



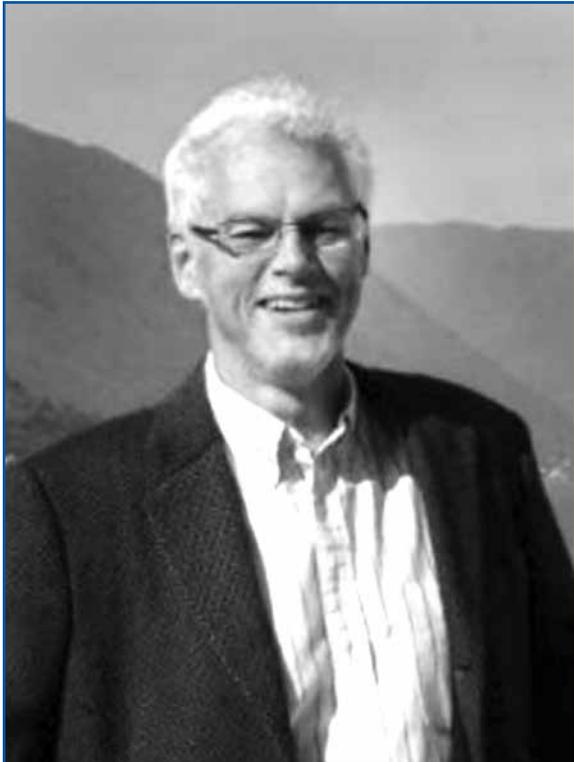
Minds @ Work

CELEBRATING STUDENT RESEARCH,
SCHOLARSHIP, AND CREATIVITY

APRIL 24, 2018



Kirkland/Spizuoco Memorial Science Lecture **“RESTORING THE ONCE-GREAT FISH MIGRATIONS OF THE SUSQUEHANNA AND OTHER ATLANTIC RIVERS”**



Dr. John Waldman

Professor of Biology
Queens College, CUNY

Wednesday, April 25, 7:30 PM
Luhrs Performing Arts Center

DR. JOHN WALDMAN joined the faculty of Queens College as a tenured professor of biology in 2004. For the previous twenty years, he was employed by the Hudson River Foundation for Science and Environmental Research. He received his PhD in 1986 from the Joint Program in Evolutionary Biology between the American Museum of Natural History and the City University of New York, and an MS in Marine and Environmental Sciences from Long Island University. His research focuses on the ecology and evolution of fishes, the historical ecology of rivers and urban waterways, and estuarine biology. Waldman has authored more than ninety-five scientific articles; numerous essays in the *New York Times*, *Yale Environment 360*, and elsewhere; and several popular books, including the award-winning *Heartbeats in the Muck: the History, Sea Life, and Environment of New York Harbor*; *Still the Same Hawk: Reflections on Nature in New York*; and most recently, *Running Silver: Restoring Atlantic Rivers and their Great Fish Migrations*.

THIS LECTURE IS FREE AND OPEN TO THE PUBLIC.

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From the President

Welcome to the Minds@Work Conference at Shippensburg University. This conference celebrates and features student research, scholarship, and creativity. The conference is an opportunity to demonstrate the rigorous and vibrant academic programs we offer—an opportunity to showcase the quality of our student/faculty interactions through joint student/faculty research.

The Minds@Works Conference also highlights the high-quality, high-touch education our students receive inside the classroom. It showcases the many benefits undergraduate research has on enhancing those skills that are central to the life our students will lead when they move on from the university. Whether our students pursue a professional degree or enter the industries that drive our state and community, students will do so having enhanced oral and written communication and critical thinking skills through the creative and scholarly activities found within our undergraduate research activities.

As a high-impact practice, our undergraduate research is an important ingredient in engaging students in collaborative, service, and community-based learning projects. These processes increase student retention and engagement with the university experience. I am so very proud of our student-scholars for the hours they have dedicated to producing what is so proudly illustrated in today's presentations.

The research you will see today resulted from the hard work of our students. Thank you to the students for engaging in creative inquiry and for bravely displaying your work here today. It takes great courage to set out every day to grow the body of knowledge in your respective area of interest. I am grateful for the investment our faculty make in our students—thank you. I also am grateful for the investment our donors make. Donor contributions accentuate the importance of student-faculty research and today's conference. Thanks to each of you for your commitment to our university and to growing the body of knowledge available to the world around us.

Laurie A. Carter, JD
President



From the Provost and Executive Vice President

The annual Minds@Work showcase of student research and creative activity displays our collective belief in the value of high impact practices for our students. Educational research shows that high-impact practices increase student engagement and, consequently, raise student persistence and completion rates. High-impact practices comprise a range

of learning experiences, such as first-year seminars, living-learning communities, service or community based projects, internships, and undergraduate research. Minds@Work makes it clear that joint faculty-student research has become a signature high-impact practice that defines the Shippensburg experience for many students.

We believe in high-impact practices because they “provide student-centered opportunities for learning and social networking that build relationships between a student and his or her faculty and peers, foster a personal investment in educational goals, and provide opportunities for students to experience and take part in the intellectual culture of the college or university” (Sweat, Jones, Han, & Wolfgram, 2013). When they engage in undergraduate research, the impact is particularly high because students:

- invest greater time and effort in learning
 - interact with peers and faculty around substantive matters
 - experience greater diversity on several levels
 - receive more frequent feedback on their work
 - discover the relevance of learning through the world at large applications
 - publicly demonstrate competence
 - reflect on and integrate learning
- (Kuh, 2014)

The impact of joint faculty-student research is highly visible on the day of Minds@Work, when we see students' public demonstrations of their competence in many forms, including poster presentations, oral paper presentations, musical performances, art displays, and departmentally organized sessions such as student panels.

However, the impact of the student research experience will be felt long after the day of Minds@Work. For one thing, students go on to deliver presentations at regional, national, and international conferences. Some students also author or co-author scholarly articles, with many selected for publication in scholarly venues, including high-profile academic journals. Furthermore, upon graduation, students who have participated in faculty-guided research have a competitive edge for employment opportunities and advanced studies.

Congratulations to the students and their faculty mentors! Much appreciation is due to the faculty and staff whose dedication makes possible this showcase of student talent and effort. Thanks to the SU Foundation for continuing to provide annual support to the Joint Faculty-Student Research Program. Thanks to all who come out to Minds@Work to celebrate the achievement of our students around the high-impact experience of student research!

Barbara G. Lyman, PhD
Provost and Executive Vice President



**From the Dean,
College of Arts and
Sciences,
Acting Dean of
Graduate Studies**

The most meaningful and effective academic experiences happen when faculty and students work closely together, often one-on-one or sometimes in small groups, on disciplinary projects outside of the formal classroom. Delivering on this premise is, I believe, one of the distinguishing characteristics of the educational experience

provided within the College of Arts and Sciences at Shippensburg University. The single most impactful form of this type of engagement is when students work under the mentorship and guidance of a faculty member in an undergraduate research project, scholarly activity, or creative activity (URSCA).

Through participation in a URSCA project, students and faculty work together to expand the boundaries of human knowledge and experience. Such experiences are not trivial, and through them, students get the opportunity to contribute uniquely to their disciplines while simultaneously experiencing personal and professional growth. By participating in URSCA projects, students gain important skills in teamwork and working collaboratively, plus they gain essential skills in writing, problem solving, and communication. Students also develop distinctive insights into the power of guided inquiry, critical thinking, and design thinking for approaching issues they are likely to encounter as they enter the working world or engage in advanced study in graduate or professional schools.

The faculty and students in the College of Arts and Sciences continue to explore the educational opportunities realized through deep engagement in URSCA. Our faculty are intimately involved in the Shippensburg University Council on Student Research and Creative Activity, which is focused on issues related to delivering excellence in URSCA. This group continues to pose questions, seek answers, and provide a forum for meaningful dialog and propose innovative ways for faculty to incorporate URSCA as a regular part of our students' learning experiences. Maintaining curricular relevance and fostering an understanding and mutual respect for the disciplinary differences has been among their many activities. The College of Arts and Sciences looks forward to continued engagement in undergraduate research, scholarship, and creative activities, and to continually improving the educational experiences of our students.

James H. Mike, PhD
Dean, College of Arts and Sciences



**From the Dean,
John L. Grove
College of Business**

Minds@Work is a genuine experience on campus for our talented business students to get valuable research and presentation experience in which they collaborate with high-quality business faculty. The faculty in the John L. Grove College of Business are committed to high-quality standards of teaching and are very active in their specialty areas of research.

Minds@Work aligns with the mission of Grove College, which is to provide a high-quality and high-value comprehensive educational experience that prepares students to excel as principled leaders in today's global business community. Students participating in Minds@Work establish a working collaboration with peers/faculty members and gain valuable skills necessary to succeed in their future careers.

Student/faculty research teams are a win-win opportunity for those involved. They gain knowledge, have the opportunity to work with experts in their field via presentation and/or panel discussion at academic conferences, and have the opportunity to publish in peer-reviewed journal articles. Grove College faculty are committed to the highest teaching standards.

I am very proud of the John L. Grove College of Business faculty and student participation in 2018 and encourage more faculty/students to get involved in this worthwhile experience. Student experiential learning always will be a major focus of Grove College's strategic planning.

John G. Kooti, PhD
Dean, John L. Grove College of Business



From the Dean, College of Education and Human Services

The hallmark of the student experience in the College of Education and Human Services is *leadership through service*.

We are preparing professionals who will be transformative in their communities of practice and will serve the public good, whether in education, social work, counseling, exercise science, criminal justice, or military science. Research and inquiry provide our students

the foundation for being effective leaders in their chosen profession as they understand how to optimize the potential of individuals and groups. Creating a culture of inquiry during the collegiate experience is a signature commitment that the university and college supports for our students.

The Minds@Work Conference provides an opportunity for our students to showcase their emerging skills as scholar-practitioners and to capture the impact of research collaboration with faculty members. Our faculty are highly engaged in research that informs educational practices, human service delivery processes, criminal justice methods, and physiological facets of health. Our students benefit from our faculty's cultivation of their scholarly identities and the integration of professional and research-based experiences into the classroom environment. The growth and development of our students is nurtured by their participation in research projects that are frequently collaborative efforts with peers and mentored by faculty. One of our goals in the College of Education and Human Services is to "instill a sense of responsibility, commitment, and professionalism in our students who provide service to people and institutions." Research experiences at the undergraduate level expand our students' understanding of their responsibility to examine critical questions, apply critical thinking skills, engage in sequenced planning, and develop strategic problem-solving practices. These skills provide the necessary competencies for our students to be agile as committed professionals in fields that, by their very nature, serve complex, dynamic, and multidimensional individuals and systems.

The mission of the College of Education and Human Services is to "prepare students to become competent human service professionals by providing leadership directed toward encouraging collaboration to develop and apply theory, research, policy, resources, practices, and innovative models." Preparing our students to be leaders who serve is evidence of the highest level of ethical practice. Leadership through service positively impacts the students' professions and is accomplished by identifying, creating, and disseminating knowledge, respecting diversity, and valuing an attitude of life-long. Participating in research collaboration with faculty and the Minds@Work Conference positions our students to be prepared to tackle the demands of highly complex and change-driven professions while exemplifying the characteristics of leaders. I am proud of our faculty and students who actively pursue research inquiry and who elect to showcase their work in the Minds@Work Conference.

Nicole R. Hill, PhD

Dean, College of Education and Human Services

On Behalf of Faculty

I'd like to include one of Albert Einstein's quotes on my syllabus for HCS360: Research Methods in Communication:

"If we knew what it was we were doing, it wouldn't be called research would it?"

The production of knowledge through the research process means engaging in critical and creative thinking for which there often isn't a rubric or a checklist to follow. Instead, we grapple with uncertainty and learn how to interpret seeming failures and insignificance as one type of important outcome. Whether we are engaged in research as physical scientists, musicians, social scientists, artists or writers; whether we employ experiential or experimental designs; whether our findings are distilled in tables or expressed in performance art, when we engage in research we are engaged in the production of knowledge.

At Shippensburg University, we have transcended the Western model of higher education in which faculty members produce knowledge and impart that experience and information through lecture to their students. Instead, we lead the way in a collaborative construction of knowledge through the enterprise of faculty-student research across the disciplines that comprise our campus.

Engagement in the research process requires a commitment to a rigorous and time intensive enterprise that exceeds the normal scope of producing or assessing coursework, papers, and exams. Students who participate in both course based and co-curricular research projects are often found in labs, in meetings with group members and faculty mentors, and committed to the public presentation of their work. Faculty members who supervise students' research activities lend their expertise beyond the topics of the courses taught, teach modes of inquiry and investigation outside of their credit hour workload, and spend time preparing and guiding students for presentations at conferences such as Minds@Work. Faculty-student research is thus both a process and a product of our faculty's commitment to the engagement of our students in meaningful and transformative undergraduate education.

Einstein's question drives directly to the heart of research: The systemic yet messy, exhausting but exhilarating, forward moving but often circular, creation of knowledge. Research requires the courage to move beyond what we know and plunge in to uncertainty, using only a set of methods or procedures as a guide. With practice, training, and some good luck, we come to the other side and make a contribution to the collective knowledge. Here at Shippensburg University, we make that contribution together.

Kara Laskowski, PhD

*Human Communication Studies Department
APSCUF-SU President*





From the Institute for Public Service and Sponsored Programs

By time-honored tradition, research and public service are identified alongside teaching as essential components of a vital university. SU's Institute for Public Service and Sponsored Programs (IPSSP) serves as a behind-the-scenes research and service facilitator. We help students and faculty shape their research and project goals, and we then help find the funding needed to turn plans into reality.

We play an active role in making the university's commitment to student research and creative expression a fully realized endeavor. In addition to funding and coordinating the Minds@Work Conference, IPSSP oversees the annual Undergraduate and Graduate Research Grant Programs.

Student research and creative inquiry bring practical benefits because they represent firsthand experience in critical thinking, planning and project management, and communication. When these skills are challenged and focused through the mentorship of our dedicated faculty, we end up with the annual event known as Minds@Work.

To all of those involved in the endeavors resulting in today's conference, I say, "Thank you." Please enjoy the event and appreciate the hard work of all who made it possible.

Christopher Wonders, Director



From the Advisory Council on Student Research and Creative Activities

Research is about gathering evidence to inform our ideas about the world; ideas as complex as what types of environments produce successful humans to more (seemingly) simple questions, such as what type of toaster to buy. There is an unbelievable amount of information out there now, more accessible than it has ever been in human history. However, it often seems as if quantity has overtaken quality; it can be difficult to sort out what serves as good evidence and what does not. To make this determination takes critical thinking, which makes the opportunity to conduct research as a student such a valuable one. Students not only learn about the nuts and bolts of formal research, such as methodology and data analysis, but also learn how to make decisions by critically examining and evaluating available evidence. These skills can then generalize to decision making in everyday life.

The opportunities that students have to engage in research here at Ship are very exciting, and the colleagues that serve with us on the SU Council on Student Research and Creative Activities (CoSRaCA) are working hard to find additional means to support faculty-student collaboration on our campus. It is a highly worthy endeavor, as this type of experiential learning translates far beyond the classroom, and these students make a real difference in the world.

**Ben Galluzzo, PhD and
Kathryn Potoczak, PhD**

Co-chairs, Advisory Council on Student Research and Creative Activities

Advisory Council for Student Research and Creative Activities Committee 2017-2018

- Dr. Kathryn Potoczak, *Psychology*, Co-Chairperson
- Dr. Ben Galluzzo, *Math*, Co-Chairperson
- Dr. Marc Renault, *Math*, Ex Officio Chairperson
- Ms. Christy Fic, *Library*, Secretary
- Dr. William (Turi) Braun, *Exercise Science*
- Mr. Neil Connelly, *English*
- Dr. Allen Dietrich-Ward, *History/Philosophy*
- Dr. Alison Feeney, *Geography-Earth Science*
- Dr. Tom Frielle, *Chemistry and Biochemistry*
- Dr. Misty Knight, *Human Communication Studies*
- Dr. Eveline Lang, *Human Communication Studies*
- Dr. Robert Lesman, *Modern Languages*
- Dr. Kirk Moll, *Library*
- Dr. Joohee Sanders, *Exercise Science*
- Ms. Maggie Albro, *Library*
- Dr. Kathryn Shirk, *Physics*
- Dr. Sarah Stokely, Dean, *Academic Engagement and Student Support*
- Mr. Chris Wonders, *Institute for Public Service and Sponsored Programs*
- Dr. Ying Yang, *Sociology/Anthropology*
- Dr. Curtis Zaleski, *Chemistry and Biochemistry*

UNDERGRADUATE RESEARCH GRANT RECIPIENTS 2017-2018

Olivia Allen	Kyle Fields	Rachel McCarthy	Morgan Sedorovitz
Andrew Ambroz	Zackery Flinchbaugh	Candace Mekins	William Sellers
Paige Bankhead-Lewis	Kaitlyn Fox	Christopher Miller	Rachel Shaffer
Rita Benfer	Hunter Funk	Helene Miller	Enoch Shissler
Amanda Benner	Oscar Ghasab	Matthew Moyer	Alyssa Sitch
Tara Bicko	Thomas Haas	Sarah Nagy	Kaitlyn Spak
Dakotah Biller	Jesse Helman	Rebecca Narr	Noah Stewart
Gabrielle Binando	Shelby Henry	Katya Nolder	Emily Stottlemeyer
Nathan Bishop	Kali Hepner	Christopher O'Connor	Sarah Strause
Parker Bispels	Lauren Hodge	Joseph Oleski	Cheyenne Swope-Stitt
James Blair	Terri Hoover	Cody Olson	Megan Torbert
Patrick Boddicker	McKenzie Horn	Kayla Pasake	Adriana Townsend
Luis Broady	Dijana Katic	Mallory Patterson	Gaby Trinkle
Victoria Campbell	Abigail Kauffman	Tristan Phillips	Kristian Voulopos
Jonathan Campos-Cruz	Alexis Kline	Brooke Poe	Anna Warfield
Andrea Capitella	Brianna Kling	Cheyenne Port	Charles Waters
Adrianna Carboni	Bethany Krug	Jessica Querry	Thomas Weiss
Gino Coleman	Jason Laubach	Sean Reardon	Abigale Whitsell
Michelle Cousins	John Lowin	Tyler Rock	Kristina Wilson
Miles Dean	Emeleigh Luckenbaugh	Daniel Rosen	Lena Witthoff
Reece Dolbin	Makenzie Magnotta	Jacalyn Rosenberger	Adam Yosua
Megan Doleschal	Elizabeth Manickas	Heidi Ross	Lane Yutzzy
Michael Donovan	Megan Marquart	Brian Royer	
Josephine Dress	Nicole Martorella	Dylan Schreiner	
Emily Favinger	Angelica Masser	Kyle Schutt	

**Not all Undergraduate Research Grant Recipients will be presenting their research at this year's conference due to the timing of the conference and nature of their research.*

Undergraduate Research Grant Advisory Committee Members 2017-2018

G. Brad Armen	Jeb Kegerreis	Maggie Albro	Christopher Wonders
William (Turi) Braun	Emily Kramer	Christine Senecal	
Sara Grove	Greg Paulson	Josefine Smith	

EZRA LEHMAN MEMORIAL LIBRARY RESEARCH AWARD

The Library Research Award was developed in 2009 by the faculty and administration of the Ezra Lehman Memorial Library, in conjunction with the Institute for Public Service and Sponsored Programs and the Council on Student Research. The annual award recognizes the best literature review submitted by students who have received grant support for their participation in the annual Minds@Work Conference or by conducting other research with a faculty mentor. The first prize recipient receives a \$1,000 cash prize and the honorable mention recipient is awarded a \$500 prize. Commemorative posters will be made of the winners and the posters will be displayed in the library.

The Library Research Award is made possible by the generous support of Berkley and Carol Laite (SU Classes of 1967 and 1965, respectively). The winners will be announced and awards presented at the Kirkland/Spizuoco Memorial Science Lecture at 7:30 PM on Wednesday, April 25, at the Luhrs Performing Arts Center.

Minds @ Work

DEPARTMENTAL CONFERENCE PANELS



BIOLOGY**TIME: 3:30-6:30****LOCATION: MPR A*****Biology Student Research Session***

This session includes oral presentations by undergraduate and graduate student researchers in the Department of Biology. There will be sixteen presentations that highlight the range of topics from ecology to molecular biology. There are talks on the distribution and diversity of organisms, considering a variety of factors including physical and population characteristics. Detection and comparison of bacterial species in a variety of environments and host organisms will be discussed, including species that cause human disease when transmitted via vector organisms such as ticks or as foodborne pathogens. The regulation of tRNA production and degradation in yeast will be presented, and connections between the cellular recycling process of autophagy and release of cellular contents via exosomes will be examined.

Erika Coover, Hannah Roos, Sam Govan, Joshua Frost, Claudia Knutelsky, Jacalyn Rosenberger, Noah Stewart, Anna Warfield, Bryanna Dissinger, Amanda Benner, Kayla Pasake, Alexis Kline, Oscar Ghasab, Andrew Ambroz, Thomas Haas, Miles Dean, Matthew Moyer, Lane Yutzy, Brianna Kling, Brooke Poe, Christopher O'Connor, Kaitlyn Fox, Kaitlyn Spak, Kali Hepner, Alyssa Sitch, Kristian Voulopos, Morgan Sedorovitz, Lauren Hodge, Abigale Whitsell, Emily Favinger, and William Sellers

Faculty Sponsor(s): Dr. Sherri Bergsten

CHEMISTRY AND BIOCHEMISTRY**TIME: 4:00-5:45****LOCATION: 232*****Undergraduate Research Projects in Chemistry and Biochemistry***

This symposium will focus on the research projects performed by undergraduate students in the Department of Chemistry and Biochemistry. Research projects will include topics from the disciplines of analytical chemistry, biochemistry, inorganic chemistry, organic chemistry, and physical chemistry.

Elizabeth Manickas, Dylan Schreiner, Megan Doleschal, Brandon Hockenberry, Rachel Shaffer, Charles Waters, and Dakotah Biller

Faculty Sponsor(s): Dr. Dan Predecki

TIME: 6:00-7:00**LOCATION: AIRPORT LOUNGE*****Biochemistry Class Poster Projects***

One of the roles of scientists is to communicate ideas to other scientists and the general public. In order for biochemistry students to practice presenting scientifically complicated concepts we have an annual biochemistry poster session where faculty critique the students' presentations. This session will provide the opportunity for these students to present their studies to the general public. Students research a general biochemical topic and read and understand journal articles related to that topic. They put this information together into a poster they can orally present. Topics presented will include

information on things like why snake venom is toxic, how a low carbohydrate diet leads to weight loss, how various medications work and many more.

Alexander Beam, Dakotah Biller, Brittani Bishop, Patrick Boddicker, Kathleen Bolan, Thomas Bonitz, Nicole Breighner, Bryanna Dissinger, Mary Erdman, Emily Favinger, Kaitlyn Fox, Joseph Gallant, Colyn Heim, Lauren Hodge, Tatiana Mora, Mary Newman, Adrienne Paey, Hallie Pennington, Brooke Poe, Sven Ramstrom, Lucas Rankin, Morgan Sedorovitz, Alyssa Sitch, Kaitlyn Spak, Kristian Voulopos, Charles Waters, Lena Witthoff, Lane Yutzy, Megan Doleschal, Elizabeth Manickas, Dylan Schreiner, William Sellers, Rachel Shaffer, Abigale Whitsell, Teddy Aurand, Analise Ciuppa, Troy Getty, Samantha Hartey, Brittany Howell, Elder Jean Baptiste, Jakob Keeney, Claudia Knutelsky, Bethany Krug, Kasey Long, Nathan Morris, Kelly O'Brien, Courtney Shuck, Mary Trahey, Cecilie Beideman, William Calvert, Edