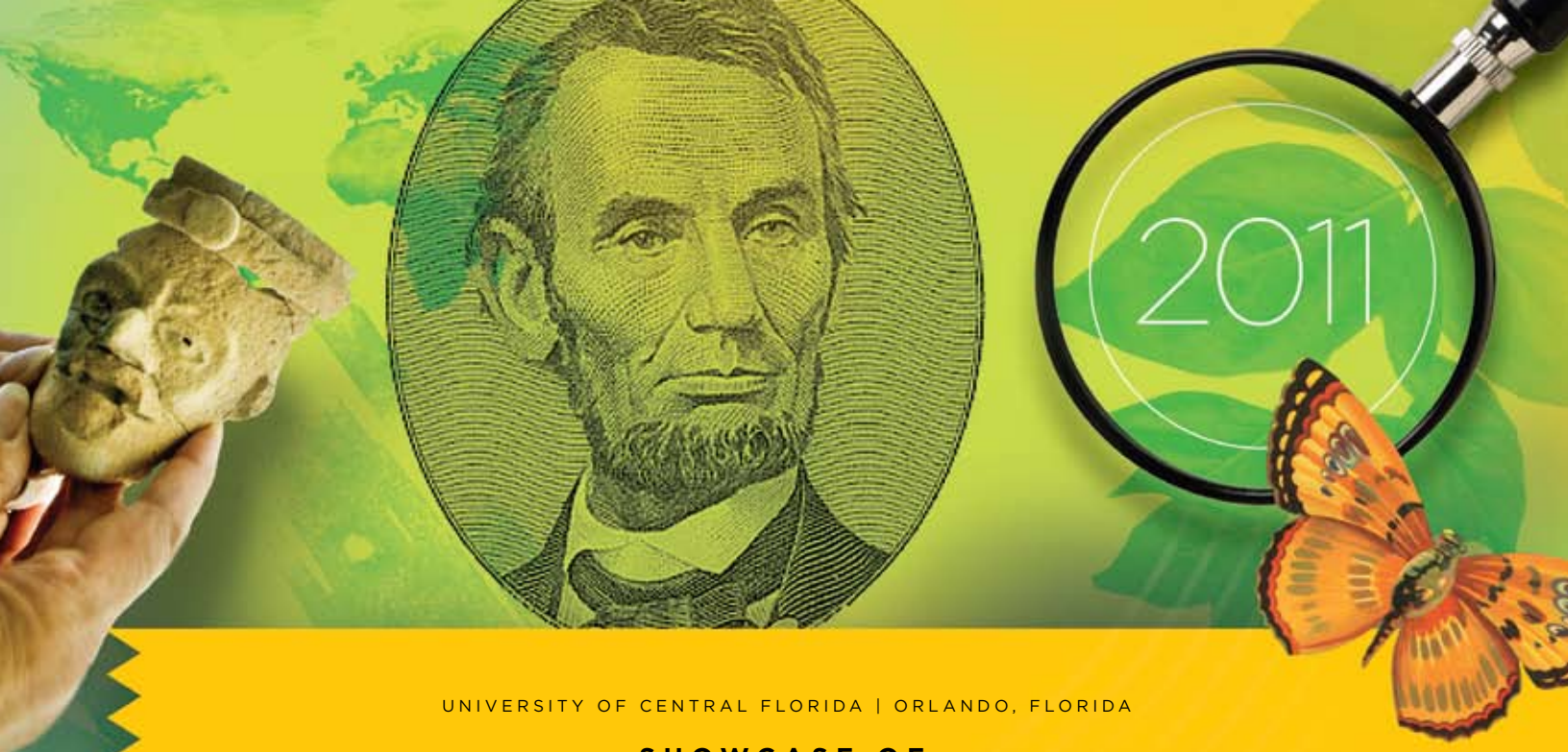
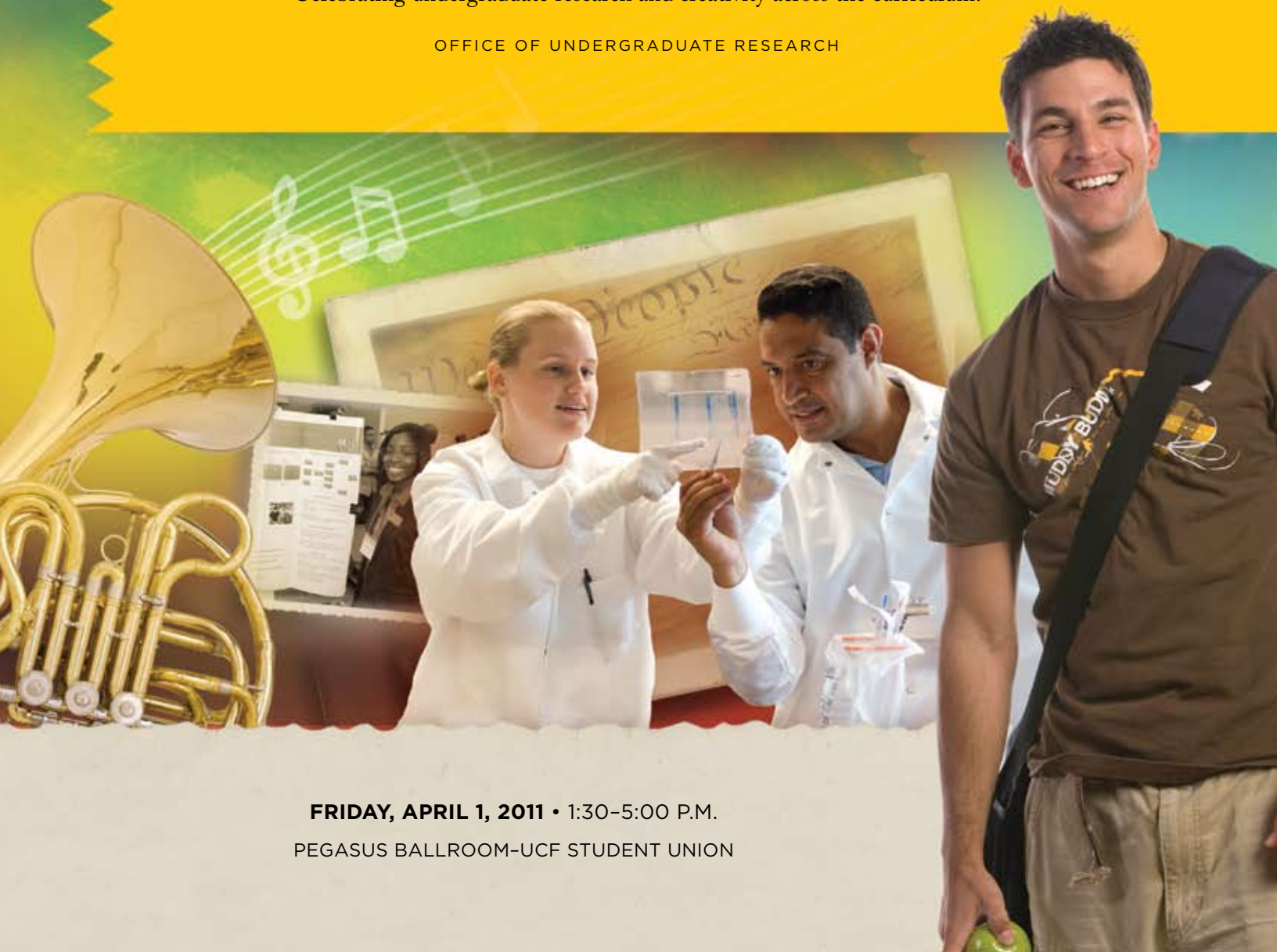


