* Dr. Robert Dipboye (Psychology)
UCF UNDERGRADUATE RESEARCH COUNCIL

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

Michael Aldarondo-Jeffries  James Hogg  Pedro Patino
Kelly Astro  Peter Jacques  Hugh Potter
Monifa Beverly  Jana Jasinski  Tison Pugh
Paul Biscardi  Bernie Jensen  Kathleen Rancourt
Ratna Chakrabarti  Joo Kim  Robert Reedy
Niels da Vitoria Lobo  Stephen Kuebler  Debra Reinhart
Jonathan Decker  Shawn Lawrence  Denver Severt
Weiwei Deng  David Lee  Zixia Song
Robert Dipboye  Robb Lindgren  Kenneth Teter
Amy Donley  John Malala  Kristina Tollefson
Martin Dupuis  Stacey Malaret  Alberto Villanueva
Costas Efthimiou  Lisa Mills  Elliot Vittes
Nora Lee Garcia-Velazquez  Abby Milon  John Walker
Michael Georgiopoulos  Jennifer Mundale  Linda Walters
Richard Harrison  Dima Nazzal  Ze Wang
Eric Hoffman  Reid Oetjen  Scott Waring
Richard Hofler  H.G. Parsa

UCF STUDENT UNDERGRADUATE RESEARCH COUNCIL (SURC)

SURC was formed to promote awareness about undergraduate research for students at the University of Central Florida. Ten students actively engaged in research are selected each year to serve on this council. Through their support the Office of Undergraduate Research has greater exposure on campus and continuously receives feedback on undergraduate research programs. SURC’s assistance help in promoting and running the Showcase of Undergraduate Research Excellence is greatly appreciated.

Shannon Bailey  Rachel King  Mario Pita
Paul Biscardi  Caroline McFadden  Melissa Robin
Amelia Carey  Stephanie Parenti  Marie Shultz

SPECIAL THANKS

The Office of Undergraduate Research thanks the following individuals and entities for their time, expertise, and support in the planning of today’s event.

Michael Aldarondo-Jeffries  Richard Harrison  Brian Strickland
Kelly Astro  Jennifer Hartman  Provost Tony Waldrop
Robert Bilic  Kris Hestad  Jennifer Wolff
Amy Carey  President John C. Hitt  UCF Foundation
Sandra Cherepow  Martha H. Hitt  UCF Libraries
Denise Cristafi  Jana Jasinski  UCF Student Union
Michelle Fuentes  Nancy Lynch  UCF University Marketing
Drew Guarino  Chris Morgan
Lauren Haar  Nicole Smith
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