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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, transdifferentiation 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

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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 $\sim 3.4 \times$ 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 ($n = 5/\text{treatment}$). 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

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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 ($n = 5/\text{reach}$). 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 ($n = 5/\text{solution}$). 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

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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/cm²) vs. high shear stress (16 dynes/cm²) ($p < 0.01$). 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 eukaryotic 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

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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. Melanogaster* 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 axoneme, 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 with several 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 regulate Caspase9 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 A β 42 Mediated Neurodegeneration

STUDENTS Madison Nichole Irwin

ADVISORS Madhuri Kango-Singh, Amit Singh

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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 A β 42 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 A β 42 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 A β 42 mediated neurodegeneration. I will employ a *Drosophila* eye model where human A β 42 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 A β 42 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 A β 42 neurodegenerative phenotype. We have found that the gain of function of the Hippo signaling pathway enhances the A β 42 neurodegenerative phenotype, while loss of function of this pathway rescues the neurodegenerative phenotype. Further, Hippo signaling is activated in an A β 42 background, but shows no activity when activated on its own. This data suggests that the Hippo pathway (i) plays an important role in A β 42 mediated neurodegeneration and (ii) its interaction with the JNK pathway leads to the A β 42 mediated neurodegenerative phenotype. This data will allow us to understand the genetic basis of the A β 42 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. chrysoscelis* 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 μ M 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 (A β 42) 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 A β 42 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 A β 42 mediated neurodegeneration. We have identified the homeotic gene teashirt (*tsh*) as a suppressor of the A β 42 mediated neurodegenerative phenotype. Targeted misexpression of *tsh* with A β 42 in the differentiating retina can significantly rescue neurodegeneration by blocking cell death. The paralog of *tsh*, *tiptop* (*tio*), rescues the A β 42 mediated neurodegenerative phenotype to a similar extent as *tsh*. Our studies demonstrate a novel neuroprotective function of *tsh* and its paralog *tio* in A β 42 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 & SCIENCES

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 (a β 42) 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

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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 A β 42 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 (A β 42) instead of 40 (A β 40) 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 A β 42 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 A β 42 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, its 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 A β 42 mediated neurodegeneration

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 A β 42 plaques is one of the vital reasons for AD mediated neurodegeneration. It has been suggested that A β 42 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 A β 42 in the differentiating photoreceptors of the fly retina. Our aim is to discern the role of signaling pathways involved in neurodegeneration. In a forward genetic screen, we have identified *teashirt* (*tsh*), *crumbs* (*crb*) and other members of *Wingless* (*Wg*) signaling pathways as genetic modifiers of A β 42 mediated neurodegeneration. 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 neurodegeneration caused by A β 42 misexpression. We will test the role of *Wg* signaling in A β 42 plaques mediated neurodegeneration. 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 A β 42.

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

STUDENTS Alexandra E Jacob

ADVISORS Carolyn 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 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

COLLEGE OF ARTS & SCIENCES

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 (A β 42). 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 A β 42 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 A β 42 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 proventriculus (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 a variety 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 of 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 imaged 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 performing 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 Handy-cam 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 *Drosophila* 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

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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 ($r^2 = 0.19$, $p < 0.001$ in 1989 and $r^2 = 0.10$, $p = 0.004$ 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 (*Maccaffertium* 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 ($r^2 = 0.78$) described more variation than eukaryotic profiles ($r^2 = 0.56$). 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 ($r^2 = 0.85$; $A = 0.04$, $p < 0.001$). 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

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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 where a limited supply of oxygen was present. The rates and products of the reaction were determined using normal phase high performance liquid chromatography (isooctane/isopropanol 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 Electrocatalytic 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 porphyrin 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 naphthylbiliverdin compound has been synthesized which offers intense absorption 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 Jasmynder 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 $\text{Ln}(\text{tdh})_3\text{dpp}$ (where $\text{Ln} = \text{Eu}^{3+}, \text{Tb}^{3+}$ or Nd^{3+} ; $\text{tdh} = 1,1,1$ -trifluoro-5,5-dimethyl-2,4-hexanedione and $\text{dpp} = 2,3$ -Bis(2-pyridyl)pyrazine) were 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 $\pi \rightarrow \pi^*$ transition to occur in the tdh ligand. Emission lines corresponding to transitions from the $5D_0$ and $5D_4$ state to the $7F_J$ manifold of the $\text{Eu}(\text{III})$ and $\text{Tb}(\text{III})$, 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-ruthenated 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-trifluoromethyl benzaldehyde and pyrrole under reflux in propionic acid and isolated through column chromatography using methylene chloride/methanol as the eluent. Coordination of cis-Ru(bipy)2Cl2 moieties was achieved through reflux under nitrogen in glacial acetic acid to give the bis-Ru(bipy)2Cl2[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 $1.3 \times 10^6 \text{ M}^{-1}$. 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.