UNIVERSITY OF CENTRAL FLORIDA | ORLANDO, FLORIDA

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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OFFICE OF UNDERGRADUATE RESEARCH

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.

Tareq Ahram
Yuanli Bai
Kathleen Bell
Bill Blank
Melody Bowden
Jay Corzine
William Crampton
Jon Decker
Martin Dupuis
Kenneth Fedorka
Diala Gammoch
Arup Guha
Roger Handberg
Eric Hoffman
Jana Jasinski
Bernie Jensen
Travis Jewett
Joo Kim
Gary Leavens
Victoria Loerzel
Bernard Mackey
Nancy Marshall
Lisa Mills
Ram Mohapatra
Sean Moore
Karen Mottarella
Kimberly Murray
Elizabeth Mustaine
Erin Saitta
Patrick Schelling
Dinender Singla
Hojun Song
Challapalli Suryanarayana
Ze Wang
Kerry Welch
JoAnn Whiteman
Kevin Yee
Antonis Zervos
Lei Zhai
Shaojie Zhang

SHOWCASE BENEFACTORS

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

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

FACULTY MENTORS

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.

Kelly Allred
Christina Amidei
Jack Ballantyne
Jeffrey Bedwell
Aman Behal
Deborah Beidel
Steven Berman
Richard Blair
Lotzi Boloni
Peter Bossaerts
Daniel Britt
Cynthia Brown
Joe Burden
Cristina Calestani
Humberto Campins
Cecyle Carson
Shannon Carter
Jeffrey Cassisi
Necati Catbas
Karl Chai
Debopam Chakrabarti
Ratna Chakrabarti
Sic Chan
Ni-Bin Chang
Larry Chew
Matthew Chin
Manoj Chopra
Annabelle Conroy
Alexander Cole
Maureen Covelli
Anne Culp
Andrew Daire
Henry Daniell
Damian Dechev
Leslie DeChurch
Marios Demetriou
Robert Dipboye
Aristide Dogariu
Amy Donley
Annelise Driscoll
Steven Duranceau
Steven Ebert
Costas Efthimiou
Kenneth Fedorka
Michael Georgiopoulos
Avelino Gonzalez
Ali Gordon
Ratan Guha
Glenda Gunter
Scott Hagen
Kerstin Hamann
Michael Hampton
Erin Hanson
Joseph Harrington
Sally Hastings
James Hickman
Eric Hoffman
James Hogg
David Houghton
Rosalyn Howard
Charles Hughes
Robert Igarashi
Masahiro Ishigami
Jana Jasinski
David Jenkins
Florian Jentsch
William Johnson
Zachary Johnson
Sai Kakuturu
Jayanta Kapat
Naim Kapucu
Abdelkader Kara
Alain Kassab
Saiful Khondaker
Joo Kim
Dmitry Kolpashchikov
Stephen Kuebler
Sigrid Ladores
Karen Large
Peter Larson
Joseph LaViola
Connie Lester
Xin Li
Kurt Lin
Robb Lindgren
Juin Liou
Victoria Loerzel
Amelia Lyons
Kevin Mackie
Anthony Major
Huifang Mao
Artem Masunov
Ty Matejowsky
Lisa Mills
Michael Moshell
Sean Moore
Karen Mottarella
Mustapha Mouloua
Robert Muise
Mark Muller
Erin Murdoch
Dima Nazzal
Anne Norris
Dan Novatnak
Chad Nye
Nina Orlovskaya
Csaba Palotai
Heili Pals
Christopher Parkinson
Marianna Pensky
J. Manuel Perez
Seetha Raghavan
Johnny Pherigo
Debra Reinhart
Kimberly Renk
Martin Richardson
Fernando Rivera
Cecilia Rodriguez-Milanes
Pamela Roush
Houman Sadri
Maria Cristina Santana
Swadeshmukul Santra
Winston Schoenfeld
Alfons Schulte
John Schultz
William Self
Denver Severt
Murbarak Shah
Bhimsen Shivamoggi
Valerie Sims
Dinender Singla
Janan Smither
Yongho Sohn
Mary Lou Sole
Hojun Song
Kenneth Stanley
Michael Strawser
Kalpathy Sundaram
C. Suryanarayana
Huaixiang Tan
Marshall Tappen
Suren Tatulian
Ken Teter
Gregory Thompson
Meredith Tweed
Natalie Underberg
Raj Vaidyanathan
Laurence von Kalm
Parveen Wahid
John Walker
Linda Walters
Ze Wang
Shannon Whitten
Bruce Wilson
Wade Winterhalter
Jingdong Ye
Kurt Young
Antonis Zervos
Lei Zhai

ARTS AND HUMANITIES

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-Author: 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
Student Co-Author: Danielle Frantz
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.

ALLISON WHITNEY MELTON
Eccentric Headpieces:
Creation of "Dames at Sea" Hats
Mentor: Ms. Huaixiang Tan (Theatre)
Elaborate and non-conventional headpieces from UCF Conservatory Theatre's production of "Dames at Sea" were created through analysis, research, and obscure construction. After analyzing and discussing renderings with the Costume Designer, research was conducted on methods and materials to construct elaborate headpieces for performers to wear while acting, singing, and dancing.

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
Student Co-Authors: Samantha Ruiz, Regina Postrekhina, Sebastian Church, Brian Strickland
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.

