Health & Sport Science

University of Dayton

Engineering

Sciences

University Honors Program

Teacher Education

Honors Students Symposium 2013

Arts

Business

The thesis component of the Honors Program
consists of a three-semester, six-credit-hour project
that culminates in a significant research contribution,
performance, or body of creative work.

The Honors thesis project involves a collaboration
with one or more faculty members
who help direct and focus the student's original thesis topic.

The University Honors Program
sponsors the Honors Students Symposium
as an opportunity for the students to present their theses
to the University community in a professional setting.

UNIVERSITY *of*
DAYTON

University Honors Program

presents the

Honors Students Symposium 2013

March 22, 2013
1:00 to 5:00 p.m.
Kennedy Union

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1:00 p.m.

Kristina L. DeMichele
English and Spanish

1:00 p.m., Room 211
Patrick W. Thomas, PhD, Thesis Advisor
English Department

The State of Digital Production within International Educational Publishing: Obstacles, Innovations, and Possible Solutions

Description
E-books are becoming increasingly popular in the United States with the constant creation of new technologies and innovative business plans. However, very little research has been done on how the international publishing sector is dealing with the transition to digital production. My honors thesis is a case study of Sonrisa Publishing, a bilingual educational publisher in Madrid, Spain. Specifically, I observed and interviewed publishing professionals during my editorial internship about how they are handling the transition to electronic publishing. My thesis identifies five categories of obstacles that Sonrisa Publishing faces in the transition to digital production: systemic, technical, personnel, cultural, and financial obstacles. From the investigation of these obstacles I have developed strategies for how Sonrisa Publishing should move forward with their digital strategy.

Benjamin E. Foster
Accounting and Finance

1:00 p.m., Room 222
Robert K. Larson, PhD, CPA, CMA, Thesis Advisor
Accounting Department

Mandatory Auditor Rotation: A Review and Analysis of Research from the Last Decade

Description
The financial reporting scandals of the early 2000's and the more recent financial crisis of 2008 has prompted regulators to consider new polices to better protect the markets and the shareholders who invest in them from future financial reporting failures. One of the most hotly debated proposed policies involves implementing Mandatory Auditor Rotation (MAR) which would require public companies to rotate their external auditor once they have served a pre-determined number of years. This proposal would fundamentally change the audit market and for that reason many market participants are seeking more information on MAR in order to better evaluate the proposal. This thesis seeks to provide a comprehensive report synthesizing the current knowledge and research on MAR so that others may educate themselves with up-to-date knowledge. After the research and arguments are presented I use this information to offer advice to policy makers on what will create higher quality financial reporting.

Lydia R. Kindelin
Mathematics

1:00 p.m., Room 311
Atif A. Abueida, PhD, Thesis Advisor
Mathematics Department

Multi-Latin Squares

Description
The research explores properties of multi-latin squares and proposes ways to construct them. Much like a Sudoku puzzle, multi-latin squares have parameters restricting the symbols in an array. A (n, t, m, p, q)-multi-latin squares is where n is the size of the latin square or number of rows and columns, t is the number of symbols, m is the number of symbols in each cell, p is the number of occurrences a particular symbol appears in each row and in each columns, and finally q is the number of cells where any pair of different symbols occurs together. Understanding trivial examples, the properties, and the math behind the problem reveals multiple examples and a systematic way to build some multi-latin squares.

Greg F. Mancini
Biology

1:00 p.m., Room 310
Amit Singh, PhD, Thesis Advisor
Biology Department

Role of Transcriptional Coactivator CREB Binding Protein (CBP) in Amyloid ßeta 42 Mediated Neurodegeneration

Description
Alzheimer's disease (hereafter AD), a common progressive neurodegenerative disorder in the aging population, has no early detection tests or proper cure. AD results in gradual decline of cognitive functions of learning and memory due to neurodegeneration in central and peripheral nervous system. My project focuses on understanding role of transcriptional co-activator CREB binding protein (hereafter, CBP) in preventing neurodegeneration caused by Aß42 plaques in the Drosophila eye. CBP binds a variety of transcription factors and components of several signal transduction pathways. It has been observed in high throughput approaches that CBP levels are reduced in cells undergoing cell death due to stress. Therefore, we propose to test if CBP can serve as a neuroprotective agent, and can prevent neurodegeneration seen in AD using Drosophila eye model.

Michael A. Xavier
Sport Management

1:00 p.m., Room 207
Peter J. Titlebaum, EdD, Thesis Advisor
Health and Sport Science Department
Corinne M. Daprano, PhD, Thesis Advisor
Health and Sport Science Department

Analyzing and Comparing State Legislation and High School Association Regulations Regarding the Management of Concussions

Description
The purpose of this study was to recognize the most comprehensive concussion regulations established by two groups of governing bodies: each state's legislatures and high school athletic association. The study was designed to identify uniform criteria covered by any complete law. This criteria was then applied to the language of each state's current legislation to identify the most progressive states. After the relationship between concussion legislation and high school regulation were examined, suggestions were made to further promote the safest possible behavior for all participants when an athlete suffers a concussion. The more progressive states and high school associations should be used as a model for governing bodies that are looking to improve concussion safety.

1:20 p.m.

Kylie M. Bushroe
Premedicine and Psychology

1:20 p.m., Room 207
F. Thomas Eggemeier, PhD, Thesis Advisor
Psychology Department
April Courtice, Thesis Advisor
Air Force Research Laboratory

Integrating Heart Rate and Eye Movement Measures as a Possible Robust Indicator of Workload in an Aviation Simulation Task

Description
Heart rate and eye measures are two psychophysiological measurements that have been demonstrated as sensitive indicators of an operator's functional state, specifically cognitive workload during tasks of varying levels of difficulty. These metrics are typically studied separately, but may be more robust indicators if integrated. The current study examined the relationship between heart rate and eye movements in response to varying levels of task difficulty and automation reliability to determine if integrating these metrics added any value to discerning workload. The study simultaneously collected electrocardiogram (ECG) and eye-tracking data from ten participants as they performed an aviation simulation task. Difficulty levels of three subtasks were manipulated in addition to the automation reliability of a fourth subtask. Performance data were analyzed for changes based on task difficulty. Heart rate and specific eye measures (e.g., fixation duration, pupil size, and blink rate) will be analyzed for changes reflecting the workload and automation.

Coral V. Flamand
English and Human Rights Studies

1:20 p.m., Room 211
Thomas L. Morgan, PhD, Thesis Advisor
English Department

Female Political Awakening in Julia Alvarez's "In the Time of the Butterflies"

Description
An analysis of the feminist implications of Alvarez's portrayal of the Mirabal sisters, underground revolutionaries during the Trujillo dictatorship in the Dominican Republic.

Stephen L. Mackell
Economics and Philosophy

1:20 p.m., Room 222
Trevor C. Collier, PhD, Thesis Advisor
Economics and Finance Department

City of Dayton Economic Development Incentive Programs: Costs and Benefits

Description
The City of Dayton Economic Development Office currently employs two unique incentive programs to attract businesses to grow and locate within the city limits. These programs cost the taxpayers significant amounts of money while also providing profits to our local economy in the form of a bolstered tax base for the city government. The goal of the thesis is to compare the two programs using two different cost benefit economic analysis methods and provide a recommendation for increased efficiency to the city based upon the results of the analysis.

