

Featured Presentation Abstracts

URCAD 2015

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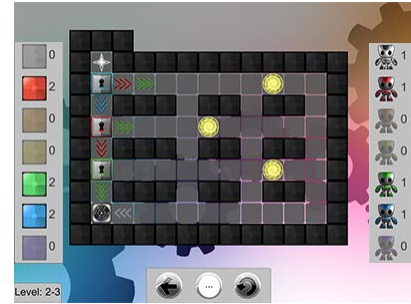
Advances in Training of Video Game Development Teams

Eliot Carney-Seim, Austin Pagano, Michael Leung, Andrea Wozniak, Zach Holtzman

Marc Olano, Associate Professor, Computer Science and Electrical Engineering

Where: UC Ballroom

When: 10:00 a.m. - 4:00 p.m.



The Game Developer's Club has created five projects, started several weeks into last semester, which will be reaching completion by the end of the spring semester. Revolve Online is a 3D online multi-player shooter where the winner can make a change to any aspect of the game, forever! Rolling Thunder is a 3D tactical flight simulator, where big guns and reckless commands win the day, that's where you come in. Fly tactically, protect the bombers and command your wing men to victory. Are you up for the challenge, pilot? Hue Bots is a 2D top-down puzzle game where you can build and control little multicolored robots, which you must use to solve increasingly complicated puzzles. The goal of each level is to get your special white robot to the finish. Second Hand is a 2D puzzle horror game where a disease is unleashed upon a derelict cruise ship. When the vessel's mechanical servants begin a fatal quarantining, it's up to Henrietta, the ship's mechanic to save whoever she can. Inheritance is a 2D dungeon crawler where you can level up your parent characters to make a strong new class child who receives the inheritance of the past characters you controlled.

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Touched

Stephanie Castner

Douglas Hamby, Associate Professor, Dance

Where: PAHB 337

When: 10:00 a.m.



In summer 2014, I attended the Broadway Dance Center (BDC) Summer Professional Semester, an eight-week dance-training program located in New York City, offering instruction from a variety of world-renowned professional teachers and mentors.

Using knowledge of modern dance that I gained while studying at UMBC, along with the new skills and insights I learned while at BDC, I explored the contrast between partnering in modern and jazz dance. Throughout this program, I concentrated on jazz and contemporary dance techniques, and attended weekly seminars that focused on choreographic composition, improvisation techniques, and partnering. I also attended and participated in the rehearsal process of professional choreographers and experienced their choreographic process in real time. Following the completion of my training program, I returned to UMBC to create a dance performance piece that investigates partnering, explores the contrast between jazz and modern dance, and utilizes the variety of new choreographic methods and rehearsal modes I experienced.

Through the creation of my piece, Touched, I was able to explore how to abandon traditional, stylistic conformity and integrate technique, partnering, and choreographic elements of both modern and jazz dance. Touched was presented in the fall 2014 First Works Dance Showcase.

This work was funded through an Undergraduate Research Award from the UMBC Office of Undergraduate Education and the UMBC Dance Department Summer Research and Study award.

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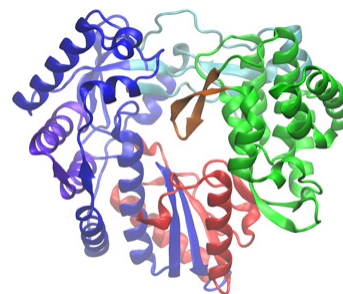
Analyzing the Mechanism of Allosteric Inhibitor AG6 on Hepatitis C Viral Polymerase

Daniel Dagenhart

*Ian Thorpe, Assistant Professor, Chemistry and Biochemistry;
Ester Sesmero, Chemistry and Biochemistry*

Where: UC Ballroom

When: 12:00 -2:00 p.m.