DANIEL WATKINS
Widescreen
Mentor: Dr. Lisa Mills (Visual Arts and Design)
The nature of cinematic grammar and the impermanence of a moment recorded are explored in a two projector video installation that uses aesthetics as well as the nature of projection to evoke the mortality inherent to the passage of both the consequential and inconsequential moments in our lives.

ENGINEERING, COMPUTER SCIENCE, AND OPTICS & PHOTONICS I

HOMA AMINI-MANESH
Electrostatic Discharge Effects on Solar Cells Used in Space Missions
Mentor: Dr. Juin Liou (Electrical Engineering and Computer Science)
This project analyzes and explores the impact of electrostatic discharge (ESD) on solar arrays used in Mars rovers and space missions. A number of solar cells are electrically shocked, and each cell's current versus voltage characteristic is used to investigate the resulted damage.

PEDRO ASENJO
Analyzing Effectiveness of Seepage Control Methods for Preventing Instability of Structures due to Subsurface Cavities
Mentor: Dr. Sai Kakuturu (Civil, Environmental, and Construction Engineering)
This study employed the GeoSlope SEEP/W software to model and examine the patterns of rainfall seepage towards a subsurface cavity located directly below a structure. A low permeability layer was positioned upstream of the structure to act as a seepage reducer. Its effectiveness was analyzed and optimized using numerical analysis.

PATRICIA AUBUCHON
Turbulent Fluid-Structure Simulation of Wind Loads on Low-Rise Buildings
Mentor: Dr. Kevin Mackie (Civil, Environmental, and Construction Engineering)
Using the computational fluid dynamics software, OpenFoam, turbulent wind fluctuations on low-rise buildings are modeled allowing for pressure field readings that are otherwise only obtained via the use of wind tunnels. This provides a free and accurate alternative to wind tunnel studies of turbulent wind fluctuations and the resulting consequences.

GISELLE BORRERO
Evolutionary Approaches for Global Optimization Problems
Student Co-Authors: Kenzo Mendoza, Stacy Glass
Mentor: Dr. Michael Georgiopoulos (Electrical Engineering and Computer Science)
We compared the performance of six competitive evolutionary approaches in solving global optimization problems. As a result of our work, the practitioner will have a good idea of which evolutionary algorithm to use and for what type of global optimization problem to use it.

JOHN BRATOS

Micro–Raman Spectroscopy of Hydrated Polymer Electrolyte Fuel Cell Membranes

Mentor: Dr. Alfons 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–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 $LaCoO^3$ Based Ceramic Perovskite

Student Co-Author: Nathan Fist

Mentor: Dr. Nina Orlovskaya (Mechanical, Materials, and Aerospace Engineering)

Experiments were conducted to determine the vibrational properties in the structure of $LaCoO^3$ upon heating with a solid silicon 532nm laser using Raman Spectroscopy. In addition, $LaCoO^3$ was 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 FONTE

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.

ENGINEERING, COMPUTER SCIENCE, AND OPTICS & PHOTONICS II

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)

Citric 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.

KRYSTAL 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.

GARDETTE 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.

MARIA 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.

MARLAINE 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.

LIFE SCIENCES I

NEEMA ABDOLLAHZADEH

The Endoplasmic Reticulum Stress Inducible Protein Herp Counteracts Mutant α945; 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

The Role of Host Chaperones in Cholera Intoxication

Mentor: Dr. Ken Teter (Biomedical Sciences)

We will examine the role of host chaperones in cholera intoxication. We hypothesize that BiP prevents toxin aggregation in the ER, and that Hsp90 and Hsc70 assist in refolding once the toxin has entered the cytosol. Determining a role for these chaperones allows for precise therapeutics to be created.

CHRISTOPHER BAILEY

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 Auranofin on *Clostridium difficile*

Mentor: Dr. William Self (Biomedical Sciences)

This study expores the mechanism of action of the gold compound Auranofin on *Clostridium difficile*.

OCEAN COHEN

Attack of the Titans: Investigating Genetic Variation in the Global Exotic Titan Acorn Barnacle, *Megabalanus coccopoma*

Mentors: 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 (TimeOverlap) 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

Who Are You, Charru? Identifying Source Populations of the Exotic Charru Mussel

Mentor: Dr. Eric Hoffman (Biology)

This study strives to determine how the nonnative mussel *Mytella 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 (HtrA1), HtrA2, and HtrA3 Proteases

Mentor: Dr. Antonis Zervos (Biomedical Sciences)

The high-temperature requirement factor A (HtrA) family of serine proteases are involved in many diverse processes. I made HtrA3's recombinant protein and purified it. We tested the serine protease activities of HtrA1, 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 Cancerous 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. Hojun 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.

SUMMER HAMADEH

Preferential Feeding Behavior of the Mud Crab, *Panopeus herbstii*, on Native and Non-Native Species of Mussels

Mentor: Dr. Linda Walters (Biology)

Geukensia demissa and *Brachidontes exustus*, two native mussels, and *Mytella charruana*, an introduced mussel, will be used to test if a native predator, *Panopeus herbstii*, the Atlantic mud crab, demonstrates preferential feeding habits in a design where *Panopeus herbstii* is given a choice of these three mussel species as prey.

SEAN HOLMES

Construction of Fab Library and Synthesis of RNA Constructs for Chaperone-Assisted RNA Crystallography

Mentor: Dr. Jingdong Ye (Chemistry)

The objective of this project is to study RNA structure and function. Due to its instability, RNA is hard to isolate and study. With a novel approach to RNA crystallography employed in the Ye lab, study of RNA tertiary structure can give great insight to its many biological functions.

MARC KEMPER

Does Marine Debris Harbor Non-Native, Sessile Marine Invertebrates?

Mentor: Dr. Linda Walters (Biology)

The objective of this research is to determine whether non-native, sessile marine invertebrates can settle on human debris, which can facilitate the spread of these non-native species throughout our coastlines.

LIFE SCIENCES II

JESSICA KENYON

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

Mentor: Dr. Eric Hoffman (Biology)

We aim to assign parentage to a captive-bred population of greater flamingos and use these data to provide insight into how to best maintain genetic diversity in captive-bred populations and learn more about captive-bred flamingo behavior.

RACHEL KING

The Influence of Systemic Infection on Male Sperm Competition in *Drosophila melanogaster*

Student Co-Author: Emily Frierson

Mentor: Dr. Kenneth Fedorka (Biology)

Previous work suggests that activating a systemic immune response in males reduces male sperm viability, which is crucial to male reproductive success. Therefore, we hypothesize that systemic infection in males are due to fewer sperm being made available for competition. Our study system was *Drosophila melanogaster* fruit flies.

VICTORIA KREINBRINK

Identification of Genes Required for Polyamine Transport

Mentor: Dr. Laurence von Kalm (Biology)

This study aims to identify genes required for polyamine transport in *Drosophila*.

SARAH LAWAND

Structural Homology Between the Scaffold Proteins ABRO1 and ABRAXAS Suggests They May Share the Same Interacting Polypeptides

Mentor: Dr. Antonis Zervos (Biomedical Sciences)

The objective of this project is to do a yeast-two hybrid screening to determine if the AP1 family members that interact with ABRO1 also bind to ABRAXAS, and, if so, whether the interaction is mediated through the coil-coil domain.

VIVIAN LEE

Associations Between Cuticular Melanization and Immune Function in *Allonemobius* Ground Crickets

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

We looked at the effects of body size, sex, geographical location, and wing morph on how *Allonemobius spp.* ground crickets may use melanin in both cuticular melanization, which is used to maintain body temperature, and immune functions, which are important in disease resistance.

DAVID LEHMKUHL

Prevention of Inactivation of Doxorubicin With Cerium Oxide Nanoparticles

Mentor: Dr. J. Manuel Perez (Chemistry)

Doxorubicin, a popular anticancer chemotherapeutic agent, is often oxidized in vivo when exposed to free radicals and heme proteins in serum to yield less cytotoxic products. Herein, we report progress in preventing the oxidation with the use of cerium oxide nanoparticles to make for a more effective drug.

ROBERT LORCH

MicroRNA Regulation of Prostate Cancer Desensitization to Androgen Receptor Antagonist Drugs During Androgen Deprivation Therapy

Mentor: Dr. Ratna Chakrabarti (Biomedical Sciences)

The involvement of microRNAs in regulating the desensitization of prostate cancer cells to androgen receptor antagonists was investigated by genome-wide monitoring of microRNA expression levels and statistical analysis of abnormally regulated microRNAs.