Andrew M. Steffensmeier
Premedicine

1:20 p.m., Room 310
Amit Singh, PhD, Thesis Advisor
Biology Department

Role of Signaling Pathways in Amyloid-ß-Dependent Cell Death in Drosophila Eye

Description
Alzheimer's disease (AD) is a progressive neurodegenerative disorder of the central and peripheral nervous system found primarily among the elderly. AD is characterized by cognitive dysfunction of learning and memory due to selective atrophy of the hippocampus and the frontal cerebral cortex. Generation of amyloid-beta plaques in the brain is one of the causes for cytotoxicity observed in AD. There is no cure available for AD, which is the sixth largest killer disease in U.S. The fruit fly, *Drosophila melanogaster*, serves as a genetically tractable model with an array of genetic techniques and tools. Drosophila eye serves as an excellent tool to model neurodegenerative diseases. I use the *Drosophila melanogaster* eye model to perform a chemical drug screen as well as a genetic screen, looking for modifiers of the Amyloid-beta 42 (AD) phenotype.

1:40 p.m.

Megan R. Abbate
English and Adolescent
to Young Adult Education

1:40 p.m., Room 211
Thomas L. Morgan, PhD, Thesis Advisor
English Department

Developing Social Consciousness through Multicultural Young Adult Literature

Description
This research project studies young adult literature's potential to foster a global and open-minded perspective which will allow young adults to recognize commonalities, overlook differences, and promote tolerance. At the same time, this research will consider how interactions between globalism and universalism play out in young adult literature. In this study, the novels *We Were Here* and *Mexican Whiteboy* by Matt de la Pena and *The Absolutely True Diary of a Part-Time Indian* by Sherman Alexie, works which feature male protagonists struggling to locate their multicultural identities, will be analyzed. This research will legitimize the use of multicultural young adult literature in the classroom, despite the presence of controversial themes, to foster social consciousness and aid the establishment of identity within a global context. This thesis will demonstrate ways in which young adult literature can promote social change through both recognition of commonalities and respect for differences.

Brian L. Berger
Chemical and Materials Engineering

1:40 p.m., Room 331
Chadwick D. Barklay, PhD, Thesis Advisor
UDRI High-Temperature Materials Group
Donald Comfort, PhD, Thesis Advisor
Chemical and Materials Engineering Department

Development of a Protective Coating for TAGS-85 Thermoelectric Material

Description
Radioisotope Thermoelectric Generators (RTGs) — in use by NASA since the 1960s — convert the heat of decaying nuclear fuel to electricity. RTGs are an ideal primary power source for space technology due to their reliability and long lifespan. TAGS-85, a material critical to the operation of these generators, has been found to degrade over long periods of time at high temperatures. This degradation leads to a decrease in the power being produced by the RTG, diminishing its reliability as a power source. This thesis seeks to create a protective coating which can be applied to TAGS-85 before it is installed in the RTG. Several types of ceramic coatings were applied to samples, which were then subjugated to elevated temperatures for extended periods of time. Several analytical techniques were employed to gauge the effectiveness of the coatings at preventing TAGS-85 degradation.

Justin J. Jennewine
Economics and Finance

1:40 p.m., Room 222
Trevor C. Collier, PhD, Thesis Advisor
Economics and Finance Department

Poverty Alleviation in Malawi: An Investigation into the Challenges Faced by Microfinance Institutions

Description
In an attempt to reduce the crippling poverty throughout the country, there has been a microfinance boom in Malawi, Africa. Since Muhammad Yunus and the Grameen Bank in Bangladesh, countries have been attempting to recreate the first bank that profitably gave loans to society's poorest individuals. However, these institutions have not been able to find the balance between the social initiative and the financial bottom line. With over half of the country living below the poverty line and a third living on less than $1 per day, this study investigates the challenges found at the intersection of social welfare and financial development.

Nicholette T. Smith
Psychology

1:40 p.m., Room 207
Erin M. O'Mara, Thesis Advisor
Psychology Department

The Influence of Self-Esteem Level on the Interpretation of Ambiguous Stimuli after a Rejection Experience

Description
Do rejection experiences influence how people of differing self-esteem levels interpret information? The present study looked at the relationship between self-esteem, rejection experiences, and whether self-esteem level buffers against the pain caused by rejection. Participants were asked to recall an experience of rejection or acceptance and then interpret the mood of positive, negative, and ambiguous email messages. It is important to understand how constructs like self-esteem, social rejection, and judgment interact with each other in order to predict how individuals may be impacted by negative social experiences.

Alexander J. Ulintz
Premedicine and German

1:40 p.m., Room 310
M. Eric Benbow, PhD, Thesis Advisor
Biology Department
Rachel E. Simmonds, PhD, Thesis Advisor
Microbial and Cellular Sciences,
University of Surrey, United Kingdom

The Role of Mycolactone in Suppression of the Innate Immune Response and Alteration of Aquatic Biofilm Metabolic Profiles: Implications for Buruli Ulcer Disease

Description
Buruli ulcer disease (BU) is an emerging tropical infection of the skin and underlying tissues that leads to extensive deformity and disability. There are 5-6,000 new cases reported each year in 30 countries of West Africa and parts of Australia, primarily affecting children ages 0-15. Although infection is rarely lethal, BU is physically, socially and economically destructive. BU is caused by the environmental pathogen *Mycobacterium ulcerans*, which secretes a unique toxin called "mycolactone". While normal infections get warm, raised and painful, *M. ulcerans* infection typically does not swell and is relatively painless due to the effect of mycolactone. Therefore, my thesis research sought to explain how mycolactone is preventing both inflammation and mounting of a successful immune response. Furthermore, because *M. ulcerans* is an environmental bacterium thought to be transmitted from water, I hypothesized and tested a novel weapons role of mycolactone on aquatic biofilm metabolic profiles.

2:00 p.m.

Grace F. Blumberg
Sociology

2:00 p.m., Room 311
Dan E. Miller, PhD, Thesis Advisor
Sociology, Anthropology and Social Work Department

The Basis of Healthy Intimate Social Relationships

Description
Relationships are an essential element of social living. In order to have successful relationships it is important to assess the primary relationships that build up one's social atmosphere. By researching the basic aspects of social interactions between two individuals, I have searched for positive behaviors and interactions that build up healthy relationships. By taking time to assess one's interactions with others and relate to others in a constructive manner, one will have the possibility to experience healthy and flourishing relationships.

Elizabeth A. Bradley
English and Spanish

2:00 p.m., Room 211
Joseph R. Pici, Thesis Advisor
English Department

Of Spaceships and Moths' Wings

Description
A collection of fictional short stories that explore the ways in which the Laws of Physics can be observed working beyond just the physical realm of our own lives. Human rationales versus the reality of the physical universe create a tension that illustrates the transience of beliefs, self-worth, and ambition in the world of logic and science.

Timothy P. Henry
Chemical Engineering

2:00 p.m., Room 331
Donald Comfort, PhD, Thesis Advisor
Chemical and Materials Engineering Department
John Brausch, Thesis Advisor
Air Force Research Laboratory

Correlating Ultrasonic Responses of Fatigue Cracks Propagated Under Different Load Spectra

Description
Ultrasonic inspection is widely used in the field of nondestructive evaluation (NDE) to inspect materials and structures for both surface and internal damage. However, the capability of ultrasonic methods used to detect fatigue cracks in aerospace structural components is often limited by crack closure, which reduces the reflected energy of ultrasonic waves. In many cases, naturally occurring fatigue cracks are often more difficult to detect than laboratory generated cracks typically grown under constant amplitude loading. This study explored the relationship between crack closure effects and load spectrum variation on fatigue cracks grown under two different load spectra. Further understanding of this relationship could lead to a greater understanding of possible causal factors for poor natural crack detectability while yielding potential to generate laboratory cracks that more closely simulate naturally occurring cracks.

Elizabeth C. Wetzel
Biology

2:00 p.m., Room 310
Carissa M. Krane, PhD, Thesis Advisor
Biology Department

Membrane Trafficking of Aquaglyceroporin HC3 in Erythrocytes from the Freeze-Tolerant Anuran, Cope's Gray Treefrog, Hyla Chrysoscelis

Description
Cope's gray treefrog, *Hyla chrysoscelis*, tolerates freezing by accumulating glycerol in its body fluids during a period of cold acclimation. Glycerol serves as a cryoprotectant to minimize cellular water loss and damage induced by the freeze-thaw process. We hypothesize that glycerol enters cells through HC-3, an aquaglyceroporin transmembrane protein channel that allows water and glycerol to move through the cell membrane. The objective of this thesis project is to examine the potential mechanisms that regulate the translocation of HC-3 from the inside of the cell to the cell membrane where it is active. The results of our experiments have indicated that two physiologically important signaling molecules, epinephrine and cyclic AMP, trigger the translocation of HC-3 to the cell membrane. Understanding the role and regulation of HC-3 in *H. chrysoscelis* freeze tolerance may ultimately lead to the development of viable methods for cryopreservation of mammalian tissues and organs for tissue transplantation.

Emily M. Wilhelm
Psychology

2:00 p.m., Room 207
Jackson A. Goodnight, Thesis Advisor
Psychology Department

Child and Family Influences on Parent's Utilization of Children's Mental Health Services

Description
Approximately 20% of children in the United States develop some kind of behavior or psychological problem that requires treatment, but the majority of these children do not receive mental health services. This study examines the relationships between various child and family characteristics and the likelihood that a parent will seek professional mental health services for their child. The purpose of the study is to identify factors beyond symptom severity that are associated with a parent's decision to seek services for their child. The factors being investigated are child age, gender, family income, family stress, parental separation, and type of problem exhibited by the child. Findings from this research will improve understanding of influences on utilization of mental health programs or interventions for children.

2:20 p.m.

Whitney M. Crim
Criminal Justice Studies

2:20 p.m., Room 312
Arthur J. Jipson, PhD, Thesis Advisor
Criminal Justice Program

Peremptory Challenges: The History and its Effect on Legal Professionals in Montgomery County, Ohio

Description
The jury system has been the center of our judicial system since the Bill of Rights guaranteed the right to a jury in 1791. An essential component of the jury system is the selection process of jurors. During jury selection attorneys for each side can use both peremptory challenges and challenges for cause to remove jurors from the pool. Challenges for cause allow for jurors to be removed upon the establishment of a reason for the removal, such as inability to analyze the information due to mental defect. However, the peremptory challenge requires no stated legal reasoning for the removal. As times have changed it has become necessary for laws to be enacted to regulate the peremptory challenge. This prevents jurors from being removed solely for discriminatory or problematic reasons. This thesis project will explore those changes as well as explain how those changes affect attorneys and judges in Montgomery County, Ohio.

Laura A. Janosko
Psychology

2:20 p.m., Room 207
Benjamin R. Kunz, Thesis Advisor
Psychology Department

Exocentric Distance Judgments in 2D Computer-Generated Images

Description
Our experiment investigated exocentric distance judgments in computer generated 2D displays. Distance judgments between objects in 2D images are made all the time in fields such as architecture and design, the medical field and satellite images. Our experiment researched how the role of the depth cues, shadow information, and texture impacted the accuracy of these distance judgments. A 2D computer generated display of a desk with 5 to 8 objects was presented to participants in both a high quality and low quality version. Participants used a unit-less scale to judge distances in the high and low quality images. Our hypothesis is that participants will be more accurate in high quality conditions. We also expect participants to focus on shadow and texture information in the high quality condition. Results will provide information about how shadow and texture information in 2D displays are used in spatial perception.

Westin D. Stahl
Economics and Finance

2:20 p.m., Room 222
Ting J. Zhang, PhD, Thesis Advisor
Economics and Finance Department

Capitalizing on Chaotic Currencies

Description
Experienced traders know that increased levels of price volatility can lead to excess profits. The 2008 financial crisis saw increased volatility levels across all asset classes, but the foreign exchange markets offer a way for even the novice trader to capitalize. For my thesis, I will construct a portfolio of simple momentum trading strategies for the top nine most traded currency pairs. These trading strategies will be back tested and optimized in order to obtain an optimal return during the 2008 financial crisis to the present date. My goal is to showcase how algorithmic traders are able to provide from momentum swings in the foreign exchange market. In addition to the portfolio of trading strategies, I will also examine the characteristics of the foreign exchange markets that make this trading strategy effective versus other commodity and equity assets.

Robert J. Strong
Chemical Engineering

2:20 p.m., Room 331
Scott A. Gold, PhD, Thesis Advisor
Chemical and Materials Engineering Department

Fundamental Mathematical Model for Direct-Write Additive Manufacturing

Description
I developed a model to predict how a bead of material will spread on a surface. This is important because 2D and 3D fabrication of products from Direct Write systems are becoming more of interest in recent years. The additive manufacturing field lacks a model to predict bead deposition and spreading. My model will allow materials to intelligently be created for different applications printed through Direct Write processes.

Molly R. Winslow
Sociology

2:20 p.m., Room 311
Theo J. Majka, PhD, Thesis Advisor
Sociology, Anthropology and Social Work Department

Resettled: Bhutanese Refugees in the Dayton Area

Description
In recent years over 100 Bhutanese refugees have been resettled in the Dayton area. This research will take a closer look at the institutions that have been put in place in order to assist refugees and assess how well this specific population has adjusted to life in the United States. This is done through interviews with refugees themselves as well as those who work closely with them along with an intensive case study with one Bhutanese family.

2:40 p.m.

Steven A. Bare
Psychology

2:40 p.m., Room 207
Matthew R. Montoya, PhD, Thesis Advisor
Psychology Department

Cognitive Appraisals in a Deception Task

Description
Cognitive appraisals of threat and challenge, identified and characterized by Blascovich and Mendes (2000), involve whether an individual feels as though he or she is able to overcome a task requiring significant effort. This can be understood as an elaboration of the fight-or-flight response, and as such, can be indicated by physiological responses. This experiment applies this cognitive appraisal paradigm to a deception task, in an attempt to improve on the polygraph test.

Anna K. Brod
International Studies

2:40 p.m., Room 311
David J. Watkins, PhD, Thesis Advisor
Political Science Department

Paying After Freedom: The Post-Revolutionary Issues of Former Socialist States

Description
An examination of the issues that countries in Eastern Europe experienced after their Communist regimes fell. 4 case studies look to compare the different problems these countries faced as they pursued democratization and political legitimacy.

Connor W. McNamee
Premedicine and German

2:40 p.m., Room 310
Thomas M. Williams, PhD, Thesis Advisor
Biology Department

The Ancestry and Evolution of the Fruit Fly t MSE Cis-Regulatory Element

Description
Animal development proceeds by continuously changing patterns of gene expression, where patterns are controlled by a type of DNA sequence known as a cis-regulatory element (CRE). How gene expression patterns are encoded in DNA sequence remains poorly understood. My thesis research studied a CRE, known as the t_MSE, which controls the male-specific expression pattern for the *Drosophila melanogaster* gene known as tan. This expression pattern is required for this species male-specific pigmentation, and the pattern is modified or absent in related fruit fly species. I isolated and evaluated this CRE's sequence and gene regulatory activity from various species and populations. My results pinpointed the evolutionary origin of the t_MSE and showed a surprising case of introgression between two sympatric species. These results make possible future studies to identify which sequence changes are responsible for this CREs nascence and what the adaptive significance might be for its introgression.

Vincent E. Spahr
Civil and Environmental Engineering

2:40 p.m., Room 331
Deogratias Eustace, PhD, PE, PTOE, Thesis Advisor
Civil and Environmental Engineering Department

Operational Performance and Safety Comparison of Roundabouts vs. Traditional Signalized and Unsignalized Intersections

Description
A look at how roundabouts perform in comparison to more traditional intersections. Both the operational performance and the safety of roundabouts are addressed. The roundabouts are compared to intersections of similar traffic loads and are from the same geographic location in Dublin, Ohio. For analysis of the intersections' efficiencies, a software program is used that approximates delays for the measured traffic loads. For analysis of safety, traffic collisions from 2009-2011 at each of the intersections of interest are evaluated.

Caroline M. Thomas
English and Visual Arts

2:40 p.m., Room 211
Andrew A. Slade, PhD, Thesis Advisor
English Department
Judith L. Huacuja, PhD, Thesis Advisor
Visual Arts Department

Elegant's Wake

Description
This project presents a written 15-20 part creative, non-fiction narrative describing in autobiographical commentary the author's maturity as a woman. These different parts are micro-essays, or aphorisms, somewhat differing in tone and style but maintaining running themes and imagery throughout. Individually, each part might seem to not have much to do with the others, but they will connect on a deeper level that points out and illustrates significant factors in the author's life and development so far. The work is intentionally somewhat vague, so as to create a personal relationship with the reader and an environment in which he or she can identify the events described with their own lives.

M. Hannah Viertel
Finance and Accounting

2:40 p.m., Room 222
Robert Dean, PhD, Thesis Advisor
Economics and Finance Department
John E. Rapp, PhD, Thesis Advisor
Economics and Finance Department

Portfolio Investment and Weighting Strategies for High Quality Stocks 2008 to 2011: A Study in Portfolio Management

Description
In highly volatile market periods, many investors tend to reduce their risk by purchasing higher quality stocks. The purpose of this study is to evaluate the returns of different portfolio weighting strategies on portfolios of high quality stocks over an observed volatile market period. In this study, I examine two overall investment strategies: (1) size: defined as market capitalization, and (2) growth vs. value: defined as price to book ratio during the period of 2008 to 2011. This time period includes the year 2008 as the model for a downswing period, 2009 for a rebound period, 2010 for an upswing period, and 2011 for a trading range period. I use mock portfolios of one million dollars to evaluate the performance of the portfolios over time. Within the two investment strategies, I weight the portfolios by several weighting mechanisms including size (market capitalization), valuation (price to book ratio), profitability (return on assets), and operating efficiency (operating margin). In essence, I want to determine which overall investment strategy has the best returns for the overall period, the downswing period, the rebound period, the upswing period, and the trading range period. Within those strategies, I want to see which portfolio weighting mechanism works best.

3:00 p.m.

Christopher A. Buck
Mechanical Engineering

3:00 p.m., Room 331
Robert A. Brockman, PhD, Thesis Advisor
Civil and Environmental Engineering
and Engineering Mechanics Departments
Dennis J. Buchanan, Thesis Advisor
UDRI Structural Integrity Division

Evaluation of Multiaxial Fatigue Models for Ti-6Al-4V

Description
The operation of many mechanical devices involves cyclic, or repetitive, loads. This repetitive loading gradually degrades the strength of a material and leads to cracking. The phenomenon is known as fatigue. The Air Force Research Laboratory recently acquired a MTS tension-torsion machine that is capable of simultaneously applying cyclic tension and torsion. This machine produces reliable test data that can be used to evaluate the validity of existing mathematical models that predict the life a material simultaneously subjected to tension and torsion. The existing models were created without the benefit of reliable test data, so the reliable data produced by the MTS tension-torsion machine is useful in determining the effectiveness of each model. Fatigue specimens made of a titanium alloy (Ti-6Al-4V) were tested in the MTS tension-torsion machine. The fatigue life data generated from these tests were used to determine how well multiaxial fatigue models predict the life of the test specimens.

Catherine E. Devlin
Psychology

3:00 p.m., Room 207
Susan T. Davis, PhD, Thesis Advisor
Psychology Department
Justin Estepp, Thesis Advisor
Air Force Research Laboratory

Neural Correlates of Human Trust in Automation

Description
My thesis was conducted at Wright Patterson Air Force Base. This study focuses on the development of trust with a computer system and its neural correlates. This was accomplished looking at EEG data from participants as they perform a task that is automated, AF_MATB.

Allison C. Eder
Chemistry

3:00 p.m., Room 312
Shawn M. Swavey, PhD, Thesis Advisor
Chemistry Department

Enhanced O2 Electrocatalysis by a Highly Conjugated Cobalt(II) Porphyrin

Description
A fuel cell has high efficiency, mechanical simplicity, and low pollutant output. Fuel cells convert chemical energy to electrical energy by oxidizing a fuel (e.g. hydrogen or methanol) at the anode and reducing molecular oxygen at the cathode. The catalyst is essential for the cell to run continuously. Currently platinum serves as the catalyst for oxygen reduction in most fuel cells. Platinum is limiting to the large scale production of fuel cells because it is expensive and easily poisoned. Cobalt porphyrins have been studied for their electrochemical properties for the ability to serve as a replacement for the Platinum catalyst. Cobalt (II) tetraphenyltetranaphthoporphyrin, with extended conjugation at the pyrrole units, was synthesized and analyzed for its spectroscopic and electrocatalytic properties. The created complex displayed the ability for the reduction of oxygen in acidic fuel cell conditions, in which over 50% of the oxygen was reduced by four electrons to water.

Taylor E. Geisman
Biochemistry and Biology

3:00 p.m., Room 311
Kevin M. Church, PhD, Thesis Advisor
Chemistry Department
Deborah Rubin, MD, Thesis Advisor
Gastroenterology Department, Washington University

Tis7 Regulation of Intestinal Nutrient Absorption and Adaptation in Short Bowel Syndrome

Description
Short bowel syndrome occurs when a patient has had a significant (typically greater than 50%) small bowel resection due to illnesses such as Crohn's disease. Due to a marked decrease in bowel surface area, nutrient absorption may be so compromised that patients must receive permanent intravenous nutrition, which notably decreases their quality of life. Elucidation of molecular mechanisms underlying small bowel adaptation following resection may be helpful in treating future short bowel patients. Past research has shown that expression of a transcriptional coregulator, Tis7, is markedly increased in enterocytes following small bowel resection in a mouse model. Experiments over the past two summers have shown that Tis7 overexpression leads to an increase in fat absorption and survival following resection in mice when compared to their wildtype litter mates, however, it appears as though this advantage comes at the expense of the absorption of other nutrients such as amino acids.

Peter N. Mills
English

3:00 p.m., Room 211
Laura J. Vorachek, PhD, Thesis Advisor
English Department

A Moon That Was the Town's: G.K. Chesterton and Local Patriotism

Description
G.K. Chesterton was a 20th century journalist, Christian apologist, novelist and poet. His entries into public controversies and frequent use of paradox earned him fame. In his writings he demonstrates a value of local patriotism, a special attachment to one's place. This thesis examines how local patriotism influenced Chesterton's fiction, his stances on war, and his views on economic policy.

Joseph R. Salomone

3:00 p.m., Room 310

Biology

Thomas M. Williams, PhD, Thesis Advisor
Biology Department

The Shaping of a Dimorphic Trait: The Evolution of Bab Paralog Expression and Abdominal Pigmentation among Sophophora Fruit Fly Species

Description

The development of animal traits is controlled by networks of genes that are connected by interactions between transcription factors and target gene cis-regulatory elements. Changes in these connections alter the expression of genes and are suspected to be a common mode by which traits evolve. A mechanistic understanding of this mode requires investigations into the expression patterns of network genes to identify those whose expression evolved. One prominent model is the evolution of male-specific abdomen pigmentation from a monomorphic ancestral state in the fruit fly subgenus Sophophora. For *Drosophila melanogaster*, male-specific pigmentation is controlled by the dimorphic expression of the paralogous Bab1 and Bab2 transcription factors that repress pigmentation. These expression patterns are thought to have evolved from a monomorphic ancestral state. My thesis research studied the timing and location of Bab expression in diverse species and discovered a more nuanced history of expression pattern evolution.

Claire M. Shaw

3:00 p.m., Room 222

Adolescent to Young Adult Education and English

Treavor L. Bogard, PhD, Thesis Advisor
Teacher Education Department

Effective Instructional Strategies to Improve Upper-Grade-Level Struggling Readers

Description

This research project focuses on finding the best strategies for teachers to use when trying to improve the reading ability of 7th to 12th grade students. It is split into a synthesis of previous research and a case study on an 8th grade student. In the case study, I implement strategies I have learned about while meeting with her on a weekly basis and track her growth as a reader.

3:20 p.m.

Frances D. Albanese

3:20 p.m., Room 207

Psychology and Biology

Keri J. Brown Kirschman, PhD, Thesis Advisor
Psychology Department

Health Belief Model and Risk-Seeking Behavior as Indicators of Chosen Listening Levels of Youth

Description

Noise-induced hearing loss is the second most common form of hearing loss, affecting millions of Americans. Although there are required noise-level regulations set for adults in the workplace, there are no such guidelines set for children, who are also subject to hearing loss, and potentially listening to iPods and MP3 players at harmful volumes. The Health Belief Model, which helps researchers understand the reasons for harmful behaviors, has been used to predict listening behavior in adults and children. Participants from Incarnation Elementary listened to a song on an iPod, and answered questions regarding their desire to take risks, their listening habits, and their beliefs about hearing loss. This research helps us understand the potential harm caused by listening at high volumes, as well as possible underlying reasons for this behavior.

Kaitlyn R. Francis

3:20 p.m., Room 310

Exercise Physiology

Thomas M. Williams, PhD, Thesis Advisor
Biology Department

Identifying the DNA Sequence Requirements for a Synergistic Interaction Between Two Cis-Regulatory Elements

Description

My thesis research studies the genetic material that is the blue print to make animal life. In animals, a key type of genetic material is sequences collectively referred to as cis-regulatory elements (CREs). These sequences control the expression of genes; more specifically they instruct when to turn “ON” or “OFF” the production of a gene’s functional product. My research investigates the interaction between the two CREs, the Anterior Element and Dimorphic Element of the fruit fly species *Drosophila melanogaster*. These two CREs act synergistically to produce a pattern of expression for the bab1 and bab2 genes that differs between male and female flies. As synergistic CRE interactions have seldom been reported, my research has sought to identify the necessary sequences for this interaction. Learning more about CRE functions in fruit flies will facilitate a better understanding as to how CREs function in our own genetic material.

Alyssa C. Lesko

3:20 p.m., Room 311

Biochemistry and Mathematics

Madhuri Kango-Singh, PhD, Thesis Advisor
Biology Department
Kevin M. Church, PhD, Thesis Advisor
Chemistry Department

Functional and Genetic Analysis of Compensatory Responses Induced in Tumors Caused by Loss of Scribble (Apical-Basal Polarity)

Description

Cell-cell interactions are fundamental for the structure and function of living organisms, especially during growth. Uncontrolled cell growth due to malfunctioning interactions is the major cause of cancer in humans. The Hippo pathway has recently been identified to regulate the proliferation and survival of cells in fruit flies. The scribble (scrib) gene has also been identified as a gene that suppresses cell growth in tumors. The goal of this project is to investigate how the Hippo pathway regulates scrib. This research will lead to insights into the function of genes in flies that will help us understand the underlying mechanisms of tumor progression and metastasis in cancer patients. Understanding these pathways is the first step to fighting these diseases caused by uncontrolled cell growth.

Kaitlyn E. Malson

3:20 p.m., Room 211

Communication: Journalism, and Spanish

Teresa L. Thompson, PhD, Thesis Advisor
Communication Department

An Application of Intercultural Communication Theories in the Spanish Workplace

Description

This research project examines intercultural communication as seen in a Spanish workplace, by looking at the application of certain intercultural communication theories in the context of Grupo SM's University of Dayton Publishing (UDP), an educational publishing company where people from Spain, Great Britain, Canada, and the United States co-create electronic and print learning materials for foreign language programs in the Spanish-speaking world. The communication theories I studied and later applied to UDP include William Gudykunst's Anxiety-Uncertainty Management Theory, Stella Ting-Toomey's Face-Negotiation Theory, Geert Hofstede's Cultural Dimensions Theory, and Edward Hall's theory of high context versus low context cultures and styles of communication. While interning for UDP, I conducted semi-structured interviews with my colleagues and then supplemented these interviews with ethnographic observations in order to determine whether the theories that I studied held up in a real-life atmosphere of cultural and linguistic bilingualism.

Kyle P. Rismiller

3:20 p.m., Room 312

Biochemistry

Matthew E. Lopper, PhD, Thesis Advisor
Chemistry Department
George F. Babcock, PhD, Thesis Advisor
Surgery Department, University of Cincinnati

Protocol Standardization of Microvesicle Quantification by Flow Cytometry Reveals a Correlation to Healthy Donor Total Body Weight

Description

Microvesicles are vesicles released from the plasma membrane of cells during programmed cell death or activation and are of interest in clinical settings as they may be predictive of early signs of disease and/or treatment progression. In recent years there has been increased interest in using an instrument analysis process known as flow cytometer as a means of high-throughput quantification and multiparametric examination of microvesicles. However, there are growing concerns with using conventional flow cytometry for detection and quantification of microvesicles due to error-sources in collection through to physical limitations in detecting the micron-scale microvesicles. Presented here is a standardized method for collection and analysis which demonstrates that microvesicles quantified by conventional flow cytometry correlates to healthy donor total body weight. Although unlikely all-encompassing, this finding strongly supports the notion that flow cytometry remains one of the few useful and valid tools widely available for the analysis of microvesicles.

Joseph A. Terrano

3:20 p.m., Room 331

Chemical Engineering

Amy R. Ciric, PhD, Thesis Advisor
Chemical and Materials Engineering Department

Modeling Complex Distillation Columns for Ternary Mixtures

Description

Distillation is one of the most common processes used to separate liquid mixtures of chemical species with differing boiling points. Simple distillation columns are a single column with two product streams; complex columns may have three or more product streams and smaller side columns. It is difficult to simulate a complex column without a good initial estimate of key parameters such as the number of equilibrium stages and the reflux ratio. The goal of this thesis is to develop a software package that models the minimum reflux ratio, minimum number of stages and the column profiles in complex distillation columns with side-stream columns.

3:40 p.m.

Grace M. Callahan
3:40 p.m., Room 222

Adolescent to Young Adult Education and Mathematics

Thomas J. Lasley II, PhD, Thesis Advisor
Teacher Education Department
Robert A. Taft II, Governor, Thesis Advisor
Teacher Education Department

Efficiency, Adequacy and Equity in Educational Funding

Description
This is an examination of the public educational system in the United States, with emphasis on the relationship between school resources and student performance. There are multiple inputs that effect a student's education; some are controlled by a school district, while others are not. Of these inputs, or resources used in the education of students, many are directly tied to a monetary sum. Therefore, in this general examination, resources were equivalent to expenditures. The particular focus was on an analysis of urban school districts in Ohio. The research study questioned whether a correlation exists between student performance and expenditures per-pupil in each district. This study gives some insight into the relationship between these two variables and provides a foundation upon which more research can be done.

