brother joseph w.

STANDER symposium

Celebrating 25 Years | Spring 2014


brother joseph w.
STANDER
symposium
Celebrating 25 Years | Spring 2014

Table of Contents

Letter from the Co-Chairs

April 2014

Dear Members of the UD Community,

We are delighted to officially welcome you to the annual Brother Joseph W. Stander Symposium. The Stander Symposium showcases individual and collaborative undergraduate and graduate research, creative endeavors, and academic achievements. Above all, the Symposium and your participation showcase our shared values as members of the University of Dayton community. This is the 25th year of the Symposium, honoring the late Bro. Joseph W. Stander, S.M., Professor of Mathematics and Provost (1974–1989).

This University-wide celebration of academic excellence exemplifies the Marianist tradition of learning in community. The Symposium's alternate day of learning includes poster sessions, hands-on activities, performances, art exhibits, oral presentations and highlights of capstone course work. The achievements and collaborations on display throughout the Stander Symposium reflect the continuing commitment of students and faculty to this great tradition.

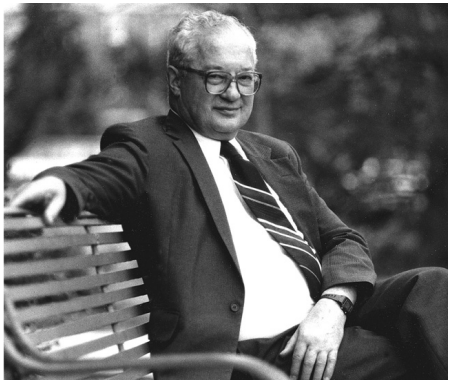
The Stander Symposium would not exist without an extraordinary effort from across the campus community – students, faculty and staff. On behalf of the Stander Symposium Steering Committee, we thank you for your support and participation.

Sincerely,

David Darrow, Ph.D.
Co-Chair, Stander Symposium
Associate Professor,
History Department; Director,
University Honors Program

Margaret Pinnell, Ph.D.
Co-Chair, Stander Symposium
Associate Professor,
Mechanical and Aerospace
Engineering Department

About the Stander Symposium



Brother Joseph W. Stander, S.M.
Professor of Mathematics
Provost (1974 - 1989)

Honoring the late Brother Joseph W. Stander, S.M., Professor of Mathematics and Provost (1974-1989), the Stander Symposium celebrates academic excellence, rich collaborations and many forms of intellectual, artistic, and spiritual growth. The career of Brother Joe embodied the spirit of collaboration and the Stander Symposium stands as a continuing tribute to him and all who carry on the Marianist tradition of education through community.

A distinctive spirit permeates student research at the University of Dayton. The faculty and students of the University are determined that "a community of learners" is not a cliche but a realistic goal. Thus the University fosters an atmosphere that nurtures productive collaboration and a shared search for excellence in learning and in research. The Stander Symposium is a day-and-a-half long event, and constitutes the University of Dayton's principal annual celebration of academic excellence. The Symposium features a keynote speaker, poster sessions, hands-on activities, performances, exhibits, oral presentations and highlights of capstone course work.

All students at the university engaging in research, creative endeavors, and other forms of innovative thinking are encouraged to participate in this student research symposium. Student attendees are key members of a critically reflective audience for their peers. Faculty members serve as mentors and leaders for many of these projects and are the driving force behind scholarship in their fields. The efforts of students, faculty, and staff are critical to making this event successful year after year.

Acknowledgements

The Brother Joseph W. Stander Symposium Steering Committee thanks the students, faculty, and staff for their many contributions and university-wide collaboration in the planning of this years' symposium. With over 1,700 presenters, performers, artists, and faculty mentors participating, the Stander Symposium is a lasting tribute to Bro. Joseph Stander and to the Marianist principles of higher education.

For generous support, we specifically owe gratitude to the Office of the President, the Office of the Provost, the Offices of the Deans in the College of Arts and Sciences, School of Business Administration, School of Education & Health Sciences, School of Engineering, Graduate Education, and University Libraries. We extend this gratitude to the Ryan C. Harris Learning Teaching Center, the University Honors Program, Student Development, and the Student Government Association.

In addition to the units represented by the steering committee membership, the committee specially acknowledges the essential and considerable planning and staff assistance received from Kennedy Union, Campus Ministry, Roesch Library, KU Box Office, ArtStreet, Department of Recreational Sports, Department of Visual Arts, Department of Music, Keck Lab, and University of Dayton Information Technology (UDit).

Finally, very special thanks are due to students Lauren Banfield and Danielle Weigand for their efforts in developing and creating this year's visual design.

Committee Recognition

Co-Chairs

David Darrow, Associate Professor, Department of History; Director, University Honors Program
Margaret Pinnell, Associate Professor, Department of Mechanical and Aerospace Engineering

Steering Committee

John Doty, Department of Engineering Management and Systems
Shannon Driskell, Department of Mathematics
Re'Shanda Grace-Bridges, Student Development/New Student Orientation
Elizabeth Gustafson, School of Business Administration
Linda Hartley, Department of Music
Diane Helmick, Graduate Academic Affairs
Judith Huacuja, Department of Visual Arts
Katy Kelly, University Libraries
Kathryn Kinnucan-Welsh, Department of Teacher Education
Brian LaDuca, ArtStreet
Amy Lopez-Matthews, Student Life & Kennedy Union
Grant Neeley, Department of Politicl Science
Patrick Reynolds, Department of Music
Shawn Swavey, Department of Chemistry

Celebration of the Arts Committee

Darrell Anderson, Director, Theatre Program
Paul Benson, Dean College of Arts & Sciences
Sharon Gratto, Chair, Department of Music
Judith Huacuja, Chair, Department of Visual Arts
Brian LaDuca, Director, ArtStreet
Patrick Reynold, Department of Music

Graphic Design

Lauren Banfield, Visual Communication Design, Department of Visual Arts '14
Danielle Weigand, Visual Communication Design, Department of Visual Arts '15

Celebration of the Arts Intern

Caroline Goodill
Jessica Urban

Social Media Interns

Caroline Goodill
Jessica Urban

Stander Coordinator

Andrea Meyer Wade

Monday, March 31

KEYNOTE ADDRESS BY RecPlex, Main Gym
PRESIDENT MARY ROBINSON 7:00 PM

First woman President of Ireland, founder and former president of Realizing Rights: The Ethical Global Initiative, and former United Nations High Commissioner for Human Rights. She now serves as chair of the Council of Women World Leaders; president of the Mary Robinson Foundation - Climate Justice, a center for thought leadership, education, and advocacy on the struggle for global justice; and special envoy for the Great Lakes region of Africa, a position she was appointed to by United Nations Secretary-General Ban Ki-moon in March 2013..

Tuesday, April 1

CELEBRATION OF THE ARTS Schuster Center
8:00 PM

An evening of inspiring and entertaining music, theatre, dance and visual art. The event showcases excellence in creativity and performance—all by UD students.

Tuesday, April 8

OPENING MASS Immaculate Conception Chapel
12:05 PM

The liturgical opening of the Stander Symposium. The Symposium is dedicated to the research we do as students and faculty; through it we seek wisdom, which is of God.

SCHEDULE OF EVENTS

Wednesday, April 9

DAY AT THE STANDER — RecPlex, Kennedy Union and Various Campus Locations, 8:00 AM-5:00 PM

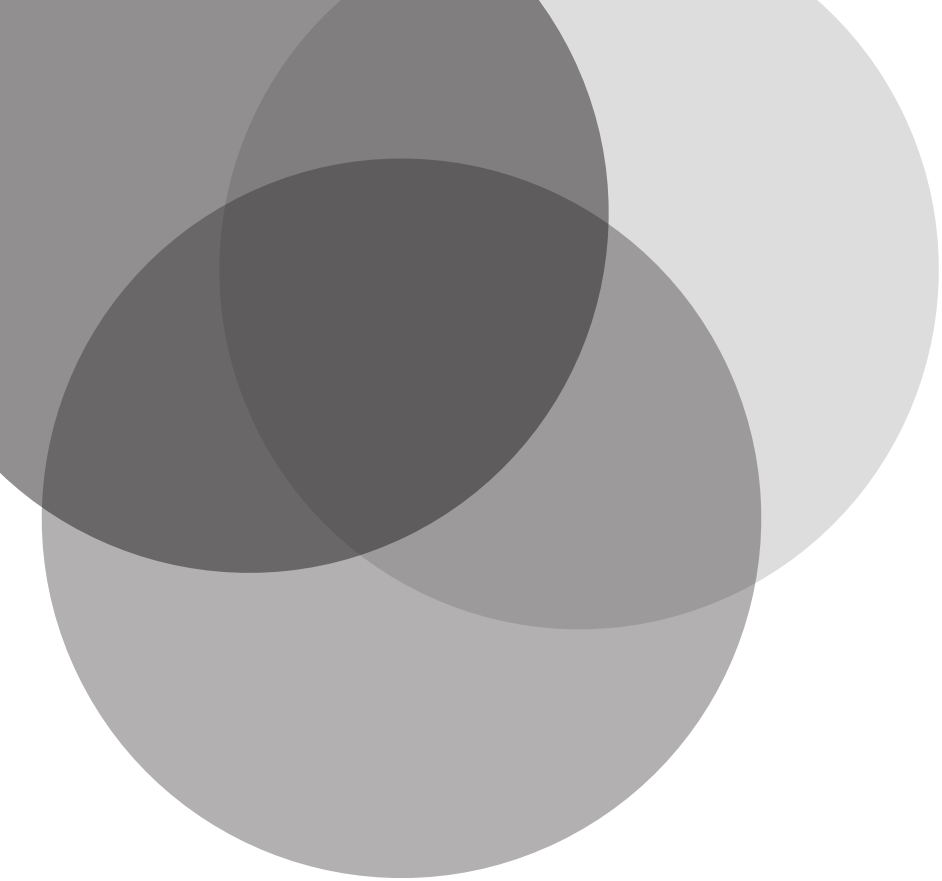
For 25 years, the Stander Symposium has acted as an annual showcase where both undergraduate and graduate students are invited to showcase their research, creative endeavors and academic achievements. We celebrate the symposium as a day of alternate learning by canceling all regularly scheduled courses and meetings-instead inviting the whole University to engage in conversation, learning and panel discussions-outside of the classroom. A closing reception for all student presenters and faculty advisors will be held at 5 PM in the CPC Gallery 249.

FREE BREAKFAST — RecPlex, Main Gym 8:00 AM-9:30 AM

POSTER SESSIONS — RecPlex, Main Gym 9:00 AM-10:30 AM, Session I 11:00 AM- 12:30 PM, Session II

HORVATH AWARDS PRESENTATION & **STANDER SYMPOSIUM CLOSING RECEPTION** — CPC Gallery 249 5:00-7:00 PM

The Department of Visual Arts will host an evening of open studios as the closing event to the University's annual Stander Symposium. The evening will feature student exhibitions, art making workshops and the awards ceremony for the annual Horvath Exhibition, a juried exhibition highlighting student artwork. The event is free and open to the public.



College of Arts and Sciences

Characterization of Wnt Signaling during Dorsal versus Ventral Iris- derived Newt Lens Regeneration

STUDENTS Konstantinos Sousounis, Georgios D Tsissios
ADVISORS Panagiotis A Tsonis
LOCATION, TIME RecPlex, 9:00AM-10:30AM
College of Arts and Sciences: Biology, Poster- Course Project, 14 SP BIO 421 P1

There are many animals that have the ability to regenerate different tissues during embryonic stage, but only newts have the ability to regenerate whole organs throughout their entire life. Our primary focus is lens regeneration through transdifferentiation of pigment epithelial cells (PECs). This process has been previously shown to be highly topological, that is, trasdifferentiation always occur from the dorsal iris and never from the ventral iris. In order to understand why we have regenerative and non-regenerative tissues in dorsal and ventral iris, respectively, we examined the role and expression of several genes. My research aimed to discover the potential for ventral iris cell regeneration, through the in vivo manipulation of the Wnt pathway. The Wnt pathway regulates beta-catenin, which moves through the cytoplasm into the nucleus and binds to TCF/LEF transcription factor for transcription of target genes to occur. After staining with an antibody that detects the activated form of beta-catenin, we observed that beta-catenin is present at both ventral and dorsal nucleus at 12 days post lentectomy and not detected in the previous days. Knowing that the next step was to inhibit the Wnt pathway and observe the effects on lens regeneration. A beta-catenin/Tcf inhibitor chemical, called FH535 was injected to the newts every other day till 12 days post lentectomy. We hypothesized that there will be no lens development for either dorsal or ventral iris. Our preliminary results suggest that the chemical we used cannot inhibit lens regeneration from the dorsal iris. Future studies need to investigate further the importance of Wnt pathway during lens regeneration.

Drosophila as a Simple Model to Test Dark Toxicity and Tolerance of Potential Photodynamic Therapy Agents.

STUDENTS Joshua N Yoho
ADVISORS Madhuri Kango-Singh, Shawn M Swavey
LOCATION, TIME RecPlex, 9:00AM-10:30AM
College of Arts and Sciences: Biology, Poster- Independent Research

The purpose of this study was to determine the optimal concentration of the compounds H2TN-mPyPFP and ZnTN-mPyPFP. These compounds have the capabilities of specifically killing melanoma cancer cells. These experiments were conducted using the fruit fly Drosophila melanogaster as a standard model, while also using flies with specific genetic defects that are relatable to the cancerous cells of melanoma. In order to acquire results, the compounds were mixed with food for the fly larvae, and the larvae were sacrificed, marked with fluorescent dyes, and observed under a Confocal. Our results conclude that for this model and intention, the most appropriate concentrations are at 4 micro-molar. Further tests will be conducted to acquire a better understanding of the exact reaction the compounds have with the dynamics of the fly physiology.

Lonicera maackii riparian invasion impacts macroinvertebrate biomass and secondary production in a headwater stream

STUDENTS Danielle M Thiemann
ADVISORS Ryan W McEwan
LOCATION, TIME RecPlex, 9:00AM-10:30AM
College of Arts and Sciences: Biology, Poster- Course Project, 14 SP BIO 421 P1

Invasive species displace native species, can reduce habitat variation, and alter ecosystem processes. Amur honeysuckle (Lonicera maackii) is an invasive shrub that outcompetes native riparian plants, thus creating honeysuckle near-monocultures along streams. Our goal was to identify the effects of Amur honeysuckle on headwater streams, specifically on aquatic macroinvertebrate secondary production. In a previous study, removal of honeysuckle resulted in a substantial increase of in-stream leaf litter; therefore, we hypothesized that removal of honeysuckle will result in an increase in macroinvertebrate biomass and secondary production since these organisms utilize leaf litter as a habitat and food resource. Macroinvertebrate Surber samples were collected monthly from riffles at a headwater stream from August 2010 to the present in Miami Valley, OH ($n = 5$/stream reach). All macroinvertebrates were identified to genus when possible, classified into functional feeding groups (FFG), and photographed with a Nikon dissecting microscope. Image J software was used to measure specimen body length and head capsule width for biomass and secondary production calculations. Preliminary results indicated that one year after removal (Fall 2011) there was a near

100% increase in total macroinvertebrate biomass. However, total biomass only increased by 50% in the honeysuckle reach for the same time frame. Total macroinvertebrate biomass for the removal reach was ~3.4 × greater than the honeysuckle reach in Fall 2011. Increased macroinvertebrate biomass primarily occurred in the gathering-collector and scavenger FFG. These results suggest that honeysuckle riparian forests may negatively impact aquatic macroinvertebrate secondary production, which may further result in impacts on aquatic food-web dynamics. From these results we see the negative influence which invasive species have on areas in which they invade; these are affects that reach beyond outcompeting native plants to altering normal aquatic ecosystem functions.

Nutrient leaching patterns of an invasive shrub, Amur Honeysuckle (Lonicera maackii),and native Box Elder (Acer negundo)

STUDENTS Elizabeth A Gleason
ADVISORS Ryan W McEwan
LOCATION, TIME RecPlex, 9:00AM-10:30AM
College of Arts and Sciences: Biology, Poster- Course Project, 14 SP BIO 421 P1

Amur Honeysuckle (Lonicera maackii) is an invasive shrub found throughout the Midwest and eastern United States. This shrub heavily colonizes riparian zones, and thus, has the potential to dramatically alter aquatic ecosystems through its nutrient contributions. Our aim was to study the nutrient leaching patterns of Amur Honeysuckle leaves and berries and compare them to native Box Elder (Acer negundo). We hypothesized that honeysuckle leaf leachate would have higher nutrient concentrations than other leachates and nutrient concentrations would not change significantly over time. Leaves and berries were collected November – December 2013 and refrigerated. Weekly, three 1:10 leachate treatments were created: Box Elder leaves, Honeysuckle leaves, Honeysuckle berries, and a DI water control (n = 5/treatment). Solutions were made by inundating 10 g of organic matter per 100 g of DI water for 24 h. Nutrient concentrations were analyzed using standardized colorimetric methods with a Hach kit for n-nitrate, n-nitrite, and n-ammonia. Phosphorus (orthophosphate) levels were tested using the Malachite Green method, which resulted in coloration results similar to the Hach kit. Analysis of nutrient concentrations were compared between all treatments temporally. Preliminary results indicated that Honeysuckle leaves had higher concentrations for all nutrients than Box Elder leaves, and that Honeysuckle berries contained more phosphorus and ammonia than Box Elder leaves. There also was an observable difference in the color of the leachates. The honeysuckle leaf leachate had the darkest color, but the honeysuckle berry leachate was noticeably darker than the box elder leachate. No temporal changes in nutrient concentrations have been observed. These results support the hypothesis that Honeysuckle has higher nutrient concentrations than Box Elder. The honeysuckle leachates' high nutrient concentrations suggest that allochthonous input from honeysuckle may impact nutrient cycling and biodiversity in aquatic environments.

Reach of Lonicera maackii debris from an area of invasion into an area of removal

STUDENTS Sarah J Frankenberg, Hannah L Ocallaghan
ADVISORS Ryan W McEwan
LOCATION, TIME RecPlex, 9:00AM-10:30AM
College of Arts and Sciences: Biology, Poster- Course Project, 14 SP BIO 421 P1

Lonicera maackii (Amur Honeysuckle) is listed as an invasive shrub by the Ohio Invasive Plants Council. This invasive is known to suppress the growth of other herbaceous and woody species through novel weapons. This study examines the dispersal distance that L. maackii had within a riparian forest along a headwater stream in the Miami Valley, OH. This will allow further exploration into the dispersal of honeysuckle and thus the degree of its possible alterations in ecosystem processes. We predicted that L. maackii seeds, fruit, and leaves would be found in both areas of invasion and removal; however the total mass of debris from L. maackii is expected to be higher in the region of invasion. Plant organic matter (e.g. leaf litter, seeds) was collected weekly within baskets located under and away L. maackii in a continuous riparian forest from fall 2013- early 2014. Organic matter was classified into categories of species, seeds of L. maackii, and a miscellaneous group (e.g. twigs). Leaf litter was then dried and massed. Preliminary results and field observations suggest that organic plant matter of L. maackii is found in both areas of invasion and removal, with a greater amount being observed and quantified in the area of invasion.

The impact of the invasive shrub, Lonicera maackii, on aquatic macroinvertebrate community structure in a headwater stream

STUDENTS Ryan W Reihart

ADVISORS Rachel E Barker, Ryan W McEwan

LOCATION, TIME RecPlex, 9:00AM-10:30AM

College of Arts and Sciences: Biology, Poster- Course Project, 14 SP BIO 421 P1

Lonicera maackii (Amur honeysuckle) is an invasive shrub that successfully invades riparian forest communities. This invasive shrub is known to outcompete native plants, changing the overall structure of riparian forest communities. These alterations can influence habitat and food resources within headwater streams and the aquatic macroinvertebrate community that relies on these resources. This study evaluated the impact of L. maackii on aquatic macroinvertebrate communities in a headwater stream in the Miami Valley, Ohio. It was hypothesized that L. maackii presence along streams will alter aquatic macroinvertebrate community structure. Lonicera maackii was removed from a 150 m stream reach in August – September 2010. Aquatic macroinvertebrate Surber samples were collected monthly from the honeysuckle removal and non-removal stream reaches ($n = 5$/reach). Macroinvertebrate density, diversity, and functional feeding group (FFG) community structure were determined from identified macroinvertebrates – all of which were identified to at least family level. Preliminary results indicated that macroinvertebrate densities were significantly influenced by time and the removal of honeysuckle from August 2010 to May 2012, with densities greater in the removal area ($P < 0.05$). Macroinvertebrate densities were greatest during the spring months for both stream reaches, with the greatest density in April 2012. Functional FG abundances were more dynamic in the honeysuckle reach compared to the removal reach fall 2010. Gathering-collectors dominated the macroinvertebrate community initially during the fall season and then were replaced by collector-gatherers in November. In contrast, FFG abundances for these groups were more stable in the removal reach. These initial results suggest that L. maackii negatively effects aquatic macroinvertebrate density and alters the abundance of FFG. Aquatic macroinvertebrates are key organisms that regulate important ecosystem processes (e.g. leaf decomposition and nutrient cycling); therefore, it is important to recognize the effects that invasive riparian plants may have on these organisms.

The invasive shrub Amur honeysuckle differentially influences the growth of an herbaceous plant

STUDENTS Elena Marie Mudrak

ADVISORS Ryan W McEwan

LOCATION, TIME RecPlex, 9:00AM-10:30AM

College of Arts and Sciences: Biology, Poster- Course Project, 14 SP BIO 421 P1

Amur honeysuckle (Lonicera maackii) is one of the most successful invasive plant species in the Midwest and eastern United States, particularly in riparian systems. This invasive is known to outcompete native plants, alter forest composition, and has high nitrogen leaf content compared to many native plants. The goal of this research was to identify potential positive or negative effects of L. maackii leachate on plant growth and seed germination. We predicted that since L. maackii leaves were high in nitrogen, then honeysuckle leaf leachate might support plant growth instead of inhibiting it; however, due to the allelopathic tendencies of this shrub, there would be a limit on the positive effects on plant growth. To test this hypothesis, three 1:10 leachate solutions were made from honeysuckle leaves and berries and native box elder leaves ($n = 5$/solution). Leachate concentrations ranged from 0 to 100 by 25% intervals. Leachate solutions were used to water Brassica rapa, a common fast-growing herb. Seed germination, plant height, and leaf production were measured daily. Root-to-shoot ratios and biomass were measured after 14 days. Preliminary results suggest that plants treated with honeysuckle leaf leachate germinated first and grew the fastest compared to control and box elder treatments; however, plants treated with honeysuckle berry leachate did not germinate. These results propose that the nutrients provided by Amur honeysuckle leachate may directly alter plant growth. Further research needs to be conducted to elucidate reasons why exotic plants influence native plant growth, and ultimately biodiversity. With a better grasp on invasive predispositions and environmental enablers, land management measures can more effectively conserve natural habitats.

A Drosophila brain tumor model to study interclonal interactions

STUDENTS Austin J Roebke, Indrayani Waghmare

ADVISORS Madhuri Kango-Singh

LOCATION, TIME RecPlex, 11:00AM-12:30PM

College of Arts and Sciences: Biology, Poster- Honors Thesis

Glioblastoma (GBM) is a malignant primary brain tumor with poor prognosis. Genetic and transcriptomic analyses of patient samples reveal differences in molecular signatures that may account for differences in responses to therapy. Another reason is the therapy resistance of the

Glioma stem cells (GSCs) - stem cells with prominent self-renewing and tumorigenic ability that can interact with the non-GSCs to promote tumorigenesis via interclonal-type interactions. We have developed a simple glioma model in Drosophila to address the effects of different molecular changes on the growth and progression of tumors, and to study interclonal interactions. Several studies in Drosophila have shown a tumor promoting role for signaling pathways, e.g., the Jun-N-terminal kinase (Jnk) pathway and the Hippo pathway. In addition, mitogenic signals (e.g., Wingless) are induced. Consistent with these findings from Drosophila models, mammalian studies show activated Jnk, Yap and Wnt levels in aggressive tumors including GBM. Here we present our progress on studying the role of JNK, Hippo and Wg signaling on tumor growth using our Drosophila glioma model, and our studies on the interclonal interactions between stem and non-stem cells.

A Drosophila model to study signaling and intercellular interactions that promote aggressive growth

STUDENTS Austin J Roebke, Shilpi Verghese, Indrayani Waghmare
ADVISORS Madhuri Kango-Singh, Amit Singh
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Biology, Poster- Graduate Research

Epithelial cells are the major cell-type for all organs, and are the source of 90% of human cancers. Epithelial cells organize into elaborate stratified sheets via formation of intercellular junctions, and have a distinct apical-basal polarity. In all advanced epithelial cancers, malignant cells lose polarity and connections to the basement membrane, and become proliferative, motile, and invasive. Several Drosophila cancer models reinforce these observations, however, the underlying changes in signaling and intercellular interactions remain largely unclear. Evidence from studies in Drosophila and recently also in vertebrate models have suggested that even the oncogene-driven enforced cell proliferation can be conditional, dependent on the influence of cell-cell or cell-microenvironment contacts. We have performed a systematic analysis to identify the signaling changes in scrib mutant cells and their neighboring normal cells. We compared scrib mutant cells generated in different genetic backgrounds for our analyses and our preliminary studies show that the cellular environment modifies the competitive ability of scrib mutant cells. We have identified three molecules (JNK, Wg and Yki) that are associated with aggressive proliferation of UASRasV12 scrib-/- cells. The combination of survival, mitogenic, and proliferative signals by activation of Ras-MAPK, JNK, WG and Yki mediated signaling drives aggressive proliferation of UASRasV12 scrib-/- cells. Our hypothesis is that JNK induced Wg and Yki activity underlies the aggressive growth of tumors. Here we present, our progress on the 'tumor-specific' interactions between JNK, Yki and Wg pathways that may be important for tumorigenic effects like aggressive proliferation, and invasive and metastatic behavior of polarity deficient cells.

Aquaglyceroporin HC-3 mediates hypotonicity-induced cell volume and shape changes in cultured erythrocytes from Cope's gray treefrog, Hyla chrysoscelis

STUDENTS Mark A Hawk
ADVISORS Carissa M Krane, Philip Nickell
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Biology, Poster- Course Project, 13 FA BIO 421 P1

Freeze tolerant Cope's gray treefrog, Hyla chrysoscelis, accumulates glycerol during a process of cold-acclimation in anticipation of freezing. Glycerol acts as a cryoprotectant to control osmotic gradients formed by extracellular ice crystals during freezing. The aquaglyceroporin, HC-3, is abundantly expressed in the membrane of erythrocytes from H. chrysoscelis, where it facilitates osmotically driven transmembrane water flux and glycerol diffusion, both important in freeze tolerance. We hypothesize that HC-3 functions to moderate the dynamic cell shape changes that occur during the freeze/thaw process as a result of hypotonicity induced cell volume expansion. Cultured erythrocytes subjected to moderate hypotonic stress (70 mOsM) in the absence of 0.3 mM HgCl2, underwent a series of shape changes: they swelled, initially elongated, then became swollen and round, before returning to an elongated state. Erythrocytes treated with an HC-3 morpholino to knockdown HC-3 expression become spherical and remained spherical in response to hypotonic challenge. Within 600 seconds of the initiation of the hypotonic challenge, 80% of control cells succumbed to hypotonicity-induced cell lysis, whereas 70% of the morpholino-treated cells remained intact. These data indicate that HC-3 functions in regulating erythrocyte cell volume in response to hypotonic challenge, implicating a role for HC-3 in cellular freeze tolerance.

Assessing the effect of shear stress on Aquaporin 1 expression in vascular endothelial cells in vitro

STUDENTS Kyle P McGrail
ADVISORS Carissa M Krane
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Biology, Poster- Graduate Research

The human saphenous vein (HSV) is commonly used in coronary artery bypass grafts. The patency of the vein graft in an arterial environment is limited, thereby requiring a high percentage of autograft recipients to repeat the bypass surgery within 5 years. The main problem that ensues with HSV grafts is due to the development of intimal hyperplasia (IH) which compromises vessel function. The mechanistic reasons for the development of IH and limited HSV patency are not currently understood. However, it has been proposed that the change from venous to arterial shear stress may be a trigger. Aquaporin 1 (AQP1), a water channel protein, is expressed in the plasma membrane of vascular endothelial cells. It is hypothesized that enhanced AQP1 expression may be an early biomarker for the development of IH. The goal of this study was to assess the effect of shear stress on AQP1 expression in cultured endothelial cells. Primary vascular endothelial cells seeded on a gelatin-coated Ibidi flow chamber grown in static conditions expressed low levels of AQP1 protein that localized around the nucleus. In contrast, AQP1 was present in vesicles throughout the cytoplasm in increasing abundance in cells subjected to low shear stress (6 dynes/cm^2) vs. high shear stress (16 dynes/cm^2)($p<0.01$). These data show that shear stress alters AQP1 abundance and subcellular distribution in vascular endothelial cells in vitro, thus supporting a role for AQP1 as an environmental sensor in HSV grafts.

Calliphoridae Diversity in Appalachian Ecoregions

STUDENTS Morgan A McHugh
ADVISORS Jayne B Robinson
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Biology, Poster- Independent Research

Blow flies (Diptera: Calliphoridae) are forensically important insects commonly used in the evidence collected for making minimum post-mortem interval estimates: this is done by understanding the species that either are attracted to or colonize decomposing remains. While blow fly diversity has been recorded throughout the US, there is still a lack of data from certain ecoregions; the blow fly diversity in the Appalachian ecoregions has yet to be studied. A survey of blow flies was conducted in early June 2013 with specimens collected from 9 sites within 6 ecoregions (Central Appalachians, Ridge and Valley, Northern Piedmont, Piedmont, Blue Ridge Mountains, and Southwestern Appalachians). Blow flies were collected using decomposing liver as bait and pop-up cone-type butterfly bait traps (n=4) in forested habitats within each ecoregion. Insects were collected for 1-4 hours at each site with sampling beginning approximately midday. A total of 16,050 insects were collected with over half (8,257) representing the family Calliphoridae. Phormia regina, Lucilia spp., Calliphora spp. and Cynomya spp. were the most abundant taxa collected representing 90.9%, 7.4% and 1.7% of Calliphoridae, respectively. There was a distinct shift in species composition and abundance from the southern ecoregions compared to the northern ecoregions along the Appalachian Mountains. Phormia regina was the most abundant species collected from all nine sites. While Lucilia spp. increased in abundance in the Blue Ridge and Piedmont locations, Calliphora spp. and Cynomya spp. were only found within the Central Appalachians ecoregions. These data document the spatial differentiation in Calliphoridae diversity within the Appalachian Mountain regions, and provides baseline information for blow flies associated with any remains found in these habitats.

Comparative toxicity of epicatechin vs. borohydride reduced nanosilver in prokaryotic and eukarytoic models

STUDENTS Kyle R. Murphy
ADVISORS Mark G Nielsen, Jayne B Robinson, John J Rowe
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Biology, Poster- Graduate Research

Nanosilver is increasingly finding use as an antibacterial agent in consumer goods and water purification in developing countries. Despite claims that it has no harmful effects on eukaryotes, toxicity tests in vitro and in vivo suggest otherwise. Powerful reductants used in traditional nanosilver synthesis may contribute to its toxicity. To test this hypothesis, we utilized epicatechin reduced AgNPs and compared their in vivo

and in vitro toxicity to sodium borohydride reduced AgNPs. We also examined the antimicrobial activity of the two kinds of AgNPs using gram positive and gram negative microbial experimental systems. Both epicatechin (12nm) and sodium borohydride synthesized nanosilver (10nm) were effective antibacterial agents against Pseudomonas aeruginosa (Gram negative) and Staphylococcus aureus (Gram positive), however sodium borohydride reduced AgNPs were more effective. Conversely, only traditionally synthesized Ag NPs were toxic to eukaryotic organisms. HeLA cell culture experiments resulted in a LC50 of 113.56 ug/mL and Drosophila melanogaster ingestion experiments showed a LC50 of 26.14 ug/mL. Doses of epicatechin nanosilver up to 200ug/mL showed no toxicity in either eukaryotic model. Of great interest was the more sensitive effect of traditional AgNP on a whole organism compared to our in vitro system. Although the epicatechin synthesized AgNPs had slightly less antibacterial activity than the borohydride synthesized AgNPs, we conclude that epicatechin synthesized nanosilver provides a safer alternative to traditional nanosilver in consumer and health applications.

Convergent Evolution of the Beta 2 Tubulin Amino Acid Sequences Required for D. Melangaster Spermtail Function

STUDENTS Bryan A Baker
ADVISORS Mark G Nielsen
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Biology, Poster- Honors Thesis

Proteins that are critical to organism function are less able to evolve compared to proteins that perform non-essential tasks. Such proteins are intolerant to mutational change, and the rate of heritable mutation rather than the competition among variants dictates their evolutionary rate. Previous structure/function testing of Beta 2 tubulin, which supports the Drosophila melanogaster spermtail axenome, found that every amino acid change made to Beta 2 resulted in a non-functional protein. This raises the question, how did Beta 2 evolve to its present state? To reconstruct its evolutionary history, we cloned Beta 2 tubulin from the blowfly Phormia regina and the deerfly Tabanidae chrysops, which shared their most recent common ancestor with Drosophila 110 and 130 mya respectively. A genealogical analysis indicates that each of these Beta 2 tubulins evolved independently from Beta 1 tubulin ancestors. This convergence in Beta 2 tubulin evolution is highly unexpected given the stringency in its structure/function relationship, and suggests gene duplication and strong positive selection drive convergence in Beta 2 tubulin evolution.

defective proventriculus (dve), a new member of DV patterning in the eye.

STUDENTS Oorvashi Roy Gajendranath Puli
ADVISORS Madhuri Kango-Singh, Amit Singh
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Biology, Poster- Graduate Research

In all multi-cellular organisms, patterning and growth of a developing field rely on conserved signaling pathways. Among these, the highly conserved Wingless (Wg) signaling pathway plays a major role in growth and cell fate differentiation. In the developing Drosophila eye, Wg function evolves along the spatio-temporal scale. During early eye development, Wingless (Wg) provides growth cues whereas later Wg blocks Morphogenetic Furrow (MF) progression and thereby suppresses the eye fate and promotes head specific fate. During early eye development, Wg is known to function in the fundamental process of delineation of Dorso-Ventral (DV) axis, the first lineage restriction event in the developing eye. Wg, a member of dorsal eye gene hierarchy, acts downstream of Pannier (Pnr), a GATA-1 transcription factor. However the genetic mechanism that regulate the domain specific expression of Wg in the Drosophila eye has not been fully understood. We have identified a K50 homeodomain transcription factor Dve, an ortholog of SATB1 in regulating expression of Wg in the developing eye. Dve acts downstream of Pnr to regulate Wg expression in the dorsal compartment of the eye. We found that Dve expressing cells contribute to processes resulting in expression of Wg in a gradient in the eye to determine eye versus head fate. This mechanism is also conserved in other insects.

Determining the Transcription Factor Genes Populating a Fruit Fly Pigmentation Gene Network and Their Regulatory Connections

STUDENTS William A Rogers, Samantha J Stringer
ADVISORS Thomas M Williams
LOCATION, TIME RecPlex, 11:00AM-12:30PM

College of Arts and Sciences: Biology, Poster- Honors Thesis

Morphological traits for organism result from the concerted action of numerous genes that are interconnected into a gene network at the level of transcriptional regulation. In each network, transcription factors control the spatial, temporal, and even sex-specific patterns of gene transcription. To better understand how a gene network operates during development, I investigated the network controlling a male-specific pattern of Drosophila melanogaster abdomen pigmentation. Using RNA interference, I reduced the expression of 550 transcription factor genes to identify those needed for normal pigmentation by the occurrence of aberrant pigmentation patterns. From this, I identified 28 genes, which include several that are known to play major roles in establishing animal body plans and that regulate chromatin structure. With this new wealth of known network genes and the diversity of pigmentation patterns among fruit fly species, my thesis supports future studies into the gene network basis for trait development and evolution.

Dmp53 interacts with the Hippo pathway to regulate cell proliferation and apoptosis.

STUDENTS Shilpi Verghese

ADVISORS Madhuri Kango-Singh, Amit Singh

LOCATION, TIME RecPlex, 11:00AM-12:30PM

College of Arts and Sciences: Biology, Poster- Graduate Research

Normal development entails a balance between cell proliferation and cell death in order for organs to grow to their normal size. This is achieved by the concerted action of several developmental signaling pathways- chief amongst which is the Hippo pathway. The Hippo pathway is conserved from flies to humans and regulates tissue size through transcriptional regulation of its target genes via its transcriptional co-activator Yorkie (Yki); and through its interactions with other signaling pathways. The Hippo pathway exerts its effects on organogenesis, regeneration, cell competition and tumorigenesis. Yki partners withseveral transcriptional factors like Scalloped (Sd), Mad, Homothorax (Hth), Teashirt (Tsh) to regulate target gene expression. Recently, Yki was shown to regulate apoptotic proteins like Dronc and Reaper to regulate cell death and proliferation. In Drosophila, p53 (Dmp53) has been shown to act downstream of Yki to regulate Reaper. Dmp53 belong to the p53 family of transcription factors that control multiple processes like protecting the cells from cytotoxic insults resulting from DNA damage, or telomere erosion. In other contexts in response to DNA damage Dmp53 activates Hippo pathway to promote cell death. In mammalian systems YAP interacts with p73 (another P53 family transcription factor) to regulateCaspase9 expression. Therefore, we investigated interactions between Dmp53 and the Hippo pathway. We show that p53 interacts with Hippo Signaling to regulate cell death and proliferation by regulating the pathway target genes. Our experiments suggest an important role of p53 in the tissues to regulate Yki activity in order to achieve tissue homeostasis.

Drosophila C-terminal Src Kinase (d-Csk) Regulates Growth via the Hippo Signaling Pathway

STUDENTS Hailey Kwon, Shilpi Verghese, Indrayani Waghmare

ADVISORS Madhuri Kango-Singh

LOCATION, TIME RecPlex, 11:00AM-12:30PM

College of Arts and Sciences: Biology, Poster- Honors Thesis

The Hippo signaling pathway is involved in regulating tissue size by inhibiting cell proliferation and promoting apoptosis. Hippo signaling coordinates a timely transition from cell proliferation to cellular quiescence, and ensures proper cellular differentiation. Aberrant Hippo pathway function (due to mutations or amplification of genes, epigenetic silencing, and oncogenic transformation) is often detected in human cancers and correlates with poor prognosis. The Drosophila C-terminal Src kinase (d-Csk) is a genetic modifier of warts (wts), a tumor-suppressor gene in the Hippo pathway, and interacts with the Src oncogene. Reduction in d-Csk expression and the consequent activation of Src are frequently seen in hepatocellular and colorectal tumors. Previous studies show that d-Csk regulates cell proliferation and tissue size during development. Given the similarity in the loss-of-function phenotypes of d-Csk and wts, we have investigated the interactions of d-Csk with the Hippo pathway. Here we present multiple lines of evidence suggesting that d-Csk regulates growth via the Hippo signaling pathway.

Drosophila Eye Model to Understand Role of Signaling Pathways in Aβ42 Mediated Neurodegeneration

STUDENTS Madison Nichole Irwin

ADVISORS Madhuri Kango-Singh, Amit Singh

LOCATION, TIME RecPlex, 11:00AM-12:30PM

College of Arts and Sciences: Biology, Poster- Honors Thesis

Alzheimer's Disease (AD) is a progressive neurodegenerative disorder without a cure. It is characterized by accumulation of Aβ42 peptides, which are toxic to neuronal cells and lead to cell death. Earlier, we have shown that a highly conserved signaling pathway, c-Jun amino-terminal (NH2) kinase pathway (JNK) is involved in Aβ42 mediated neurodegeneration. Here we present the role of the highly conserved Hippo signaling pathway, which is known to regulate cell death and organ size growth, in Aβ42 mediated neurodegeneration. I will employ a Drosophila eye model where human Aβ42 is misexpressed in the differentiating eye, which exhibits a similar neuropathology as seen in AD. I will use this model to discern the interactions of the Hippo and JNK Signaling pathways in Aβ42 mediated cell death. We have generated transgenic and mutant flies that can be used for gain-of-function as well loss-of-function conditions of these pathway members to observe their effect on the Aβ42 neurodegenerative phenotype. We have found that the gain of function of the Hippo signaling pathway enhances the Aβ42 neurodegenerative phenotype, while loss of function of this pathway rescues the neurodegenerative phenotype. Further, Hippo signaling is activated in an Aβ42 background, but shows no activity when activated on its own. This data suggests that the Hippo pathway (i) plays an important role in Aβ42 mediated neurodegeneration and (ii) its interaction with the JNK pathway leads to the Aβ42 mediated neurodegenerative phenotype. This data will allow us to understand the genetic basis of the Aβ42 mediated neurodegenerative phenotype.

Epinephrine regulates aquaglyceroporin HC-3 expression and subcellular localization in cultured erythrocytes from the freeze-tolerant treefrog, Hyla chrysoscelis

STUDENTS Connor Ratycz

ADVISORS Carissa M Krane

LOCATION, TIME RecPlex, 11:00AM-12:30PM

College of Arts and Sciences: Biology, Poster- Honors Thesis

Cope's gray treefrog Hyla chrysoscelis, accumulates and distributes glycerol as a cryoprotectant in anticipation of freezing. Transmembrane glycerol and water flux in H. chysoscelis erythrocytes likely occurs through HC-3, an ortholog of mammalian aquaporin 3. HC-3 protein is in higher abundance and is preferentially localized to the plasma membrane in RBCs from cold-acclimated treefrogs as compared to warm-acclimated animals. It is hypothesized that neuroendocrine agonists via receptor mediated second messenger pathways integrate signals derived from fasting, dehydration, diurnal, and/or temperature changes during cold-acclimation to regulate HC-3 expression as part of the mechanism of freeze tolerance. In this study, cultured H. chrysoscelis erythrocytes were exposed to 1 uM epinephrine for 30 and 60 minutes. Native HC-3 expression increased 3 fold at 30 minutes and 5.5-fold at 60 minutes relative to controls, whereas glycosylated HC-3 expression increased by 1.1-fold at 30 minutes and by 2 -fold at 60 minutes relative when exposed to epinephrine. Moreover, epinephrine treatment resulted in membrane localization as compared to cytosolic distribution in control cells. Erythrocytes pre-treated with Calphostin C, a PKC inhibitor, showed no HC-3 membrane localization, and native HC-3 expression was reduced by 66% relative to controls and 94% relative to epinephrine-treated cells. Thus, epinephrine begins a PKC-dependent mechanism that results in an increase in HC-3 abundance, HC-3 membrane localization, and enhanced glycosylation in erythrocytes. These regulatory mechanisms are consistent with the in vivo regulation of HC-3 expression observed in erythrocytes from cold-acclimated treefrogs. :

Examination of Host Range of Pseudomonas aeruginosa phages UT1, SN-T, and PEV2 for Treatment of Bacterial Biofilms in Fuels.

STUDENTS Kathleen M Sellick

ADVISORS Jayne B Robinson

LOCATION, TIME RecPlex, 11:00AM-12:30PM

College of Arts and Sciences: Biology, Poster- Honors Thesis

Biofilms are slimy substances made up of bacteria that attach to surfaces. Biofilms can be found in natural settings (rocks in streams) and man-made environments (hospital catheters, pipelines). Biofilms are also found in aviation fuel tanks, causing physical issues such as clogging in fuel lines and changing the chemical makeup of the fuel via bacterial metabolism. Bacterial viruses, known as phage, show potential for reducing biofilms through phage therapy. The goal is to find a phage or combination of phage with a broad host range that would be most effective in reducing the biofilms of bacteria isolated from fuel tanks. Known phages UT1, SN-T, and PEV2 will be tested against these biofilms, both individually and in combination. Biofilms will be assayed for biomass (crystal violet staining) and colony-forming units (CFU) in the presence of

phage or combination of phages to determine the amount of biofilm reduction.

Homeotic Gene Teashirt (Tsh) Has a Neuroprotective Function in Amyloid-Beta 42 Mediated Neurodegeneration

STUDENTS Michael T Moran
ADVISORS Madhuri Kango-Singh, Amit Singh
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Biology, Poster- Independent Research

Alzheimer's disease (AD) is a debilitating age related progressive neurodegenerative disorder characterized by the loss of cognition, and eventual death of the affected individual. One of the major causes of AD is the accumulation of Amyloid-Beta 42 (Aβ42) polypeptides formed by the improper cleavage of amyloid precursor protein (APP) in the brain. These plaques disrupt normal cellular processes through oxidative stress and aberrant signaling resulting in the loss of synaptic activity and death of the neurons. However, the detailed genetic mechanism(s) responsible for this neurodegeneration still remain elusive. We have generated a transgenic Drosophila eye model where high levels of human Aβ42 is mis-expressed in the differentiating photoreceptor neurons of the developing eye, which phenocopy Alzheimer's like neuropathology in the neural retina. We have utilized this model for a gain of function screen using members of various signaling pathways involved in the development of the fly eye to identify downstream targets or modifiers of Aβ42 mediated neurodegeneration. We have identified the homeotic gene teashirt (tsh) as a suppressor of the Aβ42 mediated neurodegenerative phenotype. Targeted misexpression of tsh with Aβ42 in the differentiating retina can significantly rescue neurodegeneration by blocking cell death. The paralog of tsh, tiptop (tio), rescues the Aβ42 mediated neurodegenerative phenotype to a similar extent as tsh. Our studies demonstrate a novel neuroprotective function of tsh and its paralog tio in Aβ42 mediated neurodegeneration. Here we present the results of our findings.

Identifying the Mechanism of Dronc Regulation by the Hippo pathway

STUDENTS Kristine R Garcia, Shilpi Verghese, Indrayani Waghmare
ADVISORS Madhuri Kango-Singh
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Biology, Poster- Independent Research

The Hippo pathway is a network of tumor suppressor genes that regulate both cell proliferation and programmed cell death. The pathway's name is derived from one of the key protein kinases of the pathway, Hippo (Hpo). The Hippo pathway consists of a core kinase cascade, Hpo and Warts (Wts), which gets activated upon sensing stress that is relayed by the activated receptor of the pathway Fat. Hpo activates Wts, and in turn Wts then inactivates the transcriptional co-activator of the pathway, Yorkie (Yki), which binds to several cognate factors such as Sd, Myc, Hth and Tsh to regulate the target genes that regulate cell division and cell death. Inactivation of Yki by Wts and Hpo allows for regular apoptosis, while a mutation in Hpo or Wts allows for the activation of Yki and therefore rapid cell proliferation and defective apoptosis. Mutations in Hpo lead to huge over growths in tissues. Study of the Hippo pathway can prove extremely valuable for the investigation of diseases such as cancer which is caused by excessive cell growth resulting in tumors. Dronc is an apical caspase of the intrinsic cell death pathway, and is a transcriptional target of the Hippo pathway. It is currently the only target known which is negatively regulated by the Hippo pathway to regulate growth. As Dronc is a transcriptional target of the Hippo pathway, activation of the Hippo pathway upregulates Dronc expression. Similarly, suppression of Hippo expression leads to suppression Dronc expression. The aim of this project is to find the minimal Hippo response element on the Dronc promoter. To examine Dronc activity, we will test transgenic flies that express different regions of the dronc promoter linked to a lacZ reporter. We will use standard genetic experiments using genetic mosaics by marking mutant cells (GFP negative) and their twin clones (normal cells, GFP positive) to test effects on dronc expression. By tracking Dronc activity, we aim to find the promoter region that contains the minimal Hippo response element required for correct gene expression.

Impact of Amur Honeysuckle (Lonicera maackii) Leachate on Culex pipiens Life History Attributes

STUDENTS Lauren E Shewhart
ADVISORS Mark E Benbow, Ryan W McEwan
LOCATION, TIME RecPlex, 11:00AM-12:30PM

College of Arts and Sciences: Biology, Poster- Honors Thesis

The objective of the study was to observe the effect of honeysuckle (Lonicera maackii) leachate on several life history traits of Culex pipiens: the survivorship, growth, pupation rate and emergence. Mosquitos are a nuisance to human beings and also a vector of some of the most deadly pathogens on Earth. The mosquito life cycle includes an aquatic stage; therefore, populations of mosquitos are strongly influenced by the ecology of aquatic habitats. One important mosquito in Ohio is Culex pipiens which is found in many urban areas and is a known vector of West Nile Virus. The biology of mosquitos could be influenced by the highly invasive shrub, Amur honeysuckle (Lonicera maackii). L. maackii is quickly outcompeting native plants across the Eastern and Mid-Western United States. L. maackii is known to leach chemicals and nutrients into aquatic habitats and I hypothesized that this leaching may affect mosquito populations. In this study, three toxicity tests were run. Each trial had nine different treatments: a high and low concentration leachates made from L. maackii, sycamore (Platanus occidentalis), and sugar maple (Acer saccharum) leaves collected in the Fall of 2012; a high and low concentration of L. maackii flowers collected in the Spring of 2013; and a control. Trial 1 lasted for 168 hours and used 2nd instar larvae in a treated water control. Trial 2 and Trial 3 used 1st instar larvae and were carried out for 480 hours. Trial 2 had a treated water control, whereas, Trial 3 had a pond water control. The data suggests honeysuckle leaf and flower material may be increasing the survivorship, growth, and pupation of Culex pipiens. If L. maackii increases mosquito success, then removal of the shrub may be a key to reducing mosquito populations.

Inspecting the Regulatory Architecture of a Toolkit Gene Locus Governing Trait Development and Evolution

STUDENTS Eric M. Camino, Kaitlyn R Francis, Lauren M Schimmoeller

ADVISORS Thomas M Williams

LOCATION, TIME RecPlex, 11:00AM-12:30PM

College of Arts and Sciences: Biology, Poster- Honors Thesis

Complex spatial and temporal patterns of gene expression are crucial to animal development and changes in expression patterns are a common mode of evolutionary innovation. Thus, understanding development requires answering: (1) what are the DNA elements, so called CREs, controlling expression, (2) how the DNA sequences of CREs encode gene regulatory capabilities, (3) whether and how CREs work together to make complex expression patterns, and (4) how CRE sequences identify their gene target(s) of regulation in a 3-dimensional nucleus? These answers will aid studies to reveal the mechanisms of gene expression, and thus animal, evolution. A model to address these questions is the bab locus of fruit flies. This locus contains the duplicate bab1 and bab2 genes that shape a derived pattern of pigmentation in the species Drosophila melanogaster. The relevant Bab expression pattern is controlled by two CREs which we found to interact in a non-additive, or synergistic, way to yield this pattern. Ongoing studies seek to trace: when and how CRE synergism evolved, which CRE sequences encode their synergistic activity, how these CREs interact with the bab gene promoters, and whether synergistic regulation extends to additional gene loci. Ultimately, this work aims to connect how animal form is programmed into 1-dimensional DNA sequence and how this program evolves.

Method for obtaining germ free Drosophila melanogaster: a tool for investigating the role gut microbes play in human disease

STUDENTS Ramyasri Matam

ADVISORS Jayne B Robinson

LOCATION, TIME RecPlex, 11:00AM-12:30PM

College of Arts and Sciences: Biology, Poster- Course Project, 14 SP BIO 421 P1

Drosophila melanogaster, or the fruit fly, is commonly used in labs because approximately 75% of human disease-causing genes are believed to have a functional homolog in the fly (Pandey 2011). This close genetic makeup as well as minimal expense makes Drosophila an ideal model to investigate potential effects of gut microbiota in human disease. Gut microbes have been known to influence the host of diseases such as obesity, type 2 diabetes and kidney disease (Musso 2010). In this study, a protocol for generating GR (germ free) D. melanogaster flies was developed and verified. This technique is crucial to investigating the role of commensal microbes in the genesis and progression of disease. We are investigating the effects of microbes in Alzheimer 's disease using a Drosophila melanogaster strain expressing of human amyloid-β peptide in a temperature dependent manner (Singh 2013). By generating GF flies of this constructed strain we will be able to determine whether commensal microbes play a role in the expression of the amyloid-β peptide. This same technique could be used to study the role of commensal microbes on any human disease homolog in the fly.

Novel Neuroprotective Function of Apical-Basal Polarity Gene Crumbs in Amyloid Beta 42 (aβ42) Mediated Neurodegeneration

STUDENTS Andrew M Steffensmeier
ADVISORS Amit Singh
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Biology, Poster- Honors Thesis

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. A novel function of the apical-basal polarity gene, Crumbs, has been identified to affect the AD phenotype.

Patterns in Evolution: Tracing the Genetic and Molecular Basis for Convergent Pigmentation Pattern in Drosophila species.

STUDENTS Sumant Grover, Claire C Konys, Maxwell John Roeske
ADVISORS Thomas M Williams
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Biology, Poster- Graduate Research

The genetic basis by which organisms adapt to an ever changing world remains a topic of great interest to the fields of evolution, development, and conservation biology. It is understood that animal genomes contain over ten thousand genes and distantly related species possess many of the same genes due to common ancestry. What is less well understood is how new traits evolve using these shared genes and whether the genetic basis for evolution favors certain genes over others. At the heart of trait development are genes that encode proteins that regulate the expression of other genes, notably transcription factors and chromatin modifying proteins. Traits can evolve through changes in the expression patterns for these genes or through changes in which target genes they regulate. However, case studies connecting gene expression changes to trait evolution remain few in number. Additionally, it is unclear whether gene expression evolution favors alterations in certain genes over others. In order to understand how a novel trait evolves and to determine whether evolution can prefer certain gene targets for modification, we are studying the convergent evolution of fruit fly pigmentation in the lineages of Drosophila melanogaster and Drosophila funebris. These two species can be considered biological replicates for the evolution of male-specific pigmentation on the A5 and A6 abdominal segments. To understand the genes involved in the formation and evolution of these similar pigmentation patterns, we are utilizing candidate gene and comparative transcriptomic approaches. Completion of this work will provide novel insights on the genetic changes responsible for a trait's origin, and whether development constrains evolutionary paths to certain genes.

Red Light Green Light: A Novel Approach to Studying Interactions between Enhancers and Gene Promoters

STUDENTS Eric M. Camino, Mary Patricia List, Jordan E Vellky
ADVISORS Thomas M Williams
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Biology, Poster- Honors Thesis

The genes in the animal genomes are selectively expressed. The mechanisms behind this selectivity have received considerable attention yielding a current model of regulation; in various cell types, developmental time points, and/or environments, DNA sequences known as "enhancers" interact with gene "promoters" in order to switch ON or OFF expression. While promoters are located just upstream of a gene's transcriptional start site, enhancers reside in more diverse locations including introns including regions both upstream and downstream of the regulated gene, often in closer proximity to non-target gene promoters. Recent studies in comparative genomics have made enhancer identification easier based upon DNA sequence conservation between related species. However, it remains poorly understood how an enhancer recognizes the gene(s) it

regulates. I propose a research project to develop a transgenic system in Drosophila melanogaster fruit flies that will facilitate the identification of sequences in enhancers and promoters that are necessary for long distance communication. This system will use two distinct fluorescent protein genes in order to track proximal and remote gene activation in vivo, and will be easy to customize with different enhancer and promoter sequences, including mutant sequences. I anticipate certain enhancer mutations will disrupt long distance enhancer-promoter communication while leaving the enhancer's pattern of activity intact. As promoters and enhancers are general components of animal genes, this approach can be applied to other species, such as humans and mice, to study similar long distance interactions.

Role of a soy protein Lunasin in Aβ42 mediated neurodegeneration in Alzheimer's Disease

STUDENTS Angela N Giaquinto
ADVISORS Amit Singh
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Biology, Poster- Independent Research

Alzheimer's Disease (AD) is a neurodegenerative disease caused by a number of factors. One of the leading factors behind the onset of AD is the accumulation of amyloid plaques in the brains of affected individuals. These plaques are formed with amyloid precursor protein (APP) is processed incorrectly and cleaved to be 42 amino acids long (Aβ42) instead of 40 (Aβ40) which are found within healthy individuals. These two extra amino acids cause the protein to become hydrophobic in nature and form plaques which aggregate around neurons in the brain. This aggregation induces oxidative stress on the neurons which then leads to cell death. Due to the conserved genetic properties of the Drosophila melanogaster, fruit fly, visual system with that of humans we have developed a Drosophila eye model. In this model the Aβ42 protein is misexpressed in the developing photoreceptors of the fly eye which results in extensive cell death of the photoreceptor neurons and produces a highly reduced eye field in the adult fly. My research focus is to understand the function of a soy protein called Lunasin in Alzheimer's disease. It has been shown that Lunasin acts as an anti-inflammatory within the somatic cells. Inflammation of the brain is an observed characteristic of AD. Therefore, we investigated the effects of Lunasin on Aβ42 accumulation mediated neurodegeneration. Here we present the findings of our studies thus far.

Role of defective proventriculus (dve) in retinal determination during development

STUDENTS Sarah A Stalder
ADVISORS Amit Singh
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Biology, Poster- Honors Thesis

A complete understanding of the genetic basis of the fundamental process of eye development has not yet been fully understood. Recently the gene defective proventriculus (dve), which has been shown to be involved in midgut specification in Drosophila, has been found to be one of the key dorsal eye fate determination genes. Our preliminary data suggests that dve interacts with highly conserved Retinal Determination (RD) genes, twin-of-eyeless (toy), eyeless (ey), eyes absent (eya), sine oculis (so), and dachshund (dac), to control the eye field specification and differentiation. The aim of this project is to (i) place dve in hierarchy of RD genes, and (ii) test if dve can promote or block eye formation function of RD genes. We used conventional genetic approaches of tissue/domain specific gain-of-function and loss-of-function to test the interaction of dve with each of the RD genes individually to discern their role in eye development. We tested these interactions at different developmental stages of the life cycle of the fly such as larval eye primordium, pupal retina and adult compound eye. Here we will present the findings of this study to date.

Role of growth regulatory pathway in eye development and differentiation

STUDENTS Erika L Wittkorn
ADVISORS Madhuri Kango-Singh, Amit Singh
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Biology, Poster- Graduate Research

Key genetic pathways are utilized for multiple functions within organisms. The novel function of such pathways provides organisms with the ability to have increased complexity. This type of utilization of genetic pathways can be seen in a known growth regulatory pathway, the Hippo

Pathway. This is a highly conserved pathway between insects and humans. Since the Drosophila melanogaster is a favored genetic model in studying patterning and growth we employ the use of this model system in order to understand the role of this known growth regulatory pathways involvement in not only growth, but in retinal development and differentiation. There are five major components within the Hippo pathway, Hippo (hpo), Salvador (sav), Warts (wts), mob as tumor suppressor (mats) and yorkie (yki).These components have been shown to be involved in growth, cell survival and are required to control organ size. Though the Hippo signaling pathway has been well researched for its involvement in growth and cell survival, it's involvement in other developmental processes, such as differentiation is still unknown. This project acts to define the Hippo signaling pathways involvement in differentiation of the developing eye and deciphers the mechanism by which this pathway regulates differentiation.

Role of Signaling Pathways in Aβ42 mediated neurodegenaration

STUDENTS Ankita Sarkar
ADVISORS Amit Singh
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Biology, Poster- Graduate Research

Alzheimer's disease (AD) is an age related neurodegenerative disorder. Accumulation of the Aβ42 plaques is one of the vital reasons for AD mediated neurodegenaration. It has been suggested that Aβ42 plaques triggers oxidative stress due to impaired signaling, which result in neuronal cell death. However the exact mechanism causing cell death is still not well understood. We employ a Drosophila eye model of AD by misexpressing high levels of Aβ42 in the differentiating photoreceptors of the fly retina. Our aim is to discern the role of signaling pathways involved in neurodegenaration. In a forward genetic screen, we have identified teashirt (tsh), crumbs (crb) and other members of Wingless (Wg) signaling pathways as genetic modifiers of Aβ42 mediated neurodegenaration. It is known that wg is a negative regulator of differentiation in the eye. Our preliminary data suggests that by misexpression of Shaggy kinase (Sgg), a negative regulator of the Wg signaling pathway, suppress the neurodegenaration caused by Aβ42 misexpression. We will test the role of Wg signaling in Aβ42 plaques mediated neurodegenaration. Furthermore, we will analyze, if these modifiers act independent and/or parallel of each other or whether they have a linear relationship in triggering neurodegenerative response due to accumulation of Aβ42.

Role of the Arista in Lucilia sericata in Sensing Wind, Airflow, Relative Humidity, and Volatile Compounds

STUDENTS Alexandra E Jacob
ADVISORS Karolyn M Hansen
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Biology, Poster- Honors Thesis

Lucilia sericata is a species of blow fly that belongs to the family Calliphoridae. This organism has important applications in the fields of forensic entomology, as well as medicine. Lucilia sericata is one of the first organisms that arrives at decaying carrion in response to decay odors released by the carrion. The attraction stimuli are presumably the decay volatiles, but wind direction, wind speed, and humidity may also influence the blow fly searching behavior. This fly species has feather-like structures known as arista that project from the antenna. The function of these structures is not completely understood, however they are believed to play a role in sensing airflow and wind, humidity, and possibly volatile organic compounds. The goal of this project is to gain a deeper understanding of the function of the arista so that it may provide a greater insight into the behavior of the organism in its natural environment. Blow flies were subjected to arista ablation (removal) and were exposed to of a series of choice experiments: air flow with versus without humidity, variable air flow, and with or without carrion odors. Flies were placed in a reaction chamber and allowed to choose between the wind, speed, humidity, and odor variables and their behavior was observed. Fly choice was recorded as landing/hovering in the area of the stimulus introduction port. Preliminary data indicate that non-ablated flies actively select humid airflow. Our data will provide greater insight into the function of the arista and how wind direction, wind speed and humidity influence blow fly searching behavior.

Role of Transcriptional Co Activator CREB Binding Protein in Amyloid Beta 42 Mediated Neurodegeneration

STUDENTS Timothy Lawrence Cutler, Greg F Mancini, Michael T Moran, Oorvashi Roy Gajendranath Puli, Andrew M Steffensmeier

ADVISORS Madhuri Kango-Singh, Amit Singh
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Biology, Poster- Honors Thesis

Alzheimer's disease, a neurodegenerative disorder that has no cure, is marked by a gradual decreased cognitive function and is extremely prevalent in the aging population. Using Drosophila melanogaster, we create a model of Alzheimer's disease by misexpressing a gene, Amyloid Beta 42 (Aβ42). Previous studies have shown that one of the many diverse functions of the CREB-binding protein (CBP) is a reduction of tau pathology, one of the causes of the neurodegenerative state in the Aβ42 phenotype. Our data shows that CBP has a neuroprotective role in the neurodegeneration seen in Alzheimer's Disease. We have performed a structure-function analysis of the Aβ42 gene to determine which domains are crucial for the function of the protein.

Search for eye specific regulatory sequences of an axial patterning gene defective provetriculus (dve)

STUDENTS Kevin X Farley, Oorvashi Roy Gajendranath Puli
ADVISORS Madhuri Kango-Singh, Amit Singh
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Biology, Poster- Graduate Research

Development of an organism relies on patterning. We aim to study the genes and signaling pathways that regulate Dorso-Ventral (DV) patterning and specification during eye-head morphogenesis of the fruitfly, Drosophila melanogaster. We have identified defective proventriculus (dve) as a novel dorsal eye gene, which is expressed in the dorsal anterior region of the eye-antennal disc. Based on preliminary data, dve is known to be a dorsal selector that is required to repress eye morphogenesis and promote head cuticle fate. We aim to identify and characterize the regulatory sequences responsible for dve expression in the eye. We tested 19 GMR transgenic lines, each controlling a distinct region of the regulatory sequence of dve and checked the expression pattern of these individual lines by crossing them with a UAS-GFP (green fluorescent protein) reporter with a nuclear localization signal (NLS). The results from our studies will be presented.

Sex-Dependent Electrophysiological Response of Lucilia sericata to a Vapor Concentration Gradient of Indole

STUDENTS Erin T Filbrandt
ADVISORS Karolyn M Hansen
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Biology, Poster- Honors Thesis

The blow fly, Lucilia sericata, is attracted to volatile organic compounds given off by decaying carrion. Anecdotal evidence indicates that males may respond to a different odor profile than females. Males are known to utilize flowers as a dietary source of sugar and may be attracted to the flowers by the scent of indole, a volatile compound that is also present in the carrion decay odor profile. This study investigated the responses of male and female blow flies to specific concentrations of indole in the adult stage of Lucilia sericata, the common green blow fly. Indole is a commonly used attractant at concentrations between 0-0.04% that has a floral scent at low concentrations and a fecal odor at high concentrations. Experiments were conducted using three organismal rearing treatments: male, female, and mixed male/female. All treatment cages were placed in an incubator to maintain stable temperature and light cycles. Each treatment cage received the identical diet to reduce any diet-influenced variables. Fly response to a concentration gradient of indole was measured using an the electroantennogram (EAG) , an instrument that records electrical depolarization occurring in the antenna of the organism when it is exposed to specific volatiles. Positive and negative controls were used to determine baseline responses; responses to varied concentrations of indole were compared to baseline measurements. I hypothesized that the responses of males, non-gravid females, and gravid females would differ from one other due to different dietary needs. The males were expected to respond to the lower concentrations of indole (flowery scent); the non-gravid females to lower and higher concentrations almost equally; and the gravid females most strongly to higher indole concentrations. Although responses were not as distinct as expected, the data set follows the general trend of the predicted responses.

Structure and Location of Sensory Structures of the Blow Fly, Lucilia sericata

STUDENTS David Barry Foraker Kling

ADVISORS Karolyn M Hansen
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Biology, Poster- Course Project, 13 FA BIO 421 P1

Blow flies (Calliphoridae) are attracted to food resources based on the detection of avariety of volatile organic compounds (odors). Lucilia sericata, the green bottle fly, is attracted to the odor of decaying carrion. Females need the carrion as a food resource and also for laying eggs. Males may be attracted to the odor of the carrion and/or to the pheromones of females at the carcass. The structures that 'sense' the odors are hair-like sensilla present on the antenna and head area of the fly and taste bristles present on the tarsi (legs). There is a difference in the number of sensory structures present on male versus female fruit flies (Drosophila sp.) but no published information on the location and number of sensory structures is available for L. sericata. This project focuses on characterizing the sensory structures on L. sericata using scanning electron microscopy (SEM) techniques. Male and female flies are preserved using a Drosophila standard fixation. A representative number of flies for each sex was selected (n=5) after confirming that represent the average fly our fly colony (length, width, wing metrics). Flies are mounted on SEM stubs for viewing using the Hitachi 4800 SEM located in the Science Center NEST facility. Entire fly bodies are image with particular attention to the head and mouth areas and the forelimbs. Since there are no published SEM images of Lucilia sericata (body or sensory structures) this research will contribute essential morphological information to the literature on sensory structures of both male and female L. sericata.

Structure function studies to map interaction domains of the fat and scrib genes in Drosophila melanogaster

STUDENTS Courtney D Heckman, Shilpi Verghese
ADVISORS Madhuri Kango-Singh
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Biology, Poster- Course Project, 14 SP BIO 421 P1

The Hippo pathway is a network of tumor suppressing genes that function to regulate cell proliferation and survival. The Hippo pathway is found in both humans, and Drosophila. Suppression of the Hippo pathway results in cell proliferation, overgrowth and regulation. This characteristic makes the Hippo pathway very important for diseases that are linked to defects in cell death and proliferation. The Hippo pathway uses the upstream regulator, fat, to signal to Yki by at least two alternative pathways. One pathway originates with fat regulating scribble. This gene then signals to the ligand Dach, which acts upstream of Warts, influencing its protein levels. Warts interacts with Yki, which is the transcriptional co-activator. Yki then translocates to the nucleus and binds to Sd to produce specific gene expression.The new gene scribble has just recently been discovered in the pathway. scrib is a known neoplastic gene that is needed for cell to cell junction formation and growth. scrib has been found to act downstream of fat in the Hippo pathway which was determined when down regulation of fat created higher DIAP 1 levels, whereas down regulation of scrib revealed a decrease in levels. Scrib has been shown to affect the Hippo signaling pathway but its functions are still greatly unknown. The goal of this project is to better understand how scrib interacts with fat. The approach that will be used is structure function analysis. The experiment will be carried out by obtaining four constructs of scrib that delete various parts of the coding region. Using these constructs, the effects of the ptcGal4 UASGFP UASfatRNAi phenotype in the adult wings will be tested. By preforming these initial experiments, the region of scrib that likely interacts with fat for its growth regulatory functions will be identified. Our progress from these studies will be presented.

Tapered Optical Fibers for Biosensing Applications

STUDENTS Dillon T Grandinette, Ighodalo U Idehenre, Branden J. King, Jonathan B Melendez
ADVISORS Karolyn M Hansen, Joseph W Haus, Peter E Powers
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Biology, Poster- Graduate Research

This study focuses on the design, fabrication, and characterization of tapered optical microfibers for biomolecular sensing in both aqueous and gaseous environments. Polarization-maintaining fibers were tapered to a diameter of approximately 7 microns. At this diameter, the modes of light allowed to propagate through the fiber create an interference pattern that can be used as the basis for biomolecular sensing. At the tapered fiber surface, the modes of light propagating through the fiber can interact with molecules chemically bound to the tapered surface. In aqueous phase, the detection of antibody-antigen binding has been demonstrated on this platform. Antigen capture changes the refractive index and the thickness of the biolayer, which can be measured as a phase shift in the output with a lower limit of detection in the femtomolar

range. This phase shift phenomenon has been replicated across different fibers, and individual fibers have shown to be reusable. The sensing platform was engineered for simple construction, durability, and also to serve as a sensor for biomolecules in the vapor phase. For vapor phase testing, interchangeable parts were created with a 3D printer to allow for the seamless introduction of both aqueous and vapor phase analytes. We envision the use of tapered optical fibers in array format for detection of multiple analytes in complex samples for biomedical (blood, saliva, breath), environmental, and homeland security applications.

Temporal Analysis of Male and Female Lucilia sericata Blow Fly Behavior Using Videography

STUDENTS Brian W Skura, Casey T Walk
ADVISORS Allissa M Blystone, Karolyn M Hansen
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Biology, Poster- Independent Research

Lucilia sericata, the green bottle fly, is a forensically important insect species used in determination of the post-mortem interval (PMI) for deceased individuals. Anecdotal evidence indicates that females and males may utilize the decaying organic material differently. Reports suggest both sexes are active at the protein source during the day, but not at night. In the present study we hypothesize that L. sericata males and females behave differently with respect to organic material resource utilization and that there will be a difference in activity during their light and dark cycles at the protein source. Protein (organic material) is a required dietary component for female flies for completion of sexual development, vitellogenesis, and the production of sex pheromones while a dietary protein requirement for males has not been elucidated. Flies were maintained in mixed colonies (both males and females present) and colonies were monitored over 24 hour cycles using a Sony Handycam video recorder with night-vision capabilities. Preliminary data reveal that L. sericata, regardless of sex, are inactive during the dark (night) cycle. Females visited the protein source more frequently than males during the light (day) cycle. These results suggest that L. sericata exhibits sexually dimorphic behavior during the daylight hours with respect to protein utilization.

The biased evolution of a pleiotropic cis-regulatory element underlies diversity in a sexually dimorphic pigmentation trait

STUDENTS Eric M. Camino, William A Rogers
ADVISORS Thomas M Williams
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Biology, Poster- Graduate Research

The development of morphological traits occurs through the collective action of networks of genes connected at the level of gene expression. A network's structure is shaped by the interactions of transcription factors with binding sites in target gene cis-regulatory elements (CREs), so called regulatory linkages. As many genes present target nodes for morphological evolution, the parallel targeting of the same node would be indicative that the path of evolution is biased for the relevant trait and network. For some traits, parallel evolution has occurred through modifications to the same CRE although little is known about the mutational and molecular paths of CRE evolution. In Drosophila melanogaster fruit flies, the Bric-à-brac (Bab) transcription factors control the development of a suite of sexually dimorphic traits on the posterior abdomen. Here female-specific Bab expression is regulated by a CRE called the dimorphic element that possesses regulatory linkages with body plan (ABD-B) and sex-determination (DSX) transcription factors. In the melanogaster species group, we identified several instances of intraspecific and interspecific variation in female pigmentation where the dimorphic element was a target for mutations that altered its regulatory activity. By reconstructing the sequence and regulatory activity for an ancestral Drosophila melanogaster dimorphic element, we demonstrated that a handful of mutations were sufficient to create independent CRE alleles with differing activities. These differences were comparable to those for orthologous sequences from species that diverged over 10 million years ago. Moreover, intraspecific and interspecific dimorphic element evolution proceeded with little to no alterations to the known body plan and sex-determination regulatory linkages. Collectively, our findings present an example where the paths of evolution were short, seemingly biased to a specific CRE, and preserved key regulatory linkages.

The Correlated and Divergent Evolutionary Histories for Two cis-Regulatory Elements Controlling Pigmentation Enzyme Expression

STUDENTS Eric M. Camino, Jordan E Vellky

ADVISORS Thomas M Williams

LOCATION, TIME RecPlex, 11:00AM-12:30PM

College of Arts and Sciences: Biology, Poster- Graduate Research

A major goal of evolutionary-developmental biology research is to make a connection between the understanding of animal development and how development evolves. At the heart of development are gene regulatory networks (GRNs), where each network is composed of a set of transcription factors that control the expression of target genes through physical interactions (regulatory linkages) with binding sites in cis-regulatory element sequences (CREs). While the regulatory linkages have been mapped for several GRNs, lacking is a characterization of a GRN for a rapidly evolving trait whose origin, diversification, and loss can be studied. Drosophila melanogaster fruit flies have a male-limited pattern of abdomen pigmentation which evolved from a monomorphic ancestor, and abdomen pigmentation has diversified and been lost between related species. Here, I studied the CREs and interacting transcription factors controlling the expression of two pigmentation enzymes with similar male-specific patterns of expression. Though these CREs direct similar patterns of expression and are controlled by some of the same transcription factors, we found that the underlying composition and organization of regulatory linkages significantly differ. We provide evidence that the repurposing of an ancestrally monomorphic pigmentation GRN to a derived dimorphic state required the de novo evolution of these two CREs. While these CREs seemed likely targets of mutations responsible for diversification and losses of pigmentation, we show that these phenotypic changes largely were driven by changes at other GRN loci. Collectively, these results show how evolution can forge similar gene expression patterns from dissimilar CRE encodings, and how a trait's origin can require the evolution of new CREs, but that these CREs may not be the preferred GRN target for subsequent evolution

Transcriptomic and Proteomic Comparisons between Dorsal and Ventral Iris during Early Lens Regeneration in the Newt Notophthalmus viridescens Reveal Insights about the Mechanism

STUDENTS Konstantinos Sousounis

ADVISORS Panagiotis A Tsonis

LOCATION, TIME RecPlex, 11:00AM-12:30PM

College of Arts and Sciences: Biology, Poster- Graduate Research

Notophthalmus viridescens, the red-spotted newt has been mainly studied for its tremendous regenerative abilities. Among other organs, newts have the ability to regenerate the eye lens after complete removal throughout life. The mechanism of newt lens regeneration has been a mystery for more than a hundred years. Histological examination of the newt eye after lens removal has revealed that the pigmented epithelium of the dorsal iris is responsible for the regeneration while ventral iris does not participate in the process. This change in cell morphology and fate of the iris cells to make lens cells is called transdifferentiation. The cellular and molecular events characterizing the initiation and progression of transdifferentiation are largely unknown. We have employed high-throughput methods to study gene expression during lens regeneration. Microarrays and RNA-sequencing have been used to study genes at the RNA level while liquid chromatography followed by mass-spectrometry to study gene expression at the protein level. Our results showed up-regulation of genes involved in cytoskeleton, immune response, DNA maintenance, reactive oxygen species balance, cell cycle and regulation of gene expression in the dorsal iris; the site that lens will be regenerated. We believe that these events consist of a regeneration signature that needs to be applied for all tissues that undergo regeneration. In addition, our studies have identified VAX2 as a gene selectively expressed in the ventral iris, a tissue incompetent for regeneration. Our efforts are focused on inhibiting VAX2 expression using morpholino anti-sense oligos in an attempt to initiate lens regeneration from that site, an event that can lead to exploring lens regeneration potentials in other regenerating incompetent animals.

What Attracts Male Blow Flies to a Carcass – Decay Odors or Presence of Females?

STUDENTS Timothy J Lee, Casey T Walk

ADVISORS Allissa M Blystone, Karolyn M Hansen

LOCATION, TIME RecPlex, 11:00AM-12:30PM

College of Arts and Sciences: Biology, Poster- Independent Research

The blow fly, Lucilia sericata, is one of the first organisms to colonize on decaying carrion. Many papers describe how the female blow flies utilize the carcass for food and for laying eggs but there is little information in the literature about how males respond to the presence of decaying carrion. In fact, anecdotal evidence found that while females actively walk on explore the carcass, males are usually found on the periphery in

the bushes and grass. We hypothesize that males are attracted not to the carcass but to the females that are present on and around the carcass and that males are not looking for a food source but for mates. This research project focuses on determining the attractiveness to male flies of various combinations of odor sources. Males are allowed to choose between different odor treatments: 1. honey:water (food-only control), 2. honey:water plus females present, 3. liver (carrion), and 4. liver plus females present, 5. females only. This species is known to respond to volatile compounds (odors) from carrion and these experiments will help us determine what odors the males are selecting: food odors, female pheromones, or both. Each run of the choice experiment uses 30 males in each of three replicate culture tents and males are able to choose from each of the treatments over a specific time period. 'Choice' means that they entered the access tube leading to the specific treatment. Our results will expand the body of literature on which stimuli (odors) are attracting the males to the decaying carrion.

The invasive shrub Amur honeysuckle (Lonicera maackii) influences nutrient dynamics in headwater streams

STUDENTS Courtney L Dvorsky
ADVISORS Rachel E Barker, Ryan W McEwan
LOCATION, TIME Kennedy Union 312, 1:00PM-1:20PM
College of Arts and Sciences: Biology, Oral Presentation- Independent Research

Stream nutrient pollution is a critical environmental problem. Elevated nutrient levels can contaminate human water supply, negatively impact aquatic organisms, and support harmful algal blooms - a human health threat. Invasive plants often have high nutrient levels, and can alter nutrient availability in ecosystems. Lonicera maackii (Amur honeysuckle) is a successful invader of streamside forests, creating near monoculture forests. This experiment aimed to identify the impact of honeysuckle invasion on nutrient availability in streams. We predicted stream sites with honeysuckle forests would not be limited in nutrients since this plant is known to be high in nitrogen. Nutrient diffusing substrates (NDS) were used to test seasonal nutrient availability in three local headwater streams with or without (removal) honeysuckle. NDS consist of a cup with nutrient rich agar that diffuses nutrients into the stream across a porous glass disc, serving as a substrate for algal growth. Four NDS treatments were created: (1) control with no nutrients, (2) nitrogen, (3) phosphorous, (4) both nitrogen and phosphorous. The NDS were deployed in March and September 2013 for 18-21 days. Diffusing substrates were processed for chlorophyll a pigmentation – representative of algal growth. Honeysuckle removal resulted in greater nitrogen limitation than phosphorus; apparent by the significant increase in algal growth on nitrogen NDS for March and September compared to honeysuckle reaches ($P < 0.0001$). All other NDS treatments had similar algal growth regardless of stream reach for March; however, all NDS supported greater algal growth in the removal reach than the honeysuckle reach in September ($P < 0.01$). This difference may be attributed to increased light availability associated with honeysuckle removal. Results suggest that honeysuckle may be subsidizing headwater streams with nitrogen. These results provide a framework for future honeysuckle nutrient work and help our understanding of how invasive plants impact stream ecosystems.

Carbon storage dynamics in an old-growth, temperate deciduous forest: understanding the biodiversity-ecosystem function relationship

STUDENTS Jessica G Davis
ADVISORS Ryan W McEwan
LOCATION, TIME Kennedy Union 312, 1:30PM-1:50PM
College of Arts and Sciences: Biology, Oral Presentation- Graduate Research

In a rapidly-changing environment, understanding the relationship between biodiversity and ecosystem functionality is an ongoing challenge for ecologists. Our objective was to answer the following overarching question: Are the most biodiverse communities also those that provide the highest level of ecosystem function? Our response variable of interest was the carbon stored in the old-growth forest of Big Everidge Hollow of Lilley Cornett Woods Appalachian Ecological Research Station, located in Eastern Kentucky. Coarse woody debris (CWD, downed tree material >20 cm in diameter) was sampled across 80, 0.04 ha plots in 1989 (Muller), 1999 (Muller), and 2012 (Davis). For each sample, the following data was collected: CWD type, length and diameter measurement parameters, species, and decomposition stage. The biomass for each sample was determined using literature density values. The data were analyzed nonparametrically due to skewed distributions. CWD biomass displayed a distinct increase across the time points of 1989, 1999, and 2012. CWD biomass in the watershed averaged 27.3 Mg/ha, 33.8 Mg/ha, and 40.2 Mg/ha in 1989, 1999, and 2012, respectively. This represents a 23.8% increase in CWD biomass from 1989 to 1999, an 18.9% increase in CWD biomass from 1999 to 2012, and a significant ($p<0.05$) 47.2% increase across the study time period of 1989 to 2012. Models were created

in ArcMap GIS to determine which factors, biotic or abiotic, were driving these changes. The models were found to be significant in 1989 and 1999 ($p<0.001$) but not 2012. Shannon diversity was found to be the only significant variable and was decreasing in model explanation as time progressed ($r2=0.19$, $p<0.001$ in 1989 and $r2=0.10$, $p=0.004$ in 1999). These results indicate that diversity has a significant impact on carbon sequestration functionality and other variables not yet explored are driving changes in CWD biomass dynamics at this site in more recent years.

Grazer Response to Changes in Epilithic Biofilm Community Composition and the Subsequent Influence of Grazing

STUDENTS Jennifer M Lang
ADVISORS Ryan W McEwan
LOCATION, TIME Kennedy Union 312, 2:00PM-2:20PM
College of Arts and Sciences: Biology, Oral Presentation- Graduate Research

Both grazers and abiotic factors directly influence epilithic biofilm community structure, but the indirect relationship between these two factors is not well understood. Our hypothesis was that grazers would indirectly respond to abiotic factors through preferential feeding on different biofilm communities. Epilithic biofilms were grown on unglazed porcelain tiles under ambient, modified flow (increased turbulence), dark and modified flow plus dark treatment conditions in a third order stream of southwest Ohio. Biofilm succession was captured at 7, 14, 21, and 28 days, and laboratory microcosms containing all communities were subjected to mayfly (Maccafertium sp.), snail (Goniobasis sp.), combination and no grazing treatments ($n=3$) for 6 days. After grazing, biofilm community composition of bacteria and eukaryotes was characterized using genetic techniques of automated ribosomal intergenic spacer analysis (ARISA) and 454 pyrosequencing. Without grazing, modified flow was associated with increased biofilm primary production (measured as chlorophyll a) and biomass at 21d and 28d. Two-way analysis of variance of biomass determined that mayflies significantly reduced modified flow communities at 21d, while snails reduced all communities at 21d and 28d. However, a distinct tiered pattern emerged in the combination grazing treatment. Modified flow communities at 21d were significantly grazed the most, biofilm communities at 7d were grazed the least, and remaining communities were grazed at an intermediate level. Non-metric multidimensional scaling analysis of bacterial ARISA genetic profiles ($r2=0.78$) described more variation than eukaryotic profiles ($r2=0.56$). Using multi-response permutation procedure, grazing was the most influential on both communities (bacteria $A=0.08$, $p<0.001$; eukaryotic $A=0.08$, $p<0.001$) but only bacteria was affected by time ($A=0.01$, $p=0.037$). Family level analysis of bacteria indicated grazing as the most important factor ($r2=0.85$; $A= 0.04$, $p<0.001$). These results indicate that optimal foraging of grazers was influenced by the abiotic factor affect on epilithic biofilms while simultaneously influencing the biofilm community composition.

Riparian invasion of Lonicera maackii alters ecosystem function and macroinvertebrate dynamics

STUDENTS Rachel E Barker
ADVISORS Ryan W McEwan
LOCATION, TIME Science Center 114 - Auditorium, 2:30PM-2:50PM
College of Arts and Sciences: Biology, Oral Presentation- Graduate Research

We investigated the impacts of the invasive riparian shrub Lonicera maackii (Amur honeysuckle) on organic matter subsidies, nutrient dynamics, and the macroinvertebrate community in a headwater stream. Honeysuckle was removed along a 160 stream reach in August 2010. Autumnal, in-stream leaf litter was assessed over 75 d, while macroinvertebrate density and secondary production were measured for three years and a nutrient limitation study was conducted during two seasons. Honeysuckle removal significantly reduced canopy cover and light availability and (both $P < 0.01$) and differentially influenced the timing and abundance of leaf litter genera within the stream. For example, Platanus spp. contributed the most organic matter within the removal reach (35-40%) but was mainly absent in the control reach. Macroinvertebrate biomass increased ~99% one year after invasive removal compared to ~50% increase in the control reach. Honeysuckle removal also resulted in in-stream nitrogen limitation ($P <0.05$). These findings suggest that removal of a dominant invasive shrub affects terrestrial organic matter and nutrient subsidies into headwater streams, influencing the timing and abundance of leaf litter habitat and food resources for aquatic macroinvertebrates.

Classifying the Functionality of Primosome Protein A in Deinococcus Radiodurans

STUDENTS Jacob T Boone
ADVISORS Matthew E Lopper

LOCATION, TIME RecPlex, 9:00AM-10:30AM

College of Arts and Sciences: Chemistry, Poster- Honors Thesis

Deinococcus Radiodurans is an extremophile bacterium with the capacity to withstand tremendous exposure to DNA damaging agents, particularly those that cause double strand breaks. Double strand breaks cause the replisome complex in cells, which create copies of DNA for cell replication, to become dislodged from the strand of nucleic acids they are attached to. All bacteria have developed processes to fix double strand breaks, allowing for other mechanisms to reload the bacterial replisome. Replisome reloading begins by utilization of primosome proteins, specifically PriA, to assist in attachment of replicative helicases to newly repaired DNA strands. Based on previous data, D.rad PriA was hypothesized to act as a fossilized helicase. Known helicases are able to bind to DNA, unwind DNA, and hydrolyze ATP. D.rad PriA is similar in structure to known primosome helicases but was postulated to differ in function because of mutation occurrences in the D.rad genome over time. This project used cell lysis and centrifugation of lysis contents to isolate both D.rad and E.coli PriA. Sizing, ionizing, and affinity column chromatography procedures were used to purify each collected protein sample for further experimentation. DNA binding, DNA unwinding, and ATP hydrolysis assays were performed using both D.rad and E.coli PriA. E.coli PriA demonstrated ability to perform all three helicase functions while D.rad PriA only demonstrated ability to bind to DNA. The results supported the hypothesis, thus classifying D.rad PriA as a fossilized helicase. While the PriA protein of D.rad may be structurally similar to PriA proteins in other bacteria, the evolution of the bacterial genome over time has rendered the helicase function of D.rad PriA inoperable.

Decomposition of Aromatic Amines in a Jet Fuel Surrogate

STUDENTS Matthew J Rohaly

ADVISORS David W Johnson

LOCATION, TIME RecPlex, 11:00AM-12:30PM

College of Arts and Sciences: Chemistry, Poster- Graduate Research

Jet fuel constitutes a very complex mixture of primarily hydrocarbons, with traces of nitrogen and oxygen compounds. Polar components are responsible for a significant fraction of the deposits formed when jet fuel is stored under high temperature conditions. Jet fuel constitutes a very complex mixture of primarily hydrocarbons, with traces of nitrogen and oxygen compounds. In order to understand the reactions that occur in jet fuel, the reactions of polar, nitrogen containing aromatic compounds (dimethyl aniline, ethyl aniline and diethyl aniline) were investigated in a jet fuel surrogate under conditions were a limited supply of oxygen was present. The rates and products of the reaction were determined using normal phase high performance liquid chromatography (isooctane/ispopropanol mobile phase) and gas chromatography-mass spectrometry. A surrogate fuel comprised of n-dodecane, diethyl benzene, methyl isopropyl benzene and diethyl cyclohexane was chosen to simulate the paraffinic, aromatic and naphthenic components typically found in fuels. It was found that the anilines react rapidly to give colored solutions and several oxidation products appeared in the HPLC chromatogram. The products of the reactions were isolated by collecting fractions from the HPLC column and evaporating the solvent. The products of the reactions were identified by nuclear magnetic resonance spectroscopy.

Design and Characterization of Photoresponsive Supramolecular Aggregates

STUDENTS Julie A Fitz

ADVISORS Angela Mammana

LOCATION, TIME RecPlex, 11:00AM-12:30PM

College of Arts and Sciences: Chemistry, Poster- Honors Thesis

A supramolecular assembly is a complex of molecules held together by noncovalent interactions. The process by which supramolecular assemblies are formed is called "molecular self-assembly", during which the molecules spontaneously aggregate in a specific manner, acquiring new properties. Incorporating photoisomerizable molecules into supramolecular assemblies offers considerable opportunities in developing new smart materials. Using UV-Vis and CD spectroscopy, we explored the propensity for a dicarboxylic acid derivatized azobenzene photoswitch (ADA) to form supramolecular aggregates and investigated the photochemical behavior of the system. ADA was shown to undergo cis-trans isomerization when irradiated in aqueous solution with visible and UV light. Upon reduction of the pH, the trans form of ADA aggregates in a chiral fashion. Homo-aggregation of the trans form of ADA was shown to prevent photoisomerization to the cis form. The feasibility of forming supramolecular heteroaggregates between ADA and other molecules, including water soluble porphyrins and poly (glutamic acid), was explored.

Enhanced Electrcatalytic Reduction of Oxygen at Electrodes Coated with a Multi-Metallic Co(II)/Pt(II) Porphyrin

STUDENTS David M Fresh
ADVISORS Shawn M Swavey
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Chemistry, Poster- Course Project, 13 FA CHM 498 09

Edge plane pyrolytic graphite electrodes coated with a Co(II)/Pt(II)2 analog of 5,15-bis-(4-pyridyl)-10,20-bis-(3-methoxy-4-hydroxyphenyl) porphyrin undergo an electrochemical-chemical-electrochemical reaction when anodically scanned in 1.0M sulfuric acid. The new redox couple from the anodic conditioning the electrode is dependent on the pH of the solution. Electrodes are then roughened with the Co(II)/Pt(II)2 multi-metallic porphyrin and show a catalytic shift of 400 mV for the reduction of molecular oxygen at a bare electrode. and additional catalytic shift of ca. 150 mV is observed for reduction of molecular oxygen at the electrode coated with the Co(II)/Pt(II)2 porphryin which has been oxidized in 1.0 M sulfuric acid. In addition to the electrocatalysis, a significant percent of molecular oxygen reduced at the oxidized Co(II)/Pt(II) electrode is converted to water as determined by rotating disk electrode measurements.

Investigating DNA Repair Processes in Bacteria: Can D. rad PriA load D. rad DnaB onto DNA forks with a leading strand gap?

STUDENTS Michael A Ryan
ADVISORS Matthew E Lopper
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Chemistry, Poster- Honors Thesis

My research focused on the repair and replication of damaged DNA in the Deinococcus radiodurans (D. rad) bacteria, which is able to survive extreme levels of DNA damage with no detriment to its health because it is very efficient at repairing damaged DNA. In replicating (copying) bacterial DNA, damaged DNA will cause the replication to stop. This requires the DNA replication to be restarted in order for replication to be completed and cell death avoided. In most bacteria the proteins that function to restart DNA replication at points of DNA damage are fairly well conserved from bacteria to bacteria; however the D.rad bacteria lacks many of those proteins. I investigated the interactions between the proteins in this pathway that D. rad bacteria has, resulting in a clearer understanding of how these proteins interact in the D. rad replication restart pathway.

Investigating Survival Strategies of a Radioresistant Bacterium: Deinococcus Radiodurans

STUDENTS Danielle M Gerbic
ADVISORS Matthew E Lopper
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Chemistry, Poster- Independent Research

DNA replication is a process that is vital to cell survival. When double stranded DNA goes through the replication process, it splits into two separate strands with the help of a helicase. When a cell in the process of replicating its DNA encounters DNA damage, the replication proteins fall off the DNA strand and DNA replication stops; in other instances cells can utilize the replication restart pathway. This pathway allows certain cells to overlook damaged DNA strands, reload replication proteins back on the replication strand, and proceed with replication. Deinococcus radiodurans is one organism that is able to utilize this pathway despite being exposed to high levels of radiation. It is believed that certain replication proteins including polymerases, primases, and helicases are used to help an organism use the replication restart pathway. DnaB is a replicative helicase that is responsible for unwinding the majority of the double stranded DNA on a chromosome, SSB prevents the separated DNA strands from reannealing, and PriA is the most important protein in the replication restart process because it is what initiates the process of reloading the proteins on the DNA strand. The goal of this project was to determine if the PriA protein is able to reload the DnaB helicase onto the DNA replication fork, specifically looking at whether DnaB was loaded with no leading strand gap on the DNA strand. Through transforming these D. Rad proteins into E coli cells, synthesizing and purifying these proteins, creating a DNA fork to unwind, and then performing helicase assays to test the unwinding capabilities of the DNA replication fork, we were able to test our hypothesis. Our results indicated that no DNA unwinding occurred on the DNA fork. This result can mean one of several things: incorrectly synthesized proteins or the DnaB helicase was not

able to be reloaded on the DNA fork.

Photoreactions of a Water-Soluble Poly-Isoquinolpyrrole and Plasmid DNA within the Photodynamic Therapy Window

STUDENTS Gregory H Versteeg
ADVISORS Shawn M Swavey
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Chemistry, Poster- Honors Thesis

Photodynamic Therapy (PDT) is a treatment method for a variety of ailments, including different cancers. It involves light activation of a molecule (photosensitizer) which then reacts with molecular oxygen to destroy tumor cells. Porphyrins are commonly used as photosensitizers due to their light absorption properties and their ability to concentrate in tumor cells but not healthy cells. Unfortunately, porphyrins suffer from poor excitation when irradiated with visible light in the photodynamic therapy window (600-800nm). The photodynamic window is optimal due to the depth of penetration the light reaches and the lack of absorption from naturally occurring compounds in the body. This project involves the synthesis and characterization of a new type of photosensitizer with the goal of creating new molecules that are activated by low energy light.

Synthesis and Characterization of a Tetra-Ruthenated Naphthylbiliverdin

STUDENTS Ashley M Berding
ADVISORS Shawn M Swavey
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Chemistry, Poster- Honors Thesis

A new naphtylbiliverdin compound has been synthesized which offers intenseabsorption within the photodynamic therapy window (600 nm – 850 nm). The compound has been characterized by proton NMR, high resolution electrospray mass spectrometry, elemental analysis, and UV/vis spectroscopy. Coordination of four ruthenium(II) polypyridyl complexes was accomplished by standard procedures. The new tetra-ruthenated naphthylbiliverdin was characterized by elemental analysis. Cyclic voltammetry measurements reveal that all four ruthenium moieties are coordinated to the pyridyl groups of the biliverdin compound. The intense metal to ligand charge transfer (MLCT) bands of the peripheral ruthenium groups overshadow the absorption due to the biliverdin compound; therefore, spectroelectrochemical studies were conducted to show that the low energy absorption of the naphthylbiliverdin compound is unaffected by coordination to the ruthenium groups. DNA photocleavage studies were performed by irradiating samples containing plasmid DNA and the ruthenated compound, filtering out high energy light. Gel electrophoresis studies indicate that the compound is capable of photonicking the plasmid DNA when irradiated with light.

Synthesis and Characterization of Three Unique Mono-Metallic Lanthanide Complexes

STUDENTS Jasminder Grewal
ADVISORS Shawn M Swavey
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Chemistry, Poster- Honors Thesis

Three unique lanthanide complexes of formula Ln(tdh)3dpp (where Ln = Eu3+, Tb3+or Nd3+; tdh = 1,1,1-trifluoro-5,5-dimethyl-2,4-hexanedione and dpp = 2,3-Bis(2-pyridyl)pyrazine) where structurally characterized. X-ray quality crystals were grown through slow evaporation in a solution of concentrated ethyl acetate and hexanes. Each of the metals are eight coordinate, where 6 oxygen atoms from the tdh ligand and two nitrogen atoms from the dpp. Specifically, the nitrogen from 1-pyridyl group and the 1-pyrazine group coordinate to the lanthanide metal. Luminescent studies were done on all three compounds but these studies show that Nd complex goes through non-radiative relaxation through solvent vibration. Eu and Tb complexes were able to emit light in the visible region of the spectrum when the solutions are excited at 288 nm, which causes the π-π^* transition to occur in the tdh ligand. Emission lines corresponding to transitions from the 5D0 and 5D4 state to the 7FJ manifold of the Eu(III) and Tb(III), respectively, are observed. The intensity of these emissions increases as the temperature is decreased.

A Di-Ruthenated Porphyrin Capable of Plasmid DNA Photocleavage within the Photodynamic Therapy Window

STUDENTS Dale F Wilson
ADVISORS Shawn M Swavey

LOCATION, TIME Kennedy Union 311, 3:00PM-3:20PM

College of Arts and Sciences: Chemistry, Oral Presentation- Graduate Research

A novel di-runthenated porphyrin has been synthesized that is capable of photocleaving plasmid DNA within the photodynamic therapy window of 600-800nm. The desired porphyrin was synthesized through reaction of 4-pyridine carboxaldehyde, 4-trifuorlomethyl benzaldehyde and pyrrole under reflux in propionic acid and isolated through column chromatography using methylene chloride/methanol as the eluent. Co-ordination of cis-Ru(bipy)2Cl2 moieties was achieved through reflux under nitrogen in glacial acetic acid to give the bis-Ru(bipy)2Cl]2[5,15-(4-pyridyl)-10,20-(p-trifluoromethylphenyl)-porphyrin. UV-Vis spectra of the porphyrin and its ruthenated analog revealed an intense Soret band at 410 nm and Q-bands at 500 and 650nm. Cyclic voltammetry was used to determine the oxidative and reductive characteristics of the porphyrin and its ruthenated analog. DNA titrations using buffered solutions of the ruthenated porphyrin and calf thymus DNA were performed spectrophotometrically. The binding constant of the ruthenated porphyrin was determined to be 1.3 x 106 M-1. The ability of the ruthenated porphyrin to photocleave DNA was evaluated by irradiating aqueous samples of plasmid DNA and the complex at a ratio of 5 base pairs to 1 complex using a mercury arc lamp with a 500nm filter. Use of the 500nm filter allowed for observation of the photodynamic therapy window of 600-800nm. Samples were taken at 5 minute intervals and compared using gel electrophoresis to confirm the formation of the photocleaved nicked form of the plasmid DNA.

Analyzing Circuit Court Rulings in Shield Law Cases

STUDENTS Andy J Kurzhals, Concetta M Reda

ADVISORS Annette M Taylor

LOCATION, TIME RecPlex, 9:00AM-10:30AM

College of Arts and Sciences: Communication, Poster- Course Project, 14 SP CMM 432 01

Journalists in most states are permitted under state law to protect the identities of their confidential sources. Those seeking the identities include defendants in criminal cases, prosecutors, and plaintiffs and respondents in various civil actions. Journalists usually decline to reveal their confidential sources so as not to become "an arm of the law" or an advocate for any cause or party. They also often want to shield people who genuinely have something serious to fear if their identities became known. Even so, some courts in some cases have defied shield laws and ordered journalists to reveal their sources under penalty of jail and fines. These papers analyze how various courts have interpreted state shield laws and determined who is a journalist with statutory protection. One major challenge is that anyone now can "publish" via the Internet. These papers compare rulings in different jurisdictions, and make recommendations.

Analyzing Shield Law Cases in the Midwest

STUDENTS Megan Elizabeth Nelson, Thomas M Stankard

ADVISORS Annette M Taylor

LOCATION, TIME RecPlex, 9:00AM-10:30AM

College of Arts and Sciences: Communication, Poster- Course Project, 14 SP CMM 432 01

Most states have enacted shield laws that allow journalists to protect the identities of confidential sources. The federal government has considered a federal shield law several times over the years but has yet to enact such legislation. These papers analyze how state courts determine who is and who is not a journalist under states' shield laws. Also considered is whether the press can legally refuse to identify anonymous commentators on news organizations' websites.

Analyzing the Actual Malice Standard in New York and Virginia Defamation Cases

STUDENTS Abraham Keller, Nathan R Vicar

ADVISORS Annette M Taylor

LOCATION, TIME RecPlex, 9:00AM-10:30AM

College of Arts and Sciences: Communication, Poster- Course Project, 14 SP CMM 432 01

Public figures suing the press for defamation must show that the journalist acted with knowledge that the material was false or recklessly disregarded evidence of the truth. This is what is known as actual malice. These papers analyze the actual malice standard as applied in defamation cases against the press in New York and Virginia state courts. Also considered are the circumstances under which actual malice would be required in a defamation case brought against a blogger.

Analyzing the Elements of Libel in Cases against the Press

STUDENTS Averie R Bornhorst, Katherine E Christoff, James-Andrew G Wade
ADVISORS Annette M Taylor
LOCATION, TIME RecPlex, 9:00AM-10:30AM
College of Arts and Sciences: Communication, Poster- Course Project, 14 SP CMM 432 01

People suing the press for defamation must show that the journalist was somehow at fault. Public figures must prove actual malice, which means that the press acted with knowledge of falsity or reckless disregard for the truth. Private persons must show that the press was negligent. Among the press' defenses are that the material was true or matters of opinion. Opinion-filled exchanges, often heated and exaggerated, have long been part of political and social discourse in the U.S. Two papers analyze how courts determine who is and who is not a public figure. Another paper looks at satire and hyperbole, types of commentary that are shielded from lawsuits for defamation.

Press Access to Information regarding National Security and Law Enforcement

STUDENTS Kayleigh C Fladung, Caroline Parks, Michael J Roche
ADVISORS Annette M Taylor
LOCATION, TIME RecPlex, 9:00AM-10:30AM
College of Arts and Sciences: Communication, Poster- Course Project, 14 SP CMM 432 01

Without access to information, the press cannot do its job serving the public. Although the First Amendment says that "no law" should abridge freedom of the press, government and institutions find ways to keep secret various matters of legitimate public concern. One paper explores how federal courts have interpreted the "national security" exception to the Freedom of Information Act. Another paper analyzes state open records laws and whether they apply to private universities' police forces. Another paper looks at sealed documents, and how journalists can legally challenge those orders and get access.

Stochastic Analysis of Data Replication and Consistency in Cache Networks

STUDENTS Chi Wang
ADVISORS Zhongmei Yao
LOCATION, TIME Kennedy Union 207, 4:00PM-4:20PM
College of Arts and Sciences: Computer Science, Oral Presentation- Course Project, 13 FA CPS 470 01

Data replication onto edge servers or routers (i.e., caches) has beenwidely used in networks (such as the Web, Domain Name Systems, and ContentDistribution Networks) to improve performance. By storing replicas ofcontents locally, caches not only decrease access delays to the source ofcontents but also reduce bandwidth requirements at the source. While thereexist numerous studies on the performance of a stand-alone cache underdifferent caching replacement strategies (e.g., Least-Recently-Used,First-In-First-Out, and Time-To-Live), little has been done to understanddata staleness and the hit rate in cache networks where contents arefrequently updated by sources (i.e., data churn). In this project, weintroduce a generic stochastic model that analyzes the impact of data churnon the performance of cache networks under classic replacement policies.Using this analysis, we also offer practical guidelines for balancingvarious tradeoffs and selecting system parameters.

Mission of Mary Farms and the Dayton Food Desert a Project of the Social Justice Service Learning Club

STUDENTS James A Brewer, Brian J Morman, Joseph Gennaro Palumbo
ADVISORS Lori G Phillips-Young, Margaret M Strain
LOCATION, TIME RecPlex, 9:00AM-10:30AM
College of Arts and Sciences: English, Poster- Independent Research

The Mission of Mary Farms (MoMF) is a non-profit organization that utilizes vacant lots in urban areas to grow organic foods to distribute to the surrounding neighborhoods that have been classified as a vegetable or food desert. A food desert is where there is a produce shortage. In the surrounding Dayton low income neighborhoods there is a severe shortage of healthy fruits and vegetables; and, prices are high at small neighborhood convenience stores Without MoMF the diets of the families these farms serve would lack variety and vital sustenance. These farms also serve to educate children in the area about the origins of organic fruit and vegetables. Our involvement included working most Friday afternoons throughout the semester building raised manure beds to grow the vegetation. We also were in charge of the up-keep of the beds

so that they will be ready for the harvest in the spring. We intend to continue this work, pursue leadership training and introduce others to the farm in the coming year. We learned the valuable skills involved with growing a garden, educating children and adults about proper nutrition and the benefits of gardening; and, we were able to help a Dayton neighborhood by providing healthy food options. We experienced first-hand the Marianist principles to learn, lead, and serve in our service learning experience.

Social Justice Club – Miracle Makers

STUDENTS Kathleen Rose Garcia, Jenna E Gerstle, Elizabeth Eiga Grandi, Laura C Komoroski, Emma C Pickerill, Samantha L Santoro
ADVISORS Lori G Phillips-Young, Margaret M Strain
LOCATION, TIME RecPlex, 9:00AM-10:30AM
College of Arts and Sciences: English, Poster- Independent Research

As members of the Social Justice Service Club our mission is to support the Building Communities through Social Justice Learning and Living Cohort (BCSJLLC)in order to advance the mission of literacy throughout the Greater Miami Valley Region. We are also charged with fulfilling a voluntary service learning commitment for our organization. This year we worked with the "Miracle Makers." This is an after-school program at the Ruskin Elementary School, one of the participants in the UD-Community School Partnership Program. Our service consisted of mentoring students, assisting them with their homework, and engaging them in group and one-on-one recreational activities. As a service club, we were able to complete 150 hours of service learning. Our presentation will focus on our service work and how it demonstrates and reinforces our commitment to the Marianist ideals of lead, learn, and serve.

Social Justice Living and Learning Community project

STUDENTS Mary M Cook, Pamela R Malone, Kelsey L Radabaugh
ADVISORS Lori G Phillips-Young, Margaret M Strain
LOCATION, TIME RecPlex, 9:00AM-10:30AM
College of Arts and Sciences: English, Poster- Independent Research

Through our Social Justice Living and Learning Community project, we were given the opportunity to feed numerous families across the Dayton area. We worked with Foodbank Inc. to help sort and repackage donated food to give to families in need. Foodbank Inc. is a company dedicated to alleviating hunger in the community by collecting and distributing food to local pantries, kitchens, and shelters for families of the Miami Valley region. The Foodbank provides food for approximately 70,000 different people annually. Through this service project, we were able to witness the widespread and detrimental effects of hunger. We were able to learn more about the Marianist values of lead, learn, and serve through our work with Foodbank Inc. Our work with this organization showed us how widespread the problem of hunger is in the Dayton area. For instance, among households with children, 88% are food insecure and 41% are food insecure with very low food security. Knowing these people are part of our community, we are called to lend a loving hand.

suporting a thrift shop

STUDENTS Travis J Bills, David M Bowen, Ryan T Bricker, Nicholas C Dirienzo, Christian J Melson
ADVISORS Lori G Phillips-Young
LOCATION, TIME RecPlex, 9:00AM-10:30AM
College of Arts and Sciences: English, Poster- Independent Research

The Good Shepard Ministries is a Miami Valley organization that assists in the recovery of former drug addicts and their successful re-entry into society. The ministry is funded by community donations of gently-used items and food. As members of the Social Justice Service Club, our service project is organizing a UD community donation drive to assist this ministry. Our plan is to set up donation bins in the Kettering Union, the RecPlex, and the freshman and sophomore dorms. Donated items will be collected and sorted through on a weekly basis and then transported to The Good Shepard Ministries for distribution or resale. Suggested donations include gently-used clothes, electronics, furniture, and food. Our strategic marketing plan includes: creating flyers that identify our club mission and goals; the donation mission and goals; identifying the donation drop-off points; and, informing the community of the types of donations we are seeking. We are recruiting UD Resident Coordinators and Resident Assistants to make sure that UD residents are aware of the ministry's program and our campaign. We plan on creating a Facebook page and a Twitter account to maximize the social media for our group cause and to widen our donation base. Strategically, the best time for donations and collections is when students leave the UD campus for summer break. That is when our work will begin. Our goal is multi-faceted:

we want to raise awareness of the mission of The Good Shepard Ministries; we want to promote social justice for the former addicts not only on the UD campus but throughout the Greater Miami Valley Region; and, to attract potential Social Justice Club members. We designed this service project to reflect the Marianist ideals of lead, learn, and serve.

A Hero's Journey: Aegean's Destiny

STUDENTS Olivia J Ullery
ADVISORS Laura J Vorachek
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: English, Poster- Honors Thesis

A young woman named Aegean is summoned by the Oracle of her village to go on a journey to defeat an evil civilization at the center of the Three Villages. Though Aegean is independent, strong-willed, and assertive, she does not know her way. With the accompaniment of Maeve, a woman warrior, and Fumito, a cloistered sage, Aegean has a model of femininity and a model of masculinity to guide her in creating her own identity. They face perils on their quest, such as deadly creatures, private struggles – even death. Yet, while they travel they learn about the history of the ancient evil that resides in the Center and the battle that awaits them at the end of their hero's journey.

Quasi-Plagiarism vs. Human Universality in the Dystopian Genre

STUDENTS Taylor V Kingston
ADVISORS John P McCombe
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: English, Poster- Honors Thesis

Dystopian literature characteristically addresses the plight of the "everyman" as he copes with the oppression imposed by a totalitarian regime. Touchstone writers of the genre known for novels including Nineteen Eighty-Four, Brave New World and Anthem have, however, been scrutinized for creating uncannily similar plots. While scholars have linked the writers' ideas back to a Russian predecessor, the novel We, this research explores how a charge of quasi-plagiarism is a shallow explanation. The great question being explored in any dystopian novel is whether government can save mankind from itself by eradicating individual will. The commonalities among that individual will dictate the appearance of a world without it. It is because of human universals such as love, family and a desire for knowledge that these dystopian novels focus on the prevention of love through the regulation of sex, communal rearing of children, and thought-level censorship of ideas.

The Disney Evolution: Princesses as Positive Role Models for Girls

STUDENTS Alexandria Lueke
ADVISORS Laura J Vorachek
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: English, Poster- Honors Thesis

The Disney Princess films are some of the most popular in the world as they have been translated into several different languages with a fan base sprawling across the globe. The Disney Entertainment Corporation has strategically reached families worldwide and, as a result, have had an impact on children in most countries. Because of their iconic popularity, these works have been discussed and analyzed in great detail by many scholars. Many have criticized the films for their seemingly sexist and oppressive gender messages and find fault in having the princesses serve as role models for young girls; they argue the negative characteristics and ideas that are presented in the popular Disney Films. They see these works as roadblocks to gender equality and advocate for awareness of their stance. However, when one closely examines the films and compares the characteristics of the princesses to the progressive female of their time, one may clearly see the positive messages. The interactions between the female protagonists and the animals in the stories showcase the princesses' positive characteristics present and highlight the ways in which these individuals may be seen as reputable women who set a worthy example for young girls. In fact, one may argue that these women are model citizens of their respective periods who gradually advocate for equality, while they promote healthy, functional relationships, and pursue happiness.

Tissi

STUDENTS Anna L Demmitt
ADVISORS Stephen W Wilhoit

LOCATION, TIME RecPlex, 11:00AM-12:30PM

College of Arts and Sciences: English, Poster- Honors Thesis

My thesis is a collection of short stories. The stories depict the lives of four children living in South Sudan trying to survive the genocide. One young girl has been brutally raped. A young boy is taking on the responsibility of raising his younger siblings. The third story shows a young boy who has been kidnapped and forced to be a child soldier. The fourth story is a story of hope. These stories are designed to show the chaos of genocide, and the difference that even a little assistance could make to the lives of the people in South Sudan.

Airships, Automatons, and Amazing Things: An Examination of the Hero's Journey through Prose Fiction

STUDENTS Ryan M Krisby

ADVISORS Joseph R Pici

LOCATION, TIME Kennedy Union 207, 1:00PM-1:40PM

College of Arts and Sciences: English, Oral Presentation- Honors Thesis

That cretin of a head librarian Geoffrey made a huge mistake humiliating Darren in front of the entire staff. Darren's only fifteen, but he got his hands on some magic. He just wishes the magic came with a few disclaimers:1. May spontaneously ignite gaslights2. Ensure all nearby friends are properly secured3. Possession by a powerful demon will occur, handle with careThe demon is a particular problem, especially when Darren's plan for revenge backfires and he loses control over his magic, landing one of the other apprentices in the infirmary. Unless Darren finds a way to tame the demon, it'll slowly consume him from the inside out. Having the demon inside him also makes Darren one of the most powerful magicians in Balnibarbi. And according to the laws of magic, anyone who wants the demon's power just has to carve up Darren's heart.Crossing paths with a power-hungry magician spells even more trouble for Darren and he learns magicians will burn and kill everything in their path to get what they want.And what this magician wants is Darren's magic.THE SEAL OF SOLOMON is a YA fantasy with steampunk elements that explore's Joseph Campbell's Hero's Journey.

Developing Social Consciousness through Multicultural Young Adult Literature

STUDENTS Megan R Abbate

ADVISORS Thomas L Morgan

LOCATION, TIME Kennedy Union 207, 2:00PM-2:20PM

College of Arts and Sciences: English, Oral Presentation- Honors Thesis

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, specifically these three texts, in the classroom, despite the presence of controversial themes. This research will demonstrate the value of these texts due to their potential 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.

Centering the Right: Mapping Focus on the Family's Queer Discourse

STUDENTS Stephen Brown

ADVISORS Susan L Trollinger

LOCATION, TIME Kennedy Union 207, 2:30PM-2:50PM

College of Arts and Sciences: English, Oral Presentation- Honors Thesis

Religious Right organizations like Focus on the Family have been known for their vitriolic discourse when it comes to the Lesbian, Gay, Bisexual, and Transgender (LGBT) community. The ways in which they have discussed gay rights have characterized the LGBT community as especially sinful and a threat to American society. Specifically targeting Focus on the Family, this paper looks at rhetorical strategies they have used when discussing gay rights. The paper identifies a significant shift in their discursive practices such that recently the LGBT community is portrayed in a more sympathetic light, though still as problematic. The purpose of this paper is to map the rhetorical moves that Focus on the Family has employed over the years in order to better understand the Religious Right's rhetorical strategies regarding the LGBT community.

Bringing Our Rivers to the Community: The RiverMobile

STUDENTS Alexander M. Galluzzo
ADVISORS Leslie W King
LOCATION, TIME C lot, 9:00AM-3:00PM
College of Arts and Sciences: Fitz Center for Leadership in Community, Interactive Display- Independent Research

The University of Dayton's Rivers Institute now shares its excitement of our rivers with the help of a 53-foot tractor trailer called the RiverMobile. This mobile learning studio will travel to schools and communities throughout the Greater Miami River Watershed. The RiverMobile houses five spaces, called classrooms, that will be used to facilitate experiential education. Although the curriculum will be geared towards students in grades sixth through eighth, it is relevant to learners of all ages. River Stewards will be leading tours through the RiverMobile at this year's Standard Symposium. River Stewards will also be able to describe the student-centered development of our educational outreach programs and continued work on this and many other projects. See the Rivers Institute's website for more information: http://rivers.udayton.edu/Rivermobile.html

Design | Science | Synthesis : Ohio's Glacial History

STUDENTS Samuel J Bidwell, Lori E Claricoates, Emily Ann Downey, Lauryn M London
ADVISORS Jennifer Biette, John V Clarke
LOCATION, TIME Science Center 114 - Auditorium, 1:00PM-2:00PM
College of Arts and Sciences: Fitz Center for Leadership in Community, Oral Presentation- Course Project, 14 SP VAD 490 P1

The four students of Design | Science | Synthesis will discuss their approach to a project initiated in the Spring term of 2012: the strategy, planning, and conceptual design of a Geology Mini-Museum, to be installed in the lower level hallways of the Science Center. These four students from Visual Communication Design will present a design concept for a portion of the proposed Mini-Museum, an exhibit of Ohio's Glacial History. The work of previous Design | Science | Synthesis student, addressing the Ordovician Period and overall museum structure, will also be referenced.

The Art of Gardening: Dayton Civic Scholar 2014 Cohort Capstone Project

STUDENTS Alyssa J Bovell, Kristen M Deane, Nia J Holt, Laura K Huber, Sarah A Kerns, Joanne C Koehler, Shannon M Lees, Adrianne C Lewis, Justin T Parker, Jacob D Rettig, Margret F Reuter, Laila T Sabagh, Paige K Singleton, Tessa J Terrell, Jessica L Yeager
ADVISORS Richard T Ferguson, Donald A Vermillion
LOCATION, TIME Kennedy Union 312, 4:00PM-4:20PM
College of Arts and Sciences: Fitz Center for Leadership in Community, Oral Presentation- Capstone Project

The Dayton Civic Scholar 2014 Cohort will present on its senior capstone project, The Art of Gardening, as well as the process that led to the creation of the after-school enrichment program at Cleveland PreK-6. Presentation details include the history of the project development, barriers and challenges to implementation, campus and community assets, implementation of the project, and implications and results.

A look at Ohio's past: a focus on Ordovician and Silurian Period fossils found in the Dayton area

STUDENTS Katherine A Burkman, Danielle A Moon, Ashley J Pantona Price
ADVISORS Michael R Sandy
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Geology, Poster- Independent Research

Ohio has a rich geologic history involving the Paleozoic era, specifically the Ordovician and Silurian periods of time for the southwestern part of the state. Ohio was once covered with tropical seas, the evidence for which are the marine fossils found in the limestones, dolomites, and shale rocks in the area. This research project involves a comparison of fossils and geological history of Clifton Gorge, Germantown MetroPark and other parks in the Dayton area. This project also includes a guide for educators on how to engage students through the connection of real world experiences at the high school level using the Ohio Model Curricula (Next Generation Science Standards) and local geology.