About 150-200 million people in the world are infected with Hepatitis C (HCV), a virus that leads to cirrhosis of the liver as well as hepatocellular carcinoma. In the United States, an estimated 3.2 million people are infected with this virus. There is no vaccine currently available, and current treatments are not completely effective. The RNA-dependent RNA-polymerase of HCV, NS5B, has a “right-handed” globular shape that includes finger, thumb, and palm domains. In the last 20 years, researchers have investigated two different kinds of inhibitors for NS5B: nucleoside and non-nucleoside inhibitors. Nucleoside inhibitors bind in the active site and are chain terminators. Non-nucleoside inhibitors work allosterically by binding to locations separate from the active site. AG6 belongs to the latter category. Our goal is to investigate the mechanism of allosteric inhibition of ligand AG6 when bound to the template channel of NS5B. For this study, we used Molecular Dynamics simulations with explicit solvent, as well as analysis tools such as root-mean-squared deviation and free energy landscape plots. Our results showed specific structural and dynamic changes caused by AG6 that affect the replication process. The new insights obtained may lead to development of enhanced and novel anti-viral treatments for HCV.

The hardware used in the computational studies is part of the UMBC High Performance Computing Facility (HPCF).

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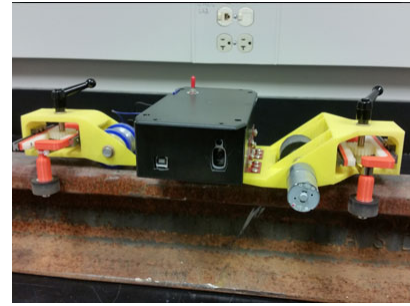
Automated Solution to Overhead Crane Runway Surveying

Aaron David, Paul Giro, Andrew Duhan, Leah Mason, Alfred Yeager

Dr. E.F. Charles LaBerge, Professor of the Practice, Computer Science and Electrical Engineering

Where: UC Ballroom

When: 2:00 - 4:00 p.m.



Determining the rail span of top running overhead cranes is a time-intensive and inaccurate process. The cranes ride along steel rails, called the runway, which are mounted high above the work area of manufacturing buildings. The rails have up to 100 foot spans and 300 foot lengths. The span must be accurate and consistent to ensure the proper operation and lifespan of the crane. In current practice, a rail span survey requires surveyors to climb up to the crane rails and stretch a measuring tape between them, pulling the measuring tape as taut as possible to minimize error. Current practice is limited to measuring the span at only three to four locations on the rail due to limited accessibility to the full length of the rails. We have developed an automated solution to accurately survey the rail span for cranes of various sizes. Our system is capable of completing the survey in less time, with fewer individuals, with greater accuracy, and with more data points than the current method.

This project was supported by a grant from Reading Crane and Engineering Co., and by the UMBC Department of Computer Science and Electrical Engineering.

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Simulated and Experimental Effects of RNA Interference on Cell Motility

Dominick DiMercurio

Michelle Starz-Gaiano, Assistant Professor, Biological Sciences;

Bradford Percy, Assistant Professor, Mathematics and Statistics

Where: UC 310

When: 2:15 p.m.



Cell motility is common in animal biology and is a key phenomenon in wound healing, immune function, and embryo development. We study *Drosophila melanogaster* to identify highly conserved genes important in cell migration. In particular, we focus on the border cells, which arise at one end of the developing egg and move toward the other. A key molecular pathway in this process involves the molecule Signal Transducer and Activator of Transcription (STAT). When we reduced gene expression via RNA interference (RNAi), we reproduced STAT-pathway mutant phenotypes of partially or completely inhibited migratory behaviors compared to controls. In qRT-PCR experiments, we

quantified mRNA concentrations to investigate how these related to the phenotypes. Our results provide experimental data for comparison with the predictions of the Ge-Stonko model, a system of differential equations that represent the pathway of interest. This research will help biologists obtain a better understanding of the molecular mechanisms controlling cell migration, which may lead to insights on the metastasis of cancer and the occurrence of birth defects.

This work was funded, in part, through an Undergraduate Biology Mathematics (UBM) Award from the National Science Foundation under Grant No. DBI 1031420, PIs Drs. Leips and Neerchal.

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Eating Habits of College Students at UMBC

Kelsey Donnellan

Jill Wrigley, Adjunct Professor, Interdisciplinary Studies

Where: UC Ballroom

When: 10:00 a.m. - 12:00 p.m.