KEITH MANNING

Mechanisms of Interfacial Activation of Human and Bee Venom Phospholipase A2 Enzymes

Student Co-Author: Ramone Eldemire

Mentor: Dr. Suren Tatulian (Physics)

The main focus of this study was to determine the effect of micelle formation on phospholipase A2, as well as the use of dodecylphosphocholine as a cell membrane mimic. This project examined interfacial enzyme activation using phospholipase A2 as a model.

MICHAEL MANNING

Characterization of Proteins Interacting With *Plasmodium falciparum* CDK-Like Kinase PfPK6

Mentor: Dr. Debopam Chakrabarti (Biomedical Sciences)

In an attempt to understand the role of PfPK6, we plan to identify its substrates and interactors via integration of HA-tagged PfCDKs in transfected *Plasmodium falciparum* cell lines. Identification will be achieved through pull-down assays and mass spectroscopy.

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 Tripartile Biosensor for Real-Time SNPs Detection in DNA Hairpin Motif
Mentor: Dr. Dmitry Kolpashchikov (Chemistry)
First, molecular beacon-based tripartile 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 antilarum* 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* PfPK5, a CDK-like Kinase
Mentor: Dr. Debopam Chakrabarti (Biomedical Sciences)
Plasmodium falciparum is the most common species of the parasite responsible for human Malaria. The aim of this project is to determine potential cellular substrates of the Plasmodium kinase PfPK5 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.

NEYDA VANBENNEKOM
The Role of the Unfolded Protein Response in Cholera Intoxication
Mentor: Dr. Ken Teter (Biomedical Sciences)
Activation of the unfolded protein response (UPR) enhances cholera toxin (CT) activity, which is predicted to be caused by efficient translocation of the CTA1 subunit of CT into the cytosol. This hypothesis will be tested by comparing CTA1 translocation to the cytosol in control cells to that of UPR-activated cells.

KORTNI WATKINS
Characterization of the Atypical *Plasmodium falciparum* SNARE PfVti1b
Mentor: Dr. Debopam 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.

PHYSICAL SCIENCES AND MATHEMATICS

JAMES BORRELLI
Molecular Dynamics of Interatomic Potentials
Mentor: Dr. Abdelkader Kara (Physics)
This is a study of the structure and dynamics of the interface between a nanoparticle and a surface: the case of Cu and Ag.

CHRISTOPHER 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 Tantalate 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.

RYAN HARDY

Exoplanet Orbital Constraints From *Spitzer Space Telescope* Secondary Eclipse Measurements

Mentor: Dr. Joseph Harrington (Physics)

We present orbital parameters determined from *Spitzer Space Telescope* secondary eclipse observations of five extrasolar planets in 2010.

MILLER HEDERI

Arranging Radio Repeaters in a Large Populated Region Using Backtracking Algorithm

Student Co-Authors: Christopher Frye, Jie Liang

Mentor: Dr. Costas Efthimiou (Physics)

In a large region with many radio users, it is necessary to arrange radio repeaters in an efficient way to provide coverage to all users. We present a computerized model to determine the minimum number of repeaters necessary to accommodate a given region using a backtracking algorithm.

KRISTY KORMONDY

High Yield Assembly and Electron Transport Investigation of Semiconducting-Rich Local-Gated Single-Walled Carbon Nanotube Field Effect Transistors

Mentor: Dr. Saiful Khondaker (Physics)

We present scanning electron micrographs and complete electron transport properties of nearly all-semiconducting carbon nanotube field effect transistors assembled via AC-dielectrophoresis.

ZOE LANDSMAN

Detection of Water, Ice, and Organic Molecules on Asteroid 65 Cybele

Mentor: Dr. Humberto Campins (Physics)

After discovering water, ice, and organics on asteroid 24 Themis, we searched for and detected these compounds on asteroid 65 Cybele. Their presence on both asteroids suggests that ice and organics may be more common in the asteroid belt than previously thought.

JIE LIANG

Fast Sparse Representation-Based Classification for Real-World Face Recognition on *Facebook*

Mentors: Dr. Xin Li (Mathematics), Dr. Mubarak Shah (Electrical Engineering and Computer Science)

We researched applications in Computer Vision, face recognition, using computational aspects by emphasizing both mathematical theory and computational skills.

JERONIMO MATOS

Chemisorption of Anthracene on Cu(110)

Mentor: Dr. Abdelkader Kara (Physics)

Our interest in small organic molecules stems from their potential for applications in organic electronic devices which outperform their inorganic counterparts in applications where high efficiency but low output is desirable. To understand the properties of Anthracene on Cu(110), we categorize it on the chemisorption-physisorption spectrum.