Glacial Ice Velocity Determination and Correlation from Different Mountain Ranges Using ASTER Imagery

STUDENTS Mark S Pleasants
ADVISORS Umesh K Haritashya
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Geology, Poster- Honors Thesis

Mountain glaciers make good indicators of even slight changes in climatic conditions because of their sensitivity to temperature and other environmental changes. Due to the inaccessibility of most mountain glaciers, field based measurements of glacier dynamics, especially ice velocities, has proved to be difficult and unrealistic. Because of this, evaluation of satellite imagery has become useful in the determination of glacial ice velocities and production of ice flow models. The calculation and comparison of ice velocities from three glaciated regions is presented here. This study was completed to establish the accuracy and global applicability of the method of precise orthorectification, co-registration, and correlation using the software Cosi-Corr and in-house filtering techniques. We chose glaciers from different mountain ranges that present different dynamics to establish a specific ice velocity method.

Population variation in fossil graptolites: a quantitative study based on single species assemblages

STUDENTS Elliott M Mazur
ADVISORS Daniel Goldman
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Geology, Poster- Honors Thesis

There are several different types of variation in populations of fossil organisms. These include intra-specific (population) variation, evolutionary variation (specimens on a slab accumulating over thousands of years), and preservational variation. An understanding of the extent and type of variation present in a population is fundamental to biological and paleontological studies. This study examines several populations of fossil graptolites from which population variation can be studied without the influence of the other types, and includes several types of morphometric analyses to examine population variation in several species of fossil graptolites. These analyses include isolating three dimensionally preserved specimens from limestone, and then photographing, digitizing, and measuring the specimens. Statistical measures such as standard deviation, coefficient of variance, modal distribution, and an index of dispersion (a similar test to the coefficient of variance, specifically meant for measuring count-based data sets as opposed to continuous data sets) will be used. We expect to gain an understanding of the range of biological variation in a number of morphologic characters in these taxa.

The Impact of Geography on Rural Poverty: A GIS Case Study on Kenya and Uganda

STUDENTS Alysa Birdsall
ADVISORS Shuang-Ye Wu
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Geology, Poster- Capstone Project

Global poverty as a current crisis often has its roots in geographic factors. This study aims to investigate the potential impact of geographic factors on rural poverty in two cases in Kenya and Uganda. In both cases, poverty rate is the dependent variable which is specified for a rural region within these two countries. The poverty gap, poverty density and rate of inequality are also considered as components affecting the poverty rate. The geographic features which are considered in this study include topography, land cover and land use, elevation and slope, climate, and proximity to roads and water resources. GIS methods are used to analyze the spatial relationships between these factors and poverty rate. A variety of GIS methods are applied in this study, including spatial joins, select by attributes, distance calculations, hydrology, reclassify, cost path and surface analysis. This comparative study of these two countries will examine whether uniform geographic factors impact poverty in different ways in globally similar regions in Africa. The results will also provide insight into the effectiveness of each State's initiatives to overcome the geographic obstacles that lead to poverty in its rural areas.

A GIS Approach to Flood Risk Assessment: a case study of Lawrence County, Ohio.

STUDENTS Anthony T Whaley

ADVISORS Shuang-Ye Wu

LOCATION, TIME ArtStreet Studio B, 3:00PM-3:20PM

College of Arts and Sciences: Geology, Oral Presentation- Capstone Project

This study evaluates the level of risk that different minority groups experience during riverine flood events within Lawrence County, Ohio. Lawrence County is the southernmost county in Ohio situated along the Ohio River at the tri-state of Ohio, Kentucky and West Virginia. In 2012, the poverty rate was 18.9%, which is nearly twice as much as the State of Ohio average. Additionally, Lawrence County has experienced six flood related natural disasters since 1990. A GIS-based approach was used to determine both the physical hazard of riverine floods and the social vulnerability of the residents within the county. First, hazardous areas were identified based on the physical intensity of the riverine flooding. Then, the social and economic vulnerabilities of the county were assessed using factors such as age, gender, race, literacy rate, income level, and non-car ownership using FEMA's Hazus-MH 2.1 software and ArcGIS for Desktop 10.0. Finally, the physical hazard and social vulnerabilities were overlayed in order to determine the proximity of the most vulnerable residents to the areas that will be most affected by riverine flooding.

Creationism, Interpretation, and the Battle for Ownership of an Inerrant Bible

STUDENTS Jason A Hentschel

ADVISORS William V Trollinger

LOCATION, TIME ArtStreet Studio C, 1:00PM-1:20PM

College of Arts and Sciences: History, Oral Presentation- Graduate Research

Have you ever been to the Creation Museum in Cincinnati? Did you know that Bill Nye ("The Science Guy") debated Ken Ham, the brain behind the museum, and lost? Have you ever wondered if Genesis 1 and evolution are compatible? Or, are you just bewildered by the fact that people fight over this stuff? In this talk, we'll discuss what seem to be the underlying reasons for why the creationism vs. evolution debate didn't die in 1925 when Christian fundamentalists won the battle over evolution, only to lose the war for America's soul. Specifically, we'll try to understand how Christians who claim that the Bible is not only true but also clear can disagree so vehemently about what that true and clear Bible actually means.

Food and Drug, Health and Beauty of the Middle Ages

STUDENTS Paul Kane, Katelyn Rendulic

ADVISORS Bobbi Sutherland

LOCATION, TIME Kennedy Union 211, 1:00PM-1:40PM

College of Arts and Sciences: History, Oral Presentation- Course Project, 14 SP HST 486 P1

Beauty, health, drugs, and food were all linked in the pre-Modern world, as they are today. These papers examine the overlap of these concepts and their place in medieval life. Paul Kane's paper looks at the role of substances - from what we now think of as food (coffee) to what we now think of as drugs (hashish) - served to create community in medieval and early modern Europe and the Middle East. Katelyn Rendulic's paper considers the relationship of health and beauty in women's medical texts, the role of cosmetics in "health", and how this relates to gender.

Topics in Modern African History

STUDENTS Julius A Amin, Ashley M Berding, Joseph F Byrne, Tony T Cusella, Anna Mary Kinnen, David W Lumsden, Kevin T Mccracken, Cristina M Perez-Cerda, Stephanie D Rodriguez, Brittanie M Rooths, Mary Kate Stanton, Lauren E Stemley, Alexandra M VanLoon

ADVISORS Julius A Amin

LOCATION, TIME Kennedy Union West Ballroom, 1:00PM-3:00PM

College of Arts and Sciences: History, Oral Presentation- Course Project, 14 SP HST 337 01

This session addresses significant issues which have shaped Africa's contemporary experience. Topics range from child labor, genocide, World Bank development, Boko Haram, human rights, to leadership challenges. The session is informative, and contributes to an understanding of Africa's political, economic, and social affairs.

History through the Lens of Entertainment: A Podcast

STUDENTS Justin S Abbarno, Meghan Tassie Blank, Danielle M Dicristofano, Kathryn G Fasoli, James E Foster, Melissa E Fox, Jacob R Glaser, Jessica L Grilliot, Caleb Andrew Holtzmann, Nikole S Kamp, Paige M Koenig, Kyle A Lach, Jenna P Ladner, William J Lawrence, Zi

ADVISORS Bobbi Sutherland

LOCATION, TIME Kennedy Union Lobby - listening station, 1:00PM-5:00PM

College of Arts and Sciences: History, Listening Station- Course Project, 14 SP HST 103 H1

Based on a jointly written book for HST 103-H1, this series of podcasts explores history through the lens of entertainment. The individual titles are below:The Mesoamerican Ball Game: Nick RacchiBurial and Feasts in Ancient Egypt - Jacob GlaserThe Ancient Greek Olympics - Erin PeifferGladiators - Emily StrobachNorth American Indian Sports and Games - Leland MerlingThe Vikings and Entertainment: Games of War - James FosterEntertainment History of the Yuan Dynasty (AD 1271-1368) - Zixi LiTournaments and Social Separation in the Middle Ages - Jessica GrilliotSunday Funnies: An Investigation of the Effects of Political Cartoons on the Political Atmosphere of 18th and 19th-Century Europe and the United States - William LawrenceThe Use of Food as a Source of Entertainment - Emma Zack19th-Century Artistic Movements - Katie FasoliHow Hunting Changed Africa - Jenna LadnerAsian Dance Throughout the Ages - Allie O'BrienThe Effect the Gaelic Athletic Association Had on the 1916 Rebellion - Melissa FoxWomen's Movements of the 20th Century - Sarah RenfrowThe Rise of the Film Industry - Paige KoenigBaseball - The American Pastime - Maggie YocumThe Evolution of Football - Meghan BlankWomen in Hollywood - Nikole KampWoodstock: Conquering the Culture Wars - Danielle DicristofanoThe Evolution of Surfing and Its Impact on Australian Society - Justin AbbarnoThe Rise in Popularity of Manga in the United States - Kyle LachSoccer Across the Atlantic - Caleb Holtzmann

Infallibility in Context: Bishop John Purcell's 1837 Americanist Defense of Infallibility in His Debate with Alexander Campbell

STUDENTS Herbert D Miller

ADVISORS William V Trollinger

LOCATION, TIME ArtStreet Studio C, 1:30PM-1:50PM

College of Arts and Sciences: History, Oral Presentation- Graduate Research

In January 1837, Cincinnati's Catholic Bishop John Purcell hosted the self-proclaimed Protestant reformer Alexander Campbell for a weeklong debate on the topic of Roman Catholicism. Public debates were not uncommon and this one showcased two of the Midwest's leading religious figures. In the context of a broadly anti-Catholic society, this event was an opportunity for each man to either vindicate or vilify Roman Catholicism. Campbell appealed to the Protestants in the audience by making repeated attacks on the Catholic Church's claim to infallibility, an attribute he would say makes the Church anti-American. An infallible Church, Campbell argued, is one incapable of reform, and a Church that can't reform is one that threatens the "genius of all free institutions." Purcell responded to Campbell's attacks not by distancing himself from the doctrine, but by enthusiastically embracing it—albeit in a redefined and Americanized form. Purcell used the doctrine of infallibility as one of the central justifications for the Catholic Church's theological superiority over Protestants and political harmony with the American republic. This paper will introduce hearers to the social context of anti-Catholicism in the antebellum period, and it will present Purcell's general argument that infallibility was an asset, rather than a liability, for American Catholics.

Written Together: The Story of a Class Project

STUDENTS Justin S Abbarno, Kathryn G Fasoli, Caleb Andrew Holtzmann, William J Lawrence, Zixi Li, Sarah M Renfrow, Bobbi Sutherland

ADVISORS Bobbi Sutherland

LOCATION, TIME Kennedy Union 211, 1:50PM-2:20PM

College of Arts and Sciences: History, Panel Discussion- Course Project, 14 SP HST 103 H1

The students of HST 103 H1 wrote a book as their final project, with each student writing one chapter. Abbreviated versions of these chapters can be heard as podcasts in the listening station. The students brought together here will discuss their experience with this project: the process, the challenges, the rewards, how the experience differed from a traditional paper, and so forth. After brief presentations, the floor will be opened for moderated discussion.

American Studies Panel: An Exploration of American Culture and Hegemony

STUDENTS Josh M Chamberlain, Megan M Garrison, Cathryn L O'Connell

ADVISORS James T Uhlman

LOCATION, TIME Kennedy Union 222, 2:30PM-3:30PM

College of Arts and Sciences: History, Panel Discussion- Capstone Project

Explore the development of American culture in this panel discussion with three American Studies majors. Drawing from the capstone projects

of these three students, this discussion delves into topics ranging from John Mayer's pursuit of authenticity through racial performance and the influence of music on identity politics, culture surrounding ghosts and their role in the creation of hegemonic nostalgia, and how dystopian films resolve the tension between our love for technology and our fear of its potential to control us.

Religion and Community in the Middle Ages

STUDENTS Shaughn D Phillips, Nicole E Price, Kevin Walsh
ADVISORS Bobbi Sutherland
LOCATION, TIME Kennedy Union 211, 2:30PM-3:30PM
College of Arts and Sciences: History, Oral Presentation- Course Project, 14 SP HST 486 P1

Religion is often at the heart of medieval identity. These three papers explore the way that religion both directly and indirectly shapes community. Kevin Walsh will examine the difference between the Christian crusaders and the Islamic communities they encountered. Nicole Price will study the nature of Jewish identity within the largely Christian Western Europe. Shaughn Phillips will examine the develop of lay devotion within Western Europe.

Medieval Ideas and Structures

STUDENTS Jessica L Barth, David W Lumsden, Allyson Morey
ADVISORS Bobbi Sutherland
LOCATION, TIME Kennedy Union 211, 3:30PM-4:30PM
College of Arts and Sciences: History, Oral Presentation- Course Project, 14 SP HST 486 P1

The Middle Ages was a period of new ideas that have inspired generations of people, even into the 21st century. Often these ideas gave rise to new structures and institutions - some of which last to this day. Jessica Barth's paper will examine the sources of George R.R. Martin's inspiration. Ally Morey will look at the phenomenon of courtly love. David Lumsden will consider the role of law and politics in medieval Britain in the shift from feudalism to early nationalism.

Valuation of Options Using a Sinc Collocation Methods

STUDENTS Elhusain S Saad
ADVISORS Muhammad Usman
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Mathematics, Poster- Independent Research

In this work we use a Sinc-Collocation method for the valuation of the European options. We use the famous Black-Scholes partial differential equation model of option valuation. We expand the function and its spatial derivatives using a cardinal expansion of Sinc functions. For time derivative we apply the finite difference method. Solutions are compared with the exact solutions.

Truncation Error for a Finite Difference Scheme for the Black-Scholes Model

STUDENTS Lawrence M Kondowe
ADVISORS Muhammad Usman
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Mathematics, Poster- Independent Research

Finite difference methods are simplest and oldest methods among all the numerical techniques to approximate the solution of partial differential equations (PDEs). The derivatives in the partial differential equation are approximated by finite difference formulas. The error between the numerical solution and the exact solution is determined by the error between a differential operator to a difference operator. This error is called the discretization error or truncation error. The term truncation error reflects the fact that a finite part of a Taylor series is used in the approximation. In this work we will analyze the truncation error for a finite difference scheme for the Black Scholes PDE for the valuation of an option.

Weak Domains and the Weakly Way Below Topology

STUDENTS Matthew D Devilbiss
ADVISORS Lynne C Yengulalp
LOCATION, TIME RecPlex, 11:00AM-12:30PM

College of Arts and Sciences: Mathematics, Poster- Independent Research

Weak domains are similar in definition to the domains commonly studied in domain theory (i.e. continuous directed complete partially ordered sets). We study spaces that are weak domain representable. We also study the weakly way below topology on weak domain representable spaces, generated from weakly way above sets in the weak domain.

Integration Bee Lunch, Department of Mathematics

ADVISORS Arthur H Busch

LOCATION, TIME Science Center Atrium, 12:00PM-1:00PM

College of Arts and Sciences: Mathematics, Lunch- Independent Research

The Department of Mathematics will host a pizza lunch in the Science Center Atrium prior to the Integration Bee.

12th Annual Integration Bee, Mathematics

ADVISORS Arthur H Busch, Maher B Qumsiyeh

LOCATION, TIME Science Center 255 - Chudd Auditorium, 1:00PM-3:00PM

College of Arts and Sciences: Mathematics, Interactive Competition- Independent Research

The students compete in teams of 2-3 people. This is organized in a similar way to the traditional spelling bee. Teams will be evaluating integrals that are projected on a screen. If a team incorrectly evaluates an integral, the team is eliminated from the competition. After the elimination rounds, we will hold the lightening rounds. The first 'y' many teams to correctly evaluate the given integrals will proceed to the next round. We do this until there is a 1st, 2nd and 3rd place team. First, second, and third place teams will receive math t-shirts. The Department of Mathematics will host a pizza lunch in the Science Center Atrium from 12:00 p.m. – 1:00 p.m. prior to the Integration Bee.

Department of Music Honors Recital Auditions

STUDENTS Elisha Rose Evanko, Molly M Guinan, Jonathan A Higgins, David A Middleton, Jonathan D Payne, Alissa Leigh Plenzler, Chris A Satariano, Gillian Claire Taylor, Anthony M Trifiletti, Rebecca E Welch, Brandon A Woods, Garrett A Woods

ADVISORS Phillip C Magnuson

LOCATION, TIME Sears Recital Hall, 1:00PM-2:30PM

College of Arts and Sciences: Music, Performance- Course Project, 14 SP MUS 200 01

Twelve music students have been selected by the music faculty for presenting some of the best student performances of the 2012-2013 school year. Three judges will select six finalists from this program to perform on the annual departmental Honors Recital, to be held Friday, 25 April 2014 at 1PM in Sears Recital Hall.

Story Telling: A Comparative Analysis of three works by Colgrass, Schwantner, and Finney

STUDENTS Erick C Vonsas

ADVISORS Patrick A Reynolds

LOCATION, TIME Kennedy Union 312, 2:30PM-3:10PM

College of Arts and Sciences: Music, Oral Presentation- Honors Thesis

In this research project, I intend to examine music by 20th century American composers Michael Colgrass, Joseph Schwantner, and Ross Lee Finney in order to compare how different composers present an aural conception to their audience through the wind ensemble medium. An aural conception is the subject upon which the music is commenting; sight (subject) through sound. The project will involve an analysis of these "soundscapes," a collection of sounds that form an acoustic representation of an action or object, in works created by Colgrass, Schwantner, and Finney. This will involve a formal analysis, analysis of orchestration, and analysis of the text, or story, about which the composer is writing. Based on my analyses of the works, interviews with conductors and composers, and an examination of other works by each composer, I will discover, compare, and contrast how a unique soundscape is created in each work.

Student Songwriter Concert

STUDENTS Anthony J Bantz, Chin Yi Chen, James R McCutcheon, Yemani E Schneider, Christopher G Yakopcic

ADVISORS James R McCutcheon

LOCATION, TIME Kennedy Union Boll Theatre, 2:30PM-3:30PM

College of Arts and Sciences: Music, Performance- Independent Research

Guitar students of Jim McCutcheon will present original songs and instrumental compositions.

String Chamber Music

STUDENTS Michelle Connor, Molly Beth Dickson, Emily D Gatlin, Thomas R Hudson, Marsha A Japutra, Lauren T Kell, Dorothy P MacKey, Connor R Mcmonagle, Brendan Daniel Michaelis, Sean M Miller, Kelsey A Mills, Rachel K Sales, Yemani E Schneider, Carly Marie Thie, Ima

ADVISORS Phillip C Magnuson, Kara Manteufel, James R McCutcheon, Shelbi J Wagner

LOCATION, TIME Sears Recital Hall, 3:30PM-4:30PM

College of Arts and Sciences: Music, Performance- Course Project, 14 SP MUS 390 10

Student musicians will present a program of string chamber music.

Dayton's Food System: Current Access to Food in Dayton and Future Possibilities

STUDENTS Katherine A Liutkus

ADVISORS Daniel C Fouke

LOCATION, TIME Kennedy Union 310, 2:30PM-2:50PM

College of Arts and Sciences: Philosophy, Oral Presentation- Honors Thesis

Downtown Dayton and its surrounding areas are considered to be a food desert by the USDA, which means there is limited access to healthy foods within a .5 mile radius. The implications of this include driving further for groceries or turning to convenience stores for highly processed foods. Thishas created health concerns for the residents of Dayton, including obesity and diabetes. The purpose of this study was to understand the food systemissues, their complexity and implications, and to understand what groups are currently doing to support the food system, and what isnecessary to push the issues forward and make positive progress. The research was done through interviews with the various people, groups, andorganizations involved in the food system. This research will provide suggestions for further actions with the goal of making healthy, local foods accessible to allthose in the area.

Aristotle's Biology and Metaphysics

STUDENTS Robert P Masterson, M Ryan Motz Motz, Michael J Rohrer

ADVISORS Myrna J Gabbe

LOCATION, TIME Kennedy Union 310, 3:00PM-4:00PM

College of Arts and Sciences: Philosophy, Oral Presentation- Course Project, 14 SP PHL 451 01

Aristotle's biological treatises, which comprise a significant portion of his written work, was for a long time ignored. The thought was that Aristotle empirical science was too antiquated to be of any use. Recent research challenges the notion that these works have little value beyond their quaintness. Students will present their research on what light the biological treatises can shed on Aristotle's metaphysics and whether his biology has any relevance to science today.

A business ethics case study on Acxiom in preparation for International Business Ethics Case Competition

STUDENTS Ryan J Aiello, Gurjot Kaur, Danielle N Mertens, Jeffrey Schumacher, James D Trimble

ADVISORS Kwok Tung Cheung

LOCATION, TIME Kennedy Union 310, 4:00PM-4:40PM

College of Arts and Sciences: Philosophy, Oral Presentation- Course Project, 13 FA UDI 281 M1

With the rise of public awareness and concerns about data security and privacy, one of the largest data brokers, Acxiom, recently found itself in a public relation situation. Our team is going to present an ethical and also financially sound solution to Acxiom.

Ascertaining the Refractive Indices for Cadmium Magnesium Telluride

STUDENTS Emily C Erdman

ADVISORS Said Elhamri

LOCATION, TIME RecPlex, 11:00AM-12:30PM

College of Arts and Sciences: Physics, Poster- Independent Research

Cadmium Magnesium Telluride (CdMgTe) has been found to have rare properties useful to the study of optics and semi-conductors. These properties include a high degree of crystallinity due to a similar lattice structure between the atoms of CdTe and MgTe. CdMgTe also possess exceptional homogeneity because the Mg segregation coefficient in CdTe is approximately equal to 1. Consequently, CdMgTe may be a usable material for room temperature gamma-ray detectors, as well as high-powered laser applications. In order to further understand the intrinsic properties of CdMgTe, the refractive indices as a function of wavelength were measured, encompassing wavelengths between .7 and 5.2 microns. The measurements were conducted at constant room temperature and the data was fit to a four parameter Sellmeier equation.

Effects of annealing InAs/InAsSb type-II infrared superlattices

STUDENTS Sara T Hierath, Arthur H Siwecki
ADVISORS Said Elhamri
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Physics, Poster- Independent Research

InAs/InAsSb type-II superlattices (SLs) are a current material of interest for mid- and long-wavelength infrared detectors. Recent studies on InAs/(In)GaSb SLs involving annealing treatments have shown some improvement in the material properties, which may indicate increased dopant activation and decreased dislocation density. This study investigates the effect of rapid thermal annealing (RTA) on the electrical, optical, and structural properties of a mid-wavelength infrared InAs/InAsSb SL design doped with Be at a concentration of 5x1016 cm-3. Samples cut from a single InAs/InAsSb SL wafer were annealed utilizing RTA at two temperatures (440°C and 460°C) and two different time intervals (30 seconds and 1 minute). Hall Effect, photoluminescence, and high resolution x-ray diffraction measurements were taken before and after annealing to determine the impact on SL properties. Results of these measurements will be presented and discussed.

Exploring Data-Driven Electricity Feedback on Energy Conservation Behavior in the University of Dayton Student Neighborhood

STUDENTS Daniel R Esposito
ADVISORS Robert J Brecha
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Physics, Poster- Honors Thesis

In general, homeowners do not have a concrete idea of how much energy their houses are using at any given moment. This energy "invisibility" is thought to be a barrier toward people adopting more sustainable behaviors. This study involves installing energy monitors in houses in the University of Dayton student neighborhood to analyze two important questions: whether the monitors teach students about the relationship between their activities and energy consumption, and whether the monitors influence students to adjust their household behaviors. Ideally, conclusions will be drawn from quantitative data collected from the monitors and the university's energy provider as well as from qualitative data acquired through the distribution of questionnaires. The results could have direct policy implications for the university, such as informing whether it would be worth investing in energy monitors for all student neighborhood properties.

The Glass Walls Project: Sharing Science and Engineering in 3D

STUDENTS William J Sember
ADVISORS Peter E Powers
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Physics, Poster- Independent Research

The Glass Walls Project is the brainchild of Dr. Peter Powers. It is a computer application for visualizing scientific and engineering laboratories, logging experiments, and networking the process. This presentation is a demo program focused on the 3-dimensional visualization and exploration of laboratories.

The Role of Nitrogen Vacancy in Optical Transitions in GaN

STUDENTS Malik A Malone
ADVISORS Andrew O Evwaraye
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Physics, Poster- Independent Research

Nominally undoped n-type Gallium Nitride (GaN) layers grown by metalorganic chemical vapor deposition (MOCVD) on silicon substrates were studied. Thermal Admittance Spectroscopy (TAS) and Optical Admittance Spectroscopy (OAS) techniques were used to characterize these layers. Using Thermal Admittance Spectroscopy (TAS), a defect level was observed at Ec – 0.051 eV and this defect is correlated with the nitrogen vacancy (Nv) in GaN. The samples were illuminated with a monochromatic light with wavelengths (λ) ranging from 200 nm to 450 nm. The OAS spectrum was measured at different temperatures and with different excitation light intensities. The spectrum shows a maximum photoconductance (G) peak at $\lambda = 365$nm ($E = 3.40$eV). This peak is attributed to transitions from the valence band to the donor level at Ec – 0.051 eV. The analysis of the results shows that the saturation level (Gm) of the photoconductance is a function of both light intensity and temperature. The photoconductance decay, after illumination has been terminated, is adequately described by a stretched exponential function. This photoconductance decay is attributed to the thermal emissions of photo-excited carriers from the donor level to the conduction band.

Exercise and Birth Outcomes in Lower Socioeconomic Conditions

STUDENTS Sarah M Gaskell
ADVISORS Nancy A Miller
LOCATION, TIME RecPlex, 9:00AM-10:30AM
College of Arts and Sciences: Political Science, Poster- Independent Research

Using the National Maternal and Infant Health Survey, this study will examine the impact of exercise on birth outcomes, specifically infant weight and infant death before one year. Results of this study will then be extended to pregnant women in lower socioeconomic groups and how programs could further improve birth outcomes and quality of life for women and children in this demographic.

Google/Multi-National Corporations, International Surveillance, and Human Rights

STUDENTS Ryan D Krempley
ADVISORS Anthony N Talbott
LOCATION, TIME RecPlex, 9:00AM-10:30AM
College of Arts and Sciences: Political Science, Poster- Course Project, 14 SP POL 300 09

The many news reports on cyber security, identity theft, Wikileaks, and NSA intelligence gathering programs over the past few years have shown the international community that the World Wide Web is anything but a safe place to store sensitive information, or any information for that matter. This study will examine how closely multi-national corporations in the information technology sector, such as Google, are involved with national governments on these issues. The study will analyze events in the U.S. and China and attempt to uncover whether or not these have directly infringed upon peoples' basic human rights.

High Efficiency Wood Burning Stoves in Developing Countries: A Study of Problems and Opportunities

STUDENTS Robert W Powell
ADVISORS Anthony N Talbott
LOCATION, TIME RecPlex, 9:00AM-10:30AM
College of Arts and Sciences: Political Science, Poster- Course Project, 14 SP POL 300 09

The infant nation state of Timor Leste has faced many roadblocks in their short history of sovereignty, and the introduction of higher efficiency wood burning stoves can help reverse these trends. Timorese satisfy 95% of their energy needs by burning wood in personal stoves and generators, a trend that is leading to high rates of air pollution related health conditions and rapid deforestation. High efficiency stoves can reduce family energy costs by 40%, while greatly limiting carbon emissions in the home and dense urban areas. The United Nations Industrial Development Organization (UNIDO) has taken up the challenge of implementing these stoves in developing countries, but further research and funding is still needed to pull developmentally struggling nations up to a global standard. This study examines the impact of this program and the potential problems and benefits of implementation in Timor-Leste.

Human Rights Violations, Genocide, and Other Current Issues in Africa: UN Involvement Then and Now

STUDENTS Raymond A Stallings
ADVISORS Anthony N Talbott

LOCATION, TIME RecPlex, 9:00AM-10:30AM

College of Arts and Sciences: Political Science, Poster- Course Project, 14 SP POL 300 09

Throughout the last century, African nations have struggled to become fully independent and successful countries. Their development has been inhibited by the lack of democracy and governmental guidance within these nations. The United Nations has played an integral role in the development of these nations. This paper will take an in depth look at the actions of the UN in these situations and how they have changed or stayed the same over the past several decades. The paper will focus on two specific African nations that have struggled through human rights violations and genocide over the last twenty years. The focus of the paper will be to compare and contrast the UN's actions in the 1994 Rwandan genocide and the Cote d'Ivoire Crisis of 2010. In both instances, the UN intervened to help diffuse the tension and help develop plans for the futures of these two nations. This paper takes a comprehensive look at which UN strategies worked, which strategies did not work, and how the UN can learn from these instances to help develop more successful practices and protocols for intervention in such instances in the future.

Human Trafficking within the International Community and Modern Society

STUDENTS Clare Potyrala

ADVISORS Anthony N Talbott

LOCATION, TIME RecPlex, 9:00AM-10:30AM

College of Arts and Sciences: Political Science, Poster- Course Project, 14 SP POL 300 09

This research project will examine the issue of human trafficking, its impact on global society, and the international responses to the crime. It will provide an overview of the scope and scale of human trafficking and examine its impact on the world of international crime. Current national level and international preventative measures will be assessed. US State Department data on human trafficking in countries in various regions of the world will be used for this analysis.

Overfishing-- the Negative Effects and Possible Solutions

STUDENTS Reine-Marie Hammonds

ADVISORS Marybeth Carlson, Anthony N Talbott

LOCATION, TIME RecPlex, 9:00AM-10:30AM

College of Arts and Sciences: Political Science, Poster- Course Project, 14 SP POL 300 09

According to the United Nations website, one out of 5 people rely on getting their protein from fish. Based on this fact, the fate of aquaculture in terms of overfishing could be devastating. Unfortunately, the overview of the United Nations Oceans and Law of the Sea does not explicitly detail the need for sustaining biodiversity within each State's respective boundaries. Rather, it focuses on the ability of each State to control the usage of their waters' resources and marine life. The most recent meeting on the Law of the Sea was dedicated to the determining the means by which are to be taken to solve international issues over water border issues and extraction of resources from other waters. There will be more violent disputes in the future if the issue of sustaining biodiversity of marine life is not addressed on a more international scale. According to the Food and Agriculture Organization, just under three fourths of the world's species are either fully exploited or depleted by legal and illegal fisheries. The United States and Ireland both require fisheries to submit how their practices will be affecting the ecosystems and environments. Taking this self-evaluation to the next level of implementing better controlled fishing techniques and monitoring (ex: biodegradable gear; selective fishing; regulated quotas), will allow for biodiversity to balance itself once again. Fisheries may be receiving much gain in the short term, but they fail to recognize the possible long term failure of aquaculture. I would like to do a comparative study between different fisheries and how much of international law has been implemented within these different cases. I would like to focus on different types of waters (such as, closed off—like gulfs; shared waters; and high traffic straights; etc.) and what can be done to further implement protection laws and rebuild marine biodiversity.

The "Genocide" of Timor-Leste: A Study of Human Suffering and International Ignorance

STUDENTS Molly Anne Ledwith

ADVISORS Anthony N Talbott

LOCATION, TIME RecPlex, 9:00AM-10:30AM

College of Arts and Sciences: Political Science, Poster- Course Project, 14 SP POL 300 01

The Indonesian occupation of Timor-Leste in 1975 resulted in the deaths of an estimated 200,000 Timorese, which accounted for more than a quarter of the territory's total population. Unfortunately, this terrible injustice went almost completely unrecognized by the international com-

munity. Even more disturbing, there is evidence to suggest that the United States was not only aware of these injustices, but perhaps encouraged the Indonesians' violent invasion. A mass killing of this magnitude is normally dubbed "genocide." However, the situation that occurred in Timor-Leste has never been labeled as an actual "genocide," most likely due to the involvement of the United States and other Western countries trying to avoid blame. In this presentation, I will explore the "genocide" of Timor-Leste and the level of involvement of other nations, specifically the United States, in this tragedy.

The Future of Humanitarian Aid in Afghanistan: An Analysis of United Nations Humanitarian Aid from March, 2002 until March, 2014, and a Projection of Afghanistan's Future Humanitarian Climate

STUDENTS Jeff T Aubin
ADVISORS Anthony N Talbott
LOCATION, TIME RecPlex, 9:00AM-10:30AM
College of Arts and Sciences: Political Science, Poster- Course Project, 14 SP POL 300 09

At the International Conference on Reconstruction Assistance to Afghanistan, the United Nations Secretary-General Kofi Annan called for an injection of 10 billion dollars of aid, over a ten-year period, into Afghanistan. Since March of 2002, the UN Assistance Mission in Afghanistan (UNAMA) has facilitated the development and coordination of sustainable humanitarian initiatives in the country. This project will explore the extent, type, and effectiveness of international aid in Afghanistan since the arrival of UNAMA. The project intends to use the identified patterns and traits of this 12 year period to project the potential humanitarian landscape of Afghanistan moving forward.

Timor-Leste, UN Women Peacekeepers, and the Gender Gap

STUDENTS Frederick Amankona
ADVISORS Anthony N Talbott
LOCATION, TIME RecPlex, 9:00AM-10:30AM
College of Arts and Sciences: Political Science, Poster- Course Project, 14 SP POL 300 09

This presentation examines the role of women in United Nations peacekeeping operations, using the example of recent operations in Timor-Leste, and makes the case that there is a need for more female United Nations peacekeepers to partake in post conflict peacekeeping operations, democratization and social and political reconstruction in order to promote gender equality. Women are mostly sidelined or alienated in the participation of various peacebuilding and societal reconstruction. This creates a false conception that women are ignorant in such areas and have nothing to offer to peacekeeping efforts. However, women have played a vital role at the grassroots level in soliciting for peace building, reconciliation and the promotion and protection of their fundamental rights and freedoms. They actually undertake many activities dealing with post war and conflict peacebuilding and socio-economic reconstruction. Women resort to different techniques and strategies than men in undertaking these tasks, focusing on agricultural, cultural and moral sectors. Most countries have taken bold steps towards the adherence and the recognition of these gender inequalities. Some countries have then entrenched and enshrined these political and economic rights of women in their codified constitutions.But these have helped a little but have not been able to solve the entire problem due to cultural misconceptions and financial constraints in governmental affairs. Also, the hierarchical structure of various organizations and institutions does not allow for the true realization or implementation of these policies.

United States stance on Weapons of Mass Destruction

STUDENTS Jonathan A Kostoff
ADVISORS Anthony N Talbott
LOCATION, TIME RecPlex, 9:00AM-10:30AM
College of Arts and Sciences: Political Science, Poster- Course Project, 14 SP POL 300 01

This project will examine how the United States works with the international community to deal with the issue of preventing terrorist organizations from acquiring weapons of mass destruction (WMDs). While many are familiar with responses to the threat of countries obtaining such weapons, few are aware of steps taken to deal with nonstate actors seeking to obtain WMDs. This project will outline measures used to prevent terrorists from acquiring WMDs. It will show how key U.S. leaders and politicians deal with this pressing issue by examine policy statements and relevant legislation. It will also examine important United Nations actions dealing with WMDs and nonstate actors. Case studies of recent

attempts by terrorist organizations to obtain WMDs will be analyzed as examples.

Effect of State Policy on Prison Population

STUDENTS Kathryn L Schwaeble
ADVISORS Grant W Neeley
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Political Science, Poster- Honors Thesis

States often follow trends when enacting sentencing policy. After a trend of get tough on crime policy which placed more and more offenders in prison, many states are turning to justice reinvestment policies, a reversal of these tougher policies. If a state passes a justice reinvestment policy, there is expected to be a decrease in the prison population for the state. Data was collected for every state's sentencing policy between 1979 and 2011, prison population between 1979 and 2011, as well as the crime rate for these years. Using statistics, it can be concluded that the presence of a justice reinvestment policy may cause a decrease in prison population. Those who influence sentencing policy at the state level have to consider the precarious balance between community safety and the financial burden of prison terms. This research demonstrates the effectiveness of particular sentencing policies, which can help with this decision-making process.

Party Building: Factors to Encourage Third Party Support Amongst 18-24 Year Olds

STUDENTS Amy N Timmerman
ADVISORS Daniel R Birdsong, Michelle C Pautz
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Political Science, Poster- Honors Thesis

Third parties have always existed within American politics, yet have never claimed the ultimate political victory: the Presidency. Third parties often enjoy support from single issue voters, a strong, concentrated group of serious devotees, but they often fail to attract more consistent backing similar to that enjoyed by the two major parties. A major source of third party patronage is also found on the university campus, yet this support often fades shortly after college. Using survey data, this thesis analyzes the potential impact party building and media campaign strategies would have on third parties in gaining the lasting support of 18-24 year old voters. By combining this survey data with a literature review of studies done on past third party presidential hopefuls, this project also reveals the problems inherent in the Electoral College that a third party must overcome. This foundation could provide a path for third parties to begin building a coalition that would allow them to take the national stage with the same presence and power that the major two parties currently possess.

Power in Numbers?: The Impact of UN Female-Formed Police Units on Women's Empowerment

STUDENTS Laura K Huber
ADVISORS Natalie F Hudson
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Political Science, Poster- Honors Thesis

Advocates hailed the UN's deployment of female formed police units (FFPUs), or all-female units, in peacekeeping missions as a groundbreaking achievement for women's empowerment. Three FFPUs have been deployed to Liberia, Timor-Leste, and Haiti. Many supporters of FFPUs claim that female police are better peacekeepers, less prone to violence, better able to interact with local women, more concerned about sexual violence, and act as role models, challenge gender stereotypes, and encourage local women to participate in the security sector. However, little systematic research has been conducted to evaluate these claimed practical impacts of the units. This thesis evaluates the effects of these units on women in local communities based on empirical and anecdotal evidence and using the current unit deployed in Liberia as a case study to determine the nature and sustainability of any impacts on women's empowerment.Advocates hailed the UN's deployment of female formed police units (FFPUs), or all-female units, in peacekeeping missions as a groundbreaking achievement for women's empowerment. Three FFPUs have been deployed to Liberia, Timor-Leste, and Haiti. Many supporters of FFPUs claim that female police are better peacekeepers, less prone to violence, better able to interact with local women, more concerned about sexual violence, and act as role models, challenge gender stereotypes, and encourage local women to participate in the security sector. However, little systematic research has been conducted to evaluate these claimed practical impacts of the units. This thesis evaluates the effects of these units on women in local communities based on empirical and

anecdotal evidence and using the current unit deployed in Liberia as a case study to determine the nature and sustainability of any impacts on women's empowerment.

International Aid: A Hidden Agenda?

STUDENTS Michael J Joubert
ADVISORS Anthony N Talbott
LOCATION, TIME Kennedy Union 310, 1:00PM-1:20PM
College of Arts and Sciences: Political Science, Oral Presentation- Course Project, 14 SP POL 202 01

Globalization has created an environment in which powerful resource rich nations have the option of giving aid to or intervening in other nations problems. However the distribution of this aid has been anything but consistent and often seems to stem from a hidden agenda of the donating nation. For example what does it take for the United States to provide aid or intervene in conflicts in especially impoverished countries? The US has worked all across Subsaharan African to help bolster developing nations there and combat the growing problems with HIV/AIDS. These programs cover a wide range of needs in these countries and are extremely helpful in moving these young countries in the right direction. Is this truly charitable aid or does the West's help often come with strings attached?

The Role of Gender in Alison Brysk's Global Good Samaritan Theory

STUDENTS Mary C Alwan
ADVISORS Natalie F Hudson
LOCATION, TIME Kennedy Union 331, 1:00PM-1:20PM
College of Arts and Sciences: Political Science, Oral Presentation- Honors Thesis

How do gender equity practices, laws, and norms impact a nation's foreign policy? In a comprehensive study of middle power states, political scientist and global governance expert Alison Brysk examined what made a state invest time, treasure, and human capital into a foreign policy agenda focused on human rights. However, in this analysis, Brysk does not fully take into account the status of women in regards to Global Good Samaritan states' control over reproductive rights, productive rights, and national security policy. By examining the status of women within these countries, this study seeks to better ascertain how domestic policy, international policy, and global governance practices regarding gender equity influence a state's likelihood of becoming a moral superpower and vehement supporter of human rights within the international system.

Country Development in Relation to Females in Forced Marriages in the Middle East

STUDENTS Jordan A Powers
ADVISORS Anthony N Talbott
LOCATION, TIME Kennedy Union 310, 1:30PM-1:50PM
College of Arts and Sciences: Political Science, Oral Presentation- Course Project, 14 SP POL 300 01

Women's rights have not been fully recognized in the Middle East by the majority of societies in Arab nations. Due to traditions, religions and poverty, females in families are often sold or forced into marriages in which they do not consent. Often times, females are so young that they have not even reached puberty. This project would like to examine this violation of human rights in relation to its effect on the countries' overall development. If more women were educated, of appropriate age and consented to such marriages would such nations see more development in their country? Furthermore, this research will include international responses to these states actions in regards to conventions for the protection of women and children.

Oppression and freedom: challenges of multicultural rights

STUDENTS Jordan L Blake, Emily L Keane, Sarah Russell Moir, David J Watkins
ADVISORS David J Watkins
LOCATION, TIME Kennedy Union 331, 1:30PM-2:30PM
College of Arts and Sciences: Political Science, Panel Discussion- Course Project, 14 SP POL 300 H1

An important issue in political theory is how we should respond to oppression. In some cases, it may mean finding a way to eradicate and delegitimize ancient cultural practices (such as, for example, dowries in India); in others, it might removing oppressed people from one state and giving them refuge in another (such as refugees from politically oppressive states); in still others, we might seek to deal with the lingering effects of past oppression through collective apology and recognition (such as the reparations granted to survivors of the Japanese internment

in 1988, or the as-yet unmet demand for reparations for slavery). The presenters on this panel will address specific cases covering each of these three responses to oppression, examining the strengths and weaknesses of these different approaches and drawing on resources from contemporary political theories of multicultural accommodation.

International Strategies for Disaster Reduction

STUDENTS Brittany A Ramsey
ADVISORS Anthony N Talbott
LOCATION, TIME Kennedy Union 310, 2:00PM-2:20PM
College of Arts and Sciences: Political Science, Oral Presentation- Course Project, 14 SP POL 300 09

International disasters can strike at any time, and damages can be greatly reduced by having emergency response plans in place ahead of time. Installing such a plan can ensure less damage, fewer lives lost, and better communication before and after. This presentation examines international cooperation on disaster management in Southeast Asia and assesses its effectiveness. The country of Timor-Leste serves as an example of how creating better infrastructure and focusing on preparing ahead of time for disasters can be extremely beneficial to both less-developed countries and the international community as a whole.

Implementing Religious Freedom in a diverse society

STUDENTS Elizaveta Klementieva, Haley E Roach, Joshua D Tovey, David J Watkins
ADVISORS David J Watkins
LOCATION, TIME Kennedy Union 331, 2:30PM-3:30PM
College of Arts and Sciences: Political Science, Panel Discussion- Course Project, 14 SP POL 300 H1

The protection of both religious freedom (collective and individual) and other individual freedoms are protected has been a central challenge for plural and democratic societies. The three presentations on this panel will consider very different particular aspects of this challenge: the use of Shari'a Courts in Northern Nigeria as a possible path to peace between Muslims and Christians in that country, the controversy surrounding the scope of the religious exemption for a rule regarding coverage of contraceptive care in employer-provided insurance plans, and the tensions between religious freedom and the rights of children to basic medical care in religious sects that reject much of modern medicine will all be explored, drawing on insights from major figures and schools of thought in contemporary political theory.

Human Rights Advocacy: Understanding Your Role in the Tomato Trail

STUDENTS Kathryn A. Akin, Mary C Alwan, Mary-Michael K King-Sekulic, Adrianne C Lewis, Daniela F Porcelli, Laila T Sabagh, Paige K Singleton
ADVISORS Natalie F Hudson
LOCATION, TIME Marianist Hall Learning Space Commons, 3:00PM-4:30PM
College of Arts and Sciences: Political Science, Oral Presentation- Capstone Project

Senior human rights studies majors will conduct an interactive teach-in for undergraduate students on one of the most pressing issues of our time - labor trafficking. This presentation will explore international and U.S. labor trafficking issues, such as domestic servitude, garment production, agricultural exploitation, child labor, and debt bondage. These issues will be examined through the framework of globalization, human rights advocacy and where advocates have been successful and not successful on advancing these issues. Lastly, students will be encouraged to consider the various ways they can become a human rights advocate on campus.

The Dropout Factory: Unraveling the Fabric of the Good Society

STUDENTS Britney P Hines
ADVISORS Anthony N Talbott
LOCATION, TIME Kennedy Union 312, 3:30PM-3:50PM
College of Arts and Sciences: Political Science, Oral Presentation- Course Project, 14 SP POL 202 H1

The top 15 metropolitan areas in the United States are known by many names, the big apple, the windy city, or even the motor city. However, many of these urban areas are filled with failing schools that have been labeled as "dropout factories." In our current society, education is a key factor that correlates with both employment and institutionalization rates. This is due to the fact education allows members of a society to carry out their objectives by allowing them to make informed decisions about their lives. In urban areas, high school dropout rates are significantly higher compared to their suburban counterparts. These high instances of dropping out create "dropout factories" in the metropolitan areas

that make it unfeasible for the affected students to achieve their goals. According to Amartya Sen and Martha Nussbaum, there is a minimum set of criteria that society must provide for its citizens in order to be capable of being considered "good". These criteria fall under the Capability Approach which, enhances the capabilities of people to pursue the goals important to their own lives whether through individual or collective action. One facet of the capability approach is the ability to make informed decisions. Anyone can make a decision, but the informed decision maker usually becomes a productive member of society. If knowledge is power and the ability to make informed decisions stems from an individual's knowledge base, then individuals without knowledge become powerless over their own lives. Therefore, an inductive study will be conducted to analyze factors contributing to and resulting from high school dropout rates across the top 15 metropolitan areas in the US.

Money & Politics : Influences on Public Policy

STUDENTS Colleen M Castle, Christopher Ryan Crisanti, Michael J Joubert, Ethan Michael Kissock, Elaine Simone Laux, Connor J Mabon, Daniel Patrick Martin, Nancy A Miller, Kaitlyn Grace Zwayer

ADVISORS Nancy A Miller

LOCATION, TIME Kennedy Union 222, 3:30PM-4:30PM

College of Arts and Sciences: Political Science, Panel Discussion- Course Project, 14 SP POL 300 10

What role does money play in politics in the United States? In this panel discussion students in POL 300 (Money and Politics) will discuss original research projects that explore how money has impacted public policy in the areas of foreign policy, foreign aid, tax policy and corporate policy.

Peoples without a State: indigenous rights to movement, self-government, and recognition

STUDENTS Jeff T Aubin, Erin Nicole Dingle, Andrew J Lightner, David J Watkins

ADVISORS David J Watkins

LOCATION, TIME Kennedy Union 331, 3:30PM-4:30PM

College of Arts and Sciences: Political Science, Panel Discussion- Course Project, 14 SP POL 300 H1

Indigenous peoples predate the modern state, yet now must find a way to co-exist within the modern state system. The research presented on this panel will consider three case studies of indigenous people trying to co-exist within the modern state system: the efforts to seek border-crossing rights when the boundaries of the modern state system divide an indigenous community, the demand for recognition from the state within which indigenous communities reside, and the efforts to carve out space for self-governance and self-determination, in the particular context of an unstable and undemocratic state (specifically, the Kurdish region of Iraq). In each case, insights from leading political theories of multiculturalism will provide insights on these controversies.

The perceptions of how student and faculty at the University of Dayton feel about being in the presence of a person legally armed with a firearm.

STUDENTS Benjamin Tercek

ADVISORS Jefferson L Ingram, Arthur J Jipson

LOCATION, TIME St. Joseph's Hall 013, 4:00PM-5:00PM

College of Arts and Sciences: Political Science, Oral Presentation- Capstone Project

As of the last few years gun control and concealed carry have become controversial topics among American citizens, politicians, and law enforcement. This research will examine the perceptions of students and faculty of the University of Dayton around these issues. What produces a feeling of safety in the presence of a person legally armed with a firearm? Through the use of online surveys both male and female students and faculty representing different majors will answer questions about perceived safety in the presence of firearms. As a result, this research project will explain how most people feel about other people carrying firearms.

Refined Skills of Physicians in Independently Owned Hospitals in India Reduce Healthcare Costs for Patients

STUDENTS Anam Hussain, We'Am Hussain

ADVISORS Kathleen C Scheltens

LOCATION, TIME RecPlex, 9:00AM-10:30AM

College of Arts and Sciences: Premedical Programs, Poster- Independent Research

In America, we are currently striving to provide adequate healthcare to all, regardless of income level. We had the opportunity to travel to India to observe how patients of different income levels are treated in the different facilities available. For two months we shadowed physician, Dr. Mahmood Osmani, who owns a hospital with in-patient facility in Hyderabad, India, serving middle and lower income families. There we observed how treatments are provided for patients who pay minimum fees: by relying on more direct knowledge of the physician and less use of technology. The physician would palpate the abdomen at a particular location and immediately correctly diagnose acute appendicitis, or diagnose a heart condition by auscultating the heart and doing simple investigations such as an EKG and chest X-rays. His education and skills had so finely developed that scans and technological protocols did not need to be utilized to help diagnose and treat the patients. Though these technological advances are indeed available in the large corporate hospitals, these are mostly used for those who can afford the cost of these services, as all medical costs in India are out of pocket pay. Nevertheless, because of the particular training of doctors, many families who cannot afford high cost modalities are receiving effective treatments because of the skills of the physician in privately owned hospitals. In this project, we will highlight several cases we observed while shadowing Dr. Osmani, and show how physical touch and expertise helped treat the many patients with various illnesses.

Assessing Aesthetic Preferences for Faces with Measures of Ocular Gaze

STUDENTS Hannah L Lieber, Ashley Ann F Marshall, Paulina E Rosequist, Madeleine L Schneider, Scott Wagoner, Margaret A Wedell
ADVISORS Susan T Davis
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Psychology, Poster- Independent Research

Though one may assume that the reactions to two nearly identical works of art would be similar, the medium in which art is presented can influence an individual's perception of the work (Locher et al., 2006). The present study evaluates aesthetic preferences for faces, specifically, relating to those influenced by art; this is done by comparing reactions when viewing classic portraits and photographic renderings of those portraits. Simultaneously portraits and photographs of faces, matched for variables such as gender, artistic medium, ethnicity, face shape, facial hair, hair color, eye color, and facial position (full or profile), are shown to participants while the participant is wearing an eye-tracker, which measures aesthetic pleasingness, based on points of interests on the portraits and photographs. Participants were assigned to one of two conditions; in Condition A, participants were asked which image they found more aesthetically pleasing, while in Condition B, participants were asked which image they would be more likely to purchase. We hypothesize that measures of ocular gaze (i.e., visual scan paths, fixation times, and pupil dilations) assessed by eye-tracking equipment will demonstrate that eye-scanning movements and eye-fixations will focus more on features of the portraits than on similar features in the photographs. This data should also correlate with the subjective ratings completed in an earlier experiment that measured subjective responses alone. In addition, participants should respond similarly in both conditions; portraits that are high in aesthetic pleasingness should also be high in likelihood of purchase. Results from this research have implications in marketing and product development, particularly in the realm of art. In addition, we have a better understanding of what is commonly considered "art" and how that consideration adds to perceived value. The comparison of the physiological measures and the subjective ratings allows for a better understanding of the relationship between body and mind.

Behavioral Activation in a Homeless Shelter: An Example of Engaged Scholarship

STUDENTS Jessalyn S Crossman, Jacob M DeBellis, Christine N Farmer, Zachary S Glendening, Stephanie D Rodriguez
ADVISORS Roger N Reeb
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Psychology, Poster- Independent Research

A Behavioral Activation Program is implemented and evaluated at a homeless shelter. Behavioral Activation, which is based on operant conditioning, refers to "...a therapeutic process that emphasizes structured attempts at engendering increases in overt behaviors that are likely to bring [the person] into contact with reinforcing environmental contingencies and produce corresponding improvements in thoughts, mood, and overall quality of life" (Hopko et al., 2003, p. 700). Guided by the Psycho-Ecological Systems Model (Reeb & Folger, 2013), this interdisciplinary research project utilizes the participatory community action research strategy (Reeb, 2006), the pedagogical technique of service-learning (Reeb, 2010), and multidimensional assessment. Hypotheses are as follows: (1) Outcomes (e.g., employment and recidivism rates) will be superior for men participating in Behavioral Activation, relative to outcomes of shelter guests prior to project implementation. (2) For men participating in Behavioral Activation, there will be improvements in psychosocial functioning (quality of life, hope, self-efficacy for coping, self-

esteem, depressed mood, learned helplessness, anxiety, empowerment, social alienation, sense of purpose or meaning, social stigma concerns, job motivation, and inclinations for illegal behavior and substance use), and changes on these variables will predict long-term outcomes. (3) Over time, the shelter's social climate will be perceived as increasingly more positive by shelter guests and staff. (4) Service-learning students (undergraduate and graduate) who assist with the project will show improvements in civic-related attitudes/beliefs. Behavioral activities include a mix of activities aimed at the enhancement of: (a) empowerment or self-sufficiency (e.g., GED preparation, computer training, job preparation); (b) coping (e.g., stress management, prevention programs); and (c) mood, quality of life, and social skills (e.g., game night). This project, which is supported in part by external funding, received full IRB approval at the University of Dayton, and was implemented in August of 2013.

Discrimination Against Disabled Persons in Malawiand the United States: A Comparative Study

STUDENTS Stephen P Crum
ADVISORS Thomas O Farnsworth
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Psychology, Poster- Honors Thesis

In Malawi, Africa and in the United States, many disabled individuals experience hardships that are more severe than the general public. With regards to education, there is a lower school attendance rate among disabled individuals in each country. With regards to employment, both disabled Malawians and Americans experience lower employment rates and lower annual incomes. This study aimed to discern what factors contributed to these educational and employment deficits in both countries. Possible factors for the deficit may include a discriminatory attitude, a lack of resources available for accessibility, or the severity of the physical or cognitive limitation. A survey was administered at the University of Dayton and at the University of Livingstonia in Malawi, aiming to discover if any subtle biases were projected unfavorably upon individuals pictured in wheelchairs. The survey also sought to evaluate whether ample resources were perceived to be available to disabled individuals in each country.

Do certain psychosocial concerns coincide with psychological well-being by age?

STUDENTS Madeline Birch Auge, Mary C Holtzhauser, Ashley Ann F Marshall
ADVISORS John J Bauer
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Psychology, Poster- Course Project, 14 SP PSY 493 P7

Which psychosocial concerns predict psychological well-being (PWB) throughout stages of one's life? We measured narratives of high points and low points in life based on Erikson's Psychosocial Stages and coded them for personal achievement, intimacy, and generativity (care for future generations). Results for high points showed that achievement narratives predicted PWB for college-aged students, whereas generativity narratives predicted PWB for older adults. The results for low points showed no differences. Narrative identity formation in college-aged students and older adults focuses on different psychosocial concerns, as Erikson predicted. However, whether a researcher finds these differences depends on the type of questions they ask to the participants (referred to as "narrative prompts"), notably writing about good versus bad points in life.

Does Time "Fly" or "Drag"? Maybe it Depends on how Long You Think it Takes?

STUDENTS Rachel M Major, Giuseppe G Miranda, Maura E Wolfe
ADVISORS Susan T Davis
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Psychology, Poster- Independent Research

The question for this research was to determine whether or not manipulating perceived time progression (PTP) would influence how individuals performed on a vigilance task (sustained focus of attention on a perceptual or auditory task). Past research by Sackett et al. (2010) showed that when participants experienced a task in a shorter amount of time than expected, they would rate that time passed more quickly, and that the task was more enjoyable and engaging. However, when the task took longer than the time expected, the opposite would be found for each type of rating. Expanding upon this research, the purpose of this study was to determine if the perceived workload and stress associated with a

vigilance task depend upon the perceived temporal context in which that task is performed (Dillard et al., 2013). This was examined by creating a mismatch between the participants' expectations about how long they would perform the task and the actual time they were engaged in the task (Sackett et al.). Specifically, participants completed a 12-minute vigilance task but were informed the task would last either 6 (time "drags"), 12, or 24 (time "flies") minutes. In each of these conditions, the participants monitored a computer for the occurrence of a target letter (i.e., the letter "O") within a repetitive series of non-target letters (i.e., a "D" or a mirrored "D"). Participants then provided subjective ratings of the workload associated with each condition. Since passing time is related to task demand, we expect to see one of two possibilities. The first is that in the time drags condition there will be an increase in perceived workload in comparison to that in the time flies condition (Dillard et al.). The second possibility is that vigilance tasks are going to be perceived as difficult regardless of the condition.

Effects of Moral Licensing on High-Cost and Low-Cost Helping Behavior

STUDENTS Kaitlin E Boyd
ADVISORS Erin O'Mara
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Psychology, Poster- Honors Thesis

The present study examines the role of cost to self in moral licensing. Previous research shows that people who recall past moral behavior become morally licensed. That is, they are less likely to engage in future high-cost helping behaviors because they feel morally affirmed (Conway & Peetz, 2012). However, these findings are limited to contexts in which participants are asked their likelihood to engage in helping behaviors that are rather costly to the self (e.g., buying someone lunch). Thus far, research has not studied the effect of moral licensing on helping that is low in cost to the self (e.g., giving someone a few cents). Consistent with past research, it is predicted that moral licensing will lead to less helping in high-cost situations. Additionally, we are interested in whether the recall task also reduces helping in low-cost situations, or when the cost-to-self is low.

Effects of Object Saliency on Early Mathematics and Cognitive Skills

STUDENTS Alejandro Trujillo
ADVISORS Mary Fuhs
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Psychology, Poster- Course Project, 14 SP PSY 493 10

The primary focus of our study is to explore the relationship between a child's early mathematics skills and related cognitive skills and the representational status of the tools used to aid learning in these areas. By focusing on children's ability to perform based on the nature of the tools given to them, the findings of this study will hopefully lead to a better understanding of the types of objects or learning aids that are most conducive to student learning in early childhood classrooms. Our work is guided heavily by the theory of graded representations, which offers that higher object saliency leads to a higher active representation of objects, and therefore takes away from a child's executive function in keeping focus on a task (Munakata & Yerys, 2006). General mathematics skills will be tested both through the Approximate Number System—which looks at a child's ability to distinguish larger numbers without counting—and the TEMA-3—which is a standardized test for purchase that assesses both formal and informal mathematics skills. Predictors of mathematics skills (i.e., executive functioning skills including working memory, inhibitory control, and attention shifting skills) will be assessed through two tasks. Children will be randomly assigned to different versions of these mathematics and executive functioning skills tasks that vary with respect to object saliency and object familiarity.