At the University of Maryland, Baltimore County, residential students are required to purchase a meal plan through Chartwells, a dining services contractor, and have limited access to kitchens for personal use. Alongside The Garden, I produced a nutrition and garden guide designed to encourage increased vegetable and fruit (v/f) intake. Participants were randomly placed in four-week intervention groups. Garden 1 participants received the guide and experienced the informal social interactions The Garden provided. Garden 2 only experienced social interactions gardening and did not receive the guide. Non-Garden 1 received the guide but did not participate in The Garden. Non-Garden 2 had neither the guide nor affiliation with The Garden. The effectiveness of the interventions was measured by data obtained from pre- and post-assessment food journals, where participants totaled their intake of the food groups: fruits, vegetables, grains, protein, and dairy. The pre-assessment food journals were completed before the first harvest in The Garden, and post-assessments four weeks later. At the outset both Garden groups had higher v/f intake than either Non-Garden group. Information received through the post-assessment journal demonstrated an increased v/f intake by 1.28 v/f per day in Garden 1, while all other groups showed a decrease.

This work was funded, in part, through an Undergraduate Research Award from the UMBC Office of Undergraduate Education.

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Future Children

Emily Eaglin

Vin Grabill, Associate Professor, Visual Arts

Where: Eng 023

When: 2:30 p.m.



In the spring semester of 2014 I submitted the film Future Children, that I wrote and directed, to Campus MovieFest, a film competition held on campus. I won the Best Director and Best Actor awards, and I was selected to screen this film in Universal Studios Hollywood at the Campus MovieFest National Conference. The inspiration behind Future Children can be traced to one simple question that I began to hear frequently, “What are you?”. After noticing that I, myself, have never asked a person this and that I was being asked this before being asked my name, I ventured deeper behind the underlying messages of the question. This presentation will include a screening of Future Children. I will also speak briefly about my creative and social justice inspirations as well as my involvement with the greater UMBC community in this regard. Through this presentation I hope to inspire others to look critically and analyze the identity-related questions that they are being asked/asking every day and to encourage them to make creative and positive solutions to solving any issues they may face because of said questions.

This work was funded, in part, through a travel award from the UMBC Office of Undergraduate Education.

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Dental Health of the Delmarva Adena-Hopewell Native Americans

Erin Edwards

Michael Lane, Assistant Professor, Ancient Studies; Esther Read, Lecturer, Ancient Studies

Where: Eng 023

When: 3:15 p.m.



I examined the dental health of Delmarva Adena-Hopewell Native Americans from a mortuary ossuary pit at the Pig Point site in Lothian, Maryland. I looked for indications of dental health through the frequency of cavities and linear enamel hypoplasia that were observed macroscopically. The Pig Point site is unique in that its impressive ritual mortuary features indicate that this was an area of significance to local prehistoric populations. Dr. Douglas Owsley of the Smithsonian Institution carefully examined the human remains from the first burial ossuary pit, and I compared Dr. Owsley’s analyses of the dental remains of the first burial pit with the dental remains of the fourth burial pit. I established the Minimum Number of Individuals (MNI) represented in the ossuaries and assessed the

occurrences of dental diseases by looking for dental caries and linear enamel hypoplasia. In most prehistoric forager societies, the frequency of dental caries is low, while the frequency of linear enamel hypoplasia is high. The results will hopefully contribute towards a further understanding of the subsistence practices of local Delmarva peoples and ultimately contribute to scholarly hypotheses about the prehistoric lifestyles and life ways of the Delmarva Adena-Hopewell based on anthropological dental analysis.

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Mohawk and Cherokee Language Revitalization: Overview, Assessment, and Challenges

Sierra Francis

Omar Ka, Associate Professor, Modern Languages, Linguistics, and Intercultural Communication; James Thomas, Adjunct Professor, Interdisciplinary Studies; Marie DeVerneil, Senior Lecturer, Modern Languages, Linguistics, and Intercultural Communication; Anna Shields, Associate Professor, Modern Languages, Linguistics, and Intercultural Communication

Where: UC 312

When: 1:30 p.m.