Erin E. Gallagher
3:40 p.m., Room 312

Biochemistry

Matthew E. Lopper, PhD, Thesis Advisor
Chemistry Department

Investigation of a 70 Amino Acid Insert in the DNA Binding Domain of Deinococcus Radiodurans PriA

Description
Deinococcus radiodurans (*D rad.*) is an extremophilic species of bacteria known for its extraordinary resistance to radiation. For example, *D rad.* can withstand over 1000 times more radiation than humans. The goal of this project is to study a specific protein, PriA, which is involved in restarting DNA replication after damage repair. PriA is well conserved throughout evolution, but in *D rad.* there are three additional amino acid sequences. This suggests that the PriA protein is partially responsible for its radiation resistance. I investigated a 70 amino acid insert in the DNA Binding Domain by testing for differences in its ability to bind single-stranded DNA. I also attempted to crystallize part of the protein to determine its structure. Knowledge of this protein will assist future researchers as they attempt to learn more about DNA replication in *Deinococcus radiodurans* as well as increase knowledge of how radiation affects bacterial cells.

Patrick M. Joyce
3:40 p.m., Room 331

Mechanical Engineering

Andrew P. Murray, PhD, Thesis Advisor
Mechanical and Aerospace Engineering Department
David H. Myszka, PhD, Thesis Advisor
Mechanical and Aerospace Engineering Department

Development of a Mechanical Starter System for Internal Combustion Vehicles

Description
With the high demand for developing more efficient vehicles that will have less effect on the environment, research is being conducted to look into storing energy in different forms. Almost all vehicles use a chemical battery to power a motor which starts it. Chemical batteries have inherent adverse effects on the environment which include bio-degradation. In the case of large semi-trucks, these batteries and starter systems are quite heavy, which creates a loss in fuel economy. The research for this project focuses on the development of a spring starter system that will be lighter and more environmentally friendly than its chemical counterparts. This project centers on a proof of concept for a spring starter system on a motorcycle.

Elizabeth A. Mitchell
3:40 p.m., Room 311

Human Rights Studies

Mark Ensalaco, PhD, Thesis Advisor
Political Science Department

Competing Responsibly: Are Businesses Appropriately Balancing the Motive of Profit with the Social Responsibility of Upholding Human Rights?

Description
Corporations are in constant competition with one another in order to expand revenue and survive in this modern economy, however, this often has a very negative impact on the rights of the individual and the rights of the worker. Those at the top are too quickly willing to exploit those at the bottom in order to drive competition and profits. This leads to both an increase in human rights abuses and a loss of corporate social responsibility. Corporate social responsibility is the duty of corporations to respect the individual, workers, families, and communities in their business practices. I examine how corporations are addressing social responsibility and how they have or have not progressed within the last dozen years in regards to their business practices. I also examine how the international community has reacted to bad business practices and what effects these reactions have on corporate responsibility.

George H. Neubauer
Biology

3:40 p.m., Room 310
Mark G. Nielsen, PhD, Thesis Advisor
Biology Department

Beta 2 Tubulin Amino Acids Required for Spermtail Axoneme Function

Description
Evolution is a process most often attributed to competition between organisms for resources or mates. Often neglected, however, is the role of available genetic mutations that are required to provide organisms with variation in features that affect their competition. The focus of this research project is to determine how a fly spermtail protein (Beta 2 tubulin) evolved while maintaining its function. Previous work identified a partial synergism in Beta 2 amino acid function. My research will determine if an additional amino acid will complete the synergism. A vector using Beta 1 tubulin with select Beta 2 codons (TGARCs) was injected into Drosophila. Matings generated genotypes containing two copies of TGARC and no endogenous Beta 2 to determine if TGARC can make a motile spermtail. This research will hopefully provide insight into how evolution can occur in a protein while maintaining the function of that protein.

Alexandra M. VanLoon
Spanish and International Studies

3:40 p.m., Room 211
Laura Villa, PhD, Thesis Advisor
Global Languages and Cultures Department

Linguistic Factors Affecting the Social Status of the Hispanic Immigrant Population in Dayton, Ohio

Description
Using a sociolinguistic methodology, based on surveys and interviews, I will analyze how the social status of Spanish-speaking immigrants correlates with their levels of English. My research will benefit the Dayton Hispanic community in that it will identify the dominant linguistic factors that contribute to the definition of their social status. This information will empower the Hispanics with the knowledge of what hinders them linguistically as well as offer the community tools to better integrate them, which is the overall goal of the newly adopted Welcome Dayton Plan — an effort to inspire immigrants to remain in the indebted city in hopes their efforts would augment the economy.

4:00 p.m.

Kara J. Dickey
Biology

4:00 p.m., Room 310
Ryan W. McEwan, PhD, Thesis Advisor
Biology Department

The Micro-Ecology of Plant Invasion: Assessing Impacts of the Invasive Exotic Shrub Lonicera maackii on the Ecology of Soil Microbial Communities

Description
Invasive exotic species are a significant threat to ecosystems across the globe and pose a monumental challenge for resource managers. The mechanisms by which these species impact ecosystems are imperfectly understood and science is still without a unified theory to explain how these species usurp habitat space, displacing natives. Invasive species dominance may be partially explained by escape from pathogens that suppress native plants, or disruption of native mutualisms. A relatively unstudied aspect is the relationship between invasive species and microorganisms inhabiting soil. *Lonicera maackii* is a model invasive species that impacts forests in the Miami Valley of southwestern Ohio. In this study we will focus specifically on colonization of roots by the microbial community and potential feedbacks to plant growth. The microbial community on *L. maackii* roots will be compared to that of native species using a metabolic profiling technique.

Patrick M. Lillis
Computer Science

4:00 p.m., Room 207
R. Sritharan, PhD, Thesis Advisor
Computer Science Department

Graphs With Small Intersection Dimension

Description
Graph Theory is a field concerned with abstract representations of data and data interactions. We study several classes of graphs and prove ways of representing such graphs as geometric shapes, namely k-dimensional axis-parallel boxes. This type of representation (called boxicity) is a notion that finds uses in social networks, ecology and operations research.

Kelsey Mayrand
Biochemistry and Premedicine

4:00 p.m., Room 312
Matthew E. Lopper, PhD, Thesis Advisor
Chemistry Department

The Effect of the Inserted Sequence in the Helicase Domain of the Deinococcus Radiodurans PriA Protein

Description
PriA is a protein involved in the process of DNA replication restart in bacteria. It acts to unwind the repaired DNA in preparation for the continuation of replication. PriA appears in nearly identical forms in most microbes, but has extra amino acid sequences in the extremely radioresistant bacterium *Deinococcus radiodurans*. This observation raised the question of whether the inserted element contributes to the ability of the microbe to survive extremely high doses of ionizing radiation. This project investigated the effect of cloning a version of the PriA gene that lacked this sequence.

Mitchell A. McCrady

4:00 p.m., Room 211

Music Performance

Richard K. Chenoweth, DMA, Thesis Advisor
Music Department

The Historical Horn: A Digital Resource Guide to Rare and Historical French Horn Recordings and Performers

Description

This project, a look at the great horn players of the past, brings their music, sound, and stories back to the musicians of today. Working with numerous vinyl records from a personal collection and through the use of modern digitalization technology, these once inaccessible albums are now open for public consumption. Excerpts from these profound and definitive recordings can be accessed online through a website created specifically for this project and in complete hard copy form through the Department of Music. This project also investigates the digitization process, notes on media copyright, and the importance of preserving recordings like these for future generations.