Effects of One's Attachment Style on Willingness and Reactions to Self-Sacrifice and Subsequent Relationship Satisfaction

STUDENTS Adrianne C Lewis, Scott Wagoner
ADVISORS Lee J Dixon
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Psychology, Poster- Graduate Research

One behavior used to sustain a relationship is self-sacrifice, and one's willingness to sacrifice has been shown to be positively associated with relationship satisfaction (Van Lange et al., 1997). Depending on the motivations behind self-sacrifice, this practice can lead to improved or poorer couple functioning (Impett, Gable, & Peplau, 2005; Stanley, Whitton, Sadberry, Clements, & Markman, 2006). Those high in anxious

attachment experience and express anger due to their fear of abandonment, whereas those high in avoidant attachment experience and express anger due to their avoidance of intimacy (Lafontaine & Lussier, 2005). The current study explored the possibility that level of anger would mediate the relationship between willingness to self-sacrifice and relationship satisfaction, and that the relationship between willingness to sacrifice and anger would be moderated by one's level of anxious and avoidant attachment. Participants were 102 (46 male, 56 female) predominantly Caucasian students from a Midwestern University. Participants completed a scale developed by Van Lange et al. (1997) to assess willingness to self-sacrifice, the Relationship Assessment Scale (Hendrick, 1988) to assess relationship satisfaction, the Experiences in Close Relationships-Revised questionnaire (Fraley, R. C., Waller, N. G., & Brennan, 2000) to assess adult attachment style, and the Arousal Subscale of the Multidimensional Anger Inventory (Siegel, 1986) to assess anger. Bootstrapping procedures described by Preacher and Hayes (2008) were used to test for moderated mediation. Results supported our hypotheses, indicating that, for those low in avoidant and anxious attachment, a greater willingness to sacrifice was negatively related to anger, which, in turn, was negatively related to relationship satisfaction. These results suggest that willingness to sacrifice for one's partner, particularly when one's attachment style is less insecure, positively predicts relationship satisfaction, and that this association is mediated by one's level of anger. Limitations, future directions, and implications of the study will be discussed.

Embodied Cognition: A Study of Social Loneliness Compensation by Physical Warmth

STUDENTS Emily A Godshall
ADVISORS Greg C Elvers
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Psychology, Poster- Independent Research

The following study investigated embodied cognition and its effect on social loneliness compensation with physical warmth. Bargh and Shalev (2012) were able to support the notion of embodied cognition—our thoughts depend on our bodies and vice versa—suggesting that a socially lonely person will compensate for their loneliness with physical warmth, specifically warmer, more frequent and longer showers or baths. This also suggests an unconscious self-mechanism for the body and mind to self-regulate. This study also investigates embodied cognition in regard to social loneliness compensation with physical warmth, and also a further proposal that a person with higher sensitivity to their bodily sensations will show a great effect of compensation. Participants were drawn from an international sample, and instructed to complete a questionnaire designed to measure their physical warmth seeking, social loneliness and sensitivity to bodily sensations. Our results failed to suggest that lonely people seek physical warmth or that sensitivity to bodily sensations influences the relation between physical and social warmth. A redesign of the original study is currently being implemented.

Homelessness Stigma as a Function of Military and Trauma Status: An Experimental Study

STUDENTS Rebecca Kinsey
ADVISORS Roger N Reeb
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Psychology, Poster- Graduate Research

Homeless individuals are stigmatized, especially those with mental illness (Phelan et al., 1997; Snow & Reeb, 2013). Mental illness stigma is less severe when causal factors for the mental illness are perceived as out of the person's control (e.g., trauma), and it is most severe when causal factors are unknown or perceived to be under the person's control (e.g., substance abuse) (Hinshaw & Steir, 2008). In a review of research on homelessness stigma, Snow and Reeb (2013) recommended research to examine whether "stigma-related reactions are less severe if the homeless person is a military veteran or has a trauma history" (p. 12). The public has compassion toward veterans due to their many sacrifices (Rosenheck et al., 2007), as evidenced by the public's endorsement of services for veterans (e.g. Wounded Warrior Project). Research suggests that individuals (especially males) with a history of sexual abuse face greater stigma than those with other trauma histories (Holmes & Slap, 1998; Saewyc et al., 2006). Given this background, the following hypotheses will be examined: (1) stigma-related reactions will be least severe when the description of a homeless man explains that he became homeless after developing mental illness related to combat trauma compared to sexual abuse or unknown reasons; and (2) stigma-related reactions will be most severe when the description of a homeless man states that he became homeless following the onset of a mental illness that developed for unknown reasons. In the present study, which employs an experimental design, college students will be randomly assigned to homeless-related vignette conditions, and stigma-related reactions will be assessed using a well-validated psychometric instrument. Another methodological strength is that we will statistically control for social desir-

ability bias – the tendency to respond in ways that match social norms (Paulhus, 1991).This work has been supported in part by the University of Dayton Office for Graduate Academic Affairs through the Graduate Student Summer Fellowship Program.

Implicit Memory and Change Blindness in Relation to Visual Stimuli

STUDENTS Alyx E Ballenger, Michael T Wright
ADVISORS Susan T Davis
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Psychology, Poster- Independent Research

Change blindness (CB) is the inability to detect changes to a visual stimulus. Priming is an implicit memory effect where exposure to a stimulus (a visual stimulus in this experiment) alters perception of or reaction to subsequent stimuli. Priming stimuli do not have to be attended to nor does one have to be conscious of them in order for the stimuli to have a significant effect on response or behavior (Bar & Biederman, 1998). The present research explored the priming effect of a video in which a gradual change occurred, on a subsequent image related to the gradual change. Particularly, it is focused on the priming effect in participants who did not attend to the change in the video. That is, an implicit memory effect is expected to occur in both the presence and absence of CB. To examine these possibilities, participants were shown a number of videos containing gradual changes in either emotional content or color-related content, and were then shown a second series of images that were gradually revealed as an object neutral to the original video or related to its emotional content. They were asked to identify the object as quickly as possible. If there was an implicit memory effect due to participants' unaware attention to the change in the initial video, then they would give a subjective identification of the related objects they had viewed significantly faster than they would for non-associated or non-primed objects. While analyses of the data are in progress, these results would replicate the findings of similar studies in the implicit memory literature and extend them to an unusual but reliable perceptual phenomenon (e.g., Gulan et al., 2010).

It's Snowing: A New Outlook on Motion-Induced Blindness

STUDENTS Joseph R Pauszek
ADVISORS Greg C Elvers
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Psychology, Poster- Independent Research

Motion-induced blindness occurs when an unchanging part of the visual field that is stationary relative to the fovea perceptually disappears when, in fact, the stimulus is still present. It was originally thought to be related to the fact that a target stimulus is stationary while other objects in the visual field are uniformly moving, hence the name of the phenomenon. However, it has since been established that motion, per se, is not necessary for motion-induced blindness to occur and that motion-induced blindness can occur in the presence of any type of uniform change, such as a collection of lights getting brighter or darker in unison while a target stimulus does not change in terms of brightness. Numerous explanations have been proposed regarding why motion-induced blindness occurs and many of these theories suggest a framework of perceptual processing through which the visual and attentional systems of the brain operate in such conditions. The current study aimed to investigate motion-induced blindness in the instance of visual displays that exhibited either random change or no change at all. In addition, the current study aimed to investigate potential differences in the duration of motion-induced blindness experienced on the basis of different colors used in the background stimulus of the visual displays. Results have shown that the perceptual disappearance of the target is significantly affected by the color of the background stimulus and that it can occur in both randomly changing and completely static visual displays. These findings have led to implications for leading theories of motion-induced blindness and other similar perceptual phenomena, as well. The implications of the current study can also be extended to the phenomenon of perceptual filling-in (which is also referred to as perceptual fading or the Troxler Effect), as the two phenomena are reportedly elicited by the same underlying mechanism.

Measuring Spatial Intelligence and Memory for Location: Athletes v. Non-Athletes

STUDENTS Alex Jacob Fitzharris, Giuseppe G Miranda, Lauren M Pytel, Marissa E Sander
ADVISORS Susan T Davis, Benjamin R Kunz
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Psychology, Poster- Independent Research

This research project examined whether athletes have better spatial abilities and memory for location than non-athletes. Due to their extensive experience in tracking the location of objects and teammates in relation to spatial layouts, athletes were predicted to outperform their non-

athlete counterparts on spatial tasks. Similarly, while everyday short-term memory should be equivalent for athletes and non-athletes, memory for location was hypothesized to be better for athletes. To test the similarity of everyday short-term memory, strings of letters were presented which participants had to recall immediately. Athletes and non-athletes were equivalent in performance for this typical short-term memory task, suggesting that any difference in performance on other tasks was due to a more specialized form of memory. To test memory for location, a moving object was presented on a computer monitor among a varying number of distracters, with or without a landmark. Participants were then asked to recall the beginning or ending location of the moving object. As expected, memory performance decreased with an increase in the number of distracters, but even more so for non-athletes. When a landmark was unavailable, athletes performed much better than non-athlete participants demonstrating a disparity in memory performance. These results suggest that athletes have improved spatial abilities due to consistent practice. Facilitation of memory for location is believed to be due to the increased ability of the athletes to use the spatial coordinates of the landmark as a reference for the location of the object.

Must Feedback have a Dollar Value to Reduce Overconfidence?

STUDENTS Jamie L Flannery, Kristen A Kemp
ADVISORS Susan T Davis
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Psychology, Poster- Independent Research

When determining our ability to be accurate in accomplishing specific tasks, we tend to show overconfidence, which is defined as the inconsistency between how well we think we performed and our actual performance (e.g., Fischoff, Slovic, & Lichtenstein, 1977). On a daily basis, we are required to estimate our ability to accomplish certain tasks accurately. These estimations are greatly influenced by individual differences, such as narcissism--the enhancement of oneself in a positive way--, and risky behavior, defined here as the willingness to place high bets on uncertain answers (Campbell, Goodie, & Foster, 2004). Previous research suggests that those who are narcissistic are generally overconfident, greater risk-takers and more likely to bet on their answers even when their accuracy is low (Campbell etal., 2004). Undergraduate participants were asked to complete a series of general knowledge questions (GKQs) and personality questionnaires, including the Narcissistic Personality Inventory (NPI), Need for Achievement Scale, Indicators of Problematic Gambling, and the Risk Adverseness Scale. Participants were assigned to a confidence (n=81) or a betting condition (n=107). Both groups expressed their confidence in their answer: those in the confidence condition with a percent confidence, and those in the betting condition with virtual money. Half of the participants in the confidence condition received feedback about the accuracy of their answer; participants in the betting condition received feedback in the form of an increase or decrease in virtual money. Preliminary analyses reveal that participants in the betting condition were significantly less confident when they had received feedback on their performance. In contrast, in the confidence condition, participants were significantly less confident when no feedback was given. Overall, participants in the confidence condition were more under confident than those in the betting condition, regardless of whether or not they had received feedback.

Past Partner Disclosure to Current Partners: A New Measure of Motivations

STUDENTS Megan Adelson, Ellen I Snyder, Scott Wagoner
ADVISORS Lee J Dixon
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Psychology, Poster- Graduate Research

Past Partner Disclosure to Current Partners: A New Measure of MotivationsMegan Adelson, Lee J. Dixon, Ellen Snyder, and Scott Wagner, University of DaytonDerived from research concerning self-disclosure in romantic relationships, it has been posited that couples share information with one another about past romantic relationships to accommodate specific needs (Omarzu, 1999). Newman (1982) suggests this type of disclosure might occur in order to achieve particular goals in one's current relationship.Therefore, Newman (1982) theorized five possible motivational constructs, including Creating Psychological and Emotional Closeness and/or Distance, Negotiating Relationship Rules and Expectations, Confirming Self-Image, and Relating Important Relationship History. The goal of the current study was to develop a measure assessing these motivations. Therefore, our measure consists of five subscales aimed to reflect Newman's (1982) motivations. We examined correlations with other relational constructs such as relationship satisfaction, attachment, rejection sensitivity, self-silencing, and commitment. We predicted each motivational subscale to relate to these constructs differently, based on the motivations they represent. At the time of this analysis, participants were 24 individuals between the ages of 18 and 25 in a committed romantic relationship. Participants were given self-report questionnaires that included

Motivations for Past Relationship Disclosure Scale (created for this study), Relationship Assessment Scale (Hendrick, 1998), Experiences in Close Relationships – Revised Scale (Fraley, Waller, & Brennan, 2000), Silencing the Self Scale (Jack & Dill, 1992), Rejection Sensitivity Questionnaire (Downey & Feldman, 1994), The Investment Model Scale (Rusbult, Martz, & Agnew, 1998), and Center for Epidemiological Studies – Depression Scale (Radloff, 1977). Results yielded meaningful bivariate correlations (i.e., medium to large; Cohen 1988) in the anticipated directions between motivation and other relational subscales. To our knowledge, this is the first measure assessing motivations of disclosing about past romantic experiences to current partners. Limitations, future directions, and implications of the study will be discussed.

Preparatory and Performance Self-Efficacy and Athletics

STUDENTS Emily C McCarty
ADVISORS Susan T Davis
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Psychology, Poster- Graduate Research

Self-efficacy establishes a relationship between people and their goal-directed behavior. The relationship helps determine whether people will initiate the behavior and how long they will persist in performing the behavior. Specific types of self-efficacy are preparatory self-efficacy in relation to a certain task, (i.e., that is, self-perception of anticipated ability in successfully completing a task) and performance self-efficacy regarding that task. Specifically, the present study examined these two types of self-efficacy in response to the performance on spatial tasks that assessed the ability to take different perspectives and picture the movement of objects in space. Participants were given preparatory, performance, and general self-efficacy questionnaires and two spatial tasks to test the research questions about self-efficacy. They were broken into two groups, a group who believed that they were in competition with other participants and a group who did not believe they were in competition. Results are hypothesized to show a difference in preparatory and performance self-efficacy between participants who believe they are in competition and those who do not. Specifically, for those participants who believe that they are in competition, there will be a difference between preparatory and performance self-efficacy after, but not before the spatial tasks. On the other hand, for those who do not believe that they are in competition, there will be no difference in preparatory and performance self-efficacy before and after the spatial task. Results are also hypothesized to show a gender difference, where male participants will report greater self-efficacy than female participants (as evidenced by the general, preparatory, and performance self-efficacy questionnaires).

Rejection Sensitivity as a Mediator of the Effects of Parental Relationship Quality on Friendship Alienation

STUDENTS Allison N Cremering
ADVISORS Jackson A Goodnight
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Psychology, Poster- Independent Research

Previous research has shown an association between parental relationship and friendship quality, so that with higher quality relationships with parents, there is an increased probability of higher friendship quality. However, the process by which these variables are related remains unclear. The present study tested rejection sensitivity, or the tendency to readily perceive and expect social humiliation or rejection, as a possible mediator of the relationship between parental relationship quality and friend alienation. The current study hypothesized that parental relationship quality would be inversely associated with friendship alienation; and that the association between parental relationship quality and friendship alienation would be mediated by rejection sensitivity. The current study analyzed data collected from college students. Results from multiple regression revealed that parental relationship quality was significantly negatively associated with rejection sensitivity ($b = -1.808$, $p < 0.0001$) and negatively associated with friendship alienation ($b = -0.193$, $p < 0.0004$). Additionally, rejection sensitivity was significantly associated with friendship alienation ($b = 0.087$, $p < 0.0001$). Lastly, rejection sensitivity mediated the association between parental relationship quality (communication) and friendship alienation ($b = -0.158$, $p < 0.0001$), such that the significant inverse relationship between parental relationship quality and friendship alienation was accounted for by rejection sensitivity. These results further the understanding of the relationship between parent-child relationship quality and friendship quality and suggest that young adults with poor quality parental relationships may be at risk of developing high levels of rejection sensitivity, leading them to be at an increased risk for experiencing alienation in their relationships with friends.

Related Self-Motives? Examining the Association Between Self-Handicapping and Self-Verification

STUDENTS Katharine M Ellis
ADVISORS Erin O'Mara
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Psychology, Poster- Honors Thesis

This research examines the association between self-verification and self-handicapping. Self-verification theory states that people tend to seek information verifying how individuals see themselves. Individuals seek verifying feedback about traits or attributes when they are certain about that attribute, regardless of whether the attribute is positive or negative. However, when individuals are uncertain about a particular trait, they tend to engage in a self-presentational strategy called self-handicapping. Self-handicapping is a self-protecting behavior that mitigates the effect of a potential failure that would otherwise be perceived as threatening to one's sense of self by providing pre-emptive excuses for poor performances. Using data obtained from a series of questionnaires, this research addresses the question: Given that self-verification occurs when individuals are certain about their self-concept and self-handicapping occurs when they are uncertain, do self-handicappers avoid self-verification?

The Community Service Self-Efficacy Scale: A Further Examination of Validity and the Application to Service-learning and Engaged Scholarship

STUDENTS Gail K Susdorf
ADVISORS Roger N Reeb
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Psychology, Poster- Honors Thesis

As a University Psychology student shaped by the University of Dayton's mission to "link learning and scholarship with leadership and service" the critical link among these components must be explored in order to move forward as a civically responsible graduate. The purpose of this project is to provide a necessary reflection upon graduation about the effectiveness a University education could potentially have within the greater community context. In doing so this study will examine the validity of the Community Service Self-Efficacy Scale, a psychometric instrument used to measure the theoretical construct of self-efficacy, in a University of Dayton Psychology course centered on service-learning in a local homeless shelter. The results will then be discussed in relation to the importance of service-learning, engaged scholarship and the purpose of universities to foster the development of civic minded graduates.

The Effect of Temperature on Self-Reported Isolation

STUDENTS Mary C Holtzhauser
ADVISORS Greg C Elvers
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Psychology, Poster- Independent Research

Embodied cognition is the idea that the human body influences thoughts and vice versa; physical heat should cause a decrease in loneliness ("social coldness") reports while physical coolness should cause an increase. Answering questions on an impersonal computer should increase loneliness reports relative to answering questions on paper. So far, 67 of a planned 150 undergraduate students have participated, completing the UCLA loneliness scale and evaluation questionnaire after holding a heated or cooled therapeutic pack. Preliminary results revealed a main effect of questionnaire type, no main effect of pack temperature and no interaction of questionnaire and pack temperature. If embodied cognition correctly identifies the relationship between physical and social warmth, then people who are more depressed (feel socially cold) may exhibit more physical warmth-seeking behaviors than those who are less depressed. Undergraduate students scoring either higher or lower on a standardized measure of depression will be invited to complete a questionnaire identifying heat-seeking behaviors. Data is still being collected at this time.

The Impact of Social Awareness, Empathy, and Confidence on Blindness to Change in Facial Emotions

STUDENTS Alyx E Ballenger, Mark Brown, Kaitlin Helene Gallup, Peter A Oduwole, Joseph R Pauszek, Jeremy T Schwob, Zachary J Vidic, Scott Wagoner, Michael T Wright
ADVISORS Susan T Davis
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Psychology, Poster- Independent Research

Change blindness (CB) is an inability to detect changes in a visual stimulus. For example, Simons & Chabris (1999) used videotaped scenes depicting a gorilla walking across the screen, typically unnoticed by observers. The present research investigated blindness to changes in facial indications of emotion. Previous studies have shown that gradual changes of facial emotion produce substantive levels of CB when assessed by verbal report (David et al., 2006). It has also been noted that observers express high levels of confidence in their ability and accuracy to detect a change in a stimulus if it were to take place, even though they consistently fail to detect changes (Blackmore et al., 1995). The present research replicates these results and examines the relationship between empathy (sensitivity to others' emotions), social awareness (cognizance of what is needed by others in a social situation), and CB. Experiment 1, using subjective reports of change detection, verified the three hypotheses of interest in this research: first, gradual changes in the facial emotion of an actor in a video were detected more frequently than gradual changes in a neutral stimulus (e.g., the color of a shirt), and more often by participants who were more socially aware and empathic; and, second, more overconfidence in their ability to detect change was expressed, a priori, by participants who were least accurate in detecting changes in emotion. The use of eye-tracking equipment in a second experiment is expected to provide physiological verification for these results. Specifically, it is expected that gradual changes in the facial emotion of an actor in a video will attract more gaze and fixation, and be detected more frequently, than gradual changes in a neutral stimulus (e.g., the color of a shirt).

Visual and Motor Information in the Rubber Hand Illusion

STUDENTS Jessica L James, Lindsey C Meter
ADVISORS Benjamin R Kunz
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Psychology, Poster- Independent Research

The body schema, one's sense of body part ownership, position and location, is informed by visual, proprioceptive, and tactile information. Under normal circumstances, these sources of information are consistent with one another in providing an accurate awareness of one's own body. The rubber hand illusion (RHI), however, illustrates the flexibility of the body schema by creating conflict between visual and tactile information. In the RHI, when individuals watch the stimulation of a rubber hand while simultaneously feeling the stimulation of their own unseen hand, they often report feeling the touch on the rubber hand (Botvinick & Cohen, 1998). The current study builds upon this phenomenon by investigating the contribution of visual and kinesthetic information to the body schema. Two experiments employed the RHI to create a sense of ownership of a robot hand. In the first experiment, a toy robot hand was positioned in front of each participant, while the participant's right hand was positioned inside a box where it could not be seen. On each trial, participants viewed the robot hand being stroked with a paintbrush while simultaneously feeling the stroking of their own unseen hand. After several moments, participants were asked to close their eyes and point with the left hand to the location in which they believed their unseen fingertips to be located. In the second experiment, we asked participants to flex the fingers on their unseen hand while viewing the robot hand flex its fingers in the same way. In both experiments we predicted that participants would judge their hand to be closer to the location of the robot hand than to the unseen hand's actual location. These results suggest that the body schema incorporates prosthetic limbs when visual and movement information about the prosthetic are consistent with the body's own movements.

When are Positive Views of Myself Harmful? An Experimental Test of Interactive Effects of Self-Enhancement, Stress Severity, and Context Controllability on Mental Health

STUDENTS Hanna M Burke
ADVISORS Erin O'Mara
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Psychology, Poster- Graduate Research

A wide array of research has shown that people tend to view themselves in a positively biased manner, known as self-enhancement. Some findings show that self-enhancement promotes positive mental health, while others reveal that self-enhancement can be harmful to mental health. Recent research suggests that self-enhancement's impact on mental health during negative experiences depends on context controllability and stress severity. It also suggests that one's motivation to address the negative experience affects the mental outcomes manifested from self-enhancement. The main objectives of the present study are to a) experimentally examine how self-enhancement, stress severity, and context controllability interact to affect mental health, b) identify the role of motivation in determining mental health outcomes through self-enhancement, and c) examine if physiological reactivity to stress changes depending on one's degree of expressing self-enhancement. Undergraduate students completed questionnaires pertaining to self-enhancement, mental health, and motivation. The participants also experienced stress by being told they will present a speech to a panel of judges who will evaluate their speech and performance. They were told the judges are either warm and kind (low stress) or cold and harsh (high stress), and tend to evaluate the performance based either on the quality of the speech (high control) or on their own personal views (low control). Physiological measures of heart rate and blood pressure were taken before and after the participants were introduced to the speech task. This study provides an understanding as to how stress severity and context controllability interact with self-enhancement to predict mental health, and how motivation affects the interaction. Additionally, it contributes to answering the question of when self-enhancement is helpful, and when it is harmful, for mental health.

Writing About My Adamantium Skeleton: Media Self-Assimilation Bolsters Grip Strength When Embodying Personal Ideals

STUDENTS Mitchell Brown
ADVISORS John J Bauer
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Psychology, Poster- Graduate Research

Body image research focuses on how ideal physical dimensions, purported by media and culture, may not be attainable for the average person. For men, that includes evolutionary indicators of physical prowess, such as heavy musculature and physical strength. Findings often indicate deleterious effects of such media on positive regard toward the self following comparison between self and ideal other. However, considerably less research concerns itself with men feeling part of the muscular ideal, thus buffering themselves from feelings of inadequacy. The current study addresses this concern through media self-assimilation (MSA), a process of imbuing oneself with characteristics of a media figure, thus "becoming" the character. We investigated how MSA with a personal ideal can bolster physical strength and self-perception. After participants provided baseline grip strength with a hand dynamometer and confidence in performing physical tasks, they engaged in an MSA experience. They wrote a first-person narrative account of themselves as either their favorite superhero or a superhero they did not like. Following MSA, participants gripped the dynamometer and reported their confidence again, along with body-esteem and attitudes regarding their performances in feats of strength. Participants' grip strength increased from baseline following MSA, but only with a favorite superhero. Confidence in performing a physical task was augmented by MSA. Results demonstrate how embodying a personal ideal bolsters a person's physical strength due to one's perception as being ideal themselves. Membership in the cultural ideal, regardless of personal meaningfulness, enhanced confidence in ability. Narratives served as a teleological proxy by creating a coherent view of the self as part of both a personal and cultural ideal.

It's Not A Question of Weight Ratio! An Analog of Experimental Grip Strength Research

STUDENTS Mitchell Brown
ADVISORS John J Bauer
LOCATION, TIME LTC Forum, 1:00PM-1:20PM
College of Arts and Sciences: Psychology, Oral Presentation- Graduate Research

From an evolutionary perspective, grip strength has proven to be a robust predictor of one's health and virility. It correlates with sexual behavior and personality traits, among other things (e.g., Archer & Thanzami, 2007; Shoup & Gallup, 2008). However, these findings may only represent one of several facets of the practical utility of grip strength in psychological research. This knowledge of what grip strength predicts may actually be grounds to test what grip strength is truly able to measure. I propose that grip strength is just as viable to measure and define physical ability in experimental settings. My current research has demonstrated that, when imbuing participants with characteristics of a personal ideal, e.g., a superhero, men increased their grip strength following an embodiment process. In this analog, I outline the history of grip strength as both a predictor and dependent variable. Then, I will discuss my current research using a grip strength experimental paradigm. Finally, I will address fu-

ture directions of grip strength in psychology experiments, which includes investigations into domains such as prejudice and cognitive appraisal.

Emotional Responses Evoked by Paintings and Classical Music in Artists, Musicians, and Non-Experts.

STUDENTS Adam Barnas
ADVISORS Susan T Davis
LOCATION, TIME Marianist Hall Learning Space 217, 3:00PM-3:20PM
College of Arts and Sciences: Psychology, Oral Presentation- Graduate Research

Most studies examining emotion have used either visual or auditory stimuli to evoke specific emotional responses. A limitation of these so-called unimodal studies is that the results are not easily generalized because a majority of real-life emotional experiences are a combination of both types of stimuli, so-called bimodal experiences. Only recently have examinations of emotion used audiovisual displays in their presentation. Furthermore, most studies do not consider participant expertise, such as that of artists or musicians, which has been shown to affect other psychological phenomena such as memory and face recognition. A logical assumption is that the degree of emotion evoked by a stimulus would also be affected by expertise. Consequently, the present study examined the effect of expertise on emotional responses to auditory (music), visual (art), and audiovisual displays. Musicians, artists, and non-experts were presented with emotion-eliciting (fear, happy, and sad) visual and auditory stimuli, presented unimodally and bimodally, and rated each stimulus on two characteristics of emotion: valence (whether the emotion is positive or negative) and arousal (whether the intensity of the emotion is weak or strong). Analyses were conducted for each emotion in both unimodal and bimodal presentations. Generally, there was a significant main effect of expertise and condition order for all emotions and presentations except in the happy bimodal presentations. This finding is supported by previous research indicating that positive emotions (e.g., happiness) are judged to occur more often than negative emotions (e.g., fear and sadness; Hepach et al., 2011), which may lead to perceptual differences between positive and negative emotions that are resistant to the effects of expertise. Additional analyses will be performed to determine any interactive effects between expertise, stimulus type, and characteristics of emotion during emotion perception.

For Our Sake and For Our Salvation: Christology in the Speculative Theology, Biblical Commentary, and Preaching of Thomas Aquinas and Karl Barth

STUDENTS Matthew D Archer
ADVISORS Jana M Bennett, Vincent J Miller
LOCATION, TIME LTC Team Space, 1:00PM-1:20PM
College of Arts and Sciences: Religious Studies, Oral Presentation- Graduate Research

Is the proclamation of Jesus as the Incarnate Word still "good news" today? Can we really say, without embarrassment or absurdity, that the man Jesus of Nazareth is God, the Son of the Father? Does Jesus truly show us who God is? Since the Council of Chalcedon, Christians have confessed that Christ is both God and human, two natures united in one person. Yet is the idea that God became flesh in one Jewish man, in order to teach and heal and divinize human beings, a possible idea today? The history of patristic reflection on the mystery of Jesus Christ, especially as found in the creedal formulations of Church councils, is loaded with technical terminology that has seemed to many nineteenth- and twentieth-century theologians, at least since Schleiermacher, to be unhelpful or unfitting to the reality of Jesus: what is the benefit of this talk of "two natures," "one person," "two wills," and so on? This talk will briefly address this question by gesturing to the thought of Thomas Aquinas and Karl Barth. Aquinas and Barth, I will suggest, offer two important options in contemporary theology for recovering Chalcedon as a doctrine. However, I also suggest that it is important to read their works in various genres (biblical commentary, sermons) in order to appreciate the full import of Chalcedonian thinking for their thought.

Seeing as God Sees: Epistemology of Ecclesial Practice

STUDENTS Colin M McGuigan
ADVISORS Brad J Kallenberg
LOCATION, TIME Marianist Hall Learning Space 218, 1:00PM-1:20PM
College of Arts and Sciences: Religious Studies, Oral Presentation- Graduate Research

In the wake of challenges to "classical" foundationalism and evidentialism, practice has emerged as an important locus for epistemological reflection in the philosophy of religion. This talk first provides an overview of the place of ecclesial practice in some of the most prominent

recent epistemologists of religion; second, it provides a brief account of an ordinary practice (engineering) to flesh out a general conception of the importance of practice in training cognizers for perception; third, and last, it connects the results of this inquiry with renewed theological and philosophical interest in the "spiritual senses" tradition. The upshot of these reflections is the conclusion that an adequate account of social practice already anticipates the possibility that ecclesial practice might effect an epistemic transformation (divinization) capable of realizing new (spiritual) perceptional capacities by the transformed.

The Halakhic Man: Rabbi Soloveitchik and Thomas Aquinas on Law and Incarnation

STUDENTS Jason A Heron
ADVISORS William Portier
LOCATION, TIME Marianist Hall Learning Space 217, 1:00PM-1:20PM
College of Arts and Sciences: Religious Studies, Oral Presentation- Graduate Research

The 20th century rabbi, Joseph Soloveitchik, is famous for his description and investigation of the halakhic man – the human person as formed by Torah. In describing the halakhic person, R. Soloveitchik distinguishes her/him from "homo religiosus" and from the "cognitive" person. For R. Soloveitchik, the "cognitive" person is the creature of the Enlightenment, determined to strip reality of its mystery, to explain, to control. "Homo religiosus" is the creature of Western philosophy and theology, determined to discern the contours of true reality in an effort to escape this world in the hopes for an afterlife of bliss. The persons shaped by the halakha is neither. This person is one intimately concerned with this world as a gift given to humans by God for the purpose of bringing the Torah to life in the mundane. The halakhic person is tasked with evincing the glory of God's wisdom in the world. Conventionally, we might be tempted to lump St. Thomas Aquinas in with R. Soloveitchik's "homo religiosus." However, in this project, I consider Aquinas's treatment of the New Law – the grace of Christ given to the Christian – as a complication of this easy identification of Aquinas with "homo religiosus". Aquinas's thought on the place of law in the life of the person generally and the Christian specifically does not allow us to neglect the shaping influence of God's wisdom in this world, where Christians are tasked with bringing the love of Christ into the mundane.

"TO TILL AND KEEP": THE SOURCES AND INFLUENCE OF MARIE-DOMINIQUE CHENU'S THE THEOLOGY OF WORK

STUDENTS Adam D Sheridan
ADVISORS Vincent J Miller
LOCATION, TIME Marianist Hall Learning Space 217, 1:30PM-1:50PM
College of Arts and Sciences: Religious Studies, Oral Presentation- Graduate Research

Marie Dominique Chenu is one of the most influential and controversial theologians of the 20th century. Chenu was the spiritual advisor and intellectual voice of the French worker-priest movement. The worker-priests were a group of clergy who worked in factories in order to minister to and evangelize a secularized working class. They were condemned under suspicion of communist sympathy in 1954. Shortly thereafter, Chenu published The Theology of Work in 1955. Chenu, also suspected of communism, was subsequently silenced and exiled. However, in 1967, Chenu's controversial treatise was cited in Pope Paul VI's encyclical, Populorum Progressio. This citation can be understood as a vindication of Chenu and the worker-priests.The Theology of Work is one of the most significant and under examined theological reflections on human work in the modern era. Chenu's argument revolves around the doctrine of the Incarnation. Christ assumed (took on) human nature in order to redeem humanity. The Church is the Mystical Body of Christ. Because the Church is incarnate, the Church must assume and redeem its own time and place in history. For Chenu, the place where the Church must incarnate is the world of work. According to Chenu, Marx, in spite of his errors, helps the Church to see the plight of the worker in the modern world. Chenu argues that the Church must find a way to assume and redeem the secularized working world. Inasmuch as Marx can contribute to this end, he has positive value for theology. Chenu's treatise on human work is equally daring and controversial. It challenged the status quo of its time. It continues to offer challenges to the Church today. Chenu's vision challenges the Church to constructively engage the problems and promise of the contemporary working world.

Ethics in Health Care within the Dayton Area

STUDENTS Jourdan J Lyons, Kristin M Schemine
ADVISORS Jana M Bennett
LOCATION, TIME LTC Team Space, 1:30PM-1:50PM

College of Arts and Sciences: Religious Studies, Oral Presentation- Course Project, 13 FA REL 399 P3

Jourdan Lyons and Kristen Schemine are University of Dayton sophomores that are a part of the Ethics in Action LLC. Throughout the past semester, Jourdan has been volunteering with the Kettering Health Network at Grandview Hospital in the physical therapy department as well as at Edison Elementary in the Special Education department. Meanwhile, Kristen has been volunteering at Miami Valley Hospital as well as researching how to best stay fit and healthy for college students. Throughout this presentation, they will be applying concepts learned within the Ethics in Action LLC to their service work and research.

The Son Must 'Son': Filial Obedience and Love in Early Confucianism.

STUDENTS Joshua R Brown

ADVISORS Daniel Thompson

LOCATION, TIME Marianist Hall Learning Space 218, 1:30PM-1:50PM

College of Arts and Sciences: Religious Studies, Oral Presentation- Graduate Research

This proposed paper presentation has two principal aims. Primarily, it means to explicate how the Confucian concept of xiao, or "filial piety," is primarily the virtue of filial love. Within this schema, the early Confucian tradition stresses that obedience to one's parents has an important and central role in realizing filial love, but is at the same time not identical with this love. The essay locates the role that obedience plays within the enactment of filial love, particularly developing this account through passages in the Analects and Liji that require the son to obey his parents in keeping with the Way (dao), and thus make room for filial remonstration (jian).The second aim is to help continue the trend in Confucian scholarship that works to counteract conventional interpretations of xiao as inherently oppressive and totalitarian. By locating obedience within a consideration of xiao as filial love, I demonstrate that the Confucian concept is not concerned with passive subservience. Rather, xiao refers to a particular type of moral agency, grounded in love for one's parent. Therefore, typical dismissals of the Confucian family overlook that xiao is not about power dynamics, but the cultivation and exercise of love in virtue. By drawing upon representative passages from the early Confucian tradition, I will show, contrary to popular interpretation, that though xiao requires obedience in its particular manifestations, such obedience is an expression of the disposition of filial love that xiao truly is. Thus, xiao tends to and is suited for obedience, but is not reducible to obedience in itself.

Anthropomorphism and Apophaticism: The Divine Body and Mystagogical Readings of Scripture

STUDENTS Dennis M Cox

ADVISORS Silviu N Bunta

LOCATION, TIME Marianist Hall Learning Space 218, 2:00PM-2:20PM

College of Arts and Sciences: Religious Studies, Oral Presentation- Graduate Research

This presentation explores the question of scriptural anthropomorphism (i.e., the tendency to form religious concepts, especially those concerning God, in human terms). Some of this anthropomorphic language is straightforwardly metaphorical (i.e., essentially dispensable). But what about scriptural passages that do appear to picture God in straightforwardly human terms, even as possessing a body? Is the notion of such a divine body only for naïve, "mythological" faith? This presentation seeks to dissolve the false choice in which the question is typically framed (i.e., literalism vs. demythologization) by advocating a third alternative that regards anthropomorphism as offering an indispensable but non-literal picture. The presentation will briefly summarize some of the complex history of reflection concerning the divine body in the Hebrew Bible and early Jewish mysticism. That Christians appropriated many of these traditions in order to portray the manifold body of the risen Christ underscores the inadequacy of treating divine-body language either as literal description or dispensable metaphor. Incorporating concepts from the Wittgensteinian philosophy of language, the presentation concludes that the theology of the icon offers resources for a "pedagogical-mystagogical" reading of Scripture that transcends the binary between literalism and demythologization.

Education for Democracy: Bernard James Sheil and the Sheil School of Social Studies

STUDENTS Justin M Yankech

ADVISORS Vincent J Miller

LOCATION, TIME Marianist Hall Learning Space 217, 2:00PM-2:20PM

College of Arts and Sciences: Religious Studies, Oral Presentation- Graduate Research

This presentation will discuss how the work of Bernard James Sheil of Chicago and his Sheil School of Social Studies represents a uniquely American manifestation of the Catholic social principle of subsidiarity. According to Catholic social doctrine, subsidiarity articulates how the state is responsible for offering aid to lower social bodies while at the same time not destroying them or absorbing their proper spheres of work. A less discussed dimension of the principle also outlines how these lower social bodies build up society and the state from the grass-roots level. In 1930, Sheil founded the Catholic Youth Organization, whose annual boxing tournaments gained him national fame. Beginning in 1939, he began collaborating with Saul Alinsky, the father of Community Organizing. Following Alinsky's urging, Sheil opened the Sheil School of Social Studies in 1943 as a way to educate the people of Chicago for democratic social action and participation. For the next 11 years, the Sheil School was a hub of American Catholic social thought and action. In 1954, facing age and ill-health, Sheil left the CYO and his entire organization was dismantled by the Archdiocese of Chicago.This presentation will discuss how the School was initially shaped by a European JOCist style of Catholic Action through the influence of Baroness Catherine de Hueck and George Drury, and in 1946 was changed to follow a form of democratic education that aligned with Saul Alinsky's conception of "Popular Education." Throughout the entire period, the School operated as a subsidiary social body; helping through social education to build up and support American democratic society. This presentation will argue that this shift was a result of Sheil's collaboration with Alinsky and was possible because both Alinsky and Sheil viewed the formation of society through a subsidiary structure.

Public School Volunteer Projects and Ethics Questions

STUDENTS Christopher John Gallo, Jenna Mackenzie Griffin, Maria C Hopkins, Mackenzie J Walsh

ADVISORS Jana M Bennett

LOCATION, TIME LTC Team Space, 2:00PM-2:20PM

College of Arts and Sciences: Religious Studies, Oral Presentation- Course Project, 14 SP REL 399 P3

Jenna Griffin, Maria Hopkins, Chris Gallo, and Mac Walsh have spent the last semester immersing themselves in Dayton Public Schools. Each person has explored a various subject and has worked with the elementary schools to better the Dayton community both within and outside of UD. They will be presenting about their experiences and what they have learned in regards to working with these children. Each one of these students is a member of the Ethics in Action LLC, and will be tying what they have learned from their studies of Christian Ethics to their service work.

Cultural Diversity and Community at the University of Dayton

STUDENTS John Anthony Apap, Hayden Paul Huber, Charles L Thiemann

ADVISORS Jana M Bennett

LOCATION, TIME LTC Team Space, 2:30PM-2:50PM

College of Arts and Sciences: Religious Studies, Oral Presentation- Course Project, 14 SP REL 399 P1

Our project will explore the cultural diversity on campus here at the University of Dayton through polling students about how they feel the University's commitment to community reaches out to students of different ethnicities. We will also incorporate our volunteering experiences at Ruskin elementary school and observe the diversity within the city of Dayton's community.

In Good Faith: The Ecclesiological Implications of the Formation of the Association of Catholic Teachers

STUDENTS Regina M Ingiosi

ADVISORS Vincent J Miller

LOCATION, TIME Marianist Hall Learning Space 217, 2:30PM-2:50PM

College of Arts and Sciences: Religious Studies, Oral Presentation- Graduate Research

This project will consider the theological problem of conflict within the Church through a historical investigation of founding of the Association of Catholic Teachers which took place in the Archdiocese of Philadelphia. In telling that story, this project will demonstrate that conflict between members of and parties within the Catholic Church can be acute without being divisive, that such conflict impacts the Church and reveals something of its nature, and that models for understanding the nature of the Church need to take such conflict seriously.To achieve those objectives outlined above I will be conducting historical research using both archival and secondary sources. In the second moment of this study, which draws out the ecclesiological significance of ACT's story, I will be using sources and studies on Catholic education in Philadelphia as

well as studies of the broader relationship between the Office of the Archdiocese and other labor unions. With the narrative and a firm analysis of it in place, I will examine the dominant understandings of the Church operant for the actors in this story, particularly the Church as People of God.This project makes two important contributions: an articulation of distress in the life of the Church and a broadening of the field of Catholic ecclesiology. First, in taking seriously the kind of conflict that so often characterizes the Catholic Church in the U.S. today, it will offer a basic framework for a Catholic understanding of points of contention. In the second case, the project will move beyond a theoretical theological engagement with history by using a specific historical moment to illuminate and critique models of the Church, and it will provide, specifically, a place for "conflict" in articulations of what it means to be "church."

Restorative Justice in the Dayton Community

STUDENTS Robert T Ress, Ryan Timothy Stanton
ADVISORS Jana M Bennett
LOCATION, TIME LTC Team Space, 3:00PM-3:20PM
College of Arts and Sciences: Religious Studies, Oral Presentation- Course Project, 14 SP REL 399 P1

Our project explores the theories of Restorative Justice here at UD and among other academic institutions. We will be comparing observations of the Restorative Justice program at Ruskin Elementary school and how those theories can fit into our community at UD.

To Incline Our Hearts Freely: A Theology of Women and Learning

STUDENTS Sarah T Powers Mostrom
ADVISORS Jana M Bennett
LOCATION, TIME LTC Team Space, 3:30PM-3:50PM
College of Arts and Sciences: Religious Studies, Oral Presentation- Graduate Research

Many people struggle to balance their intellectual growth with the seemingly less intellectual tasks that make demands on their time. The life/learning balance of women, who often find their own personal development crowded out by responsibilities at work and in the home, deserves particular attention. While it is usually addressed as a mostly logistical issue, the life/learning balance of women warrants theological treatment. The thought of Renaissance humanist Laura Cereta sheds light on how the particular issues facing women who desire to continue learning are theological in nature. Cereta's personal letters address her own journey toward a course of self-study; rather than allowing her duties to become a stumbling block to her education, Cereta learns over time to integrate her diverse responsibilities with learning. Through her examination of women and learning, situated in her own experience, Cereta reveals how the life/learning balance is best addressed theologically because at its very heart is the human person desiring wisdom and seeking God. This presentation will provide an overview of Cereta's thought concerning women learning in the midst of their busy lives, with a focus on how her theological insights are applicable to the lives of 21st century women.

A One-Man Bride and Groom in St. Augustine on Embodied Gender in the Church

STUDENTS Robert N Parks
ADVISORS Jana M Bennett
LOCATION, TIME LTC Team Space, 4:00PM-4:20PM
College of Arts and Sciences: Religious Studies, Oral Presentation- Graduate Research

Questions surrounding gender impact contemporary perceptions of the Church. I focus on the writings of fifth century bishop, Augustine, a foundational Christian writer commonly blamed, in part, for gender conflict in the Church. Augustine instead makes surprising, positive contributions to the much-needed discussion concerning gender and sexuality in the Church. In this presentation, I discuss ways Augustine understands the—traditionally male—bishop and his role in the Church. In Augustine's thought, the bishop operates dynamically at once in two gender roles (as conventionally understood): "masculine" giving and "feminine" reception. It seems he thinks simply that bishops receive sacramental life from Christ to give it to the Church's people. But for him, Christ is the union of man and woman. Though a man, Jesus is scripturally understood as Groom to and Head of the Church, his Bride and Body. Augustine views this relationship in two distinct, inseparable ways: 1) Jesus, the incarnate divine Person, unites himself with, not a human (male) person, but a complete human nature, and so his salvation extends to men and women. Divinity as Groom is united to humanity as bride in Jesus. 2) Since Jesus is Head and Groom of the Church which is his body and bride, Jesus and Church are together one Christ. Here again Christ is the union of man and woman, of masculine and feminine. The bishop's

gender dynamic is not first his. It is Christ's. He is the bishop's gendered dynamism. This concept's presence in the tradition, and in no less surprising an authority than Augustine, is desirable where gender studies and theology intersect. It is important to renewed concern for women's gifts in the Church's ministry, and it has tremendous potential in more fruitful dialogue around sexuality and sexual orientation in the Church.

Great Books, Great Minds: Exploring Our Place in the Cosmos

STUDENTS Marian Diaz, Amy E Paterline, Dominic R Sanfilippo, Molly R Winslow
ADVISORS Marian Diaz
LOCATION, TIME , -
College of Arts and Sciences: Religious Studies, Poster- Independent Research

"Great Books, Great Minds: Exploring our Place in the Cosmos" will be a rare book exhibit at the University of Dayton during the fall semester 2014. Stuart Rose, a local business man and nationally known book collector has generously allowed selected books to be on exhibit in the Roesch Library during October of this year. This poster will highlight some of the pieces involved in the book exhibit by authors including Thomas Aquinas, Beethoven, William Blake, Copernicus, Dante, Darwin, Dostoevsky, Einstein, Euclid, Goethe, Hippocrates, Homer, Abraham Lincoln, Maimonides, Isaac Newton, Flannery O'Connor, Plato, Shakespeare, Tolkien, Mark Twain, and Virginia Woolf. The selected texts include papyri, medieval bibles, manuscripts representing various stages of editing and illuminated manuscripts and many printed first editions. "Great Books, Great Minds: Exploring our Place in the Cosmos" will explore the on-going conversation among prominent thinkers of ages past and their continuing influence upon us today.

Angel of the Amazon: Sr. Dot Stang, A Martyr for the Rainforest and its People; Movie and Presentation

STUDENTS Elizabeth A Abrams, Teresa K Bradford
ADVISORS Leanne M Jablonski
LOCATION, TIME Sears Recital Hall, 7:30PM-8:30PM
College of Arts and Sciences: Religious Studies & SEE Initiative, Oral Presentation- Independent Research

Our video and guest speaker tell the story of Sr. Dorothy Stang, and her justice work among Brazil's peasant farmers. We'll view the inspiring student-made 30-min documentary, The Student, the Nun and the Amazon http://www.studentnunamazon.com/data/pages/synopsis.htm Dot's sister, Barbara Stang Richardson, will share personal perspectives on Dot's life, the environmental issue and injustices that Dot was working to end and where things stand now. We'll also explore how Dot's life can inspire our own faith in action to address environmental injustice. Sister Dorothy Stang was born in Dayton, Ohio, and entered the Sisters of Notre Dame de Namur community in 1948. She became an incredible champion for justice among the Amazon rainforest people, dedicating her life to helping the area's poor, landless peasants and protecting them from ranchers who viewed the rainforest only as a business. While reading her Bible's beatitudes as her weapon, she was murdered by two ranchers on February 12, 2005. Sr. Dot has been widely honored for her life and work including by the US Congress, the 2008 United Nations Prize in the Field of Human Rights, and by formal Vatican recognition as a modern day martyr. This event is led by students of the Sustainability, Energy, and Environment (SEE) ILLC - a cohort of first-year students living and learning together with an emphasis on SEE-related topics. Co-sponsored with the Department of Religious Studies and Campus Ministry's Center for Social Concern, this video and first-hand account of Sr. Dot's life integrate inspiring faith, justice and global perspectives to SEE. Participants are invited to join with volunteers from Dayton faith communities in the annual tree-planting service event in Sr. Dot's memory on Saturday, April 12 from 8:30 - 11:30 am at Carriage Hill Metropark. RSVP to ljablonski1@udayton.edu.

Do Student-Athletes Receive Preferential Treatment?

STUDENTS Howard L Savage
ADVISORS Arthur J Jipson
LOCATION, TIME St. Joseph's Hall 013, 9:00AM-10:00AM
College of Arts and Sciences: Sociology, Anthropology, and Social Work, Oral Presentation- Capstone Project

Upon entering a college or university, all students are expected to comply with university rules and regulations, as well as state and federal laws. Due to the fact that student-athletes are bound by more regulations than the typical student, i.e. NCAA rules, they are thus held to a higher standard of conduct. Many collegiate athletes represent the best of a college or university and conduct themselves in a respectable manner on

and off the field. A very small number of athletes do not live up to the ideals and morals of the institution. College sport is one of the biggest forms of entertainment in America, giving young adults a platform to become young celebrities in the eyes of the public. The purpose of this study is to determine how student-athletes are perceived when they (or some of them) are accused of violating an institution's rules and codes of conduct. The researcher will apply Labeling Theory and conduct quantitative research using a sample of students from the University of Dayton to determine whether a negative perception exists regarding student-athletes' behavior. This research will enlighten the reader on the perception of student-athletes.

Is the "Eye" All It's Cracked Up to Be?

STUDENTS Michael D Quigley
ADVISORS Todd Bagby, Arthur J Jipson
LOCATION, TIME St. Joseph's Hall 013, 9:00AM-10:00AM
College of Arts and Sciences: Sociology, Anthropology, and Social Work, Oral Presentation- Capstone Project

This study tests the minds of college students in seeing how detail oriented they are and if they can successfully determine who an offender is by looking at a photo lineup. This research project will start by analyzing past research that has been done on how successful eyewitness testimonies have been. It will try to explain and give insight into why individuals can come to forget major details that can lead to false accusations. Also, it will describe what new methods law enforcement officials have started using to cut down on the false testimonies. Eyewitness testimonies play a valuable role within the Justice System. An eyewitness's word carries a lot of weight because they saw the crime first hand. Their statement could be the difference between finding an individual guilty or innocent.

Training to Be Calm: The Effect of Extra Unarmed Combat Training on Law Engorcement Personel

STUDENTS James C Swedyk
ADVISORS Timothy F Apolito, Arthur J Jipson
LOCATION, TIME St. Joseph's Hall 013, 9:00AM-10:00AM
College of Arts and Sciences: Sociology, Anthropology, and Social Work, Oral Presentation- Capstone Project

In today's modern world of law enforcement, police training has made improvements right along side police methods and technology. However, there is one aspect of police training that is given inconsistent attention in the literature. This aspect of training is self-defense or unarmed combat training. There are many different martial arts that can teach officers how to defend themselves. The literature on self defense point to the fact that martial arts training can generate self-confidence. This paper examines the question of whether police martial arts/unarmed combat training would produce a calm state of mind while on patrol.

Effective Techniques for Successful Long-Term, High-Stakes Deception in Undercover Policing Operations

STUDENTS Rebecca C Winters
ADVISORS Timothy F Apolito, Arthur J Jipson
LOCATION, TIME St. Joseph's Hall 013, 10:00AM-11:00AM
College of Arts and Sciences: Sociology, Anthropology, and Social Work, Oral Presentation- Capstone Project

Police officers experienced in the field of undercover work were interviewed to determine what the most effective techniques for successful deception were in long-term, high-stakes undercover policing operations. The data gathered was cross-referenced with information from scholarly articles and publications on the subject to produce a comprehensive and testable list of the most effective deception techniques for this type of circumstance.

Law Enforcement Officers Decision-Making in Domestic Violence Situations

STUDENTS Michael R Ampthor
ADVISORS Arthur J Jipson
LOCATION, TIME St. Joseph's Hall 013, 10:00AM-11:00AM
College of Arts and Sciences: Sociology, Anthropology, and Social Work, Oral Presentation- Capstone Project

The purpose of this study is to determine what factors influence police officers in their attitudes towards domestic violence. The study focuses

on societal factors along with training of officers. The participants of this study will be current and past law enforcement officers with varying years of experience. The participants will also be interviewed in order to gain an understanding of the law enforcement view of domestic violence incidents and what factors they believe influence the officers' decision making process. The view of domestic violence by law enforcement officers will be evaluated in a qualitative approach. The research will help to identify areas that cause biases and find ways to minimize the effects of that bias.

Watched: A comparative study and analysis on the effects, awareness and efficacy of surveillance at the University of Dayton.

STUDENTS Matthew L Leonardi
ADVISORS Arthur J Jipson, Jamie Longazel
LOCATION, TIME St. Joseph's Hall 013, 10:00AM-11:00AM
College of Arts and Sciences: Sociology, Anthropology, and Social Work, Oral Presentation- Capstone Project

Surveillance methods have been in use largely within the cyber community in the past twenty years, after the proliferation of the Internet. Since then the increase of surveillance methods such as data tracking, security cameras and entry identification have grown exponentially and are used without the knowledge of those being surveyed. This research project will study the students perceived level of surveillance in use on campus at the University of Dayton. This project will also examine the actual methods of surveillance in use and the efficacy of those methods. This study is a comparison and contrast between the perceptions of college students on surveillance and the actual methods used on campus at the University of Dayton.

An In-Depth Look at the Effectiveness of the International Criminal Court

STUDENTS Kristen N Drilling
ADVISORS Arthur J Jipson, Anthony N Talbott
LOCATION, TIME St. Joseph's Hall 013, 11:00AM-12:00PM
College of Arts and Sciences: Sociology, Anthropology, and Social Work, Oral Presentation- Capstone Project

The need for an international body of justice has long existed, and in 2002 that need was met with the ratification of the Rome Statue by 60 countries. The ratification of this statue resulted in the creation of the International Criminal Court, a body that serves to prosecute those who commit the most heinous of crimes. While the court is largely still considered new, there are questions of just how effective it is at serving as a deterrent to perpetrators of crimes against humanity. This presentation will examine the International Criminal Court, and see if it is living up to the ideals it was funded upon.

College Women's Fear of Crime and Sexual Assault on Campus

STUDENTS Andrew D Fox
ADVISORS Arthur J Jipson
LOCATION, TIME St. Joseph's Hall 013, 11:00AM-12:00PM
College of Arts and Sciences: Sociology, Anthropology, and Social Work, Oral Presentation- Capstone Project

The college campus setting offers a unique perspective on crime. The purpose of this research project is to determine whether previous victimization has any affect on college women's fear of potential victimization. The literature supports the argument that women tend to be more fearful of crime and more fearful of victimization when compared to men. College women are a unique population when compared with women of the general population in that they are more likely to fall victim to sexually related crimes. Examining previous experiences of victimization can show the influence of fear on future victimization. The project will use secondary data analysis of a previous sexual assault survey on college women in the attempt to support the hypothesis that previous victimization directly affects fear of future victimization.

Pop culture's influence on "Get Tough on Crime" policies: How fictional crime-television programs contribute to student fears regarding violent assault.

STUDENTS Jennifer L Fiore
ADVISORS Arthur J Jipson, Sung-Soon Clara Kim
LOCATION, TIME St. Joseph's Hall 013, 11:00AM-12:00PM
College of Arts and Sciences: Sociology, Anthropology, and Social Work, Oral Presentation- Capstone Project

The United States records indicate that there has been a decrease in violent crime within the past twenty years. By contrast, the American public assumes that crime rates have not changed and if anything, are on the rise. The result is that Americans favor punishment aimed more at segregation and incarceration as opposed to various methods of rehabilitation and restoration. This pattern suggests that popular culture and television plays a role in contributing to the public's fears relating to crimes, such as assault. The study aims to focus on how crime-based television dramas contribute and build onto freshman and sophomore student's fears pertaining to the violent crime of assault. This study utilizes survey data to depict the misconceptions and fears that are constructed through exposure to numerous fictional crime television dramas and how viewing this helps to contribute to public attitudes about remaining tough on crime.

The University of Dayton's Public Safety vs. Fraternity members on UD'scampus. How do these fraternity members perceive public safety?

STUDENTS Tim P Cribbin

ADVISORS Jennifer Davis-Berman, Arthur J Jipson

LOCATION, TIME St. Joseph's Hall 013, 11:00AM-12:00PM

College of Arts and Sciences: Sociology, Anthropology, and Social Work, Oral Presentation- Capstone Project

The relationship between campus police and the campus community is of utmost important to the success and long-standing of an educational institution. Safety and security is an essential priority of an institution and if this relationship is scarred, repercussions may ensue. On college campuses across the country many students engage in dangerous binge drinking habits that can lead to many interactions with campus authorities. Many college campuses inhabit active fraternity chapters, these fraternities are known for habitual behavior. Due to this behavior, many fraternity chapters are susceptible to interaction with campus authorities. Due to this high level of interaction, the study provides readers information on how fraternity members may view campus authorities. This qualitative study provides the audience data that will help unravel the attitudes and perceptions that fraternity members on the campus of the University of Dayton view Public Safety officers. The sampling used in this study is based off snowball sampling in two members from ten different chapters which were selected for in-depth interviewing to discover their perception of Public Safety officers.

Evaluating Teacher Beliefs and Attitudes in High School Education

STUDENTS Michaela E Herrick

ADVISORS Jeanne A Holcomb, Danielle M Poe

LOCATION, TIME RecPlex, 11:00AM-12:30PM

College of Arts and Sciences: Sociology, Anthropology, and Social Work, Poster- Honors Thesis

Teachers are powerful agents of socialization to the students whom they instruct. Extensive research has been done on the impact of certain teaching styles, methods, and educational perspectives. However, lacking in many of these studies is the investigation of the relationship between a teacher's educational beliefs and his or her personal beliefs, behaviors, and his or her ethical leanings. An evaluation of this relationship was undertaken through the use of survey research conducted in the Montgomery County Public School System of Ohio with full-time high school instructors. Schools from Montgomery Country Public Schools were selected using simple random sampling techniques. This survey ascertains how a teacher views the classroom setting and students, basic demographic information, educational background of the instructor, and behavioral questions that approximate ethical tendencies. Frequency analysis of responses indicates high occurrences of a feminist care ethic and of a deontological ethic in teacher perceptions. Analysis also reveals that respondents view their job as an educator is to be a facilitator to actively engaged students who possess a strong work ethic.

Examining Acculturative Stressors of the International Student: Following Study Abroad Students in South Korea and Morocco

STUDENTS Chin Yi Chen

ADVISORS Karen L Abney Korn

LOCATION, TIME RecPlex, 11:00AM-12:30PM

College of Arts and Sciences: Sociology, Anthropology, and Social Work, Poster- Honors Thesis

International students, particularly students studying abroad for a limited period of time, face certain challenges in entering and adjusting to a new cultural environment. This research focuses on different barriers to adjustment including language, differences in nonverbal communica-

tion, discrimination and academic pressure. By comparing and contrasting the perspectives of various students with the researcher's experience, this research provides insight into the lived experience of international students and the researcher through on-site fieldwork and interviews conducted over a year on university campuses in South Korea and Morocco. It also discusses the results of the undertaken research and offers suggestions for resolving or minimizing these acculturative challenges.

Free Trade as Neocolonialism: CAFTA, the United States, and Guatemala

STUDENTS Margret F Reuter
ADVISORS Simanti Dasgupta
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Sociology, Anthropology, and Social Work, Poster- Honors Thesis

In today's world, free trade is seen as a forgone conclusion in the march towards economic development. The origin of free trade agreements rests in the neoliberalist surge of the twentieth century based upon finding a middle ground between central planning and laissez-faire capitalism. As the twentieth century progressed, neoliberalism and the ideas associated with it fell more to the side of laissez-faire capitalism. Free trade agreements between developed and developing countries demonstrate a play of power on behalf of the developed countries that seems unfair. There are stories that are not told about free trade agreements. Economic data analysis in the years since the implementation of the Central America Free Trade Agreement (CAFTA) demonstrates the inequality that exists in the creation of free trade agreements between developed countries—in this case the United States—and developing countries like Guatemala.

Linguistic Factors Affecting the Socioeconomic Status of Hispanic Immigrants in Dayton, OH

STUDENTS Alexandra M VanLoon
ADVISORS Theophile J Majka
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Sociology, Anthropology, and Social Work, Poster- Honors Thesis

Using a sociolinguistic methodology, based on surveys and interviews, I will analyze how the social status of Dayton's 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 recently adopted Welcome Dayton plan—an effort to inspire immigrants to invest and remain in the indebted city in hopes their efforts would augment the economy.

Reclaiming the Dead: The Mediated Reality of Auschwitz

STUDENTS Maura C Mckenna, Allyson M Mitchell
ADVISORS Simanti Dasgupta
LOCATION, TIME St. Joseph's Hall 025, 1:00PM-1:20PM
College of Arts and Sciences: Sociology, Anthropology, and Social Work, Oral Presentation- Course Project, 14 SP SSC 200 H1

During World War Two, a horrifying reality came to light. Internationally across the board, the even known as "the Holocaust" redefined the term "genocide" for future generations. However, during the Holocaust, speculation arose as to whether or not the media, and therefore, the international public, was aware of what exactly had occurred. We are interrogating what role the media played in humanitarian intervention during the Holocaust and the aftermath of the war. We will look at the importance of images and narratives of the lives of survivors and the memories of those who died. We want to analyze how this early media influenced contemporary values and how these values are portrayed today.

How Does Participation in Church Effect Gay Black Men's Support of the LGTB Community?

STUDENTS Jerami P Johnson
ADVISORS Jeremy S Forbis, Ruth Thompson-Miller
LOCATION, TIME St. Joseph's Hall 023, 1:00PM-2:00PM
College of Arts and Sciences: Sociology, Anthropology, and Social Work, Oral Presentation- Capstone Project

Historically, African-Americans have experienced prejudice and discrimination in the United States. African Americans often learned to cope with these attitudes and behaviors by seeking support from social institutions such as the church, family, and community. This kind of experience is doubled for those Black men who identify themselves as homosexual. These men have an intersection of their identities forcing them to face the oppression of both their race and sexual orientation. This study seeks to explore the research question, how does participation in church effect gay Black men's support of the LGTB community?. This study is a secondary analysis of Social Justice Sexuality Project: 2010 National Survey, including Puerto Rico written by Juan Battle, Antonio Jay Pasteana, and Jessie Daniels.

Juvenile Recidivism: Rates of Juvenile Delinquency Among Foster Children Between the Ages of 14-18 Years Old

STUDENTS Shaneika Bolt
ADVISORS Arthur J Jipson, Carlos T Stewart
LOCATION, TIME St. Joseph's Hall 013, 1:00PM-2:00PM
College of Arts and Sciences: Sociology, Anthropology, and Social Work, Oral Presentation- Capstone Project

Prior research indicates that youth in foster care repeatedly enter the juvenile justice system at higher rates in comparison to their non-foster care counterparts. The research conducted in this study aims to examine the relationship between the child welfare and juvenile justice system. The researcher examines previous literature on the subject and focuses on answering the primary question: what available methods exists that could diminish the trend of juvenile recidivism for foster care children between the ages of 14 and 18? The researchers goal in answering this question, is to possibly provide solutions that can be used throughout the justice system in order to reduce the rate at which juvenile delinquents transition into chronic adult offenders.

Surveillance and Social Control

STUDENTS Daniel J Boman
ADVISORS Jeremy S Forbis, Dan E Miller
LOCATION, TIME St. Joseph's Hall 023, 1:00PM-2:00PM
College of Arts and Sciences: Sociology, Anthropology, and Social Work, Oral Presentation- Capstone Project

In our culture, endless warnings exist concerning the dangers of surveillance and the importance of individual privacy. These warnings are often very vague, leaving the public with an unclear understanding of exactly what makes state scrutiny of our lives so potentially dangerous. I attempt to explain what these harms of surveillance are by tapping into law, history, and other literary works done on surveillance scholarship. In order to do this, I examine when and what types of surveillance may be particularly more dangerous than others. Primarily, surveillance is harmful because it can disrupt the application of civil liberties granted to us by the Constitution. The watchful government eye can impede upon our intellectual privacy and creates a harmful dynamic between the "watcher" and the "watched". The future development of surveillance law warrants constant supervision and a suitable balance between the costs and benefits of the surveillance program. Additionally, it is imperative for government surveillance to be under consistent regulation so that we can prohibit the creation of domestic government surveillance programs whose existence is kept confidential. We must recognize surveillance as a harmful practice and be wary of the negative connotations that it may cause in regard to intellectual privacy.

Underage But Not Above The Law

STUDENTS Dana Schiavoni
ADVISORS Jennifer Davis-Berman, Arthur J Jipson
LOCATION, TIME St. Joseph's Hall 013, 1:00PM-2:00PM
College of Arts and Sciences: Sociology, Anthropology, and Social Work, Oral Presentation- Capstone Project

The present study attempts to address the following research question: What are the attitudes toward traditional and non-traditional probation of probation officers in Montgomery County, Ohio? The significance of this question is that there are a rising number of juvenile offenders and there should be an approach to lower juvenile recidivism. This study examines perceptions about juvenile probation. Finding which type of probation is most beneficial to juveniles will help lower the recidivism rate of juveniles. The present project is a qualitative analysis that involves three in-person interviews with traditional probation officers from Montgomery County Juvenile Probation as well as three in person interviews with non-traditional probation officers from Building Bridges. An attempt will be made to interview Judge Anthony Capizzi who is a Judge for

Montgomery County Juvenile Court.

What Would Jesus Do? Analyzing UD Students Relationship with Sexuality and Religion

STUDENTS Ricardo E Rosado-Rodriguez
ADVISORS Jeremy S Forbis, Leslie H Picca
LOCATION, TIME St. Joseph's Hall 023, 1:00PM-2:00PM
College of Arts and Sciences: Sociology, Anthropology, and Social Work, Oral Presentation- Capstone Project

In our society today, young college students are bombarded with mixed signals regarding sexual practices and religious perspectives. This research attempts to explore the contradictions college students may face regarding their beliefs and sexual practices. Using data collected via online surveys, this study examines the question of how UD college students negotiate in their individual behaviors the strain between Catholic Social Teachings and living in a culture that is oversexualized. Data were collected using closed and open-ended questions in survey monkey; participants were recruited using snowball sampling beginning with personal contacts of the author. The findings were discussed within the context of the previous literature, and future suggestions for research were offered.

TOMS Shoes: Walking the Humanitarian Line

STUDENTS Megan E Brady, Samuel L Zaharko
ADVISORS Simanti Dasgupta
LOCATION, TIME St. Joseph's Hall 025, 1:30PM-1:50PM
College of Arts and Sciences: Sociology, Anthropology, and Social Work, Oral Presentation- Course Project, 14 SP SSC 200 H1

The aim of this presentation is to critically analyze TOMS Shoes' "one for one" business strategy. TOMS' founder, Blake Mycoskie, was inspired to create TOMS from a trip to Argentina where he saw extreme poverty and health conditions, as well as children walking without shoes. However, every pair of TOMS Shoes that is donated can take away from the local businesses and can hinder the developing goals of the community trying to be helped. TOMS creates a quick temporary fix for one problem in a specified area, but does not solve the true issues of sub-par economic development, health, sanitation and education. Because westerners see shoes as a necessity and not the privilege that they are, the attitude towards TOMS Shoes is seen in primarily a positive light, but, as previously mentioned, shoes are not the priority in many of these communities. As a result, TOMS' buy one give one business model reinforces the disparity between the giver and the receiver.

Genocide: The Elusive Word of Obligation

STUDENTS Elizaveta Klementieva, Michaela H Redlingshafer
ADVISORS Simanti Dasgupta
LOCATION, TIME St. Joseph's Hall 025, 2:00PM-2:20PM
College of Arts and Sciences: Sociology, Anthropology, and Social Work, Oral Presentation- Course Project, 14 SP SSC 200 H1

Considered as one of the most horrendous atrocities of the twentieth century, the Rwandan Genocide of 1994 claimed the lives of an estimated 800,000 people of Tutsi and moderate Hutu ethnicities in a matter of weeks. The response of the international community to the African holocaust was trifling; the lack of urgency and minimal intervention by international actors, namely that of the United Nations, had been perceived as an utter failure in the prevention and management of such a crisis. The United Nations had later publically admitted the explicit and collateral damage their inactions have imposed on the Republic of Rwanda. The purpose of this project is to analyze how and why the United Nations, which had the instruments available to intervene, did not attempt to adequately do so in order to prevent and stop the Rwandan slaughters. The United Nation's refusal to identify the mass human extermination as that of "genocide," by rather strategically maneuvering the rhetoric "acts of genocide," was an intentional political justification for the unwillingness to fully engage in another Peacekeeping Operation in Africa. By interrogating the arbitrary jurisdictional power elicited from one word, this project hopes to illuminate some of the obscure complexities of international intervention in times when it is necessarily dire.

Resettled: A Portrait of Bhutanese Refugees in Dayton, Ohio

STUDENTS Molly R Winslow
ADVISORS Theophile J Majka
LOCATION, TIME Kennedy Union 222, 2:00PM-2:20PM
College of Arts and Sciences: Sociology, Anthropology, and Social Work, Oral Presentation- Honors Thesis

Over 75 refugees from the nation of Bhutan have been resettled in the Dayton area since 2010 due to ethnic tensions in their home country. The Ethnic and Cultural Diversity Caucus in conjunction with the Welcome Dayton Initiative, a city wide effort to create a more immigrant friendly city, conducted a study to examine six local refugee populations, assess how well refugees have adapted to life in the United States, and if services provided were adequate and accessible. The Bhutanese were not included. This new study attempts to fill the gap left by this previous research.This project encompasses two methodological approaches. The first involved a series of interviews with those who work with and for the Bhutanese refugee population. This portion of the study was to identify the structural barriers faced by the Bhutanese refugees' as seen by those who work with them. The second portion took on a more ethnographic approach involving an intensive case study with one Bhutanese family. Informal meetings and interviews over the course of several months provide the perspective and voice needed to capture the lived experience of this refugee population. The findings show three main barriers to the Bhutanese integration. These include difficulty finding adequate employment, poor English language acquisition due to non-Bhutanese specific language classes and pre-literacy, and religion as both an internal community builder and an isolating factor. Other barriers such as mental health problems arose in the research. This study will be utilized by the City of Dayton to improve refugee services.

Apartments and Academics: The Relationship for Sophomore College Students in Search of Academic Success

STUDENTS Conor M Kutner
ADVISORS Simanti Dasgupta, Jeremy S Forbis
LOCATION, TIME St. Joseph's Hall 023, 2:00PM-3:00PM
College of Arts and Sciences: Sociology, Anthropology, and Social Work, Oral Presentation- Capstone Project

In the area of sophomore research, not much has been undertaken to assess and improve the lives of college students in their second year regarding their academic careers. This study assesses the role that apartment-living plays on the academics of sophomore (or second-year) college students. The population of this study is 8 sophomore college students currently living in campus apartments. These students will also have lived in campus dormitories/residence halls the previous year, as first-year students. Participants are gathered through email and will be snowball sampled. Participants are interviewed in personal, one-on-one settings to discuss and detail their experiences through a series of questions. Results are expected to indicate an effect on academics. Scarcity of current research suggests a need to conduct more extensive studies on this topic. The findings imply a more intensive examination into this issue.

Blind to Injustice?: Assessing UD Students' Awareness of Mass Incarceration

STUDENTS Matt P Pontarelli
ADVISORS Arthur J Jipson, Jamie Longazel
LOCATION, TIME St. Joseph's Hall 013, 2:00PM-3:00PM
College of Arts and Sciences: Sociology, Anthropology, and Social Work, Oral Presentation- Capstone Project

The War on Drugs has had profound effects on our criminal justice system and, in turn, our society, since its implementation in 1971. Not only has this "war" increased our prison population to the highest in the world, but also it has shown clear evidence of racial discrimination in its tactics and numbers (Alexander 2010; The Sentencing Project 2013; Jarecki, The House I live In). The goal in this research project is to find the extent of awareness among University of Dayton students regarding our country's current incarceration levels and its implications, specifically in regards to drug crime and inequality. Is there a common awareness for our imprisonment habits and how it compares to the rest of the world? Furthermore, do factors such as race and/or socioeconomic background have an effect on awareness? What does this say about our own society? Through a quantitative, survey based methodology, the research set forth will look to answer these questions among University of Dayton students. Awareness of this information is important in understanding, through our criminal justice system, the presence and workings of modern day racism and inequality in American society.

Perception of The Inked Individual in The Workplace

STUDENTS Juliann E Lawrence
ADVISORS Shawn A Cassiman, Arthur J Jipson
LOCATION, TIME St. Joseph's Hall 013, 2:00PM-3:00PM
College of Arts and Sciences: Sociology, Anthropology, and Social Work, Oral Presentation- Capstone Project

Is tattoo discrimination still prevalent in our society? Body art is always changing much like the people who choose to put it on their body. Tattooing has evolved from a dark past of criminality and gang affiliation to a relatively common mode of self-expression. However, not all sectors of society appreciate body art. Work places, such as some police departments, ban visible tattoos. Some departments go as far as rejecting applicants who have visible tattoos and do not get them removed. This project seeks to gain information about the reasons inked individuals are required to cover both the actual art and how they feel about it through semi-structured interviews. Interviews were conducted with individuals both with visible tattoos and those without.

Police Shift Work and Healthy Officers

STUDENTS Nicholas D Orrill
ADVISORS Timothy F Apolito, Arthur J Jipson
LOCATION, TIME St. Joseph's Hall 013, 2:00PM-3:00PM
College of Arts and Sciences: Sociology, Anthropology, and Social Work, Oral Presentation- Capstone Project

This project is an investigation of the health of police officers, specifically related to shift work. Typical police officers are affected in three different areas by the shift that they work: their physical fitness, mental health, and overall health. Because of time restrictions and lack of sleep, officers may not be able to exercise as much which puts them at a disadvantage to some criminals that they face on the streets. Officers also have to juggle work life consisting of training, testifying in court, and regular duty hours with family responsibilities which is not always an easy task. Finally with the mental and physical stress that is put on an officer's body and a poor diet, they are diagnosed with many severe medical issues. Data for the research was collected by an online survey completed by members from the Dayton Police Department who were invited to participate. Data was collected and analyzed from the online survey to see which particular shift was more hazardous to an officer's health. This data could be used in the future to formulate a plan to bring awareness to these issues and aid in developing healthy officers.

Prevalence of Racial Profiling in Stop and Frisk Cases conducted in 2006 by the New York Police

STUDENTS Paul Y Raffoul
ADVISORS Arthur J Jipson, Leslie H Picca
LOCATION, TIME St. Joseph's Hall 013, 2:00PM-3:00PM
College of Arts and Sciences: Sociology, Anthropology, and Social Work, Oral Presentation- Capstone Project

Racial Profiling is an unjust tactic used for finding criminals based off of their race, ethnicity, or national origin. The use of racial profiling can be dated back to the late 1600's when slavery was a part of society, yet racial profiling can still be seen in this decade as a tactic to find criminals. The question at hand is whether or not police departments use racial profiling as a tactic when looking for criminals in stop and frisk cases. This question will be answered by looking at a 2006 Stop and Frisk database conducted and collected by the New York Police Department. Through the use of this database we see that racial minorities were disproportionately being stopped and frisked as opposed to whites. We also see that racial minorities held a higher arrest rate than whites. For these reasons among others, the researcher believes that racial profiling was used by the New York Police Department to stop and frisk possible criminals in 2006.

The Feelings and Beliefs of Education Students about Urban Education

STUDENTS Katheine M Gordon
ADVISORS Jeremy S Forbis, Dan E Miller
LOCATION, TIME St. Joseph's Hall 023, 2:00PM-3:00PM
College of Arts and Sciences: Sociology, Anthropology, and Social Work, Oral Presentation- Capstone Project

For many years preservice education programs have been placing a requirement for each education student to take one or more multicultural courses concerning topics such as culture, race, and class. These courses were designed because over the past 40 years, the amount of culturally diverse students has increased immensely. University of Dayton education students are required to take a class titled "Educating Diverse Student Populations in Inclusive Settings" (EDT 340) and includes a lab observing a Dayton Public School. The purpose of this research is to survey University of Dayton students taking this required class about their feelings and beliefs about urban education before and after taking Educating Diverse Student Populations in Inclusive Settings. The aspects explored are the beliefs on urban education before beginning the class, the effectiveness of information learned in their class about urban education, and their personal experiences while observing in an urban classroom. It is

believed that the results will show that University of Dayton students in EDT 340 will have a positive change in their beliefs and feelings toward urban education after being enrolled in this class and an observation in Dayton Public School.

What makes a 'home' according to senior citizens living in a retirement community

STUDENTS Caitlin A Browning
ADVISORS Jeremy S Forbis, Laura M Leming
LOCATION, TIME St. Joseph's Hall 023, 2:00PM-3:00PM
College of Arts and Sciences: Sociology, Anthropology, and Social Work, Oral Presentation- Capstone Project

This research focuses on the increasing number of aging baby boomers and how society shifts to attend to their needs. Families may not be able to care for their older loved ones and are turning to assisted living and retirement communities to help create a comfortable place for these senior citizens to live out the remainder of their elderly years. The research discusses what aging adults in Dayton Ohio consider being a 'home' and how they are adjusting to life in their new surroundings.

Staying Clean; What Does it Mean?

STUDENTS Jamie L Flannery, Grace E Willkomm
ADVISORS Simanti Dasgupta
LOCATION, TIME St. Joseph's Hall 025, 2:30PM-2:50PM
College of Arts and Sciences: Sociology, Anthropology, and Social Work, Oral Presentation- Course Project, 14 SP SSC 200 H1

A company mission statement geared toward the aid of the less privileged implies such an organization's actions are beneficial to those less privileged. Despite such implications, the companies are often revealed as a promotion of structural violence via disconnection between the giving and receiving ends of aid. Sober Is Sexy, a clothing company that donates a portion of its proceeds to a different rehabilitation facility each month, claims to support sober living. Nevertheless, many of the products ridicule drug addiction and belittle the difficulty of reaching and maintaining sobriety, thus causing a disconnection between the mission statement and the actions of the company. Sober is Sexy products enhance social stigmas towards addicts and the nature of addiction; a few stigmas include the illusions that addicts are of subhuman status and that sobriety is an easy goal if will power is attainable. The disconnection between Sober is Sexy's actions and mission statement (Staying Clean) maintains and enhances structural violence.

Campus Safety: Perception of Crime

STUDENTS Cherrelle P Gardner
ADVISORS Jeremy S Forbis, Jamie Longazel
LOCATION, TIME St. Joseph's Hall 023, 3:00PM-4:00PM
College of Arts and Sciences: Sociology, Anthropology, and Social Work, Oral Presentation- Capstone Project

Current research on crime assumes that our society is color blind; it does not account for race and gender-based prejudices. This is contradictory to the research that shows these prejudices persist to this day. The University of Dayton is a Marianist institution that prides itself on its commitment to community. Even in this environment, stigmatization based on race and gender is common. The purpose of this study is to determine how students at the University of Dayton understand crime and the criminal. The data gathered is based on the responses of several focus groups composed of University of Dayton students who identified as African American/ Black or White. Are their understandings of crime consistent with reality or driven by race- and gender-based prejudices?

Economic Change and the Local Community: The Case of Hydraulic Fracturing in Northeast Ohio

STUDENTS Joanne C Koehler
ADVISORS Arthur J Jipson, Jamie Longazel
LOCATION, TIME St. Joseph's Hall 013, 3:00PM-4:00PM
College of Arts and Sciences: Sociology, Anthropology, and Social Work, Oral Presentation- Capstone Project

Research finds that communities undergoing drastic social and economic change tend to scapegoat outsiders as well as struggle with the new corporation changing the local economy. It also finds that community members come together over the issues that arise due to social and economic changes. The purpose of this study was to determine whether similar processes were at play in a Northeast Ohio community where

hydraulic fracturing has been taking place. I conducted six interviews with a variety of local community members. Some were activists, others were farmland owners with a well on site and there were two of which who worked for the local government. Through these interviews with local community members, the previous research conducted has been supported within the hydraulic fracturing community. I conclude by discussing how drastic changes to the social and economic aspects of a local community can affect Northeast Ohio communities due to the booming market of the hydraulic fracturing economy.

Graffiti Subculture: Ethnography and Motive

STUDENTS Adam N Box
ADVISORS Paul J Becker, Arthur J Jipson
LOCATION, TIME St. Joseph's Hall 013, 3:00PM-4:00PM
College of Arts and Sciences: Sociology, Anthropology, and Social Work, Oral Presentation- Capstone Project

They say that "beauty lies in the eye of the beholder," and this is truly the case in regards to graffiti. While some perceive graffiti as an artistic, aesthetic expression, others view it as a crime that costs the taxpayers millions of dollars annually. "No other art movement in human history has so thoroughly confounded the deeply held concepts of public and private property; no other art movement has so thoroughly made itself a public-policy issue" (Gastman & Neelon, p. 23). Through various studies, researchers have found that graffiti comes from various sources with a surplus of motives. Ethnographic research has shed light on the specific personality types of graffiti artists as well. Much like other social phenomena, graffiti has developed throughout history. From the subway car graffiti of the 1970s to the contemporary art gallery graffiti, graffiti has been used to express many underlying social, political, and artistic messages. Regardless of the motive and intent of graffiti throughout history, this social issue has nonetheless been of significant concern to policy-makers. This project examines graffiti through a study of the perceptions of it.

How does fear of crime affect a person's daily routine?

STUDENTS Karissa L Dienes
ADVISORS Jeremy S Forbis
LOCATION, TIME St. Joseph's Hall 023, 3:00PM-4:00PM
College of Arts and Sciences: Sociology, Anthropology, and Social Work, Oral Presentation- Capstone Project

The purpose of this research is to find whether a person's fear of crime or anxiety of falling victim to a crime affects their daily routines and activities. And if so, to what extent are their day to day lives altered. Previous studies examine what causes a person to worry about falling victim to crimes. This study will take it a step further and find the results of that fear. This research utilizes secondary sources including published journal articles and documented results of previous crime studies. The current study will use these secondary sources as well as focus groups conducted at the University of Dayton. It is expected that this research will link together a person's previous encounters with and present fear of crime, whether the crime is directly or indirectly experienced.

The Effect of School Uniforms on Academic Achievement and Deviant Behavior: A Meta-analysis

STUDENTS Matthew M Behan
ADVISORS Jeremy S Forbis, Ruth Thompson-Miller
LOCATION, TIME St. Joseph's Hall 023, 3:00PM-4:00PM
College of Arts and Sciences: Sociology, Anthropology, and Social Work, Oral Presentation- Capstone Project

The American school system's policies and programs are constantly being assessed and reformed in both the public and private spheres. However, as mandatory uniform policies have grown in popularity over the last twenty years -- little research has ensued on these said dramatic changes. Proponents of uniforms urge its value in creating a school environment that is conducive to both learning, and respect. On the other hand, opponents argue that research shows no disparity and that all costs of uniforms fall on the shoulders of the students' guardians. The objective of this paper is to demonstrate whether or not mandatory school uniforms are positively or negatively correlated with academic achievement and good behavior in primary and secondary schools. Prior research has suggested that school uniforms have little effect on students' academic achievement and behavioral problems, but the topic remains mostly untouched. This study will combine datasets from the "National Center for Education Statistics," a "National Educational Longitudinal Study: 1988," and data obtained from the Long Beach School District's implementation

of a uniform policy in a large urban public school district. My results are expected to indicate that school uniforms reduce behavioral issues in school, but will have no effect on academic success. Demonstrating the efficiency of school uniforms will be useful for public and private school boards in deciding what policies are more critical to the majority of students, in terms of both safety and student development.

Voter ID Laws: Cracking Down on Crime or Depressing Voter Turnout?

STUDENTS Thomas M Calascibetta
ADVISORS Daniel R Birdsong, Arthur J Jipson
LOCATION, TIME St. Joseph's Hall 013, 3:00PM-4:00PM
College of Arts and Sciences: Sociology, Anthropology, and Social Work, Oral Presentation- Capstone Project

Voter identification laws have grown more prevalent and strict since their inception in 2002, when President Bush signed the Help America Vote Act into law (Epps, 2008 pg. 13). Voter ID laws, considered basic security by some, have also been said to be disenfranchising millions of minorities, elderly, women, and poor voters (Sobel, 2009 pg. 107). This research will debunk political banter and provide an objective assessment by taking an in-depth look into voter turnout in two specific states: Indiana (strict photo ID) and Massachusetts (non-strict non-photo ID). By doing so, the research will show, through secondary data analyses, the effect of voter ID laws on voter turnout and combating in-person voter fraud. Using presidential, general election voter turnout statistics, with the 2000 general election as a control group, this research will evaluate voter turnout and crime statistics while considering outside factors, such as open-seat races, and empirically show whether voter ID laws effectively combat voter fraud or unnecessarily disenfranchise millions of voters.

How Cell Phones Affect our Physical Social Interactivity

STUDENTS Jacob A Hobbs
ADVISORS Jeremy S Forbis
LOCATION, TIME St. Joseph's Hall 023, 4:00PM-5:00PM
College of Arts and Sciences: Sociology, Anthropology, and Social Work, Oral Presentation- Capstone Project

Cell phones have become ingrained in today's modern society. This new medium ofcommunication has brought with it many positive attributes, but the negative ramifications are less visible and are often overlooked in many situations. The effect that cell phones have on our lives is profound, in the way it shapes the functions of individuals and community. The purpose of this study is to better understand how and when we use mobile phones in social situations. By specifically looking at when and how we use our mobile phones in social interactions I wish to draw relations to the reason for referring to mobile phones, rather than participating in social interactions. And to further look at our societies perceptions of cell phone use in public space. The sample population consists of students who are currently enrolled in some form of college and who are over the age of 18. Data is gathered using a self-administered electronic survey, distributed through college email, social networking sites and personal invitation. Survey items will be used to assess demographic characteristics, as well as comfort level in participation in public social interaction.

How do individuals use gun ranges and the gun subculture in Southern Ohio to construct and define their identities?

STUDENTS Clara Fox-Ruddell
ADVISORS Jeremy S Forbis, Arthur J Jipson, Jamie Longazel
LOCATION, TIME St. Joseph's Hall 013, 4:00PM-5:00PM
College of Arts and Sciences: Sociology, Anthropology, and Social Work, Oral Presentation- Capstone Project

Individuals in groups and subcultures that are only lightly represented are misunderstood by the larger populace by being understudied and thus stereotyped, including the individuals in the Southern Ohio gun subculture. In my research I ask, how individuals use gun ranges and the gun subculture in Southern Ohio to construct and define their identities. Research was conducted through both observational data collection at a well-known Southern Ohio public gun range, as well as interviews with individuals involved in the subculture. Stereotypes of individuals within this subculture lean towards violent offenders as well as gang bangers, but my research suggests that this is far from the truth. The results concluded that the individuals interviewed as well as data collected and interpreted through the observational research, that they do use the subculture to help construct their identities.

Impulse Control, Video Games, and How It Relates to Violent Behavior

STUDENTS Jennifer A Hueneman
ADVISORS Jeremy S Forbis, Dan E Miller
LOCATION, TIME St. Joseph's Hall 023, 4:00PM-5:00PM
College of Arts and Sciences: Sociology, Anthropology, and Social Work, Oral Presentation- Capstone Project

The purpose of this research is to identify the possible correlation between impulse control and the amount of time spent playing video games and if so, how this correlation relates to violent behavior. Impulse control is a widely studied subject among many different fields such as psychology, sociology, biology, criminal justice, etc. While violent video games are a popular topic, the correlation between these two variables has not yet been studied. The project involves students at The University of Dayton, in Dayton, Ohio, taking surveys. This survey consists of questions based off Barratt's Impulsiveness Scale and other impulsive questions created by the researcher. It is believed that the results will show that those individuals who spend more time playing violent video games will show lower levels of impulse control. Furthermore, lower levels of impulse control can lead to violent behavior. These results may direct future research on violent media and impulse control as it relates to possible future violent behavior.

Perceptions of College Students on Causes of Mass Shootings

STUDENTS Joseph A Baker
ADVISORS Paul J Becker, Arthur J Jipson
LOCATION, TIME St. Joseph's Hall 013, 4:00PM-5:00PM
College of Arts and Sciences: Sociology, Anthropology, and Social Work, Oral Presentation- Capstone Project

There have been an increasing number of mass shootings in the United States in recent years. There have been many hypotheses developed that attempt to explain the causes of mass shootings. The purpose of this study is to determine what college students at the University of Dayton perceive to be the reasons why offenders commit mass shootings. An online survey was designed in order to measure the perceptions of students about the decision-making of mass shooting offenders. The potential causes included in the survey were as follows: Easy Access to Firearms, Drug Use, Exposure to Violent Media (e.g. violent movies or video games), Failure of the Mental Health System to Identify Individuals Who Are a Danger to Others, Bullying, Desire for Attention, and Copycat Crime.

Creating Identities: Semiotic Theory as Applied to Visual Messages

STUDENTS Lauren E Banfield
ADVISORS John V Clarke, Kathleen W Kargl
LOCATION, TIME RecPlex, 11:00AM-12:30PM
College of Arts and Sciences: Visual Arts, Poster- Honors Thesis

Brand identity is about recognition, visibility, and expressed quality in a world where there are endless options. At the heart of branding is the perception of meaning and how that meaning is understood; successful design can never be arbitrary. Focus has been placed on the development and implementation of comprehensive brand identities, through work with multiple clients. The clients have distinct perspectives, from a local non-profit organization to a student organization trying to survive on a college campus. The components contained within the brands' systems have been determined by the needs of each organization, and have included: logos, business cards, letterhead, marketing or promotional materials, poster designs, social media elements, and invitations to events. Exploration and analysis of the development of the brand strategy for a recent local company will be discussed as a case study, including both perspective from the client and a design analysis of the solution. These different standpoints will facilitate comparison, allowing a broad and diverse view of brand identity.

Senior Capstone Projects in Photography

STUDENTS Adrienne C Lowry
ADVISORS Joel A Whitaker
LOCATION, TIME ArtStreet Studio B, 1:00PM-1:20PM
College of Arts and Sciences: Visual Arts, Oral Presentation- Capstone Project

Seniors from the Department of Visual Arts Photography Program will give a formal presentation on their respective capstone projects. These projects examine the student's individual approach, understanding, and use of the photographic medium. Each student will make a 12-15

minute presentation that utilizes a formal thesis paper and extensive visuals to contextualize their photographic work and development as photographers.

A Catalyst For Social Change: Art By Krzysztof Wodiczko

STUDENTS Julia M Williams
ADVISORS Judith L Huacuja
LOCATION, TIME Marianist Hall Learning Space Commons, 1:00PM-2:30PM
College of Arts and Sciences: Visual Arts, Oral Presentation- Capstone Project

This presentation regards the artist Krzysztof Wodiczko and his recent talk given at the University of Dayton. It will analyze the artist's body of work created over the past several decades, including his large-scale projections that have temporarily covered numerous cultural gathering places such as monuments and government buildings. Wodiczko creates a voice for the victims of injustice and violence, projecting them so that these pressing issues can no longer be overlooked. This style of public art acts as an intervention, forcing passing bystanders to witness the unspoken atrocities that are constantly occurring around them. In addition, this presentation will focus on Wodiczko's philosophies regarding the glorification of war through public memorials. The question raised by this work: Why does humankind continue to honor violence with such high esteem while disregarding the afflicted and traumatized? Overall, this presentation will honor the work of Krzysztof Wodiczko and his invitation to discuss what is needed for greater social change.

Blinking Boy

STUDENTS Jenna Striebel
ADVISORS Judith L Huacuja
LOCATION, TIME Marianist Hall Learning Space Commons, 1:00PM-2:30PM
College of Arts and Sciences: Visual Arts, Oral Presentation- Capstone Project

Blinking Boy developed by merging my academic disciplines of psychology and visual arts. During my studies, I discovered that people with a disorder or learning disability are either criticized for being the epitome of annoyance or are magnified to the point of being a contagion. Lack of knowledge is the pitfall of ignorance; with my firsthand experience as an Applied Behavioral Analysis therapist I've strived to make the Blinking Boy project encourage viewers to cope through the autistic's perspective. The language I'm using to tell my story mimics one of the most commonly used online formats– the Graphics Interchange Format (or GIF). By repurposing the mesmerizing and inherently unnerving looping qualities of the popular GIF format, viewers are invited to digest familiar information in an unfamiliar way. The desired impact is to leave the viewer with a deeper understanding of the autistic's perspective and make them more empathetic through that experience.

Catalyst

STUDENTS Kyle J Bellmay
ADVISORS Judith L Huacuja
LOCATION, TIME Marianist Hall Learning Space Commons, 1:00PM-2:30PM
College of Arts and Sciences: Visual Arts, Oral Presentation- Capstone Project

My work is focused around the idea and growth of creativity. Throughout life, I've experienced multiple people, places, and events. Each and every one of them has had an impact on me both as a person and as an artist. These inspirations have always found a way to repeat themselves and I've found myself recalling moments, faces, buildings, or even other pieces of art. With Catalyst, I wanted to create something that shows this idea of repeating instances and inspirations. This led to the idea of creating a Zoetrope-esque piece to house these inspirations.

How I Met Dayton, Ohio.

STUDENTS Kathleen M Gaffney
ADVISORS Judith L Huacuja
LOCATION, TIME Marianist Hall Learning Space Commons, 1:00PM-2:30PM
College of Arts and Sciences: Visual Arts, Oral Presentation- Capstone Project

When I first made that life-changing decision, my senior year in high school, to spend the next four years at the University of Dayton, I knew nothing about the city itself. Freshman year I hardly left campus. Sophomore year I had an internship, which allowed me to travel to the west side of Dayton. As I drove along the Miami River, I began to see a whole new side of the city I was not aware of. Fast Forward to Junior year, the

year I burst through that UD bubble. I began volunteering at Cleveland Elementary for "Reading Buddies", a program to help 3rd graders improve their reading. During that same year, I took the class, Art and Social Justice. In the class we explored the city on walkabout tours. Now, I have decided to include the city into my senior art capstone project. I want to learn more about the people. I want to meet the faces that make up Dayton, Ohio. The Mission of my senior art capstone project is to go out into various parts of Dayton, Ohio, to take portraits of its people and to share their stories. What do they love about the city and its people? What is a traditional delicacy of the city? Best places to hang out? Why is this city better than the rest? The only way to discover the core of a city and to answer these questions is to talk with the people. They are, after all, the heart and soul of the city. I hope to shine a spotlight on the people that make Dayton so great.

Letterpress: The Allure of the Handmade

STUDENTS Michelle E Adams
ADVISORS Judith L Huacuja
LOCATION, TIME Marianist Hall Learning Space Commons, 1:00PM-2:30PM
College of Arts and Sciences: Visual Arts, Oral Presentation- Capstone Project

In this digital age, print production is focused on efficiency, standardization, and capital. Machines have been created to automate and standardize all means of production. This increase in mechanization brings with it a decrease in personalization. The designer never sees a piece after it has been sent to the printer and has little control over the way the printer produces the piece. This presentation will focus on the recent rebirth of letterpress — the art of creating printed material using hand-set presses instead of computers and printers. Many designers have resisted the automation of the print industry and have instead chosen to get their hands involved by using a letterpress. In letterpress printing, everything is done by hand, from mixing the ink to setting the type to operating the press itself. This intimate, controlling process is appealing to many people because it resists the cold, detached feeling of working with modern presses. The presentation will address the social, cultural, and economic factors involved in the renaissance of the letterpress and its implications in the world of design.

Verbal History: A Slice of Dayton's Artistic Timeline

STUDENTS Abigail R Maurer
ADVISORS Judith L Huacuja
LOCATION, TIME Marianist Hall Learning Space Commons, 1:00PM-2:30PM
College of Arts and Sciences: Visual Arts, Oral Presentation- Capstone Project

My project is an ongoing video blog tracking influential creators and figures in the current Dayton Arts scene. Each video features 3-6 minutes of conversation with local art's individuals as well as still shots of their work and environment.

Visual Identity Manifested: Branding and the use of trademarks

STUDENTS Theresa M Behrens, Laura K Carmack, Kelly L Gallagher, Alissa E Gugliotta
ADVISORS Jayne Matlack Whitaker
LOCATION, TIME ArtStreet Studio B, 1:30PM-2:10PM
College of Arts and Sciences: Visual Arts, Oral Presentation- Capstone Project

A visual identity is the personality of a company, institution, small group or organization and designed to meet specific business objectives. It is most often manifested by way of branding and the use of trademarks and comes into being when there is a common ownership of an organizational philosophy. In general, this amounts to a company title and logo (logotype and/or logogram) and supporting devices commonly assembled within a set of guidelines. Students enrolled in the senior level Graphic Design III course were required to select and research a small existing and or entrepreneurial upstart company, design or redesign a trademark for them and develop from the mark, a new innovative visual identity with design elements including stationery, business forms, packaging, on screen components and various promotional collateral pieces. Their visual identity systems reflect a real world approach to brand development with specific intentions of broadening awareness of the company and reaching its potential target audience. The projects being presented are select samples of the student's extensive conceptual and visual development that contributed to each of their visual identity systems. Additional design systems will be on display in the Department of Visual Arts during the closing reception of the annual juried Horvath Exhibition in College Park Center.

Leach Treadle Wheel: Regaining the Human Touch

STUDENTS Courtney P Hoelscher, Victoria A Seitelman

ADVISORS Judith L Huacuja, Kyle E Phelps

LOCATION, TIME College Park Center 2nd floor, 5:00PM-7:00PM

College of Arts and Sciences: Visual Arts, Oral Presentation- Independent Research

The Leach Treadle Wheel represents a preservation of a more handcrafted lifestyle. In this modern age we are experiencing an exponential loss of human touch. Gone are the days when you commissioned the local potter to make your dishes and the cobbler to build your shoes. Everything is manufactured and outsourced. We propose a revisit to the local and human made. By building the Leach Treadle Wheel we are, in a small way, regaining power from the large lifeless mass manufacturing companies. We hope to build the Wheel with as many locally sourced parts as possible. This treadle wheel is extremely functional in that it is cost effective, does not require electricity to operate, and is transportable. In a way the wheel is metaphorical to pottery; many potters have come to buy electric pottery wheels rather than building their own as they used to. Pottery has become less of an essential art with the growth of chain stores that mass-produce commercial dishes. While this shift has allowed pottery to delve more into the world of fine arts it has suppressed the hand made from our culture. We hope this piece brings awareness about the quickly retreating world of the hand crafted.

Promoting the Stander Through Guerilla Graphic Design

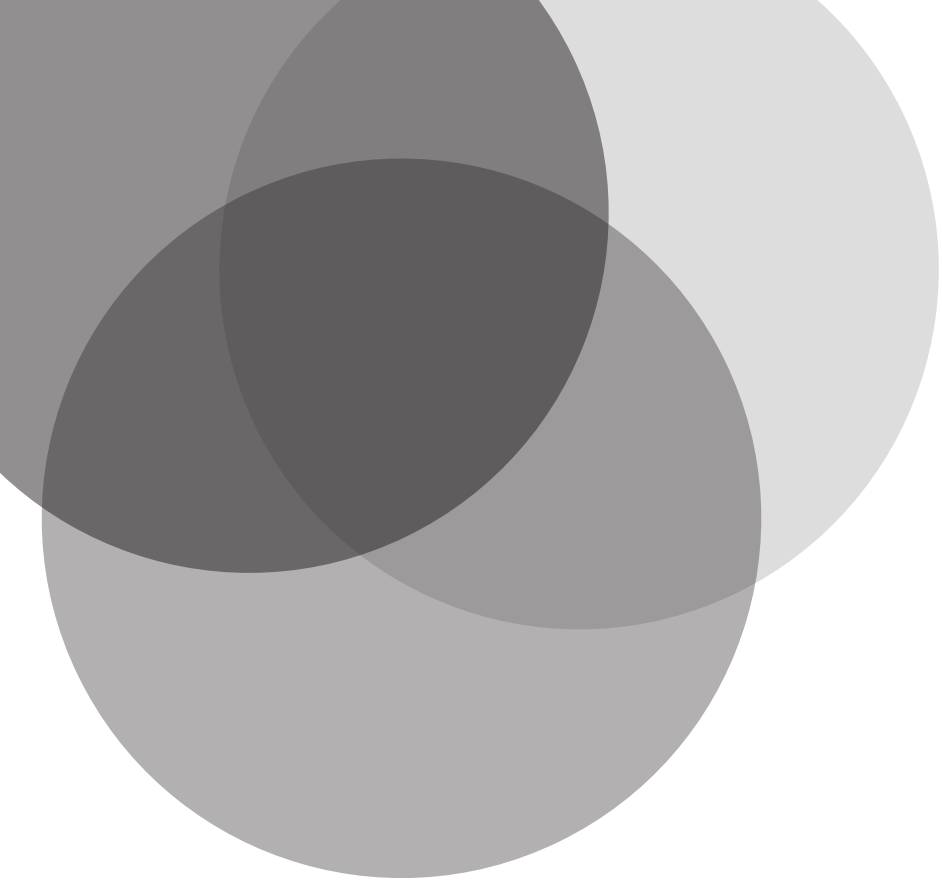
STUDENTS Clarissa F Bock, Brigid C Campbell, Lori E Claricoates, Christina L Disco, Emily Ann Downey, Savannah Taylar Heekin, Alexa Lee Hines, Kathleen W Kargl, Jessica Ann Kleja, Jordan E Manke, Marissa Marguerite Mueller, Meghan A Ostermueller, Hannah Lynn Overm

ADVISORS Kathleen W Kargl, Andrea Meyer Wade

LOCATION, TIME College Park Center 2nd floor, 5:00PM-7:00PM

College of Arts and Sciences: Visual Arts, Visual Arts Exhibition- Course Project, 14 SP VAD 411 01

Guerilla Graphic Design has to do with using time, energy and imagination to promote something, through the use of inexpensive design and marketing techniques, to target a message to a specific and small group to get them to take action. Junior and Senior level Graphic Design I students have worked with the Stander Symposium Coordinator and the event specific participants. Tasked with developing a brand and using it to generate interest in and attendance of an assigned event—occurring as a part of the Stander Symposium. The work generated from this project will be on display on the second floor of the College Park Center the day of the Stander and through the Horvath Closing Reception on April 9.



School of Business Administration

School of Business Administration

2013/2014 Micro-company results of operations from sophomore Entrepreneurship majors

ADVISORS Robert F Chelle

LOCATION, TIME Miriam Hall 214, 1:00PM-2:00PM

School of Business Administration: Crotty Center for Entrepreneurial Leadership, Oral Presentation- Course Project, 14 SP MGT 221 01

The highly acclaimed Sophomore Entrepreneurial Experience course is the first course for entrepreneurship majors in the School of Business. In its 15th year, this experiential course has operated 132 micro-companies. Specifically, besides attending normal classroom lectures, teams of students form and propose ideas for a product or service to pursue, select the best of class ideas and test the validly of the proposal through market research. After confirming a legitimate opportunity before them, each team uses a $5,000 loan from the University to purchase product or acquire assets for a proposed service. Issues such as securing a reliable vendor, competitive pricing, developing distribution channels, learning about personal selling, leadership, logistics, accounting, human resource issues and finally closing the company are mastered in this linked two semester course.

Do stock market prices co-vary with regional manufacturing activity: A look at the Chicago Fed's manufacturing activity index.

STUDENTS Ellen H Lee, Matt G Putbrese

ADVISORS Trevor C Collier, Robert D. Dean

LOCATION, TIME RecPlex, 9:00AM-10:30AM

School of Business Administration: Davis Center for Portfolio Management, Poster- Independent Research

A number of the Federal Reserve banks produce manufacturing activity indexes that measure the level and growth of manufacturing activity in their respective regions. The Chicago Federal Reserve's Midwest Manufacturing index (CFMMI) is especially important because it captures a large portion of the activity in the auto industry. It also correlates well with the national manufacturing activity index. Finally because it is usually published before the Purchasing Managers' report on future manufacturing activity, it can be considered a leading indicator.In this study we want to test the hypotheses that market and sector price indexes are positively related to the CFMMI. Using univarite regression models, we regress CFMMI on SPY, the S+P 500 ETF, as well as 10 S+P 500 sector ETF's. Three periods of analyses are studied: (1) 2001-2012 (2) 2003-2007 and (3) 2009-2012. The two shorter run periods represent rebound/upswing periods after economic recessions. The year 2013 will be used as an outer sample forecasting period to determine if CFMMI is a leading predictor of market and sector price movements.

A Momentum Growth Rate Model for Selected 4 Digit Industrial Groupings 2002-2012

STUDENTS Samuel B Girouard, Benjamin F Rudman

ADVISORS Trevor C Collier, Robert D. Dean

LOCATION, TIME RecPlex, 9:00AM-10:30AM

School of Business Administration: Davis Center for Portfolio Management, Poster- Independent Research

This study is concerned with the development of momentum models that can be used to determine the portfolio weighting for industry classifications below the search level. Using Wharton Research Data Services (WRDS) data on revenue and gross operating profit at the 4 digit SIC code level,five and ten year compound annual growth rates (CAGR) are calculated for a small sample (10) of industry groups. Higher rates of growth in the most recent 5 years compared to the 10 year period will be considered a positive momentum factor. The hypothesis to be to tested is that 4 digit SIC codes with higher momemntum factors will have (1) more stocks ouperforming the sector which they are located in and/or (2) a larger number of stocks with extremely higher returns i.e. beyond the 95th percentile. Since WRDS provides data on all the stocks within a 4 digit SIC code, the distribution of returns can easily be determined.

A Performance Analysis of Concentrated Portfolios of High Quality Stocks over the Highly Volatile Market Period of 2007 – 2013

STUDENTS Christine A Ferry

ADVISORS Trevor C Collier, Robert D. Dean

LOCATION, TIME RecPlex, 9:00AM-10:30AM

School of Business Administration: Davis Center for Portfolio Management, Poster- Independent Research

A number of investment managers use high quality stocks as a key to their investment strategy. In this study I want to look at the relative performance of concentrated portfolios (25-30 stocks) of high quality stocks compared to the S&P 500 (i.e. the benchmark portfolio). Using the S&P's quality ratings of A- through A+, I developed the following concentrated portfolios: (1) Mega Large Cap (2) Large Cap and (3) Mid-Cap. Two time periods are evaluated performance wise: (1) 12-31-07 – 12-31-13 and (2) 3-31-09 – 12-31-13. The 07-13 time interval includes the steep down swing period in the market which occurred during 2008 and the first part of 2009. Due to the housing crisis, the economy was also in free fall in the same period of time. The 09-13 time interval represents a highly volatile but strong up swing, period of the market. In this study I use the following portfolio weighting strategies to develop the returns to the concentrated portfolios: (1) market value weight (2) equal dollar weight (3) relative strength – momentum weight and (4) relative strength – concentrated weight.

Betting Against Betas: A low volatility investment strategy for the highly volatile market period (2008-2012).

STUDENTS Anthony Caruso

ADVISORS Trevor C Collier, Robert D. Dean

LOCATION, TIME RecPlex, 9:00AM-10:30AM

School of Business Administration: Davis Center for Portfolio Management, Poster- Course Project, 14 SP FIN 498 P1

The objective of this study is to examine the risk/return relationships of "style/size" ETFs over the period 2008-2012. The ETFs are (1) Large cap growth, (2) Large cap value, (3) Mid cap growth, (4) Mid cap value, (5) Small cap growth, (6) Small cap value. The measure of risk used in this study is beta. Typically, higher beta ETFs are expected to outperform in up markets and underperform in down markets. Conversely, lower beta ETFs would perform best in a down market and underperform in an up market. The overall period of analysis is 2008-2012. The following three sub periods will also be analyzed: (1) Downswing Period (12-31-07)-(3-31-09), (2) Rebound period (3-31-09)-(12/31/09), (3) Upswing-Trading Range (12-31-09)-(12-31-12). Using monthly data, betas will be calculated for the overall period as well as the three sub periods. In order to carry out the Betting Against Beta strategies, the inverse of the betas will be used as the portfolio weighting mechanism for the 6 ETFs.

Earnings Momentum Shifts and Stock Price Movements for Flyer Fund Stocks

STUDENTS Matthew Chkautovich, Andrew M Imhoff

ADVISORS Trevor C Collier, Robert D. Dean

LOCATION, TIME RecPlex, 9:00AM-10:30AM

School of Business Administration: Davis Center for Portfolio Management, Poster- Independent Research

Earnings momentum is often considered a key factor in stock price movements. In this study we look at changes in the compound quarterly growth rates over periods of four and eight quarters, and relate these to the price movements of 30 stocks from the Flyer Fund Portfolio. The period of an analyses covers two years from 8-31-11 to 8-31-13.Using cross sectional regression analyses, we identified the statistical relationship between sector price movements and variations in the compound manual growth rate in earnings period. We test the hypothesis that the slop coefficient of the univariate regressions are positive (i.e. b>0). The regressions are carried out separately for the eight quarter and four quarter CAGRs on stock price movements. A separate independent variable, the ratio of the four quarter CAGR to the eight quarter CAGR for each stock is also regressed on sector price movements. Meaningful R2s and statistically significant slope coefficients would suggest that CAGRs for short/intermediate time periods can be used as a selection factor in buying or selling stocks for the Flyer Fund Portfolio.

Financial Market Conditions, Sector Price Movements and Sector Returns: A Beta Analysis for the Period 2002-2013

STUDENTS Jessica Thomas

ADVISORS Trevor C Collier, Robert D. Dean

LOCATION, TIME RecPlex, 9:00AM-10:30AM

School of Business Administration: Davis Center for Portfolio Management, Poster- Independent Research

In this study I want to examine the relationship between market financial conditions and sector prices. The basis for the study is the 2008 financial crisis that started in the housing sector and spread to the banking system, culminating in a bank bailout by the U.S government. At the same time, the stock market experienced a major downswing in 2008 running through the 1st quarter, 2009.I plan to use the Chicago Federal Reserve's National Financial Conditions Index (NFCI) as a proxy for financial conditions in the U.S. economy. NFCI is a weighted average

of 100 financial and economic indicators. It is by far the broadest indicator of the state of financial stability in the U.S. NFCI essentially indicates whether financial conditions are tightening or loosening. The NFCI index can also be divided into three sub-indexes: (1) Risk (2) Credit and (3) Leverage. I will also examine their relationship with sector prices. The 10 S&P 500 exchange traded funds will be used to represent the 10 S&P sectors. The period of analysis is 2002-2013 with 2013 the out of sample period. Monthly data is used to examine the relationship between the NFCI and the 10 S&P 500 sectors.

Fund Allocation Strategies for ETFs: The Case for Inverse Relative Price Strength

STUDENTS Joseph D Nitting
ADVISORS Trevor C Collier, Robert D. Dean
LOCATION, TIME RecPlex, 9:00AM-10:30AM
School of Business Administration: Davis Center for Portfolio Management, Poster- Course Project, 13 FA FIN 498 P1

In this study, I evaluate a portfolio weighting strategy called inverse relative price strength (IRPS). This weighting strategy gives higher weights to ETFs with lower prices relative to some benchmark price. The benchmark price is the Russell 3000 Index. IRPS is dynamic in that the weights change as relative prices change. The six ETFs evaluated in this study are large cap growth, mid cap growth, small cap growth, large cap value, mid cap value, and small cap value. As mentioned above, all of these ETFs trade on the market like individual stocks but are constructed in such a way that they closely resemble a comparable index. The primary objective of this study is to determine if the IRPS weighting model outperforms the Russell 3000 Index (i.e. it creates alpha). A second objective is to determine which ETFs generate the largest alpha. A third and final objective is to determine if alpha is created over different phases of a market cycle. The overall, period of evaluation is 2008-2012. This period includes several economic and market downswing periods plus a significant rebound period and an upswing period. To capture the market swings, I have divided the overall period into a (1) downswing period (2008), (2) rebound period (2009), (3) upswing period (2010), and (4) trading range period (2011-2012). Portfolio and ETF performance will be analyzed for the overall period as well as the sub periods relative to the Russell 3000 Index.

Gross operating, profit momentum, and stock price movement in the cross section of returns in a short term analysis.

STUDENTS Erik Jameson Kurcz, Steven M Staffan
ADVISORS Trevor C Collier, Robert D. Dean
LOCATION, TIME RecPlex, 9:00AM-10:30AM
School of Business Administration: Davis Center for Portfolio Management, Poster- Independent Research

A number of recent academic studies have concluded that gross operating profits are a useful predictor of stock price movement, when examined in the cross section of returns. In this study we focus on momentum shifts in gross operating profits in a recent earnings period: August 31, 2011 through August 31, 2013.30 stocks similar to the UD Flyer Fund are used for the analysis. We calculate compound annual growth rates (CAGR) in gross operating profits for 4 and 8 quarter periods . The operating profit data comes from the Bloomberg Financial Database.Using cross sectional regression analysis, we regress the 4th and 8th quarter CAGRs on the stock price changes over the same respective periods. The hypothesis to be tested is that the stock price movements are directly related to gross operating profit momentum, i.e. the Sharpe coefficient is greater than 0.

How Well do Regional Manufacturing Activity Index Correlate with Stock Market Price Movements: A Closer Look at the Philadelphia Federal Reserve's Manufacturing Activity Index

STUDENTS Courtney E Cady, Owen T Flanagan
ADVISORS Trevor C Collier, Robert D. Dean
LOCATION, TIME RecPlex, 9:00AM-10:30AM
School of Business Administration: Davis Center for Portfolio Management, Poster- Independent Research

The Philadelphia Federal Reserve's regional manufacturing activity index (PMAI) has been used by economists to forecast national manufacturing activity and provide insight into the direction of the economy as a whole. In this study, we want to see if it can be used as a predictor of stock market price movements. We test the hypothesis that market and S&P 500 sector price movements are directly related to movements in PMAI.

A series of univariate regression models will be constructed to determine if the slope coefficients are greater than zero and the T-statistic are greater than two. Three time intervals will be analyzed: 2001-2012, 2003-2007, and 2009-2012. The longer term period includes two economic recessions and the short term periods represent time intervals in which the markets were in an upswing. The year 2013 will be used as an out of sample forecasting period to determine if the regression model has predictive capabilities.

Industrial Activity and S&P 500 Returns: An Empirical Analysis for the Period 2002 - 2013

STUDENTS Dimitrios G Tsiribas

ADVISORS Trevor C Collier, Robert D. Dean

LOCATION, TIME RecPlex, 9:00AM-10:30AM

School of Business Administration: Davis Center for Portfolio Management, Poster- Independent Research

In this study I want to extend the empirical research of the Chen, Ross, and Roll in the late 1980's by reexamining the relationship between industrial activity and the stock market.* My approach differs from theirs in that I will use the 10 S&P 500 sectors rather than the overall market indexes to analyze price movements. My period of analysis will be 2002-2013, with 2013 an out-of-sample period. Within the sample period, there are 3 distinct market phases that can be clearly identified. First, there is the upswing period of 2002-2007. Next, there is the downswing period of 2008-1st quarter 2009. Finally, there is the rebound/upswing period from 2nd quarter 2009 through 2012. Monthly, quarterly, and yearly data will be analyzed. In this study I want to test the hypothesis that sector price movements are directly related to industrial activity. I plan to measure industrial activity in 3 different ways: 1.Industrial Production (IP)2.Industrial Capacity Utilization (ICU)3.Manufacturing Production (MP)Using regression analysis, and running the regressions over monthly, quarterly, and yearly data, I plan to utilize the following linear models:1.Rst = a + b IPt2.Rst = a + b ICUt3.Rst = a + b MPtThe hypothesis test is b > 0 and the t stat > 2.

Modeling S&P 500 Sector Weights: The Case for Inverse Relative Price Strength

STUDENTS Nathan P Hauge

ADVISORS Trevor C Collier, Robert D. Dean

LOCATION, TIME RecPlex, 9:00AM-10:30AM

School of Business Administration: Davis Center for Portfolio Management, Poster- Course Project, 13 FA FIN 498 P1

In this study, I used a relative price strength model called the Inverse Relative Price Strength (IRPS) to develop a portfolio of 10 sector exchange-traded funds (ETFs) and then compared their performance to the overall market. I used the IRPS model as a proxy for the return risk optimizing process developed by Markowitz et, al. The hypothesis that I am testing is that sectors with lower relative prices compared to the market will have higher excess returns. The hypothesis is tested over the period 2008-2012. This particular period is highly volatile with large swings in both actual and relative prices. In addition, because this period covers the downswing period in 2008, the subsequent rebound period in 2009, and the continued upswing and trading range in 2010-2012, I will be able to evaluate the IRPS model's effectiveness in different phases of the market cycle for the overall portfolio as well as the individual sector ETFs.

Quarterly Trends in Revenue, Gross Operating Profits, and Earnings as Predictors of Quarterly Price Movements in Select Flyer Fund Stocks

STUDENTS Joseph P Riazzi

ADVISORS Trevor C Collier, Robert D. Dean

LOCATION, TIME RecPlex, 9:00AM-10:30AM

School of Business Administration: Davis Center for Portfolio Management, Poster- Independent Research

The study looks at the functional relationship between stock price movements and quarterly trends in company revenues, operating profits, and net income. Using linear trend equations and exponential smoothing equations, forecasts will be made for revenue, operating profits, and earnings. These forecasts will be compared to analysts estimates. Both the results from the forecasting models and the analysts estimates will be used to develop cross sectional regression equations with stock prices as the dependent variable. Stocks from the health care, industrial, and telecommunications sectors will be used in the analysis. 2013 will be used as the out of sample forecasting period.It is hoped that a better understanding of the relationship between stock price movements and revenues, operating profits, and net income will, on a quarterly basis, result in better stock selection for the Flyer Investments Fund.

The Impact of Exogenous Macro Economic Events on Flyer Fund Stock and Sector Returns

STUDENTS Eric T Flanigan
ADVISORS Robert D. Dean, Leslie S Mundew
LOCATION, TIME RecPlex, 9:00AM-10:30AM
School of Business Administration: Davis Center for Portfolio Management, Poster- Independent Research

A number of academic studies have shown that markets can be "shocked" by macro economic events. A sudden rise in inflation, interest rates, oil prices, just to name a few, can have a material effect on stock prices.In the study we use Bloomberg's Market Factor Model to determine the impact on stock and sector returns for the U.D. Flyer Fund. The Market Factor Model can identify response functions i.e. Betas between S&P 500 stocks and an exogenous variable like interest rates. We will study the impact of rising market volatility (VIX), rising interest rates (10 Yr T-Note) and oil prices on Flyer Fund stocks and S&P 500 sectors. Since the Flyer Fund sector weights are usually different from the S&P 500 sector weights, we can determine if the Flyer Fund sector allocation strategy creates alpha. Moreover because the impact on individual stocks can be compared to the sector impacts, we can also determine whether our stock selection strategy creates alpha. It is hoped the study will help to improve the weightings of sectors and the selection of stocks in the UD Flyer Fund.