SCOTT MATTHEWS

Fabricating Sufficient Reduced Graphene Oxide Dispersion for Energy Storage Devices

Mentor: Dr. Lei Zhai (Chemistry)

A reduced graphene oxide (RGO) composite is fabricated to determine the electrochemical properties through cyclic voltammetry (CV) and electrochemical impedance spectroscopy (EIS). The resulting composite is expected to be a supercapacitor for green energy applications which require faster and higher powered energy storage systems.

JENNIFER NEALY

Object Classification Using Local Subspace Projection

Mentor: Dr. Robert Muise (Mathematics)

This project develops a new technique, the local subspace projection (LSP), which approximates a diffusion map embedding for classification problems. Using the results and analysis of several experiments, comparable classification performance is shown with the added benefit of no longer requiring the prohibitive computations previously needed for similar results.

COURTNEY PAULSON

Analyzing Excessive Variance to Uncover Particle Properties in Saturn's Rings

Mentor: Dr. Marianna Pensky (Statistics)

The objective of the project is to model the sources of the excessive variability in light intensity observations from Saturn's rings. After evaluating excessive variance present in the data, the model can be used to make inferences on the physical conditions of the particles of the rings (e.g., average size/density).

NOÉMI RÉBELI

The Effects of Cometary Diameter on Jovian Impacts

Mentor: Dr. Csaba Palotai (Physics)

With the use of ZEUS-MP/2 three-dimensional hydrodynamic modeling, we will simulate the impact of a 500, 750, and 1000 meter in diameter cometary fragment impactor to determine whether impactor diameter affects the maximum and disintegration depth, comet fraction scaling, and ejection velocity of the atmospheric plume on Jovian planets.

KYLE REGER

Numerical Solutions to Hall Magnetohydrodynamics Near an X-type Neutral Line

Mentor: Dr. Bhimsen Shivamoggi (Mathematics)

The Hall magnetohydrodynamic (MHD) model describes fast magnetic reconnection processes in plasma physics. This project focuses on the current sheet formation at X-type magnetic neutral points in Hall MHD. Higher order terms in the Taylor expansion near the magnetic neutral point are included and a more general solution is considered.

ANDREW TEBLUM

Bimodal Chitosan-PGA Nanoparticles for Drug Delivery Using Layer-by-Layer Assembly

Mentor: Dr. Swadeshmukul Santra (NanoScience Technology Center)

The present work aims at self-assembly Chitosan-PGA polymers on iron-oxide nanoparticle surface to obtain bimodal nanoparticles for biomedical applications. An attempt is made to understand the effect of iron oxide nanoparticle surface charge and the sequence of polymer coating on drug loading, cell uptake, and drug release studies.

SOCIAL SCIENCES I

DAVID ACKERMAN

International Contracts: A Quantitative Analysis of International Contracts

Mentor: Dr. Cynthia Brown (Legal Studies)

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.

LAURA ADARVE

Examining Environmentally Friendly Behaviors: A Comparison of Native- and Foreign-Born Latinos in the United States

Mentor: Dr. Fernando Rivera (Sociology)

Does a relationship exist between Latinos' place of birth and their attitudes and behaviors toward environmental sustainability? My aim is to identify whether a trend exists among native-born Latinos and foreign-born Latinos: who becomes more or less environmentally aware and, consequently, active?

ALLYSSA ANDERSON

Mobilizing Your Marketing and Commerce Strategies: A Research Study to Inform the Hospitality Industry

Student Co-Author: Trevor Sorbo

Mentor: Dr. James Hogg (Hospitality Services)

This research study explores the emerging mobile commerce model and its application for the hospitality industry. By linking mobile marketing (m-marketing) with mobile commerce (m-commerce), hospitality organizations can create convenience for their guests, widen their market penetration, and increase sales while increasing guest mind share.

JAVIRIYAH ASHRAF

The Accounting Fraud at WorldCom: The Causes, the Characteristics, the Consequences, and the Lessons Learned

Mentor: Dr. Pamela Roush (Accounting)

Utilizing WorldCom as an example, this study will acquire information that allows a compilation of the red flags to investigate when auditing a company's financial statements, recognize stressors that exist in the internal and external environments in order to prevent an accounting fraud, and determine the effects on the economic environment and stakeholders.

PAUL ASHWORTH

Does Stereotype Threat Impact Parenting Among Homeless, Single Mothers?