Jacqueline L. Severt

4:00 p.m., Room 311

Biology

Carissa M. Krane, PhD, Thesis Advisor
Biology Department
Yiling Hong, PhD, Thesis Advisor
Biology Department, College of Veterinary Medicine
Western University of Health Sciences

Mutation Frequency in Mouse Embryonic Stem Cells After Exposure to Carbon Nanomaterials

Description

Nanomaterials are materials with morphological features of nanoscale dimension, often possessing unique electrochemical properties due to such dimension sizes. Nanomaterials are becoming increasingly valuable, particularly with applications in fields of biomedical, electrical, optical and materials science and technology. While much investigation is still required, current research suggests that nanomaterials could pose a risk to human health. The intention of this research is to investigate mutagenesis and mutation frequency in mouse embryonic stem cells, which are cells derived from an early-stage developing embryo. These cells possess unique properties of self-renewal and pluripotency. This study investigated the mutation frequency of mouse embryonic stem cells following treatment exposure to carbon nanofibers, carbon nanotubes, and multi-walled carbon nanotubes.

Ashley E. Stoetzel

4:00 p.m., Room 222

Early Childhood Education

Beverly A. Tillman, PhD, Thesis Advisor
Teacher Education Department

Teaching Methods, Strategies, and Procedures for English Language Learners in Early Childhood Education

Description

Immigration into the United States has led to English Language Learners (ELLs) being represented in PreK-12 classrooms across the US. Students with a first language other than English are required to be proficient in English in order to gain knowledge in the classroom, communicate effectively with teachers and peers, and participate in standardized assessments which are state and nationally mandated for school-age students. Unfortunately, much of the research on effective strategies for this population focuses on older aged ELLs. This study documents strategies that the current research has deemed effective and appropriate for working with ELLs in a preschool setting. This research was then compared with current strategies reported in a survey of local early childhood educators who work with ELLs in their classrooms. The researcher documented trends in the survey data and offered suggestions for strategies and further research.

Kelly C. Vogeler

4:00 p.m., Room 331

Mechanical Engineering

Kevin P. Hallinan, PhD, Thesis Advisor
Mechanical and Aerospace Engineering Department

Residential Energy Reduction through Community Gaming

Description

Dropoly.com is an online game that provides residential occupants with the knowledge to make their homes more energy efficient while providing the entertainment of a game and social network. Dropoly aims to connect neighbors and create a venue for them to compete and assist each other in energy reduction. My research investigates utilizing Dropoly.com as a viable means of addressing the energy crisis. The guiding question behind the research addresses how to reduce energy consumption in a community, with a focus on appealing to the growing demographic of a gaming society. Marketing strategies, as well as community behavior and influence were studied. The appeal and functionality of Dropoly is another focus in determining the effectiveness of Dropoly.com. This research provides an understanding of the motivation behind energy consumption reduction.

4:20 p.m.

Zachary S. Hadaway
Applied Mathematical Economics

4:20 p.m., Room 207
James P. Buckley, PhD, Thesis Advisor
Computer Science Department

A Momentum-Based Currency Trading Algorithm

Description
Computerized Automated Trading Systems (CATS) continue to gain a larger portion of volume traded across almost every asset class, although the mechanics of their operation still remains a mystery to non-trading professionals. The purpose of this research is to find and test a specific currency trading long-short algorithm (based on moving averages) to determine if a simple momentum based strategy performs better compared to specific benchmarks; both traditional indices and “buy and hold” currency strategies. To test this we will build a trading system that will automatically place and manage directional positions in the foreign currency exchange spot market. Various trades will be implemented in simulated real time per the strategy that is encapsulated in the algorithm. At the end of the simulation, the results will be compared with benchmark data to show how the algorithm(s) provided for a better (or worse) investment strategy.

Chester E. Lian
Mathematics and Computer Science

4:20 p.m., Room 311
Lynne C. Yengulalp, PhD, Thesis Advisor
Mathematics Department

An Aronszajn Tree

Description
Contrary to the popular belief that "infinity is not a number; it's a concept," numbers that are not finite do exist. Mathematicians call them transfinite numbers. Just like ordinary numbers, some transfinite numbers are larger than others. This can be thought of as there being different levels of infinity, where some infinities are "more infinite" than others. If we draw a family tree in which every generation has finitely many offspring, and every chain of descendants is finite, then it is clear that we cannot have infinitely many family members. In the realm of the transfinite, things are not as intuitive: If we draw a family tree in which every generation has offspring at a certain level of infinity, and every chain of descendants is at that same level of infinity, it is possible (though not necessary) that the total number of family members is at a higher level of infinity.

Erin J. Roark
Biochemistry

4:20 p.m., Room 312
Mark B. Masthay, PhD, Thesis Advisor
Chemistry Department

The Development, Formulation and Stability of Suds and Antifoam for Heavy-Duty Liquid Laundry Detergents

Description
This presentation delves into the mechanistic understanding of foam, antifoam, silicone and resins to analyze necessary conditions and possible solutions to develop a stable suds suppressor. This is important not only for the environmental aspect of saving energy, but also for everyday laundry around the world.

Madie K. Szaller
Adolescent to Young Adult Education and English

4:20 p.m., Room 222
Patricia M. Hart, PhD, Thesis Advisor
Teacher Education Department

The Impact of Race, Ethnicity, and Socioeconomic Status on the Timing of Autism Identification

Description
Inequalities based on race, ethnicity, and socioeconomic status continue to pervade our society and affect vulnerable populations. Recent studies reveal alarming differences in the age at which autism is identified in children from upper-class, minority, and low-income families. In response to this problem, this study reviews current literature concerning the impact of socio-demographic factors, such as ethnicity, race, and socioeconomic status, on the timing of autism identification. After conducting interviews with experts in the fields of early and special education and autism research, the researcher formulated suggestions concerning how education curricula can provide pre-service and practicing teachers with the information necessary to recognize early signs of autism. As a result, early childhood educators can become reliable advocates for all children and impact the diagnostic age gap between children from families who have the resources to advocate for themselves and those who need additional assistance.

4:40 p.m.

Carol A. Harper
Education Intervention Specialist and Spanish

4:40 p.m., Room 222
Patricia M. Hart, PhD, Thesis Advisor
Teacher Education Department

Improving Teacher Preparation and Professional Development to Enhance the Academic Achievement of English Language Learners

Description
Currently in the U.S., 10 percent of students do not speak English well enough to succeed in school. According to state and national law, teachers K-12 are responsible for providing content area instruction as well as English language instruction for these students. However, only 1 of every 6 teacher preparation programs offers instruction on how to teach these English language learners (ELL). This thesis project examines specific questions that real classroom teachers in Ohio have about teaching their ELL. Over 63 e-mails containing such questions were collected and organized according to a framework for teaching ELL. The number of e-mails in each category reveal where the greatest gaps are in the knowledge of practicing teachers. These gaps serve as a basis for recommendations of topics to include in the college coursework for aspiring teachers as well as in programs to assist current teachers in developing their skills for teaching ELL.

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Chin Yi Chen, Carol A. Harper and Alexander J. Ulintz.

The Berry Summer Thesis Institute

engages a cohort of mid-career Honors students
with records of academic success and an interest in research
in a 10-week on-campus program.
Thesis students present their research-in-progress
at the Honors Students Symposium during their junior year
and their final projects as seniors.

The members of the 2012 cohort are Megan Abbate,
Kaitlyn Francis, Greg Mancini, Ashley Niemeier, Mark Pleasants,
Claire Shaw, Vincent Spahr, Andrew Steffensmeier,
Alexandra Van Loon, Kelly Vogeler and Molly Winslow.

advisors

Advisor	Department
Abueida, Atif A., PhD	Mathematics
Babcock, George F., PhD	Surgery, University of Cincinnati
Barklay, Chadwick D., PhD	UDRI
Benbow, M. Eric, PhD	Biology
Bogard, Treavor L., PhD	Teacher Education
Brausch, John	Air Force Research Laboratory
Brockman, Robert A., PhD	Civil/Environmental Engineering
Buchanan, Dennis J.	UDRI
Buckley, James P., PhD	Computer Science
Chenoweth, Richard K., DMA	Music
Church, Kevin M., PhD	Chemistry
Ciric, Amy R., PhD	Chemical/Materials Engineering
Collier, Trevor C., PhD	Economics and Finance
Comfort, Donald A., PhD	Chemical/Materials Engineering
Courtice, April	Air Force Research Laboratory
Daprano, Corinne M., PhD	Health and Sport Science
Davis, Susan T., PhD	Psychology
Dean, Robert, PhD	Economics and Finance
Eggemeier, F. Thomas, PhD	Psychology
Eustace, Deogratias, PhD, PE, PTOE	Civil/Environmental Engineering
Ensalaco, Mark, PhD	Political Science
Estepp, Justin	Air Force Research Laboratory
Gold, Scott A., PhD	Chemical/Materials Engineering
Goodnight, Jackson A.	Psychology
Hallinan, Kevin P., PhD	Mechanical/Aerospace Engineering
Hart, Patricia M., PhD	Teacher Education
Hong, Yiling, PhD	Biology, Western University of Health Sciences
Huacuja, Judith L., PhD	Visual Arts
Jipson, Arthur J., PhD	Criminal Justice Program
Kango-Singh, Madhuri, PhD	Biology
Kirschman, Keri J. Brown, PhD	Psychology
Krane, Carissa M., PhD	Biology
Kunz, Benjamin R.	Psychology
Larson, Robert K., PhD, CPA, CMA	Accounting
Lasley, Thomas J. II, PhD	Teacher Education
Lopper, Matthew E., PhD	Chemistry
Majka, Theo J., PhD	Sociology/Anthropology/Social Work
Masthay, Mark B., PhD	Chemistry
McEwan, Ryan W., PhD	Biology
Miller, Dan E., PhD	Sociology/Anthropology/Social Work
Montoya, Matthew R., PhD	Psychology
Morgan, Thomas L., PhD	English
Murray, Andrew P., PhD	Mechanical/Aerospace Engineering
Myszka, David H., PhD	Mechanical/Aerospace Engineering
Nielsen, Mark G., PhD	Biology
O'Mara, Erin M.	Psychology
Pici, Joseph R.	English
Rapp, John E., PhD	Economics and Finance
Rubin, Deborah, MD	Gastroenterology, Washington University
Simmonds, Rachel E., PhD	Microbial and Cellular Sciences University of Surrey, UK
Singh, Amit, PhD	Biology
Slade, Andrew A., PhD	English
Sritharan, R., PhD	Computer Science
Swavey, Shawn M., PhD	Chemistry
Taft, Robert A. II, Governor	Teacher Education
Thomas, Patrick W., PhD	English
Thompson, Teresa L., PhD	Communication
Tillman, Beverly A., PhD	Teacher Education
Titlebaum, Peter J., EdD	Health and Sport Science
Villa, Laura, PhD	Global Languages and Cultures
Vorachek, Laura J., PhD	English
Watkins, David J., PhD	Political Science
Williams, Thomas M., PhD	Biology
Yengulalp, Lynne C., PhD	Mathematics
Zhang, Ting J., PhD	Economics and Finance

presenters

Presenter	Room and Session time
Abbate, Megan R.	Room 211, 1:40 p.m.
Albanese, Frances D.	Room 207, 3:20 p.m.
Bare, Steven A.	Room 207, 2:40 p.m.
Berger, Brian L.	Room 331, 1:40 p.m.
Blumberg, Grace F.	Room 311, 2:00 p.m.
Bradley, Elizabeth A.	Room 211, 2:00 p.m.
Brod, Anna K.	Room 311, 2:40 p.m.
Buck, Christopher A.	Room 331, 3:00 p.m.
Bushroe, Kylie M.	Room 207, 1:20 p.m.
Callahan, Grace M.	Room 222, 3:40 p.m.
Crim, Whitney M.	Room 312, 2:20 p.m.
DeMichele, Kristina L.	Room 211, 1:00 p.m.
Devlin, Catherine E.	Room 207, 3:00 p.m.
Dickey, Kara J.	Room 310, 4:00 p.m.
Eder, Allison C.	Room 312, 3:00 p.m.
Flamand, Coral V.	Room 211, 1:20 p.m.
Foster, Benjamin E.	Room 222, 1:00 p.m.
Francis, Kaitlyn R.	Room 310, 3:20 p.m.
Gallagher, Erin E.	Room 312, 3:40 p.m.
Geisman, Taylor E.	Room 311, 3:00 p.m.
Hadaway, Zachary S.	Room 207, 4:20 p.m.
Harper, Carol A.	Room 222, 4:40 p.m.
Henry, Timothy P.	Room 331, 2:00 p.m.
Janosko, Laura A.	Room 207, 2:20 p.m.
Jennewine, Justin J.	Room 222, 1:40 p.m.
Joyce, Patrick M.	Room 331, 3:40 p.m.
Kindelin, Lydia R.	Room 311, 1:00 p.m.
Lesko, Alyssa C.	Room 311, 3:20 p.m.
Lian, Chester E.	Room 311, 4:20 p.m.
Lillis, Patrick M.	Room 207, 4:00 p.m.
Mackell, Stephen L.	Room 222, 1:20 p.m.
Malson, Kaitlyn E.	Room 211, 3:20 p.m.
Mancini, Greg F.	Room 310, 1:00 p.m.
Mayrand, Kelsey P.	Room 312, 4:00 p.m.
McCrady, Mitchell A.	Room 211, 4:00 p.m.
McNamee, Connor W.	Room 310, 2:40 p.m.
Mills, Peter N.	Room 211, 3:00 p.m.
Mitchell, Elizabeth A.	Room 311, 3:40 p.m.
Neubauer, George H.	Room 310, 3:40 p.m.
Rismiller, Kyle P.	Room 312, 3:20 p.m.
Roark, Erin J.	Room 312, 4:20 p.m.
Salomone, Joseph R.	Room 310, 3:00 p.m.
Severt, Jacqueline L.	Room 311, 4:00 p.m.
Shaw, Claire M.	Room 222, 3:00 p.m.
Smith, Nicholette T.	Room 207, 1:40 p.m.
Spahr, Vincent E.	Room 331, 2:40 p.m.
Stahl, Westin D.	Room 222, 2:20 p.m.
Steffensmeier, Andrew M.	Room 310, 1:20 p.m.
Stoetzel, Ashley E.	Room 222, 4:00 p.m.
Strong, Robert J.	Room 331, 2:20 p.m.
Szaller, Madie K.	Room 222, 4:20 p.m.
Terrano, Joseph A.	Room 331, 3:20 p.m.
Thomas, Caroline M.	Room 211, 2:40 p.m.
Ulintz, Alexander J.	Room 310, 1:40 p.m.
VanLoon, Alexandra M.	Room 211, 3:40 p.m.
Viertel, M. Hannah	Room 222, 2:40 p.m.
Vogeler, Kelly C.	Room 331, 4:00 p.m.
Wetzel, Elizabeth C.	Room 310, 2:00 p.m.
Wilhelm, Emily M.	Room 207, 2:00 p.m.
Winslow, Molly R.	Room 311, 2:20 p.m.
Xavier, Michael A.	Room 207, 1:00 p.m.

Honors Students Symposium 2013

Business

Health & Sport Science

Engineering

Teacher Education

Sciences

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