Revenue Momentum and Stock Price Movements for Flyer Fund Stocks; A Short Run Analysis

STUDENTS Thomas Michael Campbell, Bryan E Thomas
ADVISORS Trevor C Collier, Robert D. Dean
LOCATION, TIME RecPlex, 11:00AM-12:30PM
School of Business Administration: Davis Center for Portfolio Management, Poster- Graduate Research

Many investment managers look for momentum in top line revenue growth to determine if they want to purchase a particular stock or a group of stocks. In this study, we looked at the last eight quarters of revenue data for 30 stocks currently in the Flyer Fund and determine their compound quarterly growth rate (COGR) for 4 quarters and 8 quarters of data. Using Bloomberg's database, our timeline is from August 31, 2011 through August 31,2013.Using cross sectional regression analysis we regressed the 4 quarter and 8 quarter CQGR's on the compound quarterly growth rate on price (CQGP) for each stock. We also took the rate of 4 quarter CQGR to the 8 quarter CQGR and regressed it on the value of the 4 quarter CQGP to the 8 quarter CQGP. The hypotheses to be tested is that stock price movements are directly related to the momentum levels of company revenues.

The Davis Center for Portfolio Management: Economic Outlook - Spring 2014

STUDENTS Samuel W Orman
ADVISORS Trevor C Collier, Robert D. Dean
LOCATION, TIME Miriam Hall 118 - Davis Center, 2:20PM-3:20PM
School of Business Administration: Davis Center for Portfolio Management, Oral Presentation- Course Project, 14 SP FIN 493 P1

The Davis Center for Portfolio Management is a long-only equity fund that is valued at $18,000,000. It invests in companies that fit a certain criteria and is 100% part of the University's endowment. As part of the investment process, two students create the Economic Outlook. The outlook that will be presented will go over the student's views for 2014 in areas including: domestic, international, and S&P sector outlooks.

An Empirical Study of the Relationship Between Stock Market Price Movements and Macro Financial Conditions,2001-2013

STUDENTS Brandon M Capicotto
ADVISORS Trevor C Collier, Robert D. Dean
LOCATION, TIME RecPlex, 9:00AM-10:30AM
School of Business Administration: Economics and Finance, Poster- Independent Research

Since the early 90's, a number of financial condition indexes have been developed to determine future movementsin the non-financial sectors of the economy. In this study, I use the Kansas City Federal Reserve's index of financial Stress (KCFSI) to study the relationship between market and sector price movements and macro financial conditions. The periods of analysis are :(1)2001-2012), (2) 2003-2007,(3) 2009-2012). The long run period includes two recessions and two sustained periods of economic growth. The two short run periods represent economic rebound periods

after the recessions. Using uni-variate regression models regress KCFSI on Spy, the S&P 500 ETF, as well as 10 S&P sector ETF's. Monthly data is used in the regressions. Since increases in KCFSI indicate greater financial stress, I will test the hypothesis that an inverse relationship exists between KCFSI and the market price indexes i.e., the slope coefficientb is < than 0. 2013 will be used as the out of sample forecasting period.

Establishing Sector Weights for the UD Flyer Fund: A Quantitative Approach

STUDENTS Joseph E Skarbek

ADVISORS Trevor C Collier, Robert D. Dean

LOCATION, TIME RecPlex, 9:00AM-10:30AM

School of Business Administration: Economics and Finance, Poster- Independent Research

Establishing Sector Weights for the UD Flyer Fund: A Quantitative ApproachSince stocks in the Flyer Fund are grouped by S&P Sectors, an important factor in the Fund's performance is the portfolio weight given to each sector. To a large extent, sector weights depend on the Flyer Fund investment team's evaluation of U.S. macro-economic conditions as well as monetary/fiscal policy initiatives by the U.S. Government. The decision to over or under weight a given sector, however, is based more on intuition and subjective judgment than empirical analysis. The purpose of this study, therefore, is to develop a more objective framework for sector weightings with particular emphasis on the relationship between macro-economic activity and sector price movement.In essence, the hypothesis that I am testing is that sector price movements vary directly with the expansion and contraction of economic activity. As a measure of economic activity I chose to use the Chicago Fed's National Activity Index (CFNAI). CFNAI is a weighted average of 85 macro-economic indicators and is considered by business economists to be a reliable indicator of U.S economic expansions and contractions. I will use the S&P sector ETF's to obtain sector prices and price movements.

What Money Can't Buy: Incidents of Market Failure

STUDENTS Roberto Federico Acevedo, Ryan J Aiello, Gabriel L Alvarado, Kirsten Nicole Bartlett, Trevor E Beck, Adam T Berthold, Christopher R Brown, Rosemary C Brown, Patrick E Burke, Jonathan Michael Diemer, Patrick J Fahey, Stephen Paul Hall, Barbara Heroy John,

ADVISORS Barbara Heroy John

LOCATION, TIME Miriam Hall 101, 9:00AM-4:00PM

School of Business Administration: Economics and Finance, Oral Presentation- Course Project, 14 SP ECO 346 01

Markets and organizations are often celebrated for their potential to achieve harmony (efficiency and socially optimal—if not moral--outcomes). The corollary is that any interference with market mechanisms and organizational imperatives should be contemplated with caution. But if human behavior is not rational or predictably irrational, both markets and organizations may fall short of achieving socially desirable outcomes. Traditional violations such as the presence of external effects or market power (monopoly and monopsony)have always been invoked to justify government intervention. But the new work in behavioral economics implies yet more ways that regulation may be rationalized. The recent history of bubbles and panics, for example, recommends that we revisit conventional postures against the regulation of financial markets. This presentation will consist of a montage of instances--historical, theoretical, hypothetical and actual--that invite us to revisit the issue of market efficacy and the role of government.

Disney's Adventure in Foreign Direct Investment: A Case Study of Hong Kong Disneyland

STUDENTS Jenna L Maffei

ADVISORS Christopher S Agnew, Barbara Heroy John

LOCATION, TIME RecPlex, 11:00AM-12:30PM

School of Business Administration: Economics and Finance, Poster- Honors Thesis

This thesis analyzes the foreign direct investment in Hong Kong Special Administrative Region by the Walt Disney Company. Utilizing a unique cooperative partnership between the Walt Disney Company and Hong Kong Government, Hong Kong Disneyland represents a large service investment of the company in an attempt to penetrate the Chinese market. The case study of Hong Kong Disneyland as "greenfield" investment will evaluate the costs and benefits of introducing a large service product—initially produced in the home market (the USA) into the host market (Hong Kong SAR, PRC). Hong Kong Disneyland faced many challenges in penetrating the 'amusement park' market in Hong Kong, including tailoring the experience to a multi-lingual audience. But the larger challenge was adapting the product to the tastes and preferences of (predominantly) Asian customers. The thesis looks at the many aspects of this investment including the historical context of the host nation in order to evaluate it as a recipient of the unique American product; Disney had only invested this product in two countries prior to entering the

Hong Kong market. Disney had to 'go big or stay home' and success was not and is not assured. The very metric—success—has to be evaluated from multiple perspectives: that of the firm, Disney; the home nation (the USA), and the host country (Hong Kong, PRC).

Commodity Seasonality and Their Effect on the Consumer

STUDENTS Hussien Saleh, Christopher J Waldock
ADVISORS Trevor C Collier
LOCATION, TIME Miriam Hall 103, 1:00PM-1:20PM
School of Business Administration: Economics and Finance, Oral Presentation- Independent Research

We will be researching the seasonality and price changes of commodities that affect the industrial consumer as well as the everyday consumer. Some of these examples are the changes in prices of a futures contact of Crude Oil and its spread with a futures contract of RBOB (gasoline). This will include Calendar Spreads and Inter-Commodity spreads that take into account the seasonality, cyclicality, and natural events that affect price movement. Our presentation will include up to date statistics on the typical expenses incurred by the consumer and how price changes in various commodities can alter these expenses.

Davis Center for Portfolio Management - Securities Team

STUDENTS Christopher E Bell
ADVISORS Robert D. Dean, Leslie S Mundew
LOCATION, TIME Miriam Hall 118 - Davis Center, 3:40PM-4:40PM
School of Business Administration: Economics and Finance, Oral Presentation- Independent Research

The Davis Center for Portfolio Management Securities Analysis Team performs quantitative and qualitative analysis in a bottom-up approach to making investment decisions. This presentation will cover methods and tools that the Securities Analysis Team uses in equity research, stock screening, industry research, and fund management.

Efficient market and irrational exuberance: How do Nobel prize winning theories affect the stock market?

STUDENTS Linxuan Zhao
ADVISORS Ting J Zhang
LOCATION, TIME Miriam Hall 214, 4:00PM-4:20PM
School of Business Administration: Economics and Finance, Oral Presentation- Course Project, 14 SP FIN 460 01

Fama and Shiller won the last year's Nobel prize in Economics. Fama proposed the efficient market theory, while Shiller found that the capital markets' short-term efficiency was less enduring over longer periods due to investors' irrational exuberance. This presentation will first introduce their theories and then investigate their effects on the portfolio management and asset pricing.

Economics of European Football: An Analysis of Factors Influencing UEFA Champions League Performance

STUDENTS Bernardo E Morales
ADVISORS Trevor C Collier
LOCATION, TIME Miriam Hall 214, 4:20PM-4:40PM
School of Business Administration: Economics and Finance, Oral Presentation- Independent Research

The UEFA Champions League is an annual European Football competition. For the thirty-two elite clubs which qualify, it is an opportunity to earn bragging rights, establish a reputation and generate a significant amount of revenue. At the end of the tournament, many players, fans and coaches ask the same question: "Why did my team perform poorly (or successfully) in the Champions League?" Using data spanning ten seasons (2003-2012), this study analyzes the impact of club finances, socio-economic factors, domestic competitive balance, and other variables on a club's performance in the Champions League.

UD Business Plan Competition: Insights from the Finalists

STUDENTS William L Blum, Justin Darcy, Emily C Meyer, Diane M Sullivan, William E Wiebe

ADVISORS Diane M Sullivan

LOCATION, TIME Miriam Hall 109, 11:00AM-12:00PM

School of Business Administration: Management and Marketing, Panel Discussion- Independent Research

In this panel discussion, student members of the five finalist and alternate teams from the 2013-2014 UD Business Plan Competition (UDBPC) will discuss their experiences in the competition. Presenters will include members from finalist teams College Base Camp and Lagoon. Through the panel discussion, the participants will comment on what they learned through participating the competition as well as their impressions of the competition. Finalists will also comment on and describe the support provided to them throughout the competition. Additional time will be provided for audience members to ask questions to the finalists about their experiences.

Theory to Practice: Flyer Angels Private Equity Fund

STUDENTS Cole P Aston, Cory J Bowers, Jay J Janney, Kevin Gerard Joseph, Ann C Kyne, Vincent T Torchia, Mark A Zimmerman

ADVISORS Jay J Janney

LOCATION, TIME Miriam Hall 109, 1:00PM-2:00PM

School of Business Administration: Management and Marketing, Oral Presentation- Independent Research

UD's nationally ranked ENT program has one of only five undergraduate private equity funds in America. While practically every other college has a student-run stock fund, UD is ten years ahead of the curve! Our students manage a seven figure investment fund, targeting start-up companies, pre-revenue companies, mostly high-tech with either an Ohio/UD connection. Students will talk about what angel investing is about, how the research they do differs from what you're taught in Finance courses, and the challenges they face developing information on privately held companies. Although the panel cannot disclose specific companies where they have made an investment, they'll talk about our partnership with Columbus-based Ohio Tech Angels (Flyer Angels belongs to funds III and IV). Not only do Flyer Angels invest their own money, they sit in on 6-8 due diligence committees annually. This means they present their findings to the fund's 99 members, who use it in their own investment decisions.This is a year long program; students enter as "junior private equity analysts", and if chosen to continue, are promoted to a leadership role as "senior private equity analyst". Several students have used this experience to land their career jobs.Admission to Flyer Angels is competitive, and this is a very exclusive group—there will be only 3-4 openings next year; only students majoring in entrepreneurship may apply to be part of Flyer Angels. Details about the process will be shared during the presentation.

Flyer Consulting Final Client Deliverable and Presentations

STUDENTS Eleanor G Bayer, Jane Marie Bottini, Michael T Briercheck, Douglas S Carey, Matthew D Gardner, Matthew T Goodlett, Troy David Kauffman, Matthew D Kuhlman, Marissa E Lancia, Alexander Ian Middleton, Josie Nicole Reinitz, Cody Allen Rice

ADVISORS Victor M Forlani

LOCATION, TIME Miriam Hall 103, 2:20PM-3:20PM

School of Business Administration: Management and Marketing, Oral Presentation- Course Project, 14 SP BAI 151 12

Students registered in the BAI 151 Flyer Consulting Section will be presenting their final client presentations. Presentations will consist of analyses and recommendations for each group's non-profit client regarding fundraising efforts.

Theory to Practice: The SOE-SBA Collaboration

STUDENTS Cory J Bowers, Patrick F Brady, Heeral M. Desai, Jamie L Gregory, Catherine R Hopkins, Jacob R. Houk, Jay J Janney, Kevin Gerard Joseph, Ann C Kyne, Dana M Lucas, Adam R Marasco, Colleen M. Neenan, Kaila M Taton, Vincent T Torchia, Maria M Zampino

ADVISORS Jay J Janney

LOCATION, TIME Miriam Hall 109, 2:20PM-3:20PM

School of Business Administration: Management and Marketing, Panel Discussion- Course Project, 14 SP MGT 422 N1

For a student wanting a "real world" experience, this project delivers! SBA students partner with engineering students to develop both the technical feasibility (engineering) and market feasibility of new product, sponsored by an entrepreneur. Students will share about their experiences, what they like and dislike, what they learned, etc. There is a major change to next year's collaboration. Next year, it will be a semester long course, not a year long course as it is now. The course will meet at the same time as the engineering students and their class--so the two classes

will meet at the same time, but share some common lectures and meeting times. Teams are anywhere from 6-11 students (3-6 engineers, 2-5 business), they examine all aspects of the new product idea. The business students then write a full business plan for the sponsor. This year's projects include1. An aerodynamic device to improve fuel economy for semi-trailers on the Interstates2. A cordless clipping shear for 4-H animals that reduces the danger of wrapping a cord about an animal while shearing.3. A Fishing Lure designed for trolling, that maintains a consistent depth4. A portable swim dock with a clear top so swimmers can see the water beneath them. It is designed for upscale vacation homes.

P&G Marketing Challenge: Developing Marketing Skills and Experience with the Very Best!

STUDENTS Nico A Veltri
ADVISORS Irene J Dickey
LOCATION, TIME Miriam Hall 214, 3:40PM-4:00PM
School of Business Administration: Management and Marketing, Oral Presentation- Independent Research

The P&G Marketing Challenge is an intensive, hands-on marketing program which combines select Marketing students into competing teams. Each semester teams receive an actual business assignment from P&G for a particular brand or business unit to strategically devise a promotional campaign to increase branding and sales for a product or service.
Campaign development includes marketing research and strategy development, media plans, fully produced electronic media and finished art for print ads, brochures, digital marketing tactics, other support materials as well as budget and timing decisions. Students interact directly with P& G Brand Mangers and other advisory personnel and provide actionable solutions to P&G, ones that they actually use!

Job Design: A Human Approach through Catholic Social Teaching and Job Design Theories

STUDENTS Thomas A Decastra
ADVISORS Raymond L Fitz, Stephen Russell Hall
LOCATION, TIME RecPlex, 9:00AM-10:30AM
School of Business Administration: MIS, OM and Decision Sciences, Poster- Honors Thesis

Job design theories outline jobs that help a company design jobs that are efficient and productive for a laborer to do. Catholic Social Teaching enlightens humanity that above all it is important to respect human dignity. Do Catholic Social Teaching and job design theories agree or are they at odds with each other? "Job Design: A Human Approach" looks at the story of each starting with Fredrick Taylor in 1911 and Pope Leo XIII in 1891 and identifies similarities and differences. Finally, the thesis uses the stories of each to look forward into the modern world of the jobs yet to be designed.

OPS 495 Senior Capstone Projects (Part A). UD Working With Its Community

STUDENTS Leigh E Anson, Timothy S Bertolone, Louis Cairo, Peilin Cen, Thomas A Decastra, Andrew K Duncan, Quinn M Ellsworth, Andrew J Hastings, James A Hoefer, Sean P Joyce, Carol L Kehoe, Thomas R Lee, Zachary S Mark, Ryan T Miller, Kimberly R Murray, Victoria L
ADVISORS Michael F Gorman, John J Kanet, Robert A Kinion
LOCATION, TIME Miriam Hall 103, 11:00AM-12:15PM
School of Business Administration: MIS, OM and Decision Sciences, Oral Presentation- Capstone Project

Senior OPS students present the results of their OPS 485 Capstone Project (Part A). As part of the Operations Management Program at the University of Dayton all students are required to propose and run a consulting project to exploit real world business opportunities with professionals of their fields. In October of 2013 we began our work with Montgomery County Jobs and Family Services (MCDJFS). Working with a team of professionals from MCDJFS we identified two key operational opportunities. The first, their hiring process takes too long thus inhibiting their organizational productivity. The second opportunity involves the Haines Children's Center, specifically the 15 room visitation center for children in protective services. This center provides a safe, family oriented location for children in foster care to have weekly meetings with their birth parents. The center experiences serious capacity issues during peak hours causing the one time a family gets to get together a week to be hectic at times. Our team has been working diligently for the past 6 months to help MCDJFS gain a better understanding of the problems at hand and exploit these opportunities. We have a fantastic working relationship with the professionals there and are making excellent headway

toward a greater understanding and lasting viable solutions.

Business Oriented Study Abroad - Becoming a World Citizen with the School of Business Administration

STUDENTS Julie E Destefanis, Timo J Hartmuth, Peter G Wagner
ADVISORS Peter G Wagner
LOCATION, TIME Miriam Hall 119 - O'Leary Auditorium, 1:00PM-2:00PM
School of Business Administration: MIS, OM and Decision Sciences, Oral Presentation- Independent Research

Business Oriented Study Abroad - Becoming a World Citizen with the School of Business Administration: Summer Study Abroad, Semester Exchange, ETHOS (Engineers in Technical Humanitarian Opportunities of Service Learning), and other programs.University students increasingly realize that international experience is almost a prerequisite for securing a first-rate job after graduation, and learning about and understanding diverse cultures make us all better world citizens. How can you as a student expand your horizons while still maintaining a high level of academic professionalism? SBA international programs that include Summer Study Abroad, Semester Exchange, and ETHOS (co-sponsored by the SBA and the Department of Engineering), to name a few, provide opportunities for students to become world citizens by embracing unfamiliar and diverse cultures in rigorous educational environments that can include service activities. This presentation will inform students on becoming a more educated citizen through a study abroad and/or service experience in Europe, Asia, Central or South America, and more. Students may take business and general education classes taught by University of Dayton faculty or take a foreign language. Opportunities for service activities through ETHOS engage students in life-changing experiences while giving back to the global community. Past program participants will present their stories and discuss the unique opportunities awaiting students in all majors.

Dayton Power & Light IT Service Desk Knowledge Base

STUDENTS Michael C Dickey, Daniel T Gentsch, Gabrielle M Gloekler, Alex K Schatzman
ADVISORS William D Salisbury, Arthur R Santoianni
LOCATION, TIME Miriam Hall 214, 2:20PM-3:20PM
School of Business Administration: MIS, OM and Decision Sciences, Oral Presentation- Capstone Project

At DP&L, the IT Service Desk assists clients and employees with any technical problems that may occur. This process is conducted of phone calls coming into the IT Service desk and the IT Service Desk employee looks up information in order to answer the question. All information is stored in three locations: a SharePoint site, a local hard drive, and a binder called the Black World Com. The objective for this project is to create one centralized location for all informational material organized by application. Our team is creating a Knowledge Base system that will meet this objective with goals in mind to reduce call time, call wait time, and reduce phone calls coming into the IT Service Desk. We will develop a process so employees can keep this system updated and usable for the future after it has been implemented since this has been an issue in the past for DP&L with this initiative. University of Dayton Team: Michael Dickey, Daniel Gentsch, Gabrielle Gloecker, Alex SchatzmanProject Sponsor/ Coach: Scott Lazor; Laura Harr

NewPage Corporation PC Use & Tracking

STUDENTS Ryan C Cronin, Ian T Grosel, Michael S Schaerer, Chad E Smith
ADVISORS William D Salisbury, Arthur R Santoianni
LOCATION, TIME Miriam Hall 214, 2:20PM-3:20PM
School of Business Administration: MIS, OM and Decision Sciences, Oral Presentation- Capstone Project

With more than 3,600 PCs across NewPage Corporation, the cost of replacing physical hardware can be a heavy price tag. In order to lower the cost of ownership for NewPage Corporation's PC environment, thin client devices have begun to replace desktop PCs, with nearly 1,200 thin client devices already having been deployed. NewPage Corporation has commissioned the assistance of UD's MIS seniors in providing actionable insight for identifying more PCs that can be replaced with thin client virtual terminal devices. Unfortunately, not every PC in the organization can be replaced one for one with a thin client device, as some PCs are required for industry specific industrial hardware reliant on specialized PC software and hardware versions. In addition to proprietary industrial desktop PCs, multitudes of other user workstations may not be able to move to thin client devices based on software applications utilized by employees. Therefore, a dashboard will be created generating reports to aid in identifying existing desktop PCs that can easily be replaced with a thin client device. The dashboard will reflect an executive overview of

standard reports with the option to create ad-hoc reports. These detailed outputs will call upon data collected by NewPage Corporation's Microsoft Active Directory environment and the complimentary System Center Configuration Manager. UD's MIS seniors will incorporate this data dashboard into an existing product already in use at NewPage Corporation. University of Dayton Team: Ryan Cronin, Ian Grosel, Michael Schaerer, Chad Smith NewPage Corporation Sponsors and Coaches: Paul Moorman, Larry Buttelwerth

Spectral Analysis Results Database for Riverside Research

STUDENTS Kaleigh Dianetti, Justin P Miles, Jordan D Verst, Trevor D Wright
ADVISORS William D Salisbury, Arthur R Santoianni
LOCATION, TIME Miriam Hall 214, 2:20PM-3:20PM
School of Business Administration: MIS, OM and Decision Sciences, Oral Presentation- Capstone Project
Riverside Research serves a variety of government entities by providing technical assistance and research in the areas of Measurement and Signal Intelligence, Full Spectrum Geospatial Intelligence and in processing and disseminating information from these types of systems to their customers. The domain for this particular project is in the area of Hyperspectral Imaging, which provides detailed spatial, spectral and temporal information about objects in these types of images. One such system generates a CSV report that includes data about objects, including attributes such as information about the sensor that captured the image, where the object is located, when it was captured, what elevation it's located at, and others by which clients may wish to categorize the object. This project has three main elements. The first is a data ware house to capture and store the data, the second is a user interface so that the user may select attributes and objects they would like to search, and the third is a graphical display that displays the outputs. Time permitting, the ability to select items in the graphical interface for further refinement of the search will be built. The team is responsible for the creation of this prototype. University of Dayton Team: Jordan Verst, Kaleigh Dianetti, Justin Miles, Trevor Wright Project Sponsor/Coach: John Ross

UD International Programs - Many Ways Toward Becoming a World Citizen

STUDENTS Nicole M Hinkebein
ADVISORS Peter G Wagner
LOCATION, TIME Science Center 114 - Auditorium, 3:00PM-4:00PM
School of Business Administration: MIS, OM and Decision Sciences, Oral Presentation- Independent Research
This presentation will appeal to students in all interested in any/all international venues available to all UD students, including UD faculty-led programs, internships, semester exchanges, service projects, and third-party programs. This will be the first year for this program, but we anticipate wide turnout and therefore the Science Auditorium is requested as the desired venue for this session.University students increasingly realize that international experience is almost a prerequisite for many fields of endeavor after graduation, and learning about and understanding diverse cultures make us all better world citizens. How can you as a student expand your horizons while still maintaining a high level of academic achievement? University international programs that include Summer Study Abroad, Semester Exchange, service, and international internships to name a few, provide opportunities for students to become world citizens by immersion in unfamiliar and diverse cultures in rigorous educational, service, and experiential milieus. This presentation will inform students on becoming a more educated world citizen through a study abroad and/or service experience in Europe, Asia, Central or South America, and more. Students may take major general education classes, also integrative electives, taught by University of Dayton faculty or on a foreign campus for a semester, develop skill in a foreign language and culture, or partake in a life-changing experiences while giving back to the global community. Past program participants will present their stories and discuss the unique opportunities awaiting students in all majors.

OPS 495 Senior Capstone Projects (Part B)

STUDENTS Brendan J Ambrose, Katharine M Barrett, Kelsey C Bergman, Ryan P Curran, Nicholaos M Frangopoulos, Alexander A Franke, Mary Meg M Gerbich, Samuel L Hanley, John P Hewitt, Sara R Kidd, Patrick G Matthews, Brennan May, Matthew S McNeil, Justin P Miles, Jada
ADVISORS Michael F Gorman, John J Kanet, Robert A Kinion
LOCATION, TIME Miriam Hall 103, 3:40PM-4:55PM
School of Business Administration: MIS, OM and Decision Sciences, Oral Presentation- Capstone Project
Senior OPS students present the results of their OPS 485 Capstone Project (Part B)

Flyer Enterprises: Developing Business By Developing People

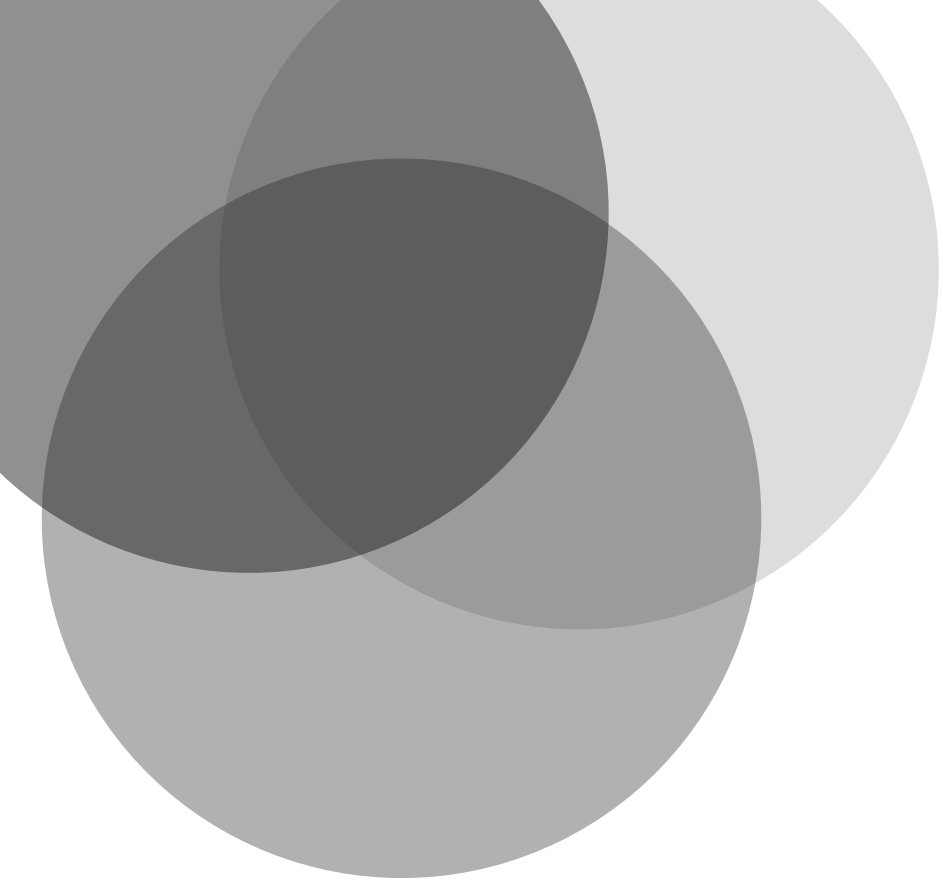
STUDENTS Richard P Bogusz, Amanda Marie Lochtefeld, Claire Elizabeth Van Tiem

ADVISORS Janet R Leonard

LOCATION, TIME Miriam Hall 214, 11:00AM-12:00PM

School of Business Administration: School of Business Administration, Office of the Dean, Oral Presentation- Independent Research

A national leader experiential learning. This presentation will explain the value Flyer Enterprises offers University of Dayton students by providing hands-on business experience centered around the individual's strengths and interests. Details including the firm's vision, goals, and current state.



School of Education and Health Sciences

School of Education and Health Sciences

The Relationship Between Core Stability and Lower Extremity Function and Performance After Anterior Cruciate Ligament Reconstruction

STUDENTS Laura R Schemenauer
ADVISORS Joaquin A Barrios, Kurt J Jackson, Lloyd L Laubach
LOCATION, TIME LTC Forum, 1:30PM-1:50PM
School of Education and Health Sciences: Chemical and Materials Engineering, Oral Presentation- Graduate Research

Background: Anterior cruciate ligament (ACL) injury is a common injury among young athletes that has detrimental short and long term effects. The relationship between core stability and lower extremity function has not been extensively studied in this population. The purpose of this investigation was to compare core stability measures in individuals with and without history of ACL reconstruction and to determine if ACL-reconstructed (ACLR) individuals exhibit altered lower extremity mechanics during walking and a single-limb landing task.Methods: 20 ACLR subjects and 20 matched controls performed isokinetic strength testing on Biodex III and Cybex instrumented dynamometers followed by the McGill standardized testing battery to test for core strength and endurance. All subjects also underwent 3 dimensional motion analysis testing to assess gait and single-limb drop landing mechanics. Results: Trunk extensor endurance was significantly reduced in the ACLR group ($p < 0.05$). The ACLR group additionally exhibited altered hip and knee joint sagittal plane kinematic alterations. Specifically, the ACLR group displayed decreased peak knee flexion ($p < 0.05$) during gait and decreased knee flexion excursion ($p < 0.05$) and increased hip flexion at initial contact ($p < 0.05$) during the single-limb landing task. Conclusions: These results suggest that aberrant lower limb kinematics remain following ACL reconstruction and could pre-dispose ACLR individuals to future knee injury risk and osteoarthritis. The results of this study will help clinicians and researchers understand the relationship between core stability and lower extremity function and performance.

Motivations for Under-Reporting Concussions in Collegiate Athletics

STUDENTS Brenna M Bird
ADVISORS Elana Bernstein, Susan C Davies
LOCATION, TIME RecPlex, 9:00AM-10:30AM
School of Education and Health Sciences: Counselor Education and Human Services, Poster- Graduate Research

The present study examined the motivations behind refraining from reporting concussions among student athletes. One hundred and ninety-three student athletes at the University of Dayton involved in high-risk sports, such as football and soccer, completed multiple-choice surveys inquiring why students choose to refrain from reporting their concussions and concussions of their teammates. Results indicated that 45% of student athletes did not report their sports-related concussions.

A Room Full of Rocking Chairs: Urban Appalachian Student Experiences in Community College

STUDENTS Rana Elizabeth Peake
ADVISORS Abd El Nasser A Abd El Razek
LOCATION, TIME LTC, 4:30PM-6:30PM
School of Education and Health Sciences: Counselor Education and Human Services, Poster- Graduate Research

Urban Appalachian college students (UACS) face cultural and institutional barriers that impact their ability to persist and complete college. Designed to explore UACS experiences at a large urban community college, this study provides insight into Appalachian culture and identity as they impact their success in higher education. UACSs are more likely to come from a low-income family, and be the first in their family to attend college. First-generation college students more often lack the social and cultural capital needed to successfully navigate college, further increasing the risk of failure (Bradbury, 2009). Colleges and universities must seek out ways to improve the campus environment to reflect the needs and values of the students they serve and develop support systems that nurture the development of cultural capital needed to be successful in college and beyond (Oldfield, 2007).

All the Single Ladies: Romantic Partnering and its Influence on Self-Esteem of Female College Students

STUDENTS Katherine M Marrero
ADVISORS Abd El Nasser A Abd El Razek

LOCATION, TIME LTC, 4:30PM-6:30PM

School of Education and Health Sciences: Counselor Education and Human Services, Poster- Graduate Research

As college students understand and vocalize their needs, supports, and decisions, they begin to believe in their own choices and build confidence and self-esteem. Early on in their undergraduate years, many female students define themselves by their social relationships and cannot separate themselves from whom they are associated with. Thus, those in a committed romantic relationship may have more validation and support for fostering self-esteem than those who are not romantically involved. The current study seeks to understand the relationship between 250undergraduate female students' levels of self-esteem and romantic partnerships, and projected changes if the relationship status were to change. Quantitative methodology will allow for a comparison of group averages and make supported judgments about whether or not there is a correlation between being in a romantic relationship and self-esteem in young female undergraduates. With the study findings, further research can dive deeper into the identity development of female students on college campuses and create more effective support systems for them.

Booze, Bros, and Bibles: Impact of Faith on Female Students' Decision to Engage in Risky Behaviors

STUDENTS Heather D Vlack

ADVISORS Abd El Nasser A Abd El Razek

LOCATION, TIME LTC, 4:30PM-6:30PM

School of Education and Health Sciences: Counselor Education and Human Services, Poster- Graduate Research

Alcohol abuse and other risky behaviors, such as illegal drug use and unplanned sex, are not uncommon on college campuses. Peers often influence these behaviors and students continue to believe involvement in them is connected to their college experience where students examine life's meaning and purpose (Dodd, Glassman, Arthur, Webb & Miller, 2010). Therefore, an understanding of this relationship is needed. Qualitative, one-on-one interviews were conducted with eight female undergraduate students. Participants were all actively involved in a faith-based student organization on campus. Findings revealed students' tendency to avoid risky behaviors due to their desire to honor their spiritual beliefs. Family, spiritual mentors and other members of their faith communities play a significant role in their decision-making process.

But It's a Party School: The Impact of Alcohol Culture on Student Initial College Choice

STUDENTS Leah M Shamblin

ADVISORS Abd El Nasser A Abd El Razek

LOCATION, TIME LTC, 4:30PM-6:30PM

School of Education and Health Sciences: Counselor Education and Human Services, Poster- Graduate Research

While many aspects can affect a student's decision to attend a specific institution, a college's alcohol culture can have a positive or negative effect on student choice. Research explains one of the biggest aspects to aid in a students' decision to attend a university is the perception of alcohol culture on campus (Parker, 2009). Lifestyle choices can also affect this decision. Therefore, there is a need for an examination of why students select a college based on perceived drinking culture of that institution. This study will offer an insight into why first-year students in the fall of 2013 decided to attend University of Dayton as it relates to the perceived alcohol culture of the institution. Findings allow for a better understanding of how students perceive the alcohol culture on a campus and how much it affects their decision to attend an institution.

Can they ever feel at home?: Saudi Student Experiences in Residence Halls

STUDENTS Elizabeth Cahill

ADVISORS Abd El Nasser A Abd El Razek

LOCATION, TIME LTC, 4:30PM-6:30PM

School of Education and Health Sciences: Counselor Education and Human Services, Poster- Graduate Research

Saudi students are choosing to pursue higher education at institutions in the United States at an accelerated rate. As a result, it is essential that administration develop ways to better serve this population. The residence halls at American institutions provide a unique challenge for Saudi students because of certain elements of their culture including religion, gender dynamics, and more. Currently, there is a lack of research on this particular topic. In a one hour semi-structured interviews, participants reflected on their experience in the residence halls as well as provided suggestions for future programming and physical space. Information collected through this study provides considerations for college and

university administrators when structuring the on-campus residential experience.

Community Despite Contingency: Working Together, Achieving Together

STUDENTS Carrie Lynn Rogan Floom
ADVISORS Michele M Welkener
LOCATION, TIME LTC, 4:30PM-6:30PM
School of Education and Health Sciences: Counselor Education and Human Services, Poster- Course Project, 14 SP EDU 944 01

In the changing context of higher education, many faculty members are experiencing an increased workload, more accountability, fewer resources, and a changing student demographic (Eddy & Garza-Mitchell, 2012), which can result in a faculty who feels overworked and disconnected. Learning Communities have been used as a way to meet the needs of faculty members by developing a sense of community and reinvigorating their scholarship of teaching (Cox, 2004). While learning communities can work well for faculty, the largest growing subset of the professoriate, adjunct faculty, often do not have this support. Adjunct faculty are generally not satisfied with the support that they are offered by the institution (Hoyt, et al., 2008) and are often not integrated into the institution (Hainline, et al., 2010). Adjunct faculty learning communities, if created using learning community best practices, can provide support to adjuncts and help them to fully connect with their the institution.CAW (2012). A portrait of part-time faculty members: A summary of findings on part-time faculty respondents to the coalition on the academic workforce survey of contingent faculty members and instructors. Retrieved from: http://www.academicworkforce.org/CAW portrait 2012.pdfCox, M.D. (2004). Introduction to faculty learning communities. In M. D. Cox & L. Richlin (Eds.). Building faculty learning communities. New Directions for Teaching and Learning,97, 5-23.Eddy, P.L. & Garza -Mitchell, R.L.G. (2012). Faculty as learners: Developing thinking communities. Innovations in Higher Education 37, 283-296.Hainline, L., Gaines, M., Long Feather, C., Padilla, E., & Terry, E. (2010). Changing students, faculty, and institutions in the Twenty-First Century. Peer Review, 12(3), 7-10.Hoyt, J. E., Howell, S. L., Glines, L. J., Johnson, C., Spackman, J. S., Thompson, C., & Rudd, C. (2008). Assessing part-time faculty job satisfaction in continuing higher education: Implications for the profession. Journal of Continuing Higher Education, 56(1), 27-38.

First Year Chinese Student Engagement in Residence Halls: A Mixed Methods Study

STUDENTS Jamie K Chong
ADVISORS Abd El Nasser A Abd El Razek
LOCATION, TIME LTC, 4:30PM-6:30PM
School of Education and Health Sciences: Counselor Education and Human Services, Poster- Graduate Research

Social adjustment is tumultuous for first year international students, especially for those living in residence halls. Yet, research focused specifically on international residents in this environment is lacking (Paltridge et al., 2010). This mixed methods study assessed first year Chinese students perception of racial climate in the residence halls at a mid-sized, Midwestern private institution. The quantitative results indicated that the students' perceptions of a positive racial climate directly impacted their personal and social learning outcomes. Students' first impression of the hall environment impacted how they subsequently perceived the sense of community. The qualitative analysis revealed aspects of the social adjustment and help-seeking behavior of Chinese students, their perception of American culture and peers, and adjustment process to life in the U.S. Results suggest that the participants' stringent high school experiences positively influenced their adjustment into residential hall living. Preferring informal interactions with peers to hall programs, students may not fully capture the learning opportunities that are intentionally offered for in the residence halls. With insights on Chinese student perception and experiences, practitioners can tailor programming and educational initiatives to engage them.

Medical Education through a Learning Community Lens

STUDENTS Nancy P Silverman
ADVISORS Michele M Welkener
LOCATION, TIME LTC, 4:30PM-6:30PM
School of Education and Health Sciences: Counselor Education and Human Services, Poster- Course Project, 14 SP EDU 944 01

Long considered to be a fiercely competitive environment, many schools of medicine can be characterized as learning communities. A learning community involves a group of people who come together under established guidelines for the shared purpose of learning and a commitment to reflective practice that can ultimately bring personal transformation. Collaboration is the hallmark of learning in community and becomes the vehicle whereby knowledge is socially constructed through negotiation in community with peers. The collaborative approach to learning that

historically has characterized medical student instruction at the bedside has been introduced into the classroom and laboratory, often under the moniker of team-based learning. Students are accountable not only for their own learning successes but also for the successes of their team of peers. In addition to engaging in this highly collaborative environment, students become immersed into the medical school community through cultural integration (mentoring by upperclass peers), ritualistic performances (white coat ceremony), behavioral expectations (professionalism and accountability), and shared goals (attaining a desired residency). Medical students can benefit from the successful outcomes of learning communities as they create a sense of belonging; academic, social, and personal satisfaction; generate deeper levels of learning; incite initiative, creativity, and critical thinking; and nurture sensitivity to diverse perspectives (Cox, 2004).ReferenceCox, M. D. (2004). Building faculty learning communities. In M. D. Cox & L. Richlin (Eds.), New directions for teaching and learning (Vol. 97, pp. 5-23). San Francisco, CA: Jossey-Bass.

Unfamiliar Territory: A Phenomenological Study of International Students Enrolled in a Large Urban Community College

STUDENTS Laurie L Malone

ADVISORS Abd El Nasser A Abd El Razek

LOCATION, TIME LTC, 4:30PM-6:30PM

School of Education and Health Sciences: Counselor Education and Human Services, Poster- Graduate Research

International students are choosing community colleges for reasons of affordability, easy access, and as a good place to start their education, especially if English is their second language. There is a deficiency of research surrounding this student population despite an increase in enrollment. With little representation of the ICCS in current literature and with institutions recognizing their value more than ever, an understanding of their experience is needed. This qualitative study sought to explore and understand the shared experience of the international college student enrolled in a large Midwestern urban community college. The method of data collection included personal interviews with international students currently enrolled in a large urban community college and faculty and staff practicing at that same institution. Interviews were examined for common themes and compared and contrasted with existing research and literature. The study answer questions like why international students chose to attend community college, where ICCS' get support and information, and what are the barriers that challenge their success. Fresh information surrounding social integration was revealed, illuminating a disparity between faculty/staff perception and the ICCS experience. The findings may be of interest to professionals who work in the community college setting directly with international students and/or with students and staff who interact with ICCS.

WANTED: Bromances Impact of Hegemonic Masculinity on the Relationships of Sophomore Men

STUDENTS Zachary J Hooten

ADVISORS Abd El Nasser A Abd El Razek

LOCATION, TIME LTC, 4:30PM-6:30PM

School of Education and Health Sciences: Counselor Education and Human Services, Poster- Graduate Research

Hegemonic masculinity is constructed in a way that pressures men into certain behaviors and mindsets. Traditional genders roles emphasized in hegemonic masculinity call for alcohol and drug abuse, unprotected sex, and other prohibited behavior (Edwards & Jones, 2009). There is a significant lack of research aimed specifically on the sophomore year experience for college students (Gardner et al., 2010). Hegemonic masculinity (Arxer, 2011) and its foundations give way to how men translate the pressures of masculinity into relationships. The research for this study revolved around the success of sophomore students and hegemonic masculinity. The study attempted to gain a new perspective into the real issues of sophomore men. Findings will assist higher education professionals in designing support systems for sophomore men.

We're Here to Help: Assessing the Orientation Needs of Transfer Students

STUDENTS Dynea S Pope

ADVISORS Abd El Nasser A Abd El Razek

LOCATION, TIME LTC, 4:30PM-6:30PM

School of Education and Health Sciences: Counselor Education and Human Services, Poster- Graduate Research

The need to assist transfer students is particularly important because transfer students enter into new institutions with unique needs, perspectives, and experiences compared to non-transfer students. Many orientation programs do not address the needs of transfer students and focus

on freshman students. Little is known about the correlation between transfer students and orientation attendance. Therefore, this study aimed to identify transfer student needs, increase their attendance of orientation programs, and to provide effective programming for them. Participants were asked questions regarding barriers to program attendance and institutional support. This qualitative study focused on eight undergraduate students at a private, midsized, religious affiliated institution that transferred during the 2013-2014 academic year. Students were interviewed and responded to a series of questions regarding reason for transfer, previous orientation experience, and recent orientation experience. The results provide student affairs professionals with future implications for designing orientation programs that directly address transfer student needs and ways to increase their participation.

Who Needs Friends…I'm a Leader! (Peer Support's Effect on Student Leadership)

STUDENTS Justen T Cox
ADVISORS Abd El Nasser A Abd El Razek
LOCATION, TIME LTC, 4:30PM-6:30PM
School of Education and Health Sciences: Counselor Education and Human Services, Poster- Graduate Research

The relationship between student's leadership development and the role in which peer support enhances it, creates a phenomenon which is experienced at the University of Dayton. The concept of Propinquity explains peer support as a catalyst within a student's leadership development and provides insight for their various leadership skills and competencies. This research looks at University Dayton students' leadership competencies and strength of peer support through quantitative analyses of an online survey. Results offer insights for college professional staff and administrators in leadership programming.

Students Who Serve: A Study of Undergraduate Students' Experiences in Community Service

STUDENTS Lindsay Elrod, Elizabeth M Fogle-Young, Savio D Franco, Edel M Jesse, Michael B Kondritz, Heidi Maria McGrew, Cody L McMillen, Daniel J Trunk
ADVISORS Carolyn S Ridenour
LOCATION, TIME LTC, 4:30PM-6:30PM
School of Education and Health Sciences: Educational Leadership, Poster- Course Project, 13 FA EDU 991 01

Undergraduate students who participated in sustained community service through the Fitz Center for Leadership in Community were volunteer informants in a qualitative exploration of the meaning they make from being engaged in the Dayton community. The research team (five women and four men who were professor and eight doctoral students in educational leadership) were generously granted access to students associated with the Fitz Center. We were drawn to study "students who serve" because of our interest in student sub-cultures as well as the center's model of sustained community engagement.Fourteen students were interviewed on or near campus. Unstructured open-ended interviews (Spradley, 1979) were approximately 30-45 minutes in length. The team adopted what Saldana (2009) calls structural coding from the work of MacQueen, McLellan-Lemal, Bartholow, & Milstein (2008). Based on the purpose of the study, a three-part structure to coding was designed: the background of students who serve, students' experiences in service, and the meaning they constructed. "Meaning" was our goal, i.e., how students made meaning from community engagement and the nature of that meaning. Preliminary findings suggest that the students had background experiences with service, many of which derived from their Catholic high schools. They experienced service at diverse sites in the Dayton community, playing multiple roles (from tutor, to explorer, to leader, to fundraiser). Their experiences challenged their schedules, and their attempts to achieve a sense of balance in managing time. In their voices we heard the centrality of relationships as the core meaning of their experiences. Their community engagement expanded not only their knowledge and thinking, but also their struggles with understanding diversity and the roots of social injustice. Sustained engagement in the city deeply influenced what many students envisioned as their potential life's work.

Retrospective analysis of a 5-week summer sports program indicates health improvements in 9-16 year olds.

STUDENTS Chanelle E Brown
ADVISORS Anne Crecelius
LOCATION, TIME RecPlex, 9:00AM-10:30AM

School of Education and Health Sciences: Health and Sport Science, Poster- Independent Research

Since 1970, Case Western Reserve University has hosted the National Youth Sports Program (NYSP), a unique summer experience for youth to participate in health, wellness, and educational learning opportunities for 5 weeks during the summer. On average, camp participants engaged in 5.5 hours of daily organized athletics and classes, Monday through Friday. The purpose of this retrospective data analysis was to determine the effect of NYSP on the anthropometric [height, weight, body mass index (BMI)] and cardiovascular health (blood pressure) of participants ages 9-16 years old (N=271). All measures were made at registration (pre) and at camp's end (post) by trained NYSP staff. Data presented as mean $\pm$ s.d. and compared pre and post with paired t-tests. BMI was significantly reduced (23.2 ± 0.4 kg/m2 vs 22.4 ± 0.3 kg/m2; $p<0.05$) due to increases in height (1.55 ± 0.007 m vs 1.57 ± 0.007 m; $p<0.05$) and a trend towards decreased body weight (56.1 ± 1.1 kg vs 55.8 ± 1.0 kg; $p=0.07$). Mean arterial pressure was also significantly reduced (81 ± 0.5 mmHg vs 76 ± 0.4 mmHg; $p<0.05$) due to lowered systolic blood pressure (107.9 ± 0.7 mmHg vs 103.1 ± 0.6 mmHg; $p<0.05$). This preliminary analysis supports beneficial health impacts of NYSP. Further studies with standardized and additional health-related measurements would allow for more comprehensive analysis and insight into the underlying mechanisms of improvement or lack thereof.

The History of Physical Education-Activity and Sport: Stories for the Ages and Lessons from the Legends of Memorable Moments, Events, Trends, Tales, Phenomena, and Famous Women and Men: Their Teams and Times-Year 8

STUDENTS Kevin M Bogenschutz, Victoria E Bordfeld, Sarah G Busch, George M DeMarco, Michael J Dexl, David J Farwick, Ashley Christiana Fecher, Brenna L Frattaroli, Jameson T Hackett, Sara B Hamilton, Jessica E Koney, William Q Menard, Jenna M Rindler, Mckenzie L W

ADVISORS George M DeMarco

LOCATION, TIME RecPlex, 9:00AM-10:30AM

School of Education and Health Sciences: Health and Sport Science, Poster- Course Project, 14 SP HSS 275 01

The purpose of these studies was to describe and interpret major events, trends, phenomena, and the lives and times of significant individuals in the history of sport and physical education-activity throughout the millennia. At once interesting, inspirational, edifying, and enlightening, the stories told by the students of three (3) separate sections of the course HSS 275 - History of Physical Education/Activity and Sport – during the spring semester of 2014 speak powerfully to the transcendent nature of sport and physical activity across all generations, cultures, and topical interests. This year's project titles include: Arete and Agon in the Life and Times of Major League Umpire Bill Kinnamon:The Man for Whom the Game Always Mattered Most;The History of University of Dayton Baseball 1902-2014;Sports Stigmas and the Rise and Fall of An American Icon: The Tiger Woods Scandal;Diana Nyad: The Woman Who Just Keeps On Swimming;The Greatest Two Minutes in Sports: The History of the Kentucky Derby; The Life and Times of Billie Jean King: A Passionate Athlete Who Continues to Fight Long Past Her Glory Days on Centre Court;The Hardest Hit: A History of Concussions in the NFL;Another Hopeful Head Hoopster Takes the Floor for the Flyers: The Life and Times of Archie Miller;Got Juice? The History of Performance Enhancing Drugs in Baseball;The History of Summer Camps: 1861-2014;Say It Ain't So Joe: The Chicago Black Sox Scandal of 1919;These original research projects utilized an array of primary and secondary sources, including interviews, personal narrative, documents, print media, photographs, artifacts, and vintage video to bring alive the past to teach anew life's sporting lessons from which all may learn.

The Acute Effects of Aerobic and Resistance Exercise on Cardiovascular Function and Arterial Stiffness

STUDENTS Hayleigh E Raiff

ADVISORS Lloyd L Laubach

LOCATION, TIME RecPlex, 11:00AM-12:30PM

School of Education and Health Sciences: Health and Sport Science, Poster- Honors Thesis

This study investigated how long the cardiovascular effects of aerobic and resistance exercise propagate after completion of exercise in healthy males. Cardiovascular function was closely monitored to observe changes in arterial stiffness before exercise and during recovery. Parameters used to monitor vascular function include central and peripheral blood pressure, heart rate, velocity of blood flow, and blood biomarkers of vascular function. The study required participants to complete an aerobic, resistance and control exposure. Measures of the parameters were taken at rest and at specified intervals after completion of each protocol. These measurements were analyzed to determine the acute effects of each exposure on the blood vessels' functioning, how long these effects last and how the vascular responses differed between the exercise modalities.

This experiment served as a pilot study in developing exercise protocol for patients with Peripheral Artery Disease (PAD).

Time for a Gamble? The Ongoing Discussion of Legalizing Sports Gambling in the United States

STUDENTS Matthew J. Garbin
ADVISORS Corinne M Daprano
LOCATION, TIME RecPlex, 11:00AM-12:30PM
School of Education and Health Sciences: Health and Sport Science, Poster- Honors Thesis

The recent push for the legalization of sports gambling is a major issue which balances the desire for legalization by states such as New Jersey and the constant opposition from the NCAA and the four major professional sports leagues in the United States. There is a foreseeable economic gain to be made by states if sports gambling were to be legalized. This legalization, however, would open a door the professional leagues do not want to be opened, because it has the potential to jeopardize the integrity of college and professional sports. It is also important to note that the United States is one of the few major countries in the world that does not have widespread legalized sports gambling.This thesis research will focus on the economic benefits that may result from the legalization of sports gambling. In addition, this study will analyze how legalization may lead to easier regulation of a potentially harmful product. This study will involve examining the laws currently in place that prohibit sports gambling as well as analyzing the current sports gambling case New Jersey has just recently appealed to the Supreme Court. The researcher will also examine economic impact studies as well as social concern studies focusing on the negative effects gambling have on society in order to present the pros and cons of legalized sports gambling.

A Road Map to a Successful Career in the Event Industry

STUDENTS Lyndsey Alyse Diggs, Patrick S Kaindl, Colleen T Santella, Joseph R Tomek
ADVISORS Peter J Titlebaum
LOCATION, TIME Frericks 010, 1:00PM-1:40PM
School of Education and Health Sciences: Health and Sports Science, Oral Presentation- Course Project, 14 SP HSS 253 01

The purpose of this research study in event planning, executing, and evaluating is to understand best practices in conducting successful events from the standpoints of professional, collegiate and non-profit organizations. Professionals entering the field could apply this information to prepare for employment. A literature review in the event industry revealed a growing concern of employment readiness. After an in-depth look at some of the strengths and weaknesses of those entering the field, we wanted to ascertain if industry professionals concurred with the research. Using information gathered from this literature review, a tool was developed and validated by a panel of those currently working in the field. The tool will be used for a project for a facility management class at the University of Dayton during the spring semester of 2014. Utilizing this tool, a sample of 40 individuals each from the areas of non-profit, collegiate, and professional organizations will be interviewed, totaling 120 perspectives from the industry. These individuals will be asked the same 12 questions, focusing on the skills, knowledge, and experience needed within the profession. With these results, those looking to enter the event industry will have a better understanding of how to identify, quantify, illustrate, and speak to the skills in highest demand within the industry.

Discrepancy Between Fruit and Vegetable Consumption and Disposal in School Cafeterias

STUDENTS Sydney Marie Antolini
ADVISORS Diana Cuy Castellanos, Peter J Titlebaum
LOCATION, TIME ArtStreet Studio C, 2:00PM-2:20PM
School of Education and Health Sciences: Health and Sports Science, Oral Presentation- Independent Research

The Center for Disease Control and Prevention (CDC) estimates that nearly one in three children in the United States are overweight or obese. Additionally, childhood obesity has nearly doubled in children in the last 30 years and tripled among adolescents (CDC, 2013). Different dietary factors have been linked to obesity risk, such as low intakes of fruit and vegetables and high intakes of caloric dense foods. The consumption of fruits and vegetables in children in the US is below the recommended amount as indicated by the Dietary Guidelines for Americans. In 2012, the USDA mandated that all schools participating in the nutrition lunch program had to provide each student with one fruit and one vegetable. While many schools are working to provide healthier options (namely fruits and vegetables) in their cafeterias, research indicates that most children are throwing away, or not even choosing, the healthier options. The purpose of this literature review was to examine the attempts made

to increase fruit and vegetable intake in school cafeterias and how student consumption follows. The general trend found that while children are being provided fruits and vegetables on their lunch trays, both the rate of consumption and disposal of fruits and vegetables increases. Although the increase in consumption is positive, food waste is also increasing. These results further unleash an are of inquiry: How do you close the gap between fruit and vegetable consumption and disposal? Having a better understanding of what is happening in school cafeterias allows dietitians, school cafeteria managers, and health professionals to determine what needs to be done to diminish the discrepancies between consumption and disposal of fruits and vegetables in school cafeterias.

Dyslexia the Ability from Disability

STUDENTS Andrew R Hanley
ADVISORS Peter J Titlebaum
LOCATION, TIME LTC Meeting Space, 2:00PM-2:20PM
School of Education and Health Sciences: Health and Sports Science, Oral Presentation- Independent Research

Dyslexia or developmental reading disorder is a learning disability that affects a person's ability to read fluently with accurate comprehension. In early childhood, symptoms of dyslexia include delay in speech and literary reversal. Signs of dyslexia continue into adulthood with difficulty in learning foreign languages, summarizing stories, word retrieval and spelling. In grade school, many children with this issue are sent to special needs school, in addition to their regular schooling, to improve their reading, writing and spelling skills. However, with current secondary education structure, many dyslexic people will find that good grades will not come as easy to them as their peers, and it will be difficult for them to keep up with their studies. This results in students being labeled lazy, dumb or immature, resulting in dyslexics feeling unintelligent and possessing poor self-esteem. Living with this disability, is one way to overcome this condition is to stop viewing dyslexia as a disability. When a person goes blind, even though it is a life-changing incident, the person gains the advantage of having their other senses heightened. As long as a blind person learns how to cope in the world without their sight, they are left with elevated senses that most people don't possess. Researchers have discovered about dyslexia - even with the weaknesses that dyslexics deal with, there are many strengths dyslexic people can use to their advantage. It may be hard to learn in school, and make good grades. However, going through life with this issue and doing things differently makes dyslexic people stronger. Dealing with dyslexia makes people persistent, driven and ambitious. Let me share the skills that can assist in making smooth transition to college environment.

Students Uncover Hidden Tools for Noteworthy Career: Closing the Gap Between Theory and Practice

STUDENTS Amy T Szymaszek
ADVISORS Peter J Titlebaum
LOCATION, TIME LTC Forum, 2:20PM-3:00PM
School of Education and Health Sciences: Health and Sports Science, Oral Presentation- Graduate Research

Students enrolled in college programs today learn about resume development and job interviews in some form, yet research suggests employers do not believe candidates can communicate or demonstrate proficiencies in resumes/portfolios. The purpose of this presentation is to provide insight into the hiring process from the perspective of the human resources (HR) professional by establishing a methodology for activating student knowledge regarding job requirements. Current research regarding resumes, networking, and portfolio development include key ideas about format and appearance, but minimal scholarship exists regarding what HR looks for in a candidate. Understanding the HR perspective, the presenter will summarize current research, identify the gap, and provide information on how to employ the five areas of influence: networking, portfolio development, resume drafting, professional development, and self-branding. By understanding how the hiring process works, and what distinguishes one candidate from another, the presenter will focus on these guiding questions: what experiences should be leveraged by the job candidate? What do hiring professionals look for in a resume? How can we assist students to get the job they want? By attempting to answer these questions, the intent of this presentation is to empower students to take ownership over the process of career-hunting and transition into an intentional career.

The Connection between Nutrition Knowledge and Healthy Food Choice in College Students

STUDENTS Natalie C Senninger

ADVISORS Diana Cuy Castellanos, Peter J Titlebaum

LOCATION, TIME ArtStreet Studio C, 2:30PM-2:50PM

School of Education and Health Sciences: Health and Sports Science, Oral Presentation- Course Project, 14 SP HSS 255 01

Research indicates that many college students do not consume adequate nutrients in their daily diets. One's diet can be considered healthy if it adheres to the USDA's nutritional guidelines for that person's sex and age. Unhealthy diets are linked to adverse health effects such as weight gain, like the freshman 15, and higher risk for disease later in life. While there are many factors that are responsible for college students' inadequate dietary intake, one clear factor is the lack of sound nutrition information provided to students. Without this information offered to students, many do not know how to pick a healthy choice over a less nutritious option. Research shows that when college students are presented with nutrition information about food through intervention or the labeling of healthful foods, students are more inclined to pick the healthier options. This research proposes that if College food services provided the nutrient content of foods offered and/or labeled foods that were healthy options as indicated by USDA nutrition standards, then students may be more likely to consume these foods. This may then lead to more adequate dietary intakes and better health outcomes.