Linguistic diversity is the key to maintaining historical, ecological, scientific, and cultural knowledge about our planet. Unfortunately, the colonization of North America resulted in the loss of nearly half of the indigenous languages that were spoken on the continent, and those remaining today are undergoing a process of language shift. This research seeks to assess the status of two Iroquoian languages with fairly limited scholarship, Mohawk and Cherokee, as well as emphasize the role education plays in their revitalization initiatives. Each assessment was organized according to UNESCO's 2003 Language Vitality and Endangerment document. The document outlines nine factors of language vitality, and acts as a set of guidelines to identify the immediate needs of language communities through the evaluation of intergenerational transmission, speaker population, language attitudes, domain use, educational materials, and language policies. My findings indicated the need for teacher training programs, linguistics education, increased community involvement in and outside of schools, and means to address the negative language attitudes held by various Mohawk and Cherokee youth. Luckily, the establishment of locally controlled immersion schools, increased parental involvement, and adaption to new domains of use have prevented both languages from further declining, and given hope to each community.

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Social-Emotional Skills of Young Latino English Learners: The Influence of the Classroom Context

Claire Hempel

Dr. Claudia Galindo, Associate Professor, Language, Literacy, and Culture

Where: Eng 023

When: 4:00 p.m.



This research examines the social-emotional skills of Latino English Learners (ELs). We also analyze whether classroom context (e.g., classroom composition, support for EL students) and teacher practices (e.g., readiness beliefs, pedagogical support for EL instruction) facilitate student growth in social-emotional skills (e.g., approaches to learning, attentional focus, inhibitory control). Quantitative analyses with nationally representative data from the Early Childhood Longitudinal Study-Kindergarten Cohort (2010-2011) will identify large patterns of influence. Teachers' reports of their perceptions (four kindergarten teachers of Latino ELs will be interviewed) about Latino ELs and the influence of the classroom context will complement the statistical analyses, and will provide detailed and rich interpretations of larger patterns. Preliminary results indicate that teachers reported higher levels of approaches to learning, attentional focus, and inhibitory control for Latino ELs than for native-English Latinos, Whites, and Black children after controlling for socioeconomic status. There were also important differences in the classroom context of Latino ELs, when compared with other subgroups. The results from this study will be useful in developing a better understanding of Latino English Learners and may help to facilitate their success.

This research was supported by a grant from the American Educational Research Association.

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East-Asian-American Student Perspectives on Romantic Relationships and Violence

Yoo-Jin Kang

Dr. Bambi Chapin, Associate Professor, Sociology and Anthropology

Where: Eng 023

When: 1:15 p.m.



This presentation will outline key findings and insights gained from six qualitative interviews of East-Asian American undergraduate students at UMBC. Subjects were students raised by parents who were grew up in an East-Asian country, such as Korea, Vietnam, Japan and China, and were current UMBC undergraduates, ages 18 and older. The purpose of this project was to explore East-Asian students' perspectives on romantic relationships, relationship violence, and viewpoints on seeking help and resources during relationship violence situations. Topics included what constituted a healthy and unhealthy relationship, characteristics of an ideal

partner, and whom students would turn to in the event of emotional and physical relationship violence. The findings of this project aim to identify and explore student experiences in the university system and to connect student responses about intimate partner violence to the available literature on intimate partner violence in East Asian communities. Further, this analysis will be used to assess the presence of culturally-appropriate and relevant violence-prevention outreach on UMBC's campus.

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Simple Sensor Box

**Kit Kearney, Andrew Comer, Marcus Flores, Lewis Gould,
Daniel Zuckerbrod**

*Dr. E. F. Charles LaBerge, Professor of the Practice, Computer
Science and Electrical Engineering*

Where: UC Ballroom

When: 10:00 a.m. - 12:00 p.m.



Simple Sensor Box

Students, researchers, and developers looking to simultaneously collect several types of data are often confronted with purchasing and programming multiple measuring devices. This research project developed a universal device with the ability to collect a broad range of sensory input while simplifying operation, optimizing portability, and expanding file format compatibility. By combining a collection of ten sensor types into a single, encapsulated, portable device we provided a stand-alone means of collecting independent types of data sets. The array of sensors detected movement and local environmental data. Movement was measured with an accelerometer and gyroscope, while with barometric pressure, light, humidity, and temperature sensors measured the local environment. An embedded microcontroller stored the collected data to a non-volatile memory source in real time. A companion computer application allowed the user to download and format the collected data for use with third-party analysis tools such as MATLAB and Excel. Compatibility with outside analysis tools made the device ubiquitous for a variety of applications.

This project was supported by a grant from Advanced Circuits, and by the UMBC Department of Computer Science and Electrical Engineering.