Mentor: Dr. Amy Donley (Sociology)

The objective of the current research is to determine if stereotype threat can significantly impact an individual's behavior outside the world of academia. Specifically, the research aims to diagnose the perceived effect of stereotype threat on a homeless mother's parenting.

GHISLAINE ATKINS

Computer-Mediated Communication and Interracial Social Interaction: Racial Perceptions in a Digital World

Mentor: Dr. Kurt Young (Political Science)

This research examines the literature surrounding interracial interaction, prejudice, and individual attitudes through the medium of computer-mediated communication. The literature introduces important theories in social psychology associated with the study of race and prejudice. They are social identity theory, social desirability, stereotypes, racial bias, and group competition.

SHANNON BAILEY

Spatial Ability of Crafting Experts

Mentor: Dr. Valerie Sims (Psychology)

Spatial ability refers to the aptitude of an individual to mentally rotate objects, visualize spaces, and recognize patterns. A highly spatial task that is not addressed in current literature is crafting (sewing, knitting, crocheting). This study assesses the correlation of crafting expertise with performance on spatial tasks.

SIMON CAINE

Political Conservatism and Its Effects on Memory and Basic Recall

Mentor: Dr. Janan Smither (Psychology)

Through the use of experimentation and data analysis 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.

MARIA CARRILLO

Computerized Walk-Through Models: Assessing the Role of Spatial Ability, Knowledge, and Workload

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.

SALLY CLAUSEN

I Never Forget a Face!: Memory for Faces and Individual Differences in Spatial Ability and Gender

Mentor: Dr. Shannon Whitten (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.

MATTHEW COHN

Is There a Stigma Associated With Gender Composition in Teams? An In-Depth Analysis of Gender Bias in Peer Evaluations

Student Co-Authors: Celise Remy-Lewis, Angela Vergara

Mentor: Dr. Leslie DeChurch (Psychology)

Participants were asked to rate their teammates according to the level of socio-emotional input, average cooperation, and average strain. These ratings will be analyzed by gender to see how females and males work in teams and their perceptions of their teammates' contributions.

LINDSAY DHANANI

Discrimination Against Arabs and Muslims in Simulated Hiring Decisions

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.

REBECCA DODSON

Asset-Based Approach to Community Disaster Resiliency and Sustainability

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.

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.

SOCIAL SCIENCES II

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 pro-social 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 Cristana 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 KEES

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.

JORGE MENDOZA

Intolerance of Ambiguity and Instrumentality-Expressiveness Along a Humanistic-Normative Ideological Dimension

Mentor: Dr. Matthew Chin (Psychology)

This research study will test the relationship between intolerance of ambiguity, self-identified gender role attributes, and ideological orientation as described by Tomkins' Polarity Theory.

JOSHUA 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.

TEDDY MOUMOURIS

The Effect of Individual Distress on Retention for Low-Income Couples Participating in Marriage and Relationship Education Workshops

Mentor: Dr. Andrew Daire (Educational and Human Sciences)

Low-income couples are particularly susceptible to frequent relationship stressors, contributing to recruitment challenges for treatment and research. We provided marriage education to 158 low-income married participants and assessed each partner for individual distress pre-intervention. This study will examine the relationship between individual distress and retention in marriage education workshops.

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**.

UNDERGRADUATE RESEARCHER OF THE MONTH

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. Kiminobu 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
Kelly Astro
Monifa Beverly
Paul Biscardi
Ratna Chakrabarti
Niels da Vitoria Lobo
Jonathan Decker
Weiwei Deng
Robert Dipboye
Amy Donley
Martin Dupuis
Costas Efthimiou
Nora Lee Garcia-Velazquez
Michael Georgiopoulos
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Robert Reedy
Debra Reinhart
Denver Severt
Zixia Song
Kenneth Teter
Kristina Tollefson
Alberto Villanueva
Elliot Vittes
John Walker
Linda Walters
Ze Wang
Scott Waring

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
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Caroline McFadden
Stephanie Parenti
Mario Pita
Melissa Robin
Marie Shultz

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INDEX OF STUDENT PRESENTERS

UCF

Stands For Opportunity

UCF is the university that seeks opportunities, creates opportunities, and brings them to fruition. The university's culture of opportunity is driven by the diverse people it attracts and serves, its Orlando environment, its history of entrepreneurship, and its youth, relevance, and energy.

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