Civic Dietetics: Integrating Opportunities for Sustainability within the Dietetic Practice

STUDENTS Emily J Strauss

ADVISORS Diana Cuy Castellanos, Peter J Titlebaum

LOCATION, TIME ArtStreet Studio C, 3:00PM-3:20PM

School of Education and Health Sciences: Health and Sports Science, Oral Presentation- Course Project, 14 SP HSS 255 01

Registered dietitians (RD) are food and nutrition experts that have earned a bachelor's degree in nutrition and dietetics, completed 1,200 hours of supervised dietetic practice and passed a national examination. The goal of an RD is to promote health and prevent disease or disease progression. Research suggests that there is a need for dietetic professionals to increase their knowledge of environmental issues around food and incorporate the use of sustainability within their practices, as well as their own lives. Civic dietetics is a new area in the profession and places an emphasis on the importance in the connection between food choices and the sustainability of the food and agriculture system. However, the longstanding practices of dietetics may limit the extend to which the Academy of Nutrition and Dietetics and its members gravitate towards the concepts of civic dietetics. One of the greatest barriers surrounding these ideas is a lack of knowledge amongst dieticians. The findings of a study suggested that less than half of registered dieticians in Minnesota had heard about the push towards sustainability, and only about 1 in 8 dietitians had chosen to incorporate civic dietetics into their practice. Although this research was only a single study, it is indicative of the percent of dieticians who are practicing food sustainability. The purpose of this presentation is to discuss this new area of dietetics, civic dietetics, and outline current research suggesting the importance of incorporating aspects of civic dietetics into professional practice to ultimately support human and environmental health.

Evolution of Premium Food and Beverage in Sport and Entertainment

STUDENTS Danielle Denise Kloke

ADVISORS Peter J Titlebaum

LOCATION, TIME ArtStreet Studio C, 3:30PM-3:50PM

School of Education and Health Sciences: Health and Sports Science, Oral Presentation- Honors Thesis

To best understand the trends and development of the food and beverage industry in sport premium seating, it is important to look at the history of premium seating and sport. Since the Houston Astrodome added 53 luxury suites in 1965, the premium seating market has exploded (Titlebaum & Lawrence, 2009, p. 125). Food and beverage became a way to extend the premium experience and offer more than the traditional beer, hotdog, and chicken tenders. Not only did the shift provide more revenue from a premium product, but it also added value to the customer experience. Premium seating can account for up to 25% of local revenue for sport organizations (Connelly, 2011). Food and beverage options are an important part of elevating customer experiences and raising product value to customer standards, justifying a premium price tag. This industry is now dominated by four major players: Levy Restaurants, Delaware North Companies, ARAMARK, and Centerplate. Industry professionals must find a balance among consumer preferences, corporate needs, and local and national sponsors. The bottom line and the key for success is to provide quality service while meeting the premium-experience needs of today's corporate world.

The Dating Game of Startups: Which Investment Option is the Right Fit for You?

STUDENTS James E Foster

ADVISORS Peter J Titlebaum

LOCATION, TIME ArtStreet Studio C, 4:00PM-4:30PM

School of Education and Health Sciences: Health and Sports Science, Oral Presentation- Course Project, 14 SP HSS 255 01

For a great majority of startup businesses, the question in the back of most entrepreneurs' minds is how to get more money invested. Of the options, the most common choices are: Angel investment, Venture Capital, banks loans, federal grants, private funding, and (of course) personal assets to fund the venture. Among all of these different options, do all entrepreneurs know which choice is the right one for their startup? They may end up simply choosing whichever option comes to them first. Even the first two choices, which are the most common, how do startups gather additional funds without often mistakenly using terms interchangeably? This causes a great deal of problems for entrepreneurs trying to receive funds, as well as the investors trying to have a high return on investment. This presentation explains the concepts and differences between private equity investments, the benefits and consequences of each, and what is a "good match" between investor and start-up consists of. The concepts and differences that will be discussed are to reduce often mistakenly using terms interchangeably, and will include the investment decision process, the size and scope of ventures that are invested in, interest rates, duration of time needed for firm to exit the venture, and the firm's return on investment.

Dimensions of support in schools

STUDENTS Virginia Abigail Saurine, Molly E Stanifer, Zachary L Valletta

ADVISORS Susan M Ferguson, Kathryn A Kinnucan-Welsch

LOCATION, TIME RecPlex, 9:00AM-10:30AM

School of Education and Health Sciences: Teacher Education, Poster- Course Project, 14 SP EDT 110 H1

Standards for the teaching profession emphasize the importance of awareness, understanding, and integration into practice of current research in education. The goal of EDT 110 H1 class project was to present synthesis of related literature on pertinent topics to P-12 education, specifically dimensions of support in schools.

Identification of English Language Learners as Gifted Students

STUDENTS Riley Catherine Weber

ADVISORS Stephen B Richards

LOCATION, TIME RecPlex, 9:00AM-10:30AM

School of Education and Health Sciences: Teacher Education, Poster- Course Project, 13 FA EDT 498 H1

The United States educational system has faced several challenges and reforms regarding assessment and identification in the past fifty years which continue to change as the nation develops new goals and needs (Giuliani & Pierangelo 2012). In recent years, schools have included a large population of immigrant students from families with native languages other than English (Carter 2005). The need for educating students in English as a second language has led to new policies and programs developed specifically for ELL or English Language Learners (Elizalde-Utnick 2008). Another current topic of educational policy concerns the emphasis on assessment and high-stakes testing. In 2004, the Individuals with Disabilities Education Act, IDEA, provided legal rights and expectations for special education students which includes students with learning disabilities; however, English Language Learners are not covered under IDEA unless they are identified with a learning disability. IDEA also does not cover the rights of students who qualify for gifted and talented programs, even though students who qualify for these programs require a form of specialized education. Due to these recent educational initiatives, this research study will focus on how the assessment of English Language Learners impacts their identification and placement in gifted and talented programs. This is a current topic to research because most studies have focused on the overrepresentation of English Language Learners as learning disabled or the misidentification of students of color in learning disabled programs. However, some case studies and other forms of research have considered the underrepresentation of ELL in gifted and talented programs and whether or not students learning English as a second language can be successful in gifted and talented programs.

Increasing FAFSA Completion Rates: A Look at the Ohio 8 Coalition

STUDENTS Anna L Syburg

ADVISORS Connie L Bowman

LOCATION, TIME RecPlex, 9:00AM-10:30AM

School of Education and Health Sciences: Teacher Education, Poster- Course Project, 13 FA EDT 498 H1

Getting students ready to excel in higher education has been a topic dominated by conversations about raising academic rigor and standards.

College readiness covers a scope of factors including content knowledge, academic skills, behavioral skills as well as "college knowledge". College knowledge consists of the information that students need to navigate the complex processes of applying for college as well as financial aid. Many times, students have aspirations of enrolling in higher education but fail to complete essential tasks that make them eligible for college entrance. One of those key tasks is completing the Free Application for Federal Student Aid (FAFSA), which allows students to receive government aid for their college tuition. The application asks intensive questions about an individual and their family's finances. Many students and their families do not complete the FAFSA because of time constraints, misconceptions about the aid received, or lack of knowledge in how to navigate the system. The focus of this study is to look at the Ohio 8 Coalition of Ohio's largest urban school districts and to examine their FAFSA completion rates. Once the districts and their respective high schools have been examined, the study looks into which programs are implemented in order to foster high completion rates. Experts on FAFSA completion and the importance of "college knowledge" for the college readiness process have been interviewed as well as the superintendents of the highest performing districts to gather the specific details about the importance of FAFSA completion and what makes their district or high schools so successful in this area. The purpose of this research is to provide districts across the nation with resources on how to increase their FAFSA completion and, therefore, increase the likelihood of their students being able to receive aid for and enroll in higher education.

Reading Interventions in Relation to the Ohio Third Grade Reading Guarantee

STUDENTS Kathryn C Auletto
ADVISORS Mary Catherine Sableski
LOCATION, TIME RecPlex, 9:00AM-10:30AM
School of Education and Health Sciences: Teacher Education, Poster- Course Project, 13 FA EDT 498 H1

Reading is one of the most critical skills that students learn in their first few years of education. A strong foundation in reading at the early childhood level can promote success in the rest of schooling and beyond. This is especially true for children of poverty; reading abilities and the strong education that follows provide students with opportunities to break the poverty cycle. The importance of reading achievement is a political dimension, as demonstrated by Ohio's Third Grade Reading Guarantee. This legislation, which has many implications in education, requires that all third grade students who do not pass the Reading section of the Ohio Achievement Assessment must be retained until they are on reading level. In order to prevent this retention, teachers may choose to implement a reading intervention program with students who are at-risk of retention in third grade. The Ohio Department of Education provides districts with research-based reading instructional programs that may be implemented with these students. The list includes Reading Recovery and Orton Gillingham, two reading programs that use different approaches to literacy instruction. The research conducted in this study will look into the factors affecting a low-income school's decision to select one of these two programs. The research will follow a dual case study format, in which interviews will be conducted with principals and teachers in the selected high poverty schools. The interviews, along with collected data about these schools and the two programs, will provide an illustration of how the Third Grade Reading Guarantee is affecting curriculum, as well as how schools are choosing these reading programs in accordance with the new legislation. The research may provide valuable information for low-income schools in this selection process for choosing the appropriate intervention for their struggling readers.

Research on aspects of the classroom environment in p-12 schools on student learning

STUDENTS Bridget Jocelyn Bielski, Moira M Bonadonna, Renee Katharine Brown, Nikole S Kamp
ADVISORS Susan M Ferguson, Kathryn A Kinnucan-Welsch
LOCATION, TIME RecPlex, 9:00AM-10:30AM
School of Education and Health Sciences: Teacher Education, Poster- Course Project, 14 SP EDT 110 H1

Standards for the teaching profession emphasize the importance of awareness, understanding, and integration into practice of current research in education. The goal of the EDT 110H1 class project was to explore different learning environments that affect student learning.

Research on Learning and the Brain

STUDENTS Elizabeth Anne Martin, Kira Marie Ogburn
ADVISORS Susan M Ferguson, Kathryn A Kinnucan-Welsch
LOCATION, TIME RecPlex, 9:00AM-10:30AM
School of Education and Health Sciences: Teacher Education, Poster- Course Project, 14 SP EDT 110 H1

Standards for the teaching profession emphasize the importance of awareness, understanding, and integration into practice of current research

in education. The goal of the EDT 110H1 class project was to present syntheses of related literature on pertinent topics to p -12 education. Our research focuses on the brain's role learning in the areas of gender differences and the arts.

Research on Single Gender Environments

STUDENTS Sarah E McGrath, Miranda M Melone
ADVISORS Susan M Ferguson, Kathryn A Kinnucan-Welsch
LOCATION, TIME RecPlex, 9:00AM-10:30AM
School of Education and Health Sciences: Teacher Education, Poster- Course Project, 14 SP EDT 110 H1

Standards for the teaching profession emphasize the importance of awareness, understanding, and integration into practice of current research in education. The goal of the EDT 110H1 class project was to present syntheses of related literature on pertinent topics to p - 12 education, specifically the benefits of single gender environments on student achievement.

Research on Single Gender Environments

STUDENTS Katie M Anderson, Elizabeth A LaVigne
ADVISORS Susan M Ferguson, Kathryn A Kinnucan-Welsch
LOCATION, TIME RecPlex, 9:00AM-10:30AM
School of Education and Health Sciences: Teacher Education, Poster- Course Project, 14 SP EDT 110 H1

Standards for the teaching profession emphasize the importance of awareness, understanding, and integration into practice of current research in education. The goal of the EDT 110H1 class project was to present syntheses of related literature on pertinent topics to p - 12 education, specifically the benefits of single gender environments on student achievement.

Research on Technology in P-12 Classrooms

STUDENTS Courtney A Arand, Gabriela Mae Sanfilippo, Rebekah R Schwall
ADVISORS Susan M Ferguson, Kathryn A Kinnucan-Welsch
LOCATION, TIME RecPlex, 9:00AM-10:30AM
School of Education and Health Sciences: Teacher Education, Poster- Course Project, 14 SP EDT 110 H1

Standards for the teaching profession emphasize the importance of awareness, understanding, and integration into practice and current research in education. The goal of the EDT 110-H1 poster is to discuss both the positives and the negatives associated with the evolving use of technology in the classroom.

Research on the Approaches to School Safety

STUDENTS Jacob David Criminski, Kelly I Drayton
ADVISORS Susan M Ferguson, Kathryn A Kinnucan-Welsch
LOCATION, TIME RecPlex, 9:00AM-10:30AM
School of Education and Health Sciences: Teacher Education, Poster- Course Project, 14 SP EDT 110 H1

Standards for the teaching profession emphasize the importance of awareness, understanding, and integration into practice of current research in education.The purpose of this project is to discover different approaches to school safety.

Research on the Effect that Teacher Education Standards have on Teacher Formation in the United States and Finland

STUDENTS Caroline Ann Goodill, Caroline Elizabeth Herrmann, Danielle P Tout
ADVISORS Susan M Ferguson, Kathryn A Kinnucan-Welsch
LOCATION, TIME RecPlex, 9:00AM-10:30AM
School of Education and Health Sciences: Teacher Education, Poster- Course Project, 14 SP EDT 110 H1

Standards for the teaching profession emphasize the importance of awareness, understanding, and integration into practice of current research in education. Our goal of the EDT 110H1 class project is to present syntheses of the effects on teacher professional development based on education standards in Finland and the United States.

Teaching English Learners with the Common Core State Standards

STUDENTS Jenna Mackenzie Griffin
ADVISORS Patricia M Hart
LOCATION, TIME RecPlex, 9:00AM-10:30AM
School of Education and Health Sciences: Teacher Education, Poster- Course Project, 14 SP EDT 340 01

As the world increasingly becomes more global, teaching English Learners (ELs) has presented a challenge for many educators who are unprepared for this type of diversity within the classroom. The drastic achievement gap between ELs and English-speaking students demand more attention to addressing this issue. However, as the Common Core State Standards (CCSS) are being adapted in nearly every state, the demand for a focus on academic language development shows progressive improvement. My research focuses on the impact that the implementation of the CCSS is having on ELs in our country, particularly on academic language. I will also examine effective instructional strategies, environmental structures and the learning needs of ELs in relation to their academic accomplishments.

Understanding the Common Core State Standards and their Role in Catholic Education

STUDENTS Annemarie Fisher
ADVISORS Jacqualine M Arnold
LOCATION, TIME RecPlex, 9:00AM-10:30AM
School of Education and Health Sciences: Teacher Education, Poster- Course Project, 13 FA EDT 498 H1

In 2009, the Common Core State Standards (CCSS) revolutionized academic standards, providing a format adopted by states across America that focused on raising Math and English Language Arts standards as preparation for colleges and careers. In conjunction with the adoption and implementation of the CCSS across the United States, Catholic schools have worked towards the strengthening and advancement of their own educational systems. This thesis first examines the background of the CCSS, including implementation and professional development, as well as the opposition regarding the standards. The paper presents an overview of the history of academic standards in Catholic education and then explores the current role of the CCSS in Catholic schools. Through interviews with teachers, principals, and superintendents in Catholic education, the methodology examines how the standards are being understood and implemented in Catholic schools.

Improving Female Science Scores Through STEM Curriculum

STUDENTS Erin M Yacovoni
ADVISORS Mary Kay Kelly
LOCATION, TIME RecPlex, 11:00AM-12:30PM
School of Education and Health Sciences: Teacher Education, Poster- Honors Thesis

Currently in education there is a stress on career readiness. Specifically in science education, teachers are expected to educate their students not only on science concepts but also careers that involve Science, Technology, Engineering, and Mathematics (STEM). According to the United States Department of Education (2013), the United States is falling behind on mathematics and science education, ranking 25th and 17th in the world. These numbers must increase in order to prepare students for success in STEM fields as they graduate. One approach teachers use to ensure that students are well versed in the STEM fields is STEM education. In STEM education, students are taught using a method that focuses on real world application and engineering. This study focuses specifically on how middle-school females are affected by STEM education. Female success in science under the STEM method of teaching has been observed through a review of literature and a survey.

Preparing Pre-Service Teachers to work with English Language Learners

STUDENTS Alexandra N Hill
ADVISORS Stephen B Richards
LOCATION, TIME RecPlex, 11:00AM-12:30PM
School of Education and Health Sciences: Teacher Education, Poster- Honors Thesis

English Language Learners (ELLs) can be misidentified as students with special needs. Teachers often watch these students struggle in school and assume they have a cognitive delay, when in reality; they may just be struggling with their language delay. To be identified as needing special education services, these students undergo assessments to test their abilities. These assessments were created for students who speak English. Studies have shown that "Familiarity with Standard English accounts for more than 50% of the total test variance on IQ and achieve-

ment test measures for fourth graders and 60% to 90% of the variance for seventh graders" (Abedi, 2002). Therefore, ELLs are put at a further disadvantage during the testing period. If placed in a special education program, the student rarely receives the language instruction needed. The current structure creates an environment where ELLs can easily be misplaced into special education programs where they will continue to fall further behind in their education. To prevent this problem, pre-service teachers need to gain experience with ELLs so that they can give them the instruction and support they need. Not all pre-service teachers have access to classrooms with ELLs. In order to try to replicate this experience, instructors turn to video case studies that show pre-service teachers authentic footage, assessments, and class work of an ELL. The goal of this research is to determine the effects of video case studies on pre-service teachers, and what questions were generated as a result of the in class clinical experience.

The Themes of Catholic Social Teaching Integrated into the work of UD's Center for Catholic Education's (CCE) Urban Child Development Resource Center (UCDRC)

STUDENTS Julie A Iuliano
ADVISORS Susan M Ferguson
LOCATION, TIME RecPlex, 11:00AM-12:30PM
School of Education and Health Sciences: Teacher Education, Poster- Honors Thesis

Schools today are challenged to meet the mental health concerns of students due to an emphasis on academic testing and a lack of communication within schools to identify and treat the needs of the students. The needs of the student travel beyond the classroom into the non-academic barriers to learning. The University of Dayton's Urban Child Development Resource Center (UCDRC), works in five local schools in the Dayton area and strives to help students cope with these non-academic barriers to learning.This study focuses on three of the Seven Themes of Catholic Social Teaching as stated by the United States Conference of Catholic Bishops: Call to Family, Community, and Participation; Option for the Poor and Venerable; Life and Dignity of the Human Person; and how UCDRC implements these three themes into its program.

Upper Grade Level Literacy: Instructional Strategies for Struggling Readers

STUDENTS Claire M Shaw
ADVISORS Treavor Bogard
LOCATION, TIME RecPlex, 11:00AM-12:30PM
School of Education and Health Sciences: Teacher Education, Poster- Honors Thesis

Education research has shown that a quarter of eighth-grade students perform below basic reading proficiency. Despite this, reading instruction often ceases after eighth grade while text structure and content area language become more difficult. This research project focuses on studying strategies used for struggling readers in seventh through twelfth grade and includes a case study of a struggling reader in order to identify some of the characteristics and needs of struggling readers. This research synthesizes ideas from previous studies, analyzes teacher interviews for literacy instruction strategies, and, in the case study, uses observation, primary source study, and reading assessments.

Stiegler's "Distrust," Digitalization, and the Integration of Two Knowledges: The Academy's Struggle to Integrate the Technical with the Theoretical and Its Effect on Technology Adoption and Transformation

STUDENTS Russell A Thomas
ADVISORS Joseph L Watras
LOCATION, TIME LTC Studio, 1:00PM-1:20PM
School of Education and Health Sciences: Teacher Education, Oral Presentation- Graduate Research

Today's transition from printed text to digital media has exposed academic scholars to a technical knowledge typical of technology professionals but different from their own. According to French philosopher, Bernard Stiegler, this "radical displacement of technical knowledge" has created a "crisis of trust" that short-circuits technology adoption and hinders transformation. At the heart of this "distrust" is a lack of awareness of the nature of technology and the process of transformation that occurs when the introduction of a new technology holds out the promise of improving current thinking and practices but instead challenges and disrupts them. Distrust is overcome when one becomes aware of a

technology's pharmacological nature, as both a poison and cure, disruptive when first introduced and only later beneficial when adopted; and of technology as a process, as not just how something is done (the technical realm of the technologist) but also what is being done (the conceptual realm of the academic). The misunderstanding of these creates incorrect expectations and distrust, and indicates that there will be difficulties with a technology's adoption and a reduction in the benefits of transformation. The question then is how are we to increase understanding and decrease distrust? This presentation introduces a study whose purpose it is to determine how academic scholars are to make use of the technical knowledge they have been exposed to due to digitalization in a way that it increases understanding and advances adoption and transformation. It is the culmination of the researcher's work over the past decade and something he has written about and presented on in the past including here at the Stander Symposium.

Promoting Historical Literacy in High School Classrooms

STUDENTS Randall S Helm, Brendan M Lewis, Michele M McDonald, Emily L Mobley, Jordan Thomas Seitz, Conor William Squier, Anna L Syburg
ADVISORS John J White
LOCATION, TIME Marianist Hall Learning Space 218, 2:30PM-3:10PM
School of Education and Health Sciences: Teacher Education, Panel Discussion- Course Project, 14 SP EDT 323 01

This spring in our EDT 323 class, Historical Thinking and Literacy we have been looking into what are the most effective methods for teaching today's high school students to read historical documents and secondary works. We have read research about the topic of how to most effectively help students to develop the strategies of historical literacy and we have examined the ways in which historical literacy differs from virtually every other type of reading. Historical Literacy is the process by which students read and understand historical texts. It involves being able to find evidence in texts, synthesize this evidence with evidence found in other texts, and form and defend an argument using this evidence. Students must learn to read for sourcing, context, subtext, and corroboration as well as for close reading. This process of learning to think like an historian allows students to work with historical texts and other documents and artifacts. This engages the students in a way that more common methods of teaching history have not.When it comes to building historical literacies, much of the research we have read finds that teaching from the common history textbooks found in classrooms today can be more harmful to students understanding of history than helpful. Most textbooks generally found in high school history classrooms present history as a set of facts that are settled and should only be memorized. However, history is actually a constantly developing field that is always being debated and reinterpreted as new evidence comes to light or as new perspectives emerge on existing evidence and interpretation. By presenting primary documents and other assorted resources to students rather than textbooks, teachers are allowing students to explore history on their own and create their own ideas, based on evidence, of how the past worked.

Family Engagement Partnerships: How Early Childhood Students Demonstrated the Marianist Mission through Community-based Learning

STUDENTS Shauna M Adams, Magdalene L Egan, Marie N Garcia, Emily C Girouard, Mary K Jehling, Allison E. Scheid
ADVISORS Shauna M Adams
LOCATION, TIME LTC Studio, 3:00PM-3:40PM
School of Education and Health Sciences: Teacher Education, Oral Presentation- Course Project, 13 FA EDT 344 01

This presentation will focus on the work of a group of students who selected a family engagement project as part of a community-based course assignment. After a brief overview of the course assignment and its connection to the Family Engagement Collaborative of the Miami Valley, the students will describe their work in selecting the project, developing a relationship with the school-based partners and working with the partners to organize a family literacy event for children and families in a high poverty school. Throughout this project, the students engaged in learning, leading and serving while also coming to understand the power of partnering with families. The family literacy event was attended by over 250 persons and was an evening of family fun and learning. Upon completing the project, the team worked with the school principal to complete a self-evaluation of the Family Engagement Program and to develop an action plan for improvement. A question and answer session will close the presentation.

Teaching Historical Literacy by Examining Primary Sources

STUDENTS Justin T Parker, Sarah A Williams
ADVISORS John J White
LOCATION, TIME Marianist Hall Learning Space 218, 3:30PM-4:10PM
School of Education and Health Sciences: Teacher Education, Oral Presentation- Course Project, 14 SP HST 490 P2

Due to changing standards in education, both history students and teachers of history are now being challenged to actively engage with primary sources in the classroom. Throughout the duration of our student teaching it has been our goal to introduce a variety of primary sources to promote student engagement. At the same time, historical literacy has unique demands that require students to develop ways of reading that are different than for any other subject area. The purpose of this presentation is to demonstrate and share our strategies for incorporating primary sources as an alternative to traditional textbook learning and to illustrate strategies for increasing historical literacy in secondary school students.

School of Engineering

Design and Fabrication of Composite I-Beams for Bending Load Applications

STUDENTS Punit Gupta
ADVISORS Donald A Klosterman
LOCATION, TIME RecPlex, 9:00AM-10:30AM
School of Engineering: Chemical and Materials Engineering, Poster- Course Project, 14 SP CME 595 03

Abstract:Composite is a special type of material that combines the properties of two different constituents thereby, enhancing its mechanical properties. These constituents are generally a fiber and matrix. Fiber imparts stiffness and strength to the composite while the matrix holds the fiber in place, so that fiber property translation into composite properties is achieved. The objective of this poster is to establish a basic understanding of how to design and fabricate a composite I-beam i.e a carbon-fiber composite I-beam that can be used for bending load applications. It also focuses on the analysis of stresses in beam bending. By beam theory, I-beam is shown to be a very efficient form for carrying both shear and bending loads in the plane of the web but the inefficiency of the I-beam is because of its cross-section which has a reduced capacity in the transverse direction, and also its inefficiency in carrying torsion. The I-beam consists of a carbon fiber unidirectional and woven laminas, as well as high density polystyrene foam to stiffen the structure. It is manufactured using a wet layup technique and cured with the help of vacuum. Composite beams are tested using the 3 point bending test. The limit load for a composite I- beam under pure bending is determined experimentally and theoretically. Through analysis and testing, it is determined that web stability was the driving failure mode and many aspects can be improved through manufacturing techniques. Use of an autoclave as well as using metal molds for curing the beam dramatically increases load carrying capability.

ETHOS A review on the importance of maintaining standards in Appropriate Technology

STUDENTS Candida Crasto, Marcy A Prendergast
ADVISORS Candida Crasto
LOCATION, TIME RecPlex, 9:00AM-10:30AM
School of Engineering: Chemical and Materials Engineering, Poster- Course Project, 14 SP EGR 330 P1

A review of Appropriate Technology evolution as it applies to the practical implementation of ETHOS Immersion contributions. This is pre-work for an upcoming ETHOS immersion in Auroville, India.

ETHOS A Translation of Biodigestion Feasibility across Continents

STUDENTS Candida Crasto, Anirban Mandal
ADVISORS Candida Crasto
LOCATION, TIME RecPlex, 9:00AM-10:30AM
School of Engineering: Chemical and Materials Engineering, Poster- Course Project, 14 SP EGR 330 P1

Taking an existing technology in one region and transplanting it successfully in another region. The is pre-work to an upcoming ETHOS immersion in Managua, Nicaragua.

ETHOS Appropriate Solar Technology for Bihar, India

STUDENTS Aaron M Ramsey, Jose C Panameno, Matthew O Worsham
ADVISORS Candida Crasto
LOCATION, TIME RecPlex, 9:00AM-10:30AM
School of Engineering: Chemical and Materials Engineering, Poster- Course Project, 14 SP EGR 330 P3

An investigation of the potential for appropriate solar technology in Bihar, India, including solar thermal refrigeration systems. Both current applications and potential opportunities will be examined.

ETHOS Coconut Oil Extraction Optimization

STUDENTS Thomas L Bennett, Candida Crasto
ADVISORS Candida Crasto
LOCATION, TIME RecPlex, 9:00AM-10:30AM
School of Engineering: Chemical and Materials Engineering, Poster- Course Project, 14 SP EGR 330 P1

This will explore the optimization of the virgin coconut oil production. This process will extend to oil extraction of other plants and the methods

by which this is happening in cottage industries. This is pre-work for an upcoming ETHOS summer immersion in Dominica, West Indies.

ETHOS Water Technologies in Underdeveloped Regions

STUDENTS Chris B Baxter, Jose M Canabal, Candida Crasto, Chinedum A Ukandu
ADVISORS Candida Crasto
LOCATION, TIME RecPlex, 9:00AM-10:30AM
School of Engineering: Chemical and Materials Engineering, Poster- Course Project, 14 SP EGR 330 P1

Exploring water as it applies to underdeveloped regions in Africa and Central America. This is a pre-work scope and literature review for 3 upcoming ETHOS Immersions to Uganda, Cameroon, and Guatemala. This poster will address the water needs such as delivery, collection, and purification, and the proposed approach for each area of impact.

Application of Cobalt Porphyrins as Catalysts in Microbial Fuel Cells

STUDENTS Weilong Wang
ADVISORS Donald A Comfort
LOCATION, TIME RecPlex, 11:00AM-12:30PM
School of Engineering: Chemical and Materials Engineering, Poster- Graduate Research

A microbial fuel cell (MFC) is a renewable energy device in which microorganisms consume organic matters to generate electricity. These devices have potential utility in wastewater treatment facilities to dually clean the water and generate part of the electricity needed for water treatment. The last decade has seen tremendous advancement in MFC technology, but many challenges remain, particularly with improving performance and efficiency of cathodes. The cathode reduces oxygen to water and traditionally has utilized precious metals as the primary catalytic compound. In these studies, the precious metal in the cathode has been replaced with alternative catalysts, cobalt porphyrins. Porphyrins may serve as an effective, low cost oxygen reducing catalyst capable of operating in air-cathode MFCs. Here, a cobalt-porphyrin complex compounded with carbon black support (porphyrin/C) was fabricated into an air-cathode for the MFC and its performance was tested. Various porphyrin loading densities were investigated in order to determine the optimal catalyst loading as determined by power production in MFCs. The cathodes were further examined by polarization curves and voltammetry tests to exam electrochemical performance of the cathodes.

Characterizing the Adsorption Behavior of a Bovine Serum Albumin and A Novel Amino Acid onto Iron and Aluminum

STUDENTS Yaqiu Zhang
ADVISORS Douglas C Hansen
LOCATION, TIME RecPlex, 11:00AM-12:30PM
School of Engineering: Chemical and Materials Engineering, Poster- Capstone Project

The US Navy currently utilizes ultra-high pressure water jetting (UHPWJ) or grit-blasting for preparing steel surfaces for painting. Before a new coating/protective surface treatment can be applied, the cleaned surface usually is exposed to a humid environment for a significant amount time, which can cause corrosion. This corrosion activity is known as "flash rusting". The corroded surface will shorten the lifetime of the new coating/surface treatment. The aim of the study is to have an aqueously soluble biopolymer based corrosion inhibitor system that can protect exposed steel surfaces during the paint removal process from the flash rusting, which is also environmentally friendly. In order to do this, it is first required to understand the adsorption behavior of biopolymers onto metal alloy surfaces. Using adsorption isotherm measurements, the adsorption behavior of biopolymers onto the metal substrates will be monitored using bulk solution concentration determinations. Based on the Langmuir theory, the maximum number of adsorption sites and the affinity constant can be calculated for each biopolymer-substrate interaction, thus the optimal solution concentration for maximum substrate coverage will be determined. The adsorption characteristics of Bovine Serum Albumin (BSA) and a novel amino acid (L-dopa) onto high strength steel (HY80) and 5083 aluminum alloy powders suspended in a buffer solution were measured by the Arnow assay for diphenols and the Bradford protein assay, respectively, to detect the bulk solution concentration of non-adsorbed protein as a function of time; the amount adsorbed from solution at equilibrium can then be determined. With the surface area of the metal powders known, it is then possible to calculate the amount of protein or amino acid adsorbed from solution per unit area of metal. Thus the number of adsorption sites and binding affinity for each adsorbate can be established.

Controlling the Corrosion of Metals with Polyphenolic Proteins

STUDENTS William F Nelson

ADVISORS Douglas C Hansen

LOCATION, TIME RecPlex, 11:00AM-12:30PM

School of Engineering: Chemical and Materials Engineering, Poster- Graduate Research

Flash rusting is a corrosion process in which steel rapidly oxidizes upon contact with air at a high relative humidity. The ultimate goal of this research is to develop a water-soluble and environmentally friendly corrosion inhibitor that will inhibit flash rust on high strength steel (HY80). Several proteins involved in the formation of the adhesive byssal threads by the blue mussel Mytilus edulis L have been identified for their potential as corrosion inhibitors. The most important feature of these biomolecules for corrosion prevention applications is the presence of a post-translationally modified amino acid L-3, 4 dihydroxyphenylalanine (L-dopa). L-dopa has a well characterized ability to form strong bonds with metal ions, thus stabilizing the metal surface and inhibiting corrosion. In addition, enzymatically treated L-dopa containing proteins can participate in crosslinking reactions, which have been shown to lead to a thicker and more durable protein layer. In this study, HY80 steel coupons were treated with varying amounts of MAP-1, the largest and most well-characterized of the five mussel proteins, in 0.05M phosphate buffer at pH 7.0 and exposed in an accelerated atmospheric corrosion chamber maintained at 40°C and 100% relative humidity. For comparison, identical HY80 samples were treated with a commercially available flash rust corrosion inhibitor under identical exposure conditions. The results indicate that the corrosion inhibiting behavior of the cross-linked protein may be contingent on the presence of an air-formed oxide layer. Current results suggest that the mussel protein is nearly as effective as the commercial inhibitor at a similar concentration, which shows that the protein could potentially serve as an environmentally friendly replacement for current flash rust inhibitors.

DMSO and temperature contributions to synthesis of silver nano-particles by the bacterium Shewanella Oneidensis

STUDENTS Wei Zhong

ADVISORS Donald A Comfort

LOCATION, TIME RecPlex, 11:00AM-12:30PM

School of Engineering: Chemical and Materials Engineering, Poster- Capstone Project

Nanomaterial are widely used in different areas such as optical device, drug delivery, chemicals, mechanics, magnetics, catalysis, energy science, Nano therapeutics and space industries depend on the special physical properties. However, most methods to produce nanoparticles are expensive or environmental unfriendly which can involve in toxic chemical. Another reason is that the nanoparticles from bio-based protocols are hydrophilic which is compatible with biological materials. In this project, we chose Shewanella oneidensis which is Gram-negative bacterium as the organism to produce sliver nanoparticles from sliver nitrate solution. The mechanism of bacterial of ion metal ion reduction to stable metal nanoparticles is unclear, but the NADH-dependent reeducates, quinines, and soluble electron-shuttles are thought to play an important role in metal reduction. This research focused on the temperature and DMSO affects the synthesis of silver nanoparticles by Shewanella Oneidensis. At various temperatures, the bio-activity of bacterium is different which can affect the silver nanoparticles reducing rate and the spherical size and nanoparticle geometry. DMSO is an aprotic, polar solvent which can penetrate skin and other membranes without damaging the cells. Due to this property of DMSO, DMSO was utilized as a co-solvent, which may change biosynthesis of silver nanoparticles. The synthesis processes were carried out at different temperatures and DMSO concentration and the nanoparticle formation monitored by using UV-vis spectrometer scans of the aqueous layer of reaction at 0 hr, 24 hr and 48 hr.

ETHOS Earthen Stoves in Rural Africa

STUDENTS Candida Crasto, Juliana I Lawniczak, Kyle Slone

ADVISORS Candida Crasto

LOCATION, TIME RecPlex, 11:00AM-12:30PM

School of Engineering: Chemical and Materials Engineering, Poster- Course Project, 14 SP EGR 330 P1

This will explain the unique application of earthen stoves in varying rural communities. Presenting the challenges of available resources, balance of efficiency, and the trade offs in comparison to the traditional 3-stone fire. This poster is the pre-work for the upcoming ETHOS summer immersions in Malawi and Uganda.

Growth Kinetics of Carbon Microcoils

STUDENTS Muneaki Hikita
ADVISORS Khalid Lafdi
LOCATION, TIME RecPlex, 11:00AM-12:30PM
School of Engineering: Chemical and Materials Engineering, Poster- Graduate Research

Carbon is one of the most versatile materials of the periodic table and exists in various allotropic forms and shapes including fullerene, carbon nanotube, graphene. Coiled carbon filaments exhibit very attractive morphology and properties such as absorption of electromagnetic waves and high conductivity because of their shape and carbon structure. Bidirectionally grown double helical carbon microcoils (CMCs) are one type of coiled carbon filaments with unique catalytic activity. In this study, CMCs were synthesized using a chemical vapor deposition method. Growth mechanism of CMCs was explained by a simple exponential catalyst decay model.

Heat Transfer Coefficient Correlations for Pumparound Sections of Petroleum Fractionation Towers

STUDENTS Bryan L. Sigward
ADVISORS Amy R Ciric
LOCATION, TIME RecPlex, 11:00AM-12:30PM
School of Engineering: Chemical and Materials Engineering, Poster- Honors Thesis

The accuracy of several empirical correlations for estimating heat transfer coefficients within pumparound sections of atmospheric and vacuum petroleum fractionation towers was investigated. The heat transfer coefficients were estimated according to the C.F. Braun correlation for trayed pumparounds and the atmospheric and vacuum Glitsch correlations for packed pumparounds. From these correlations, heat transfer coefficients were estimated for 43 different petroleum fractionator pumparounds based on operating data gathered from nine refineries around the globe. The accuracy of the correlations was evaluated by comparing the estimated heat transfer coefficients to actual values calculated from operating data. Results showed that while the C.F. Braun correlation did not have any accuracy biases, it was also not very precise and had a large amount of variation in how well it could predict actual heat transfer coefficient values. Results also showed that while the two Glitsch correlations were both relatively precise, they both had accuracy biases. The atmospheric Glitsch correlation has a conservative underprediction bias, while the vacuum Glitsch correlation has an optimistic overprediction bias for heat transfer coefficients.

Identification of Modified Nanomaterial Characteristics and Cellular Responses in Artificial Alveolar Fluid

STUDENTS Kristen K Comfort, Yingde Zhu
ADVISORS Kristen K Comfort
LOCATION, TIME RecPlex, 11:00AM-12:30PM
School of Engineering: Chemical and Materials Engineering, Poster- Capstone Project

The rapid expansion of nanotechnology and inclusion of nanomaterials (NMs) into everyday objects have introduced benefits in many areas, including energy, electronics, cosmetics, medical procedures, and household items. It is due to their unique physicochemical properties, such as enhanced surface area to volume ratio and increased reactivity that make NMs attractive for these applications. Recently, however, concerns have been raised regarding the safety of NM exposure. To address these concerns, scientists and engineers have sought to identify the root cause of nano-bioresponses, with conflicting reports presented between in vitro and in vivo studies. While in vitro models retain the advantages of quick-screening and low effectiveness, a traditional cell culture environment does not accurately represent an in vivo setting. One mechanism to overcome this discrepancy is to incorporate artificial physiological, which in addition to being more biologically relevant allow for full NM characterization and evaluation in a more representative environment; a critical component in order to identify true NM behavior during targeted applications. As such, our goal was to elucidate the impact of physiological fluids on the characteristics and induced biological responses of select NMs. As inhalation is a primary mode of NM entry, our in vitro model consisted of a human alveolar cell line (A549), artificial alveolar fluid, and NMs that possess increased likelihood of exposure via inhalation (aluminum dioxide, copper oxide, and silicon dioxide). Following dispersion in alveolar fluid the NMs displayed dramatically increased rates of agglomeration and modified surface charge. Additionally, stress activation and cytotoxicity were evaluated and varied between standard culture media and alveolar fluid. These results indicate modified NM and resultant cellular behavior following adaptation of an in vitro environment to more closely mimic an in vivo surroundings

Low Alloy Steel Susceptibility to Stress Corrosion Cracking in Hydraulic Fracking Environment.

STUDENTS Ezechukwu Anyanwu
ADVISORS Douglas C Hansen
LOCATION, TIME RecPlex, 11:00AM-12:30PM
School of Engineering: Chemical and Materials Engineering, Poster- Graduate Research

The pipelines used for the process of hydraulic fracturing (aka. "fracking") process are constantly operating at very high pressure and thus are highly susceptible to Stress Corrosion Cracking (SCC). This is primarily due to the process of carrying out fracking at a shale gas site, where the hydraulic fracking fluid is pumped through these pipes at very high pressure in order to initiate fracture in the shale formation. While the fracking fluid is typically more than 99% water, other components are used to perform various functions during the fracking process. Research into the occurrence of SCC reveals that SCC is engendered by a number of factors, of which two main contributors are stress in the pipe steel and a particular type of corrosive environment that exist around the pipeline in the service setting. The variety of fracking fluid formulas which could be used and the insufficient information about the fracking fluid chemistry makes it very important to carry out analysis to ensure the integrity of the pipeline used for this process. The current research described here is focused on the evaluation of the susceptibility of low alloy steel (C4340) to stress corrosion cracking in different environments as it relates to hydraulic fracking fluid chemistry and operating conditions. These different environments are achieved by varying the solution pH, the pH adjusting agent and the applied stress. Electrochemistry measurements using AISI 4340 samples in various solutions and applied stress conditions will be presented and discussed.

Purification and Biochemical Characterization of a Cellulolytic Glycoside Hydrolase from Caldicellulosiruptor saccharolyticus

STUDENTS Caroline E Wise
ADVISORS Donald A Comfort
LOCATION, TIME RecPlex, 11:00AM-12:30PM
School of Engineering: Chemical and Materials Engineering, Poster- Honors Thesis

In response to the current global energy crisis, biofuels have become a viable renewable energy solution and require a carbohydrate source to begin their production. One such carbohydrate source option is biomass, which is comprised of complex sugars that can be broken down into simple sugars and then fermented for the production of bioethanol. The bacterium called Caldicellulosiruptor saccharolyticus contains many glycoside hydrolase enzymes that have the potential for metabolizing the complex sugars in several carbohydrate sources, including those in biomass. This project is focused on the cloning of the Csac 2410 gene from C. saccharolyticus, expression of the gene as a protein, purification of the protein, and biochemical characterization of the protein. The biochemical characterization determines the substrate specificity, pH optima and temperature optima of Csac 2410, and the results are used to determine the effectiveness of Csac 2410 in metabolizing complex sugars for the upstream processing of biofuels.

Save More Money on Natural Gas Vehicle

STUDENTS Zhenghao Luo
ADVISORS Donald A Klosterman
LOCATION, TIME LTC Meeting Space, 2:00PM-2:20PM
School of Engineering: Chemical and Materials Engineering, Oral Presentation- Independent Research

With population and economy projected to rise, the global challenge is to manage and meet energy demand affordably, sustainably and securely. Suitable energy resource is helpful to save energy and solve the challenge. Natural gas is a lower-carbon fuel that is increasingly secure and affordable. When used in place of coal for power, it can reduce CO2 emissions by half. It could offer the most effective pathway to a secure, lower-carbon future. The goal of this project is to discuss about the application of natural-gas engines in the cars and compare couple ways to reduce the cost.

Characterization of Iron Phthalocyanine As the Active Material for Lithium Batteries

STUDENTS David T Anneken

ADVISORS Sarwan S Sandhu

LOCATION, TIME Kennedy Union 207, 3:00PM-3:20PM

School of Engineering: Chemical and Materials Engineering, Oral Presentation- Graduate Research

Results on the determination of the lithium-ion coefficient in the iron phthalocyanine (FePc) active material as a function of intercalation level, using modified electrochemical impedance spectroscopy technique, will be presented. Also, developed thermodynamic functions such as the Gibbs free energy, entropy, and enthalpy changes for the lithium insertion reaction with FePc, derived from cell voltage measurements as a function of intercalation level, are presented. Also presented, are estimates of the maximum amount of lithium that can be intercalated into the FePc based on constant volume and temperature conditions.

Large-scale exfoliation of hexagonal boron nitridenanosheets in liquid phase

STUDENTS Sadra Emami

ADVISORS Khalid Lafdi

LOCATION, TIME Kennedy Union 207, 3:30PM-3:50PM

School of Engineering: Chemical and Materials Engineering, Oral Presentation- Graduate Research

Hexagonal boron nitride (h-BN), the structure analogue of graphite, has many potential applications owing to its superb thermal, electrical and mechanical properties. In this study, a novel facile mixture solvents strategy (ammonia water solution/isopropyl alcohol) was developed for the preparation of h-BN nanosheets (BNNSs) in large scale, and the results demonstrated the exfoliated BNNSs were very stable in isopropyl alcohol solution. Lewis acid-base interaction was considered to be the mechanism for the exfoliation of h-BN due to the electrondeficient boron atoms. This simple and low cost exfoliation approach could provide a promising platform for preparation and applications of BNNSs in the future.

Civil Engineering 2014 Senior Capstone Design - Buckeye Motor Speedway

STUDENTS Mariana E Aboujaoude, Tj J Bernard, Andrew M Bernhard, Jacob L Bertke, Paul J Biancone, Zachary E Borchers, Leigha R Brisco, Robin A. Brownrigg, Andrew F Doerfler, Longxing Dong, Edward M Farrell, Brian James Gitzinger, Alec W. Goodall, James L. Gross, Sa

ADVISORS Donald V Chase

LOCATION, TIME Kennedy Union Boll Theatre, 8:30AM-12:00PM

School of Engineering: Civil and Environmental Engineering and Engineering Mechanics, Oral Presentation- Capstone Project

Every year the senior Civil Engineering class presents their Senior Capstone Design. This year our class will be presenting our design of a brand new, state of the art NASCAR facility which has been named Buckeye Motor Speedway. This hypothetical stadium will be located south of Columbus, Ohio in Madison County, and will hold approximately 110,000 race day attendees. The facility incorporates many features including a hotel, casino, track and roughly 40,000 RV and regular parking spots for fan tailgating. All facets of Civil Engineering will be represented in our design and presentation. Structural Engineers will be presenting their design of the hotel and casino, the signs and towers throughout the facility, the grandstands encompassing half of the track, and bridge upgrades along Interstate 71. Environmental Engineers will display their designs of a green roof, water treatment facilities and oil water separators within the track. The Geotechnical group will present on their foundations, tunnel, and track embankment designs. Site/Civil Engineers will discuss grading for the facility, storm water management, and water distribution throughout the facility. The Transportation group will discuss efforts to increase the capacity of the surrounding roads, the design of the track itself, lighting throughout the facility, and all of the newly designed access roads to facilitate traffic movement throughout the site. The Project Managers will highlight the overall design of the facility to open the presentation and will conclude with a discussion of the schedule produced for both the design and construction of the facility, as well as a breakdown of the cost estimate for the project.

Operational Performance and Safety Comparison of Roundabouts vs. Traditional Intersections

STUDENTS Vincent E Spahr

ADVISORS Deogratias Eustace

LOCATION, TIME RecPlex, 11:00AM-12:30PM

School of Engineering: Civil and Environmental Engineering and Engineering Mechanics, Poster- Honors Thesis

As roundabouts become increasingly popular in Ohio, this study assesses their performance as a safe and functional alternative to traditional intersections. Focusing on three roundabout locations in Dublin, Ohio, the study compares accident reports with traditional intersections in the

area as well as with the traditional intersections that existed before the roundabouts were installed.

3D Anomaly Detection using Structure from Motion

STUDENTS Yakov Diskin
ADVISORS Vijayan K Asari
LOCATION, TIME RecPlex, 11:00AM-12:30PM
School of Engineering: Electrical and Computer Engineering, Poster- Graduate Research

We present a 3D anomaly detection technique designed to support various applications in changing environmental conditions. The novelty of the work lies in our approach of creating an illumination invariant system tasked with detecting anomalies in a changing environment. Previous efforts have focused on image enhancement techniques that manipulate the intensity values of the image to create a more controlled and unnatural illumination. Since most applications require detecting anomalies in a scene irrespective of the time of day, (lighting conditions or weather conditions present at the time of the frame capture), image enhancement algorithms fail to suppress the illumination differences enough for Background Model (BM) subtraction to be effective. A more effective anomaly detection technique utilizes the 3D scene reconstruction capabilities of structure from motion to create a 3D background model of the environment. By rotating and computing the projectile of the 3D model, pervious work has been shown to effectively eliminate the background by subtracting the newly capture dataset from the BM projectile leaving only the anomalies within the scene. Although previous techniques have proven to work in some cases, these techniques fail when the illumination significantly changes between the capture of the datasets. Our approach completely eliminates the illumination challenges from the anomaly detection problem. The algorithm is based on our previous work in which we have shown a capability to reconstruct a surrounding environment in near real-time speeds. The algorithm, namely Dense Point-cloud Representation (DPR), allows for a 3D reconstruction of a scene using only a single moving camera. Utilizing the 3D models, we compute the volumetric changes between two reconstructed scenes. We measure the success of our technique by evaluating the detection outputs, false alarm rate and computational expense when comparing the two state of the art anomaly detection techniques.

A Computer Based Detection of Lung Nodules in Chest Radiographs

STUDENTS Barath Narayanan
ADVISORS Russell C Hardie, Temesgen M Kebede
LOCATION, TIME RecPlex, 11:00AM-12:30PM
School of Engineering: Electrical and Computer Engineering, Poster- Graduate Research

Lung cancer is the leading cause of cancerous disease in the United States. Lung cancer usually exhibits its presence with the formation of pulmonary nodules. Nodules are round or oval-shaped growth present in the lung. Chest radiographs are used by radiologists to detect and treat such nodules, but nodules are quite difficult to detect with human eye and are sometimes misinterpreted with lesions present. Thus, automated analysis of such data is very essential and would be of valuable help in lung cancer screening. A new Computer Aided Detection (CAD) system in chest radiography is proposed in this paper. The algorithmic steps of the CAD system include: (i) local contrast enhancement of chest radiographs; (ii) automated anatomical segmentation; (iii) detection of nodule candidates; (iv) feature extraction; (v) candidate classification. In this research, we present facets of the proposed algorithm using a publically available dataset and we explore new set of features and other classifiers. The publically available dataset was created by Lung Image Database Consortium (LIDC) and Image Database Resource Initiative (IDRI). LIDC-IDRI dataset is comprised of 276 patient chest radiographs containing nodules of various types and sizes. The centroids of the nodules are provided by at least one of four board certified radiologists. Local contrast enhancement of chest radiographs is achieved using a Gaussian low pass filter. Automated anatomical segmentation is performed using an active shape model. Potential candidate nodules can then be determined by using an adaptive distance –based threshold algorithm limited to the delineated lung fields. Later, a set of features are computed for each potential candidate. Based on those tailored features, a learning based system such as neural network can be used to classify the candidates into true or false positives. This CAD system could serve as an express way for processing an x-ray and would aid in providing a second opinion to radiologists.

A Novel High Quality Factor Tunable Band-stop Filter for Microwave Applications

STUDENTS Hailing Yue
ADVISORS Guru Subramanyam
LOCATION, TIME RecPlex, 11:00AM-12:30PM

School of Engineering: Electrical and Computer Engineering, Poster- Independent Research

A band-stop filter is used to remove a narrow band of frequencies from the signal path of a receiver or a transmitter. For a conventional notch filter, the maximum attenuation (notch depth) occurs at a single frequency midway between the specified edges (3dB) of the lower and upper pass-bands, and the selectivity can be described as the ratio of the notch depth to the bandwidth between the edges of the pass-bands. The unloaded quality factor Q (Qu) of the filter's resonators limits both notch depth and selectivity. This proposal suggests an optimized version of varactor-tuned microwave band-stop filter designed using a novel inductive spiral signal line incorporated with shunt varactors featuring an expected Qu of ~110 and notch depth of ~30dB at center frequencies from 2GHz to 8GHz.

Advanced Image Processing for Automatic Pipeline Right-Of-Way Threat Detection

STUDENTS Sai Babu Arigela, Chen Cui, Yakov Diskin, Binu M Nair, Sidike Paheding

ADVISORS Vijayan K Asari

LOCATION, TIME RecPlex, 11:00AM-12:30PM

School of Engineering: Electrical and Computer Engineering, Poster- Graduate Research

Rapid advances made in the area of camera and sensor technology has enabled the use of video acquisition systems to monitor the right-of-way of pipelines. Huge amount of data is thus made available for analysis. However, it would be very expensive to employ analysts to scan through the data and identify threats to the right-of-way in the vast amount of wide area imagery. This warrants the deployment of an automated mechanism that is able to detect threats to the right-of-way and send out warnings in the event of detection of a threat. A novel algorithmic framework for the robust detection and classification of objects on pipeline right-of-way (ROW) is designed in four directions: visibility improvement, context-based segmentation, change detection, and part-based object recognition. In the first part of the framework, an adaptive image enhancement algorithm is utilized to improve the visibility of aerial imagery the can aid in threat detection. In this technique, a nonlinear transfer function is developed to achieve the enhancement process for the extremely non-uniform lighting conditions. In the second of the proposed scheme, the context-based segmentation is developed to eliminate regions from imagery that are not considered to be a threat to the pipeline. This segmentation algorithm allows to accelerate threat identification and improve object detection rate. Thirdly, a volumetric change detection algorithm utilizing dense point cloud representation flags changes in consecutive flights. The last phase of the framework is an efficient part-based object recognition model. This technique employs parts of the object with specific feature representative to characterize objects, which is robust to detect objects in partial occlusions and appearance variations. In other words, it is a stricter pre-trained classifier that searches imagery for specific targets that are considered threats. The classifier outputs location of threats and the severity of threat to pipeline.

An Interactive Robust Artificial Intelligence-based Defense Electro Robot (RAIDER) using a Pan-Tilt-Zoom Camera

STUDENTS Theus H Aspiras, Andrew D Braun, Chen Cui, Yakov Diskin, Solomon G Duning, Binu M Nair, Sidike Paheding

ADVISORS Vijayan K Asari

LOCATION, TIME RecPlex, 11:00AM-12:30PM

School of Engineering: Electrical and Computer Engineering, Poster- Graduate Research

The Vision Lab's Robust Artificial Intelligence-based Defense Electro Robot (RAIDER) is an integrated electro-mechanical system equipped with an onboard processor and numerous imaging sensors. The RAIDER is built upon the Clearpath Husky A200 mobile base. In a multidisciplinary effort, the newly constructed robotic body houses the onboard laptop, GPU processor, LAN, IP cameras, and Kinect sensors. In our previous experiments and efforts, we shown the capability of computing a 3D model of the surrounding scene from motion imagery. We have tested autonomous navigation algorithms in which the RAIDER was to follow a particular person in a crowded environment. Algorithmic enhancements have integrated the 3D depth information into the person-tracking technique to allow for following a person around sharp corners. These navigation and controls algorithms call for an accurate face detection and recognition system as well as a human body detection and recognition system. Additionally, we have integrated a Play Station 2 wireless controller to remotely maneuver the RAIDER and activate various autonomy modes. In this poster, we present our latest effort in integrating face detection with the Pan-Tilt-Zoom (PTZ) base of an Axis camera. Positioned on top of the RAIDER, the PTZ-base will allow for the RAIDER to mimic a human's ability to "look around" or "follow a person with only the eyes," specifically without physically turning the robotic body. The face detection algorithm provides the location of a face within the images, the PTZ is constantly tracking the face and adjusting to keep it in the center of the image. Additional RAIDER projects work on integrating a speaker system that would vocalizes pre-defined phrases triggered by the recognition of specific persons. This would allow the RAIDER to vocalize

"Hello" to people trained into its recognition system. These new artificial-intelligence RAIDER innovations create a more interactive human-like robotic system.

Blur Processing Using Double Discrete Wavelet Transform

STUDENTS Yi Zhang
ADVISORS Keigo Hirakawa
LOCATION, TIME RecPlex, 11:00AM-12:30PM
School of Engineering: Electrical and Computer Engineering, Poster- Graduate Research

We propose a notion of double discrete wavelet transform (DDWT) that is designed to sparsify the blurred image and the blur kernel simultaneously. DDWT greatly enhances our ability to analyze, detect, and process blur kernels and blurry images—the proposed framework handles both global and spatially varying blur kernels seamlessly, and unifies the treatment of blur caused by object motion, optical defocus, and camera shake. To illustrate the potential of DDWT in computer vision and image processing, we develop example applications in blur kernel estimation, deblurring, and near-blur-invariant image feature extraction.

Brain Machine Interface for Controlling a Robotic Arm

STUDENTS Theus H Aspiras, Kelly Cashion, David Fan, Yicong Gong, Carly A Gross, Nathaniel J Maas, Ahmed H Nasrallah
ADVISORS Vijayan K Asari, Weisong Wang
LOCATION, TIME RecPlex, 11:00AM-12:30PM
School of Engineering: Electrical and Computer Engineering, Poster- Capstone Project

This project takes Electroencephalography (EEG) data and correlates it with specific robotic actions. The process is implemented using a 3 phase system that includes EEG signal acquisition, data classification, and robotic action encoding. This project utilizes the Emotiv EPOC headset that uses 14 electrodes which detects brain activity and wirelessly transmits raw data to a personal computer. The project utilizes Emotiv software to classify and translate and encode this raw EEG signal into a command to control a robotic arm. This Brain Machine Interface (BMI) research has many potential applications; for example, it could help the handicapped use robots to complete various task, or help the user use only their mind to control multiple devices like Google Glass, cell phones, wheelchairs and air conditioners, etc.

Exploring the Capabilities of Large Scale Memristor Crossbars

STUDENTS Roshni Uppala
ADVISORS Tarek M Taha
LOCATION, TIME RecPlex, 11:00AM-12:30PM
School of Engineering: Electrical and Computer Engineering, Poster- Graduate Research

The memristor considered to be the fourth passive electronic element after the resistor, conductor and inductor has been a very powerful nanotechnology device used by several researchers in fields such as circuit theory, logic and memory circuits, neuromorphic systems and applied analog circuits. Their applicability as synapses in neuromorphic systems provide even further surprising properties in electric circuits. Their immediate use in mimicking the human brain cortex has proved to be possible mainly because of their nanometric size. Memristors are basically resistors with memory which have the capability to perform logic operations as well as store information. Various breakthroughs of memristive devices have shown the potential of memristive crossbar designs for their ultra-high density and low-power memory. The principal objective of this paper is to evaluate large scale memristor crossbars that allow high density layout of synapses and thus enable to build highly capable neuromorphic systems. Much work in evaluating large scale memristor crossbar has not been presented by anyone yet as its computation goes beyond the capacity of today's existing simulation tools. In order to achieve this, the simulations will be performed with the help of a newly released parallel simulator, Xyce developed by the Sandia Labs. We also aim to bring out the reliability issues of such cortical crossbar design in events of noise, write disturbances and radiation and hence provide an effective solution in avoiding these limitations that would contribute in overheads such as performance, area and energy consumption. Therefore, the results from these simulations will be crucial in understanding the future of the memristor crossbar in developing highly reliable and extremely low power processors and neuromorphic systems.