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Arroy: The Thai Food Cart

Hannah Korangkool

Stephen Bradley, Associate Professor, Visual Arts

Where: Eng 023

When: 11:00 a.m.

Arroy: The Thai Food Cart documents street vendors and market spaces in the central region of Thailand. Cuisine is a complex,



multi-faceted feature of Thai culture and goes far beyond the Western perception of “Thai Food.” This video documentation captures food being prepared, sold, packaged, displayed, and eaten by both residents and tourists. The tourist perspective contrasts greatly with Thai natives’ communal rituals, traditional dishes, and religious practice. The visual “leitmotifs” highlight various actions done by hands, such as exchanging currency and goods, cooking, handling utensils, offerings into alms bowls, etc. The resulting film demonstrates the cultural significance of Thai cuisine as a communal medium for the people of Thailand.

This work was funded, in part, through an Undergraduate Research Award from the UMBC Office of Undergraduate Education.

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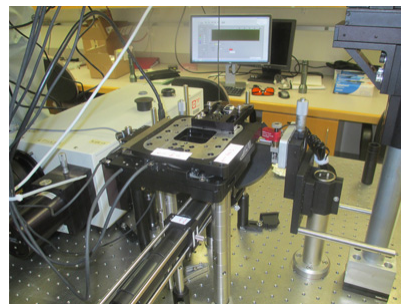
Computer Interface for Optical Studies of Single Nanoparticles

James Loy

Matthew Pelton, Assistant Professor, Physics

Where: UC Ballroom

When: 10:00 a.m. - 12:00 p.m.



This research project has produced a computer interface to control the instruments of a microscopy unit for general optical research of single nanoparticles. Making optical measurements on nanoparticles individually removes the effects of variations in nanoparticle shape and size that are unavoidable when many nanoparticles are measured simultaneously. Single-particle measurements, however, are more challenging, and require multiple instruments to be controlled concurrently. The researcher must locate individual particles in a sample, and then operate instruments to collect data of interest, such as emitted frequencies or intensities over time. Individual control of the required instruments is time consuming and inefficient. My interface controls the software of the necessary instruments and allows the recording and examination of optical data within one platform. With improved efficiency, the microscopy unit can collect a statistically significant quantity of data and allow the researcher to determine whether observed behaviors are indeed characteristic of the ensemble of particles or are simply due to variations in individual particles. Upcoming applications of this interface will be to study the effect of proximal metal nanoparticles on the excitation of semiconductor nanoparticles, and the transfer of electrons from semiconductor nanoparticles to molecules (a model for novel solar-energy conversion systems).

This work was funded, in part, through an Undergraduate Research Award from the UMBC Office of Undergraduate Education.

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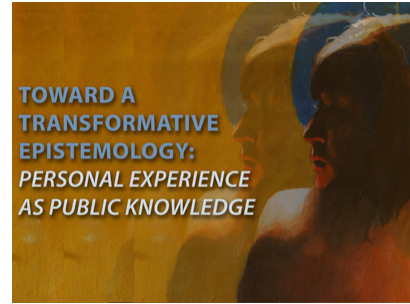
Toward a Transformative Epistemology: Personal Experience as Public Knowledge

Amelia Meman

Megan Tagle Adams, Women's Center

Where: UC 312

When: 2:15 p.m.



A great amount of feminist scholarship is rooted in the exploration of personal experience. In my research, I set out to understand the relationship between feminist epistemology and personal experience, so that I could demonstrate new ways of making knowledge that open the field to marginalized voices. I surveyed feminist theories that challenged traditional epistemic standards in order to frame my research and justify the value of meaning-making grounded in personal narratives. The analysis portion of the research was comprised of a close reading of both my own creative non-fiction writing and the foundational feminist anthology *This Bridge Called My Back: Writings by Radical Women of Color* edited by Cherríe Moraga and Gloria Anzaldúa, which pushed the boundaries of dominant knowledge-making standards in feminist scholarship. By exploring feminist methods for knowledge-making, as well as the subsequent analysis of *This Bridge Called My Back* and my own writing, I examined the impact, implications, and limitations of the unique paradigm shift inherent in using personal experience as the basis of knowledge creation. By challenging dominant standards on what makes “good knowledge” and operationalizing this feminist epistemological framework, my research explored a creative approach to expanding access to knowledge-making.

This work was funded, in part, through a travel award from the UMBC Office of Undergraduate Education.

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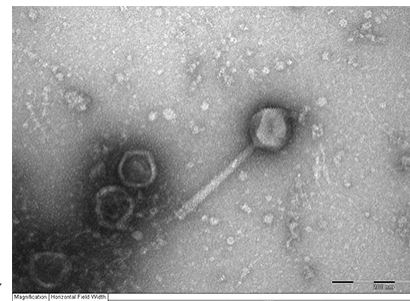
Novel Bacillus Bacteriophage Isolated from Russian Soil

Julie Norton, Kevin Liao, Mimi Way, Brittnie Prakash

Steven Caruso, Senior Lecturer, Biological Sciences; Ivan Erill, Associate Professor, Biological Sciences

Where: UC Ballroom

When: 12:00 - 2:00 p.m.



Bacteriophages are abundant biological entities that inhabit every known biome on Earth, utilizing susceptible bacteria as a means for replication. Bacteria have numerous bioindustrial applications; *Bacillus thuringiensis*, for example, sporulates and secretes d-endotoxins that have pesticidal applications in agriculture. Because of the impact they have on bacterial ecosystems and their evolution, phages can potentially be used in many bioengineering applications. Here, a *Bacillus cereus* group myoviridae bacteriophage, dubbed TsarBomba, was isolated on *Bacillus thuringiensis* subsp. *Kurstaki* from a soil sample taken from central Russia. We imaged TsarBomba via transmission

electron microscopy, ran a restriction digest to determine genome length, and provisionally characterized it as a C1 subcluster bacteriophage using PCR. We also ran a series of host-range tests, and isolated the TsarBomba DNA and submitted it to the University of Pittsburgh for sequencing. At the time of this writing the TsarBomba genome is being annotated by the Phage Genome Analysis class at the University of Maryland, Baltimore County.

This work was funded in part by Howard Hughes Medical Institute Science Education Alliance - Phage Hunters Advancing Genomics and Evolutionary Science (HHMI SEA-PHAGES) Program.

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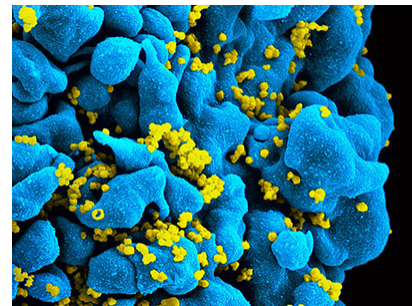
The Application of CRISPR Genome Engineering to the Study of Host Antiviral Factors

Tolu Omokehinde

Paul Bieniasz, Research Professor, Aaron Diamond AIDS Research Center (ADARC), The Rockefeller University

Where: UC 310

When: 11:45 a.m.



Human immunodeficiency virus (HIV) is a retrovirus that infects cells of the human immune system. Previously, a screen of interferon-stimulated genes was used to identify candidate genes with the capacity to protect cells from HIV-1 infection. A candidate gene Tripartite motif containing 56 (TRIM56) has been shown to be an interferon inducible E3 ubiquitin ligase that acts to restrict replication in positive strand RNA viruses. CRISPR and the CRISPR-associated (CAS) protein 9 is a nuclease system that can be programmed to induce DNA double stranded breaks (DSBs), which cause mutations that result in gene knock-out. We were able to clone sequences targeting TRIM56 into a LentiCRISPR plasmid. The cloned plasmids were then used to generate viruses that would deliver the necessary machinery to target and cleave TRIM56 genes. To test the efficiency of the CRISPR/Cas9 system, sequences targeting GFP were cloned. GFP deletion was observed in a 293T-GFP stable cell line and knockout efficiency was determined by analysis. Knockout results of TRIM56 are still pending, but we expect that TRIM56 deleted cell lines will demonstrate the contribution of this gene to the interferon response to HIV-1.

This research was supported in part by a grant to The Rockefeller University and the Aaron Diamond AIDS Research Center from the Howard Hughes Medical Institute through the Precollege and Undergraduate Science Education Program.

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Speciation Reversal: The Case of the Common Raven

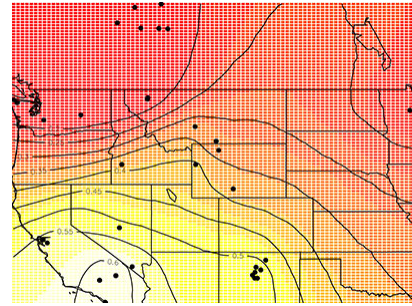
Hayley Richardson, Jin Ah Kim, Anna Kearns

Kevin Omland, Professor, Biological Sciences; Matthias

Gobbert, Professor, Mathematics and Statistics

Where: UC Ballroom

When: 10:00 a.m. - 12:00 p.m.



Speciation reversal results when two or more distinct species interbreed to form one species. This phenomenon is a well-known part of human evolutionary history; most modern humans include genes from both modern humans and Neanderthals. We focus on the case of Common Ravens, which are a likely case of speciation reversal. The Common Raven (*Corvus corax*) has a wide range, spanning throughout North America, Europe, and Asia. Within this species, there exist two deep mitochondrial lineages, the California clade (found exclusively in western U.S.) and the Holarctic clade (found throughout the entire range). These two genetically distinct clades now have overlapping ranges, and Holarctic and California alleles are intermixing, which is likely causing the merging of these two lineages. We sequenced ACO1, a nuclear intron, to evaluate specific clusters of alleles that are present in our raven sample. We then compared these data to the known mitochondrial clades and found that the nuclear genome indicates a similar story of divergence and reemerging. Using the program GENELAND, we mapped the geographic ranges of each clade. These data are the first step in understanding the evolutionary history of the Common Raven and elucidating the process of speciation reversal.

This work was funded by NSF Interdisciplinary Training for Undergraduates in Biological and Mathematical Sciences (UBM) and the Research Council of Norway.

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The Association between Intimate Partner Violence and Conflict Disengagement in Newlywed Couples

Rupsha Singh

Robin Barry, Assistant Professor, Psychology

Where: UC Ballroom

When: 10:00 - 12:00 p.m.



Recent advancements in treatment and theory of intimate partner violence (IPV) have identified emotion dysregulation and experiential avoidance as important contributors to IPV. This perspective suggests that conflict disengagement is associated with risk for IPV because both IPV and disengagement may function as avoidance of aversive emotion. Further, an emotion regulation perspective suggests that greater negative emotional intensity during couple conflict (i.e., conflict intensity) confers IPV risk for individuals who have emotion regulation difficulties.

(i.e., difficulty modifying emotional experiences and expressions). Insecure adult attachment styles are frequently conceptualized as emotion regulation difficulties and both avoidant and

anxious attachment have been found to be associated with IPV. The present study examined the association between attachment, conflict avoidance, conflict intensity and IPV in a sample of 114 heterosexual newlywed couples using actor-partner interdependence modeling. We expected insecure attachment and conflict avoidance to predict IPV perpetration for individuals with higher conflict intensity. Results showed that 26.3 percent of husbands and 31.6 percent wives perpetrated IPV. Additionally, one's own higher conflict avoidance predicted IPV perpetration when one's partner was more anxiously attached. In sum, this research supports an emotion regulation perspective of IPV. Findings have implications for IPV treatments that focus on emotion regulation skills training.

This work was funded, in part, through a travel award from the UMBC Office of Undergraduate Education.

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Nerds Rule, Jocks Drool

Angelo Skarlatos, Scott Seiss, Hannah Kelly, Zachary Garmoe, Jason Klimek, Parker Damm, Ramon Burris, Andrew Kelly

Cathy Cook, Professor, Visual Arts

Where: Eng 023

When: 1:45 p.m.



Nerds Rule, Jocks Drool is a short film nominated for best story at the 2014 Campus MovieFest competition in Hollywood. The film is a five minute piece shot entirely over the course of one week, and it explores an alternate reality where "nerds" are the popular kids and the "jocks" are mocked daily for playing sports. The film is meant to be a hyperbolic demonstration of the movement of modern culture towards valuing intelligence over physical strength. The use of comedy in the film makes the story much more engaging than it would have been otherwise. The funny nature of the film comes from a collaboration between the scriptwriting process and the improvisations of the actors. At the beginning of the film, a long extended take is utilized to introduce the characters in an interesting and efficient way. This is followed by a back and forth between the nerd characters and the jock characters that creates the central conflict of the piece. The conclusion of the film is a framing device that brings all these elements together into one final punch, ending on a laugh and reminding people of the central message.

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Geographic Variation in Community Structure in *Drosophila* Species and Their Parasitoid Wasps in North America

Parisa Soleimanifar, Jaelyn Bos

Jeff Leips, Professor, Biological Sciences; Chia-Hua Lue, Biological Sciences Research

Where: UC Ballroom

When: 2:00 - 4:00 p.m.



Geographic variation in biodiversity can generate testable hypotheses about the factors that determine species distributions, a central question of ecology. We are characterizing geographic biodiversity of *Drosophila* host-parasitoid wasp communities along the eastern coast of North America, especially focusing on *Drosophila melanogaster* and *Drosophila simulans* (Diptera: Drosophilidae) two closely related host species, and their major parasitoid predator, *Leptopilina bouleardi* (Hymenoptera: Figitidae). Female parasitoid wasps deposit their eggs in host larvae. Larval wasps feed on host tissues to complete their development, killing the host in the pupal stage. Our data indicate that *D. melanogaster* are more common in the north and *D. simulans* more common in the south. Interestingly, we found no *L. bouleardi* in our northernmost site. This suggests many testable hypotheses. The first is that in the absence of one of the major parasitoids, *D. melanogaster* may be able to outcompete *D. simulans* and so reach higher density. Alternatively, different parasitoid species that are found in the north may preferentially target *D. simulans*, reducing competition with *D. melanogaster* leading to higher *D. melanogaster* density. These, and other experiments are planned in the near future to investigate the factors giving rise to these geographic patterns of biodiversity.

This work was funded, in part, through an Undergraduate Research Assistantship Support (URAS) Award from the UMBC Office of the Vice President for Research.

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Ebb & Flow

Molissa Udevitz

Doug Hamby, Associate Professor, Dance

Where: PHAB 337

When: 10:15 a.m.



Ebb & Flow is an abstract contemporary dance work for four dancers inspired by my personal observations of the extreme ocean tides of Kachemak Bay in Homer, Alaska. These tides can fluctuate over 25 feet in one day, drastically altering the physical appearance of the bay and inspiring me to capture this repetitive transformation through dance. Ebb & Flow was created by choreographing abstract movement sequences that suggest different aspects of the tide, such as kelp swaying in ocean currents or churning waters on stormy days. The dance strives to encourage the audience to reflect upon the external forces that seemingly push and pull the dancers across the stage. Ebb & Flow premiered in November 2014 at

UMBC's Fall Senior Dance Concert and was also selected to perform in an adjudicated concert at the American College Dance Festival Association Mid-Atlantic conference in March 2015.

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Is Breast Center Risk Assessment Clinic Attendance Improved with a High Risk Recommendation in the Mammography Report?

Ankur Vaidya

Alison Chetlen, D.O., Assistant Professor, Department of Radiology, Division of Breast Imaging, Penn State Hershey Medical

Where: UC 310

When: 11:15 a.m.



This study evaluated the effectiveness of introducing a standardized recommendation into the mammography report in 2012 to recruit women at high risk for breast cancer into our risk-assessment clinic. The study population was comprised of patients presenting for mammography in 2011 and 2013 with $\geq 20\%$ lifetime risk for developing breast cancer by NCI criteria. We evaluated the intra- and inter-observer variability of radiologists' annotations, identifying the patients' risk status, and recommendations made to high-risk providers. The number of patients subsequently seen by a high-risk provider within one year of their mammogram was analyzed; 173 patients in 2011 and 241 in 2013 were identified with $\geq 20\%$ lifetime risk of developing breast cancer. 40.5% of patients received a risk-assessment clinic recommendation in 2011 versus 75.5% in the year 2013. Despite an overall increase in recommendations by the radiologists for clinical risk assessment, only a modest increase was observed, from 11.4% to 14.3%, in patients that subsequently kept appointments for this evaluation. Although a modest increase in referrals occurred following the institution of the standardized reporting recommendation, $>85\%$ of the identified high-risk patients in 2013 were not evaluated by a high-risk provider for their elevated lifetime risk of developing breast cancer.

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