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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 been widely used in networks (such as the Web, Domain Name Systems, and Content Distribution Networks) to improve performance. By storing replicas of contents locally, caches not only decrease access delays to the source of contents but also reduce bandwidth requirements at the source. While there exist numerous studies on the performance of a stand-alone cache under different caching replacement strategies (e.g., Least-Recently-Used, First-In-First-Out, and Time-To-Live), little has been done to understand data staleness and the hit rate in cache networks where contents are frequently updated by sources (i.e., data churn). In this project, we introduce a generic stochastic model that analyzes the impact of data churn on the performance of cache networks under classic replacement policies. Using this analysis, we also offer practical guidelines for balancing various 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 repack 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.

supporting 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:

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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, Automaton, 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 gaslights 2. Ensure all nearby friends are properly secured 3. Possession by a powerful demon will occur, handle with care The 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 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.

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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, Adrienne 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

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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 overlaid 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

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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 Racchi Burial and Feasts in Ancient Egypt - Jacob Glaser The Ancient Greek Olympics - Erin Peiffer Gladiators - Emily Strobach North American Indian Sports and Games - Leland Merling The Vikings and Entertainment: Games of War - James Foster Entertainment History of the Yuan Dynasty (AD 1271-1368) - Zixi Li Tournaments and Social Separation in the Middle Ages - Jessica Grilliot Sunday Funnies: An Investigation of the Effects of Political Cartoons on the Political Atmosphere of 18th and 19th-Century Europe and the United States - William Lawrence The Use of Food as a Source of Entertainment - Emma Zack 19th-Century Artistic Movements - Katie Fasoli How Hunting Changed Africa - Jenna Ladner Asian Dance Throughout the Ages - Allie O'Brien The Effect the Gaelic Athletic Association Had on the 1916 Rebellion - Melissa Fox Women's Movements of the 20th Century - Sarah Renfrow The Rise of the Film Industry - Paige Koenig Baseball - The American Pastime - Maggie Yocum The Evolution of Football - Meghan Blank Women in Hollywood - Nikole Kamp Woodstock: Conquering the Culture Wars - Danielle Dicristofano The Evolution of Surfing and Its Impact on Australian Society - Justin Abbarno The Rise in Popularity of Manga in the United States - Kyle Lach Soccer 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

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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 & SCIENCES

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 Yakopic

ADVISORS James R McCutcheon

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

COLLEGE OF ARTS & SCIENCES

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. This has created health concerns for the residents of Dayton, including obesity and diabetes. The purpose of this study was to understand the food system issues, their complexity and implications, and to understand what groups are currently doing to support the food system, and what is necessary to push the issues forward and make positive progress. The research was done through interviews with the various people, groups, and organizations involved in the food system. This research will provide suggestions for further actions with the goal of making healthy, local foods accessible to all those 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 $5 \times 10^{16} \text{ cm}^{-3}$. 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 Ewwaraye

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

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

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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 $E_c - 0.051$ 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 $E_c - 0.051$ eV. The analysis of the results shows that the saturation level (G_m) 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-

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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

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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, Adrienne 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

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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-

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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 Malawi and 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 Adrienne 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

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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-

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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., Fischhoff, 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 et al., 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 Motivations Megan Adelson, Lee J. Dixon, Ellen Snyder, and Scott Wagner, University of Dayton Derived 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 (Fraleigh, 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 Vidik, 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

COLLEGE OF ARTS & SCIENCES

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

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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) perceptual 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 Schemeine 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 remonstrance (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

COLLEGE OF ARTS & SCIENCES

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

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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 Enforcement Personnel

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 Amthor

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

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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's campus. 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 importance 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 County 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 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 communication,

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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 LGBT 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

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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 Nations' 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

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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 Cherelle 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

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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 of communication 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.

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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

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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 Taylor 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.