High Resolution 3D Reconstruction Using a Hexacopter Drone

STUDENTS Yakov Diskin, Evan W Krieger, Lauren Marissa Milliken
ADVISORS Vijayan K Asari

LOCATION, TIME RecPlex, 11:00AM-12:30PM

School of Engineering: Electrical and Computer Engineering, Poster- Graduate Research

One of the greatest challenges in developing automation algorithms for aerial surveillance applications is the difficult of gathering data. Algorithm developers rely on infrequent and expensive test flights for obtain imagery datasets. As a result of the status quo, algorithms tend to be gear towards and perform well on specific imagery sets. We present the Hexacopter Drone, the Vision Lab's newly acquired unmanned aerial vehicle (UAV), used for inexpensive collection of aerial imagery data for various research activities. The UAV, a TurboAce Cinewing 6 hexacopter, carries a Canon 5D Mark III mounted to a separately controlled gimbal and has a flight time of up to 25 minutes. The body is a triple deck carbon fiber structure that is durable and lightweight, foldable arms allow for easy transport and the 15 inch extra heavy duty carbon fiber propellers are resistant to flexing and warping under heavier payloads. A transmitter allows the operator to view a live feed of the video during flight, and the hexacopter and the camera gimbal can both be separately controlled during flight with 2 transmitters. The Naza V2 GPS on board of the UAV allows for auto-stabilization, GPS course-lock, and Return-to-Home features for flying. While using GPS control, the pilot can keep the hexacopter at a certain position using the auto-stabilization feature in order to focus on the camera controls and the image capturing. Utilizing those components, the objective of this project is to create high resolution 3D reconstruction model of vehicles. The hexacopter has the ability to capture a 360° view of vehicles or other objects, and this data can be used as the input to a 3D reconstruction algorithm, namely Dense Point-cloud Presentation (DPR). We present 3D models of scenes that are computed using video captured by the hexacopter.

Human Re-Identification in Multi-Camera Systems

STUDENTS Kevin C Krucki, Binu M Nair

ADVISORS Vijayan K Asari

LOCATION, TIME RecPlex, 11:00AM-12:30PM

School of Engineering: Electrical and Computer Engineering, Poster- Graduate Research

This research involves live human re-identification on multi-camera systems. Each frame of multiple cameras needs to be captured and analyzed with image processing methods. First, a histogram of oriented gradients (HOG) is performed to identify a person in each frame. Next, Local Binary Pattern (LBP) descriptors are used on each person to determine certain set features about then. Lastly, a red, green, blue (RGB) color histogram is performed on a specific body mask. Each body is then given a label based on their LBP and color histogram information and that label will be sent to a database. This label should be the same across all the cameras. The process should also happen live. The research will include analysis of the difference between using a static body mask and using pose estimation for a more accurate color histogram. Also, regional descriptors will be used to better describe the human body. Lastly, the difference between YCrCb and RGB color histograms will be shown.

LiDAR Data Analysis for Region Segmentation and Object Classification

STUDENTS Nina M Varney

ADVISORS Vijayan K Asari

LOCATION, TIME RecPlex, 11:00AM-12:30PM

School of Engineering: Electrical and Computer Engineering, Poster- Graduate Research

A LiDAR point cloud is 3D data which contains millions of data points represented in the form I (x, y, z) that stores the spatial coordinates and possibly RGB color information. This method of data collection is especially useful in collecting large scale scene information. The goal of this project is to develop a self-adaptive and automated methodology to extract features which effectively represent object regions, specifically man-made objects and vegetation regions. The point cloud will be initially segmented using a strip histogram grid approach. Once significant features are extracted, region refinement by surface growing will be performed. Finally after the regions of interest have been segmented a cascade classifier approach will be used for object classification.

Nonlinear Image Enhancement and Super Resolution for Enhanced Object Tracking

STUDENTS Sai Babu Arigela, Evan W Krieger

ADVISORS Vijayan K Asari

LOCATION, TIME RecPlex, 11:00AM-12:30PM

School of Engineering: Electrical and Computer Engineering, Poster- Graduate Research

Tracking objects, such as vehicles and humans, in wide area motion imagery (WAMI) is a challenging problem because of the limited pixel area and the low contrast/visibility of the target objects. We propose an approach to make automatic tracking algorithms more effective by incorpo-

rating image enhancement and super resolution as preprocessing algorithms. The enhancement process includes the stages of dynamic range compression and contrast enhancement. Dynamic range compression is performed by a neighborhood based nonlinear intensity transformation process, which utilizes a locally tuned inverse sine nonlinear function to generate various nonlinear curves based on pixel's neighborhood information. These nonlinear curves are used to select the new intensity value for each pixel. A contrast enhancement technique is used to maintain or improve the contrast of the original image. Local contrast enhancement using surrounding pixel information aids in extracting higher number of features a detector can find in the image, and therefore, improves the automatic object detection capabilities. Secondly, the super resolution technique is performed on an area surrounding the object of interest to increase the size of the object in terms of pixels. The single image super resolution process is performed in the Fourier phase space which preserves the local structure of each pixel in order to estimate the interpolated pixels in the high resolution image. As a result, super resolution increases the sharpness of edges and allows for addition tracking features to be extracted. The combination of these two techniques provides the necessary preprocessing enhancement to increase the effectiveness of tracking algorithms. A quantitative evaluation is performed to compare the results of the tracking with and without the proposed techniques. The analysis is based on results of an automatic detection and tracking technique, Gaussian Ringlet Intensity Distribution (GRID), evaluated using wide area motion imagery data.

Numerical study on the characteristics of metal-insulator-metal diode integrated with spiral optical antenna

STUDENTS Zhijun Yang

ADVISORS Qiwen Zhan

LOCATION, TIME RecPlex, 11:00AM-12:30PM

School of Engineering: Electrical and Computer Engineering, Poster- Graduate Research

Metal-insulator-metal (MIM) diode structures attract increasing interests in many technical areas including the solar cell technologies because of their capabilities to directly convert optical energy into electric current. During the process of energy transfer, surface plasmon polaritons (SPPs) play an important role due to their intriguing properties such as high local field enhancement and short effective wavelength. As an important figure of merit, the field enhancement arising from the SPPs excitation is limited by the relatively large mode volume in the traditional MIM structure. A potential way to improve the field enhancement factor is to introduce an optical antenna in the design of MIM diode structure to efficiently couple the energy of free-space radiation into a confined region of subwavelength size with highly enhanced field. In this project, I present the numerical studies on the characteristics of a novel device design that integrates MIM structure with a spiral slot optical antenna. As a spin sensitive structure, the response of the spiral slot antenna strongly depends on the optical spin state of the illumination. Three-dimensional finite element method model has been built to numerically simulate the performance of the proposed structure. Modeling results show that this hybrid structure has the ability to achieve both extremely high field enhancement and circular polarization extinction ratio simultaneously. A field enhancement of 150 and circular polarization extinction ratio of 200 can be obtained with this design. Such a device may find useful applications in polarimetric imaging and remote sensing.

Optical flow based Kalman tracker for body joint prediction and tracking using HOG-LBP matching.

STUDENTS Binu M Nair

ADVISORS Vijayan K Asari

LOCATION, TIME RecPlex, 11:00AM-12:30PM

School of Engineering: Electrical and Computer Engineering, Poster- Graduate Research

We propose a real-time novel framework for tracking specific joints in the human body on low resolution imagery using optical flow based Kalman tracker without the need of a depth sensor. Body joint tracking is necessary for a variety of surveillance based applications such as recognizing gait signatures and identifying the motion patterns associated with an action. The proposed framework consists of two stages; the initialization stage and the tracking stage. In the initialization stage, the joints to be tracked are either manually marked or automatically obtained from other joint detection algorithms in the first few frames within a window of interest and appropriate image descriptions of each joint are computed. We employ the use of a well-known image coding scheme known as the Local Binary Patterns (LBP) to represent the joint local region and a HOG descriptor to represent the edge information. Next the tracking stage can be divided into two phases: Optical flow based detection of joints in corresponding frames of the sequence and prediction/correction phases of Kalman tracker with respect to the joint coordi-

nates. Lucas Kanade optical flow is used to locate the individual joints in consecutive frames of the video based on their location in the previous frame. The mismatches are then determined by comparing the joint region descriptors using Chi-squared metric between a pair of frames and depending on this statistic, either the prediction phase or the correction phase of the corresponding Kalman filter is called. The framework has been successfully tested on a private dataset provided by Air Force Institute of Technology where this consists of a total of 21 video sequences. The challenges associated in this dataset are the very low-resolution imagery along with some interlacing effects. and designed based on a linear approximation of the joint trajectory where its true form is mostly sinusoidal in fashion. The framework is tested on a private dataset provided by Air Force Institute of Technology. This dataset consists of a total of 21 video sequences, with each sequence containing an individual walking across the face of the building and climbing up/down a flight of stairs. The challenges associated in this dataset are the very low-resolution imagery along with some interlacing effects. The algorithm has being successfully tested on some sequences of this dataset and three joints mainly, the shoulder, the hip and the elbow are tracked successfully within a window of interest. Future work will involve using these three perfectly trackable joints to estimate positions of other joints which are difficult to track due to their small size and occlusions.

Phase-shifting Holography Using Bragg and non-Bragg Orders in Photorefractive Lithium Niobate

STUDENTS Ujitha A Abeywickrema
ADVISORS Partha P Banerjee
LOCATION, TIME RecPlex, 11:00AM-12:30PM
School of Engineering: Electrical and Computer Engineering, Poster- Graduate Research

The refractive index (RI) of a material can be changed due to several effects such as the optical Kerr effect and the photorefractive (PR) effect. The use of PR materials for implementing real time phase shifting holographic interferometry is discussed in this work. Holographic interferometry (HI) is an effective and rich method for measuring very small (order of a wavelength) displacements and it is widely used for non-destructive testing. Bragg and non-Bragg orders can be generated during two-beam coupling in a PR material due to the induced RI in the material and can be used to retrieve the phase information of the object, as well as the deformation of the object. In previous work, we have shown how object deformation can be determined from monitoring a Bragg order. Furthermore, we have reported on preliminary experiments for determining the depth profile of an object and provided approximate analytic solutions for the Bragg and non-Bragg orders for the case of interacting plane waves. In this work we numerically calculate the exact solutions for the intensities of the Bragg and non-Bragg (higher orders) orders for the case of two incident plane waves, as well as for the case when one of the incident fields is a profiled or image bearing beam. We show how the information from the diffracted order intensities can be used to determine the amplitude and phase of the 3D object. Similarities with phase shifting holography will be discussed. Numerical results are compared with experimental results performed using lithium niobate as the photorefractive recording material. Key words: Photorefractive materials, Photorefractive effect, Bragg and non-Bragg orders

Real-Time Object Segmentation from Network Camera using Touch Screens

STUDENTS Fatema A Albalooshi, Yakov Diskin
ADVISORS Vijayan K Asari
LOCATION, TIME RecPlex, 11:00AM-12:30PM
School of Engineering: Electrical and Computer Engineering, Poster- Graduate Research

Touch screens interfaces have become the quicker, more intuitive way to interact with surround technologies. We present an interactive object region segmentation technique that leverages the touch screen technology to the detection and identification of objects in images captured in real environments. Our algorithmic work addresses one of the most challenging tasks in image processing and computer vision research fields, specifically, the segmentation of objects that have non-homogeneous body textures. The proposed segmentation method employs Seeded Region Growing (SRG) segmentation algorithm to extract the precise and accurate object region from other surrounding objects and backgrounds. In region growing segmentation, three key factors are satisfied such as choice of similarity criteria, selection of seed points, and stopping rule. The choice of similarity criteria is accomplished through texture descriptors and connectivity properties. The selection of seed points is determined interactively by the user when they choose the object of interest. The definition of a stopping rule is achieved using a test for homogeneity and connectivity measures, therefore, a region would stop growing when there are no further pixels that satisfy the homogeneity and connectivity criteria. The segmentation region is iteratively grown by comparing all unallocated neighboring pixels to that region. Seeded region growing factors would change interactively according to the intensity levels of the chosen object of interest. In our experimentation, we

have setup an interactive touch screen that projects a live feed from a network camera. The human input via touch screen is used to select the seed point on the object of interest within the video. Our algorithm uses the seed points as the initialization for the seeded region growing technique. The proposed system is evaluated by observing its capability to correctly segment the selected objects, while simultaneously performing invariant to the user's choice of the object.

Regression based Time-Invariant Modeling of Motion-Shape based Features for Human Action Recognition.

STUDENTS Binu M Nair
ADVISORS Vijayan K Asari
LOCATION, TIME RecPlex, 11:00AM-12:30PM
School of Engineering: Electrical and Computer Engineering, Poster- Graduate Research

A novel human action recognition framework is proposed which extracts local flow based motion and shape descriptors and computes the underlying action distribution through regression-based time invariant modeling. The action models are designed to be independent of time so as to incorporate action sequence length normalization, motion speed in-variance and non-initialization of the action states. We formulate an action descriptor based on the fusion of motion features, HHOF and LBFP, and body posture features based on the R-Transform. By applying a feature selection technique using symmetrical uncertainty, a subset of relevant and non-redundant features are obtained thereby getting a discriminatory action descriptor. Using these descriptors, a time independent orthogonal action basis using EOF analysis is computed for each action class where the projections of the features on this space vary with time. Due to one-to-one mapping between the action feature space and the action basis projections, the time series is modeled by computing the mapping between them using GRNN networks. The class of the test sequence is determined by the action model which has less discrepancy between the GRNN estimations and the feature projections on the corresponding action basis. This framework has successfully been tested on two kinds of datasets ; One set being the Weizmann and the Cambridge Hand Gesture dataset which has binary silhouettes and the other being the KTH and the UCF sports dataset where motion history images can be computed. Experimental results prove that the algorithm works both on the binary silhouettes as well as motion history images and classifies action sequences accurately from a few frames without any need for the normalization of sequence length and motion speed and initialization of the action states.

Rotation-Invariant Feature Tracking using Gaussian Ringlet Intensity Distributions (GRID)

STUDENTS Theus H Aspiras
ADVISORS Vijayan K Asari
LOCATION, TIME RecPlex, 11:00AM-12:30PM
School of Engineering: Electrical and Computer Engineering, Poster- Graduate Research

Many feature tracking methodologies do not incorporate rotation-invariance or low resolution imagery as possible testing scenarios, for example Wide Area Motion Imagery (WAMI). We propose using a new technique called Gaussian Ringlet Intensity Distribution (GRID), which uses a ring partitioned histogram with Gaussian weighting for a set of features. These features are also center weighted to provide more importance towards the center of the object rather than the outside of the object, which most likely contains background information. The GRID features provided the best average tracking ability against several state of the art algorithms across several different scenarios in two databases.

SHG in 1D PBG Structures for Arbitrary FF Incident Angles

STUDENTS Han Li
ADVISORS Partha P Banerjee
LOCATION, TIME RecPlex, 11:00AM-12:30PM
School of Engineering: Electrical and Computer Engineering, Poster- Graduate Research

General transfer matrix method is developed to analyze the phenomenon of second harmonic generation in a multilayer nonlinear photonic bandgap structure. Under the pump nondepletion assumption, the fundamental monochromatic plane wave incident on the multilayer nonlinear structure with arbitrary angle is counted. The corresponding type 0 second harmonic frequency wave then is generated by the dielectric polarization of the fundamental plane wave with its specific angle. The proposed transfer matrix method takes into account the reflections and the interferences between forward and backward propagation waves. Different conversion efficiency is obtained by various angle of the incident

wave and various thickness of the nonlinear material. Specific incident angle and thickness of nonlinear structure may generate relatively high conversion efficiency inside of nonlinear material. Then the pump nondepletion assumption is no longer valid. Therefore, the effectiveness of the nondepleted pump assumption is analyzed before any optimization for designing the appropriate nonlinear structure, and it's indispensable.

Visibility Improvement through Hyperspectral Band Integration

STUDENTS Sai Babu Arigela, Yakov Diskin, Sidike Paheding
ADVISORS Vijayan K Asari
LOCATION, TIME RecPlex, 11:00AM-12:30PM
School of Engineering: Electrical and Computer Engineering, Poster- Graduate Research

The science of hyperspectral remote sensing is based on taking a fraction of the electromagnetic spectrum and breaking it into numerous bands for theoretical analysis and computations. The combination of all wavelengths in a given spatial area builds complete spectral signatures for each specific material in the scene. Based on the spectral signature obtained from hyperspectral imagery, one can detect and identify objects more precisely compared to using only three bands information provided by a RGB camera. Hyperspectral sensors can also assist in automatic target detection in noisy backgrounds since objects vary uniquely from the natural background in absorbing and reflecting radiation at different wavelengths. In many cases, the objects that the human eye fails to capture can be differentiated and identified based on the unique hyperspectral signature. Unfortunately, the spatial resolution for hyperspectral sensors is still extremely coarse compared to modern high definition camera. Thus, we present a visibility improvement technique that will increase the spatial resolution of the captured hyperspectral image and improve the image contrast. In the proposed algorithm, the image spatial resolution is increased by integrating intensity information from multiple related spectral bands. Leveraging our prior expertise with single image super-resolution on RGB imagery, we exploit the band information of the hyperspectral image and develop an adaptive contrast enhancement technique to construct a high spatial resolution image. Specifically, the enhancement algorithm selects the pixel-wise intensities to maximize the pixel's neighborhood contrast. To verify the effectiveness of the proposed technique, we use the Resonon Pika II hyperspectral camera, which provides 240 spectral channels that ranges from 400-900nm with 2.1nm spectral resolution, to capture real-life images and test the visibility improvement methodology in a variety of environments such as low illumination or over-exposure regions. The proposed technique aids in real-world applications such as object detection, recognition, and tracking.

Multiframe Adaptive Wiener filter Super Resolution with JPEG2000 Compressed Images

STUDENTS Barath Narayanan
ADVISORS Eric J Balster, Russell C Hardie
LOCATION, TIME Kennedy Union 311, 1:00PM-1:20PM
School of Engineering: Electrical and Computer Engineering, Oral Presentation- Graduate Research

Historically, Joint Photographic Experts Group 2000 (JPEG2000) image compression and multiframe Super Resolution (SR) image processing techniques have evolved separately. In this paper, we propose and compare novel processing architectures for applying multiframe SR with JPEG2000 compression. We propose a modified adaptive wiener filter (AWF) SR method and study its performance as JPEG2000 is incorporated in different ways. In particular, we perform compression prior to SR and compare this to compression after SR. We also compare both independent frame compression and difference frame compression approaches. We find that some of the SR artifacts that result from compression can be reduced by decreasing the assumed global signal-to-noise ratio (SNR) for the AWF SR method. We also propose a novel spatially adaptive SNR estimate for the AWF designed to compensate for the spatially varying compression artifacts in the input frames. The experimental results include the use of simulated imagery for quantitative analysis. We also include real video results for subjective analysis. The applications of combining SR with compression are mainly focused in the field of aerial mapping and airborne imaging. Also, SR and compression can be combined effectively in the images/videos with affine and global motion such as remote sensing/mapping, satellite imaging and other civilian applications such as video surveillance in unmanned aircraft systems.

Blind Full Reference Quality Assessment of Poisson Image Denoising

STUDENTS Chen Zhang
ADVISORS Keigo Hirakawa
LOCATION, TIME Kennedy Union 311, 1:30PM-2:10PM
School of Engineering: Electrical and Computer Engineering, Oral Presentation- Graduate Research

The distribution of real camera sensor is well approximated by Poisson, and the estimation of the light intensity signal from the Poisson count data plays a prominent role in digital imaging. It is highlydesirable for imaging devices to carry the ability to assess the performance of Poisson image restoration. Drawing on a new category of image quality assessment called corrupted reference image qualityassessment (CR-QA), we develop a computational technique for predicting the quality score of the popular structural similarity index (SSIM) without having the direct access to the ideal reference image.We verified via simulation that the CR-SSIM scores indeed agrees with the full reference scores; and the visually optimal denoising experiments performed on real camera sensor data give credibility tothe impact CR-QA has on real imaging systems.

Brain Machine Interface Collection of EEG Signals for Controlling a Robotic Arm

STUDENTS Theus H Aspiras, Kelly Cashion, David Fan, Yicong Gong, Carly A Gross, Nathaniel J Maas, Ahmed H Nasrallah
ADVISORS Vijayan K Asari, Weisong Wang
LOCATION, TIME Kennedy Union 311, 2:30PM-2:50PM
School of Engineering: Electrical and Computer Engineering, Oral Presentation- Capstone Project

The Brain Machine Interface (BMI) project converts Electroencephalograms (EEGs) to actions for the robot. This project's purpose is to explore the limitations of the current interface and to improve its performance. Specifically, various thoughts are experimented with to test the precision of the Interface. There are many ways of expressing actions and how they are represented as signals, for example, thinking 'left' and clenching your left fist produce different EEG signals. Since EEG signals varies from person to person, profiles for each user can be generated to provide better readings for a user and improve future readings upon multiple uses. Further, the Interface offers the ability to use the Universal User profile or to use the user's own personal profile. The Universal User is a profile that contains data for all of the users' who participated in experiments. The Interface has a goal of being able to perform at least 7 unique actions that can be combined in unique and complex ways. Filtering multiple expressions within the EEG signals bring up a challenge as it reduces the ability to produce clear signals and requires a great deal of concentration. EEG signals are also dependent upon the user's state of mind including their mood, tiredness, and other various factors during the time of the reading.

Dayton Most Metro Chef's 10 Questions

STUDENTS Rebecca P Blust, Gracelyn M Key, Sushmitha Rayinadi, Emily K Strobach, Daniel L Williams
ADVISORS Rebecca P Blust
LOCATION, TIME RecPlex, 9:00AM-10:30AM
School of Engineering: Engineering Technology, Innovation Center, Poster- Course Project, 14 SP IET 323 01

Dayton Most Metro (DMM) is an online regional magazine which has created a ten question interview with local chefs. Currently 20 chef interviews have been completed and uploaded onto the website. DMM's goal is to add to the amount of interviews posted online this spring 2014, but has run out of the manpower required to do so. The goal behind incorporating the Dayton IET 323 team is to aid DMM in accomplishing its goal. Our team will be conducting interviews with a minimum of eight Dayton area chefs which will be featured on the Dayton Most Metro site. In the interviews, the intention is to gain insight on the chef's story and personality, relaying it in the report and sharing it with the people of Dayton.The project is to be completed in a seven phase process which includes; completing preliminary operation requirements for project direction, creating email, phone and in-person contact templates to support and make the effort flow easily, dividing the work into two person teams to equally distribute the work load, contacting chefs (if required, restaurant management for major food chain approval) and scheduling interviews, completing the interviews whether it be by email, phone or in-person, formatting and organizing all information for transfer to DMM.

Dermatopatholligy Lab - Improve Turn a Round Time!

STUDENTS William E Blount, Rebecca P Blust, Michael P Bodde, Linda M Moodie, Christopher Ryan Patzelt
ADVISORS Rebecca P Blust
LOCATION, TIME RecPlex, 9:00AM-10:30AM
School of Engineering: Engineering Technology, Innovation Center, Poster- Course Project, 14 SP IET 323 01

The purpose of this proposal is to present the University of Dayton project management group's plan of optimization methods. The optimization methods are to improve efficiency of the lab reporting techniques and retrieval at the University of Cincinnati's Dermatology Lab. Currently, the time from the date the biopsy is completed to the date the report is posted and available to the client and physician is too long. While the aver-

age time the results are reported is around six days, it is not uncommon for the results not to be posted for over a week or more. The program management group was contacted in order to improve efficiency so that UC Health may continue to carry out its mission to serve the Cincinnati community. In addition, the methods will provide an understanding of the issue and the best methods to correct the turnaround time.The objective of this proposal is to describe process in which the team will optimize the University of Cincinnati Health lab turnaround time. The optimization will be done in several steps. The first will be the analysis of the labor needed and the analysis of the operation and technology. A hard copy of all the analysis is to be reported for further action. Once that is established, execution of an alternative itself will begin. The general plan is for all variables and possibilities to be considered with a full and complete understanding, followed by execution of a corrective plan.

Dispense A Roll Project for PM Company

STUDENTS Ibrahim Abdul-Karim, Rebecca P Blust, Garret P Ervin, Kevin M Eversole, Ryan Patrick Shea, Matthew R Srnoyachki
ADVISORS Rebecca P Blust
LOCATION, TIME RecPlex, 9:00AM-10:30AM
School of Engineering: Engineering Technology, Innovation Center, Poster- Course Project, 14 SP IET 323 01

The current method of shipping receipt paper is very wasteful in regards of packaging and leads to inadequate storage. The inadequate storage of the rolls wastes time and energy when consumers have to reach in difficult, inaccessible places to refill the machine with a roll.The PM Company has contracted the University of Dayton Project Management Team to develop a roll dispenser. The Dispense-A-Roll dispenser will bring a convenient, sustainable, and cost saving method to dispense electronic transaction receipt paper rolls at the point of sale location for our client. The ease of use of the dispenser will allow for the consumer to quickly and effectively change the receipt paper roll when needed. In addition, the dispenser will enable customers to buy the receipt paper in bulk, reducing the waste associated with unnecessary packaging.The project will start upon acceptance of this project proposal and end on April 25th. Our team's plan is to survey point of sales users to collect data for the product, develop three conceptual designs, select a final design concept from those designs, and create a prototype Dispense-A-Roll. Manufacturing the final dispenser will be outsourced. It is the clients request that each dispenser will cost about $8 with the budget for the prototype to cost approximately $25. Once made, the Dispense-A-Roll will be found in a variety of places that use PM Company's paper for point of sales service, such as convenience stores, gas stations, retail stores, and restaurants.

Enhancing Our Campus Community

STUDENTS Megan R Aponte, Abdulelah Bajbair Bajbair, Rebecca P Blust, Gabriel Jesus Diaz, Chuanchuan Zhou
ADVISORS Rebecca P Blust
LOCATION, TIME RecPlex, 9:00AM-10:30AM
School of Engineering: Engineering Technology, Innovation Center, Poster- Course Project, 14 SP IET 323 01

The Ryan C. Harris Learning Teaching Center (LTC) fosters a culture of transformational learning through professional and leadership development, educational technologies, and student learning support. As part of this program, the LTC focuses a portion of its staff and resources to teaching a global student community. With over 1400 international students from 40 different countries, the University of Dayton welcomes undergraduate and graduate students from all over the world. The departments at the University benefits from the rich cultural, ethnic, and linguistic diversity these students and scholars bring from around the globe.In the past there was another team who did a similar project and took similar surveys about how to help our native students to be more effective at working, interacting, and communicating with the international students. We plan to work off of what they have found to better implement a solution.

Madison County Equine Arena Improvement

STUDENTS Rebecca P Blust, Nathaniel L Decamp, Reid Daniel Fuente, Jesse Lee Hester, Matthew J Soto, Andrew W Spirk
ADVISORS Rebecca P Blust
LOCATION, TIME RecPlex, 9:00AM-10:30AM
School of Engineering: Engineering Technology, Innovation Center, Poster- Course Project, 14 SP IET 323 01

The Madison County Fairgrounds Equine Center is in need of repair in order to provide a more safe and enjoyable experience for its patrons. The Equine Facility can gain aesthetic value and functionality by improving the conditions and characteristics of the show arena. The improvement of the Equine Facilities will not only increase the aesthetic value, but will also help to enrich the Equine experience of the youth and citizens of Madison County. To assist Madison County Fairgrounds with this endeavor, the team will provide technical information to Madison County Fairgrounds in order to improve the quality and functionality of the Equine Facility by focusing on the design, placement and costs associated

with the Arena. The project officially begins with the submittal of this proposal and will be completed by the 26th of April 2014. In order to the complete this task, the team will first conduct research concerning equine facilities. After the analysis of Madison County. Equine Facility, the team will create dimensional schematics of the grounds. The team will then develop and determine costs associated with the designs. Upon completion of cost estimation the team will present the conceptual designs. Upon deciding a final design, the team will prepare final costs associated with the project and make a final presentation to the client. The team will be located at the University of Dayton. The majority of the tasks will be completed on campus, however, on site observation and analysis will be necessary. The team will strive to provide an in depth plan of action concerning the design, placement and cost analysis of the Arena in order to increase the functionality and appeal of the Madison County Fairgrounds Equine Center.

Northwest Lead Track Railroad Analysis for the City of Dayton

STUDENTS Rebecca P Blust, Marc S Ferere, Joseph P Nagy, Clayton Michael Sanchez, Zhaofeng Xie
ADVISORS Rebecca P Blust
LOCATION, TIME RecPlex, 9:00AM-10:30AM
School of Engineering: Engineering Technology, Innovation Center, Poster- Course Project, 14 SP IET 323 01

In 1993 the City of Dayton purchased a four mile stretch of the NorthWest Lead Railroad Track from CSX Transportation. In the years since the track was purchased it has played a major role in bringing new companies to the west end and Trotwood. The goal of this project is to promote business growth by producing a set of drawings using computer aided design (CAD) software for the 4 mile stretch NorthWest Lead Railroad Track. These drawings will include measurements of all of the intersections along the Tracks as well as the access points for the companies that use the tracks. These drawings will allow the city to show possible new companies what kind of access the new companies would have to the track. These drawings would also allow the City of Dayton to show possible companies the crossings in greater detail than are currently available. After the drawings are completed if time allows the team will create a marketing package with the drawings. The start date for the project will be February 16 and the end date will be April 20. The team is comprised of five University of Dayton Engineering Technology Students: Joe Nagy (Project Manager), Marc Ferere, Mike Harper, Clayton Sanchez, Jeffrey Xie. The location of this project will take place along the 4 mile stretch of the NorthWest lead Railroad Track in Dayton, Ohio.

A Geometric Study of the Discharge Port used in Scroll Compressors

STUDENTS Yu Liang
ADVISORS Andrew P Murray, David H Myszka
LOCATION, TIME RecPlex, 11:00AM-12:30PM
School of Engineering: Mechanical and Aerospace Engineering, Poster- Independent Research

A scroll compression has become the prevalent technology used air-conditioning and refrigeration systems. The compression chamber consists of two spiral shaped vanes that form pairs of chambers. A crankshaft imposes an orbital translation on one of the vanes, which reduces the volume of the chambers, thereby compressing the gas trapped within the chamber. A hole is placed at the center of the fixed spiral. The moving spiral will uncover the hole, which serves as an exhaust port. This project studies the exhaust flow area as a function of crank angle. Additionally, the project assesses the sensitivity of the exhaust flow area to the defining spiral parameters, along with the size and placement of the port.

A Novel, Elastically-Based, Regenerative Brake and Launch Assist Mechanism

STUDENTS Joshua E. Nieman
ADVISORS Andrew P Murray, David H Myszka
LOCATION, TIME RecPlex, 11:00AM-12:30PM
School of Engineering: Mechanical and Aerospace Engineering, Poster- Graduate Research

This project involves a spring-based mechanical regenerative brake and launch assist system to increase vehicle fuel economy. When a vehicle slows, traditional brakes waste the kinetic energy by dissipating it to the environment as heat. Regenerative brakes, by comparison, store this energy for later use. A novel mechanical system has been designed that stores the energy in a spring and then uses that energy to later propel the vehicle. Hybrid electric vehicles have a successful electrical regenerative braking system but it is only beneficial for hybrid and electric vehicles, about 3% of the market. The proposed mechanical system could be incorporated in the design of most conventional vehicles with internal combustion engines. Preliminary estimations predict fuel efficiency improvements between 5-10% in the city. The modeling, mechanism design, optimization, and a dynamic simulation validate further investigation of the concept.

A Semi-Empirical Prediction Model for the Discharge Line Temperature of Hermetic Compressors

STUDENTS Chen Guan
ADVISORS Andrew P Murray, David H Myszka
LOCATION, TIME RecPlex, 11:00AM-12:30PM
School of Engineering: Mechanical and Aerospace Engineering, Poster- Independent Research

Predicting the discharge line temperature (DLT) of air conditioning and refrigeration compressors is important to ensure sufficient lubricant properties and proper performance of components that are positioned in the exhaust stream.Numerous comprehensive prediction models have been developed with excellent accuracy, but require many details of a particular compressor. This paper assesses various DLT prediction methods that do not compressor-specific parameters. It presents a semi-empirical model with a accuracy that significantly exceeds the other established methods. The model is applied to both traditional refrigeration and vapor-injected, economizer cycles. Lastly, a study was conducted to determine the relationship between the accuracy of the model and number of experimental points used to produce the model.

Advancing Segmentation Techniques for Rigid-Body Shape-Changing Mechanism Design Specific to Variable Geometry Extrusion Dies

STUDENTS Bingjue Li
ADVISORS Andrew P Murray, David H Myszka
LOCATION, TIME RecPlex, 11:00AM-12:30PM
School of Engineering: Mechanical and Aerospace Engineering, Poster- Graduate Research

This research is part of a larger project on designing extrusion dies that create parts with complex variation in cross section. The research presented is on segmentation theory, the realization of a set of rigid bodies and joints that best approximate a set of curves that define a shape change. These curves differ from each other by a combination of planar displacement, shape variation, and notable differences in arc length. Among various shape-changing technologies, rigid-body mechanisms composed of traditional machine elements offer many advantages including carrying large loads while achieving large displacements. Although some of the theory for synthesizing rigid-body shape-changing mechanisms is well established, segmentation that utilizes a significant number of prismatic joints remains to be addressed and is the contribution of this work. Additional examples of applications of the developed theory include airfoils, car seats, and light reflectors that can alter their shapes during use.

Assessing the Energy Requirements of Actuators during Common Automation Tasks

STUDENTS Mohamed A Eltaeb
ADVISORS Andrew P Murray, David H Myszka
LOCATION, TIME RecPlex, 11:00AM-12:30PM
School of Engineering: Mechanical and Aerospace Engineering, Poster- Graduate Research

Manufacturing operations is a major consumer of energy, with a large proportion being used to operate motors. The objective of this project is to create principles for the design of automation mechanisms that have reduced energy needs. As part of the project, an experimental study was performed to assess the energy required by industrial actuators for common automation tasks. The energy consumption is mapped to torque, motion and time on task. Using this information, the influence of mechanism architecture and dimensional synthesis of single-degree-of-freedom manufacturing devices can be assessed and design guidelines can be formulated.

Community Residential Energy Reduction

STUDENTS Kelly C Vogeler
ADVISORS Kevin P Hallinan
LOCATION, TIME RecPlex, 11:00AM-12:30PM
School of Engineering: Mechanical and Aerospace Engineering, Poster- Honors Thesis

This research evaluates the effectiveness of residential energy reduction programs aimed at cost effective, collective action. One of these energy reduction programs is Dropoly.com, an online game developed by the University of Dayton that aims to connect neighbors and allow them to

compete against one another. The guiding question behind the research addresses how to reduce energy consumption in a community. My research presumes that effective community engagement is a central factor in achieving success and evaluates a variety of energy reduction programs based on certain criteria. The chosen criteria assess the programs' effectiveness by focusing on different means of engaging the community. Results of this evaluation indicate the most successful programs at community engagement and opportunities for improvement.

Cost Optimization with Solar and Conventional Energy Production, Energy Storage, and Real Time Pricing

STUDENTS Seyed Ataollah Raziei
ADVISORS Robert J Brecha, Kevin P Hallinan
LOCATION, TIME RecPlex, 11:00AM-12:30PM
School of Engineering: Mechanical and Aerospace Engineering, Poster- Graduate Research

Research is presented that investigates the potential for solar power generation with battery energy storage for reducing the effective cost of energy delivered to residential customers if real time pricing is present. A linear optimization approach is developed based upon a two-step process. In step one, given a specified solar array area and battery capacity, the optimal means to meet loads based upon grid power, solar power, and/or battery power is determined. This analysis considers an expected lifespanof the solar panel. With these results established,in the next step, the capital costs for the solar arrays and batteries are considered for each point (solar area and battery capacity) in the design space. Ultimately, the results illuminate the most cost effective means to provide power to customers for the chosen system.

Design and Assembly of a Spring-Powered Engine Starter Prototype

STUDENTS Linda M Leben
ADVISORS Andrew P Murray, David H Myszka
LOCATION, TIME RecPlex, 11:00AM-12:30PM
School of Engineering: Mechanical and Aerospace Engineering, Poster- Independent Research

Automotive starting systems require substantial amounts of mechanical energy in a short period of time. Lead-acid batteries have historically provided that energy through a starter motor. Springs have been identified as an alternative energy storage medium and are well suited to engine-starting applications due to their ability to rapidly deliver substantial mechanical power and their long service life. This project involves the development of a prototype of a spring-powered starter for a motorcycle engine. The focus was on the design and assembly of the complete system, including the design challenge of interfacing the starting mechanism with the motorcycle, designing the assembly such that all parts are aligned, manufacturing necessary parts, and assembling the mechanism.

Design of Variable-Geometry Dies for Polymer Extrusion

STUDENTS Mary Joy Frances Cardilino, Wesley P Kramer
ADVISORS Andrew P Murray, David H Myszka
LOCATION, TIME RecPlex, 11:00AM-12:30PM
School of Engineering: Mechanical and Aerospace Engineering, Poster- Independent Research

Polymer extrusion is the process of forcing a melted plastic through a die to create a continuous part with a constant cross-section dictated by the die's shape. The goal of this project is to develop a die that can change the cross-section created in the plastic during extrusion. This technology introduces extrusion to a host of products that historically have been manufactured by more expensive and time-consuming techniques like injection molding. Variables considered in order to make the dies both practical and efficient include limiting the degrees of freedom, managing unnecessary die openings, and creating joints that can act as revolute as well as prismatic joints. Design challenges include addressing the high pressures and temperatures present in extrusion die systems, minimizing material leakage in the die assembly, and creating the methodology and practice for designing dies that create the desired shape changes in the extrusion.

Effect of Compliant Flooring on Postural Stability in an Older Adult Population and in Individuals with Parkinson's Disease

STUDENTS Renee Lynn Beach
ADVISORS Kimberly E Bigelow, Kurt J Jackson
LOCATION, TIME RecPlex, 11:00AM-12:30PM

School of Engineering: Mechanical and Aerospace Engineering, Poster- Graduate Research

Balance is affected by the brain's ability to process sensory information from an individual's visual, vestibular and proprioceptive inputs. Neurological and elderly patients, including those with Parkinson's Disease (PD), often have problems in these systems and therefore struggle with balance, putting them at a higher risk of falling. Initial studies have shown compliant floors are able to absorb energy from a fall, reducing injuries, but have not looked at how individuals recover from functional movements on the floors. It was the objective of this study to determine whether compliant flooring has an effect on postural stability during quiet-standing for a more diverse and more impaired population than previously studied as well as examine the effect of compliant flooring on postural stability following a dynamic, functional movement. Thirty healthy older adults and ten individuals with PD performed tasks such as the sit-to-stand transition while standing on a balance plate. From the collected center of pressure (COP) data A/P Sway Range, M/L Sway Range, Mean Velocity and Area of 95% Confidence Ellipse were calculated. It was found that compliant flooring caused increased sway ($p<0.05$) in all four parameters during quiet standing in healthy older adults and increased sway ($p<0.05$) in A/P Sway Range during quiet standing in older adults with PD. Stabilization immediately post-transition displayed increased sway upon completion of the movement, but there was no statistical differences between the flooring ($p<0.05$) for healthy older adults and older adults with PD. Overall although quiet standing differences were small in magnitude and the stabilization post-transition were non-significant, no clinical implications have been found for fall frequency on compliant floors. More work is necessary to determine the implications of compliant flooring during natural gait or transition areas.

Identification of any Aircraft by its Unique Turbulent Wake Signature

STUDENTS Sidaard Gunasekaran

ADVISORS Aaron Altman

LOCATION, TIME RecPlex, 11:00AM-12:30PM

School of Engineering: Mechanical and Aerospace Engineering, Poster- Graduate Research

The objective of this research is to identify any turbulent generator (Example: Aircraft) by the turbulent wake it leaves behind. It was a wide spread belief in turbulence community that the turbulence generated by an object forgets its origin as it goes far downstream. In late 80's and 90's, scientists and engineers did experiments in the wake of a turbulent generator and found that the turbulent characteristics in the wake such as velocity defect and turbulent intensities are dependent on the initial conditions (i.e. the turbulent generator) and different turbulent generator gave different turbulent characteristics in the wake (analogous to fingerprint in humans). These results paved the way to make the current research of identification of aircraft by the turbulent wake possible because it has been proven that the wake does not forget its origin and it is unique to each turbulent generator. Through this technology, low observable aircraft (stealth) which deceive modern radars and use radar absorbing materials can be detected because all objects displace a fluid medium. It also allows the fighter pilots to promptly identify the "friend" or "foe" status of the incoming aircraft in an aerial war. This technology also has a potential application in National Airspace systems where the wake of the landing aircraft can be detected and tracked so that the oncoming aircraft can be cleared to land with shorter distances between aircraft thus increasing airport capacity without the need to expand runways. Most importantly, no present capability exists to detect and identify aircraft by their turbulent wakes.

Investigation and Optimization of a Mechanical Regenerative Braking and Launch Assist Device

STUDENTS Vijay Krishna

ADVISORS Andrew P Murray, David H Myszka

LOCATION, TIME RecPlex, 11:00AM-12:30PM

School of Engineering: Mechanical and Aerospace Engineering, Poster- Graduate Research

Fuel efficiency has become a major concern in the automotive industry. A mechanically-based, Regenerative Braking Launch Assist (RBLA) is a kinetic energy recovery system that helps us to improve fuel efficiency in vehicles. A prototype of one concept has been previously created. In the existing RBLA prototype, an extension spring is used as strain energy storage component. The effectiveness of prototype will be evaluated with the extension spring along with a torsion spring and spiral spring. The desired configuration is one where a large amount of energy can be stored with a low weight and low volume spring.

Serial Chains of Spherical Four-Bar Mechanisms to Achieve Design Helices

STUDENTS Kevin S Giaier
ADVISORS Andrew P Murray, David H Myszka
LOCATION, TIME RecPlex, 11:00AM-12:30PM
School of Engineering: Mechanical and Aerospace Engineering, Poster- Graduate Research

This research presents a methodology for designing mechanical chains comprised of a large number of identical spherical four-bar mechanisms. Such a mechanical chain can achieve up to five prescribed helices. A spherical four-bar mechanism is a single degree of freedom device consisting of four revolute (R) joints whose rotational axes intersect at a common point. The mechanical chains are created by connecting the coupler of the prior spherical mechanism to the base link of the subsequent spherical mechanism. An extension on each mechanism will lie along the prescribed helices as the device moves. The methodology introduces a companion helix to each prescribed helix along which the intersection locations of each spherical mechanism's axes must lie. As the mechanisms are connected by rigid links, the distance between the intersection locations along each companion helix is the same. Additionally, an approach to actuating this mechanical chain with a single rotating input is presented.

Singularity Maps that Describe the Motion Characteristics of a Mechanical Linkage

STUDENTS Saleh M Almestiri
ADVISORS Andrew P Murray, David H Myszka
LOCATION, TIME RecPlex, 11:00AM-12:30PM
School of Engineering: Mechanical and Aerospace Engineering, Poster- Graduate Research

Understanding the motion characteristics of a mechanism is an important step toward designing machinery to accomplish a give set of tasks. The purpose of this research is to understand the motion characteristics of a linkage as a design parameter is altered. This research implements kinematic analysis theory utilizing isotropic coordinates to allow for the construction of mathematical models of planar linkages composed of rigid bodies, revolute joints, and prismatic joints. A graphical representation has been developed to represent the gross motion characteristics of linkages called a singularity map. The singularity map provides a visual snapshot of the effects of the altering a design parameter of the linkage by including the number of assembly circuits and the location of locked configurations. Bertini, a powerful tool for working with large algebraic systems of equations, allows for the solution to the complex systems arising in this design challenge. MATLAB is then used to integrate from the Bertini solutions to plot the complete singularity map.

Singularity-Free Synthesis of Coupler-Drivers for Actuating Single Degree-of-Freedom Mechanisms

STUDENTS Hameed Juma
ADVISORS Andrew P Murray, David A Perkins
LOCATION, TIME RecPlex, 11:00AM-12:30PM
School of Engineering: Mechanical and Aerospace Engineering, Poster- Independent Research

The goal of this research is to advance the synthesis methodology for designing coupler-drivers for actuating single degree of freedom mechanisms. A planar coupler-driver is a chain consisting of a fixed revolute joint, an actuated prismatic joint, and a moving revolute joint connected to an ideal location on a previously synthesized planar mechanism. Although such a chain may be connected between any fixed point and any moving point on the mechanism, the synthesis challenge is determining the locations of these points such that the mechanism moves over its desired range of motion without reaching a singularity. A singularity is a configuration of the mechanism at which it ceases to move. A spatial coupler-driver is defined by a chain consisting of a fixed spherical joint, an actuated prismatic joint, and a moving spherical joint connected to an ideal location on a previously synthesized spatial mechanism. This work addresses both planar and spatial coupler-drivers and uncovers challenges unique to each case.

Statically Equivalent Serial Chain Modeling With Kinect and Wii Balance Board

STUDENTS Ali Almandeel
ADVISORS Andrew P Murray, David H Myszka
LOCATION, TIME RecPlex, 11:00AM-12:30PM

School of Engineering: Mechanical and Aerospace Engineering, Poster- Graduate Research

Identifying the center of mass location provides a significant aid in controlling the balance of humanoid robots. Additionally, in humans this location is an essential parameter in postural control and is critical in assessing rehabilitation. Anthropometric tables have been complied for this identification but their accuracy is readily questioned. This research presents an estimation technique that uses the statically equivalent serial chain (SESC), a representation of any multilink branched chain whose end-effector locates the center of mass. In order to construct the SESC for center of mass prediction, a Kinect and Wii balance board are used. The Kinect provides joint location information while the Wii balance board provides the center of pressure. The utility of the presented method as compared to other common methods is that the center of pressure, and hence, the Wii balance board, is no longer needed after the SESC is constructed.

The Acute Effect of a Sensory Integration Therapy Intervention on Postural Stability and Gaze Patterns of Children with Autism Spectrum Disorder: A Feasibility Trial

STUDENTS Senia I. Smoot

ADVISORS Kimberly E Bigelow, Kurt J Jackson

LOCATION, TIME RecPlex, 11:00AM-12:30PM

School of Engineering: Mechanical and Aerospace Engineering, Poster- Graduate Research

The Effect of Input Parameters on Detrended Fluctuation Analysis of Postural Control Data

STUDENTS Melissa R Taylor

ADVISORS Kimberly E Bigelow

LOCATION, TIME RecPlex, 11:00AM-12:30PM

School of Engineering: Mechanical and Aerospace Engineering, Poster- Graduate Research

Biological variability is critical for healthy function and is present in all types of physiological movements. Variability exists on a spectrum in which the optimal amount falls between two extremes: a lack of variability indicating rigidity and limited adaptability and excessive variability indicating instability and random, uncontrolled motion. It is believed that nonlinear analyses provide insight into variability that can help predict future movements based on current movements. Detrended fluctuation analysis (DFA) is a widely used nonlinear analysis tool for postural control research. A limitation of DFA is that the results are heavily dependent on input parameters (data length, window size, and scaling region) used to determine the scaling exponent α; however, the input parameters are selected by the researcher and little published guidance exists to aid in their selection. The aim of this research is to examine the effects of changing input parameters on DFA of postural control data and to determine best practices for their selection in order to improve the consistency of the analysis and ensure that important effects in postural control data are not lost or skewed. MATLAB will be used to create theoretical chaotic and white noise time series with random initial conditions and known α values, and center of pressure sway measures will be taken for healthy adults using a balance plate. The theoretical and experimental data will be subjected to DFA where data length, window size, and scaling region will be varied independently. The value of α will be determined for all combinations of input parameters and the effects of varying these parameters will be explored. Statistical significance ($p<0.05$) of any of the main effects or interactions will indicate the extent to which α is dependent on the input parameters, allowing suggested guidelines for future researchers to be determined.

Zero Structural Error Function Generating Mechanisms

STUDENTS Hessein Ashour

ADVISORS Andrew P Murray, David H Myszka

LOCATION, TIME RecPlex, 11:00AM-12:30PM

School of Engineering: Mechanical and Aerospace Engineering, Poster- Graduate Research

A slider-crank mechanism consists of an input crankshaft, a connecting rod, and an output piston. As the crankshaft makes full rotations, the output piston produces periodic curves similar to a sine wave. A drag link mechanism consists of four links with the input and output links capable of making a complete rotation. Using the output of the drag link to drive the input of the slider-crank distorts the periodic output curve it produces. Function generation addresses the design of mechanisms to create desired output curves. As the addition of a single drag link to a slider-crank distorts the output curve a modest amount, the addition of a large number of drag links (with the output of one driving the input

of the next) can distort the original curve a significant amount. This research aims to generate chains of drag link mechanisms connected to a final slider-crank device capable of producing any periodic curve. The match between the desired curve and the curve produced by the chain of mechanisms is called the structural error. As the chain of drag link mechanisms increases in number, the structural error reduces.

Design Optimization Under Uncertainty Using Surrogate Models

STUDENTS Komahan Boopathy
ADVISORS Markus P Rumpfkeil
LOCATION, TIME Kennedy Union 311, 3:30PM-3:50PM
School of Engineering: Mechanical and Aerospace Engineering, Oral Presentation- Graduate Research

A deterministic design optimization process assumes no variations in the design variables and other parameters. This can easily lead to sub-optimal performance or failure of many deterministically optimized designs. Therefore, given the uncertainties in input parameters and operating environments, one would always like to have some measure of confidence placed on the output quantities of interest and would like to prevent the failure of such designs. We present a stochastic optimization framework involving surrogate models to quantify and propagate the uncertainties and account for them in the optimization process leading to robust designs.

Other Units

VOICES: Billie Holiday, Disney and how the Scottsboro Boys influenced Black and White perception in the 20th Century.

STUDENTS Christina A Bortolotti, Kelly L Gallagher, Christianna M Iannucci, Samantha E Morrison
ADVISORS Brian LaDuca
LOCATION, TIME RecPlex, 9:00AM-10:30AM
AALI: ArtStreet, Poster- Course Project, 14 SP UDI 371 M1

Through music, photography and visual statements, the ArtStreet Experience course brings to life 110 years of American music and those marginalized music makers whose creative work became the voice of America in the face of commercialization, corporation and corruption. ArtStreet's 306 Kiefaber Spring Concentration was the 1930's. Wanting to focus on the untold stories rather than the politics, the wars, and the conflict, 306 chose a route of the unheard. Racism was a prominent theme, as America was still engrossed inside a period when blacks didn't count as a 'whole person' with the residual affect of the 3/5's compromise rippling. Some Black men and women were actually finding fame and happy lives through the music industry. They were making small, steady strides in social equality, however terrible, horrifying things were still being done to their population. This message was most clearly transcribed in the lyrics of Billie Holiday's heart-wrenching ode to lynching, STRANGE FRUIT. To contrast the grotesque nature of the song, famous imagery of Disney's Snow White (1937) was superimposed. The film, though critically receptive, represented a multitude of Disney influences, including passive power amongst marginalized populations. To cohesively connect the juxtaposed story between divergent female voices the story of the Scottsboro boys was added as the third piece of commentary. Together, the three different elements work in tandem to express the purity of Snow White as modeled by the purity of the prostitute Victoria Price who committed the claim of unsubstantiated rape against the innocent Scottsboro boys. The concept of White's famous poisonous apple alludes to the poison of lies as well as the strange and bitter fruit Holliday's song refers to. The dwarf's faces were replaced by the faces of the Scottsboro boys representing the oppressive power this singular white woman had on an entire disenfranchised community.

Catholic Social Ministry Gathering: Flyers Advocate for Justice

STUDENTS Alyssa J Bovell, Mary M Cook, Claudia Guzman, Abigail L Lambert, Joseph J Oliveri, Dominic R Sanfilippo, John S Welsh
ADVISORS Nicholas J Cardilino
LOCATION, TIME RecPlex, 9:00AM-10:30AM
Campus Ministry: Campus Ministry, Poster- Independent Research

On February 2nd, 2014, the University of Dayton sent a delegation of students and faculty to the Catholic Social Ministry Gathering in Washington, DC. During this four day gathering of educators, policy makers, religious and lay people, and social justice advocates from all over the world, the group lobbied Congress on Capitol Hill, learned about the extensive civic engagement and advocacy work being done by agencies, academics, and workers of all stripes for the principles of Catholic Social Teaching, participated in policy sessions, plenary discussions, and dialogues about issues facing the world and Church today, and reflected on how the two pillars of the social teaching of the Church- justice and charity- are lived out on Dayton's own campus, in the city of Dayton, and beyond. This presentation explores and highlights some of the extraordinary lessons the delegation learned, and highlights the implications and steps forward they are taking to help improve Dayton's own community through "connecting, learning, praying, and advocating!"

The Reverse Mission: A Service Immersion in El Salvador

STUDENTS Riley Catherine Weber
ADVISORS Mary C Niebler
LOCATION, TIME RecPlex, 9:00AM-10:30AM
Campus Ministry: Campus Ministry, Poster- Independent Research

The organization Christians for Peace in El Salvador, or CRISPAZ, hosted myself and ten other University of Dayton students for one week in January. Throughout this week my peers and I experienced the daily routines of those living in the fast-paced atmosphere of San Salvador, the capital city of El Salvador, as well as the town of San Jose Los Flores, a small agricultural village with dirt roads and one large church at the center. Representatives from CRISPAZ sat down with us on the first night in El Salvador to discuss the purpose of the mission trip. They explained that while we were there we would not participate in what people consider traditional service. We would not be serving food, raising money, or building homes, but instead, we would spend our time in meetings with different organizations in order to gain the knowledge necessary to spread awareness about the issues in El Salvador and the current state of Latin America. Our duties in El Salvador included being attentive listeners, empathizing with the

stories of the people we met, and absorbing as much information as possible. The representatives from CRISPAZ referred to this as a "reverse mission" in which our service began when we returned to the United States. We had the privilege of hearing personal witnesses of civil war soldiers, mothers of missing immigrants, and many other people who have spent their lives advocating for human rights causes but have not had their voices heard. This presentation will address the issues of labor, gender, and immigration rights in Latin America as well as my personal experiences of culture shock concerning the violence and poverty present in El Salvador.

Allocating Intangibles: Who Should Own the Intellectual Property Created by College Coaches?

STUDENTS Tanyon T Boston
ADVISORS Susan C Wawrose, Julie E Zink
LOCATION, TIME LTC Meeting Space, 1:00PM-1:20PM
School of Law: School of Law, Oral Presentation- Graduate Research

When a coach hosts a radio or television show featuring student-athletes, who should own the rights to the show? Who should own the rights to a fee-based website that provides updates about a coach's team and also sells team-related memorabilia? This presentation will explore the role of intellectual property in the employment agreements of college sports coaches. These agreements, although lengthy, sometimes do not fully address the allocation of intellectual property rights. To fill in the gaps, some sample university intellectual property policies will be examined to illustrate how they might apply. As a provocative point of interest, the coach's intellectual property paradigm will be compared to that of the student-athlete's, as it is raised in the O'Bannon v. NCAA litigation scheduled for trial on June 9, 2014. This presentation will be followed by an opportunity for questions and answers.

An Undivided Heart: How Mary Unites What Sin Divides According to John Paul II's Theology of the Body

STUDENTS Ann M Michalica
ADVISORS Jana M Bennett, Gloria Dodd
LOCATION, TIME RecPlex, 9:00AM-10:30AM
University Libraries: Marian Library, Poster- Honors Thesis

Today, personhood is often threatened by the tendency to divide the human person into two contrasting parts: body and soul. Many times, this causes the human person to be reduced to a disembodied spiritual being or a disposable object rather than a whole person called to love and be loved. In his teachings known as the Theology of the Body, John Paul II uses a personalistic approach to illuminate the human person as the integration of body and soul. Scripturally based, Theology of the Body is the study of God's reflection in the human body and human sexuality. Using John Paul II's Theology of the Body and the Catholic Church's four Marian dogmas, this thesis will illustrate how the Blessed Virgin Mary gives humanity knowledge of the body as a personalistic integration of flesh and spirit intended for a self-giving relationship with both God and man.

Sergei Bulgakov on the Catholic Doctrine of the Immaculate Conception

STUDENTS Richard E Lenar
ADVISORS Gloria Dodd
LOCATION, TIME LTC Studio, 2:00PM-2:20PM
University Libraries: Marian Library, Oral Presentation- Course Project, 14 SP MRI 629 01

The presentation will examine the historical context and certain aspects of the mariological thought of the Russian Orthodox theologian Sergei Bulgakov(1871-1944). He converted from Marxism to Orthodoxy but was concerned about changes in the Russian Orthodox Church after the 1917 Russian Revolution. This concern led to his subsequent efforts at ecumenical dialogue with the Catholic Church. In order to resolve theological differences between the Catholic Church and Russian Orthodoxy, Bulgakov examined Catholic teachings such as the Dogma of the Immaculate Conception. His criticisms of that Dogma, based on sophiology, illustrate important differences between Catholic and Orthodox theology. The presentation will conclude with a brief evaluation of Bulgakov's continuing significance for contemporary mariology and ecumenism.

René Laurentin and the Great Magnificat Controversy

STUDENTS James Koelsch

ADVISORS Gloria Dodd

LOCATION, TIME LTC Studio, 2:30PM-2:50PM

University Libraries: Marian Library, Oral Presentation- Course Project, 14 SP MRI 629 01

The words attributed to the Blessed Virgin Mary have been stirring up controversy in scholarly circles for more than a century now. Various biblical scholars have presented evidence that Mary did not utter those famous words of praised found in the Magnificat, that joyous song sung by Mary in Luke's Gospel. Others like René Laurentin, however, have not been convinced by their arguments and have responded by presenting textual evidence that she did burst into this prayer. This presentation will explain a fundamental argument offered by Laurentin, a leading scholar in this field and a past visiting lecturer here at the University of Dayton. For Laurentin, clues in the text point to Mary as the origin of the Magnificat and settle the controversy.

Index

NAME - *TITLE* | LOCATION/TIME

STUDENT INDEX

NAME - *TITLE* | LOCATION/TIME

NAME - *TITLE* | LOCATION/TIME

STUDENT INDEX

NAME - *TITLE* | LOCATION/TIME

NAME - *TITLE* | LOCATION/TIME

STUDENT INDEX

NAME - *TITLE* | LOCATION/TIME

NAME - *TITLE* | LOCATION/TIME

STUDENT INDEX

NAME - *TITLE* | LOCATION/TIME

NAME - *TITLE* | LOCATION/TIME

STUDENT INDEX

NAME - *TITLE* | LOCATION/TIME

NAME - *TITLE* | LOCATION/TIME

STUDENT INDEX

NAME - *TITLE* | LOCATION/TIME

NAME - *TITLE* | LOCATION/TIME

STUDENT INDEX

NAME - *TITLE* | LOCATION/TIME

NAME - *TITLE* | LOCATION/TIME

ADVISOR INDEX

NAME - *TITLE* | LOCATION/TIME

NAME - *TITLE* | LOCATION/TIME

ADVISOR INDEX

NAME - *TITLE* | LOCATION/TIME

NAME - *TITLE* | LOCATION/TIME

NAME - *TITLE* | LOCATION/TIME

NAME - *TITLE* | LOCATION/TIME

ADVISOR INDEX

NAME - *TITLE* | LOCATION/TIME

NAME - *TITLE* | LOCATION/TIME

ADVISOR INDEX

NAME - *TITLE* | LOCATION/TIME

UNIVERSITY of DAYTON

University of Dayton
is an Institutional Member of the
Council on Undergraduate Research
Learning Through Research

Designed by Lauren Banfield, Graphic Design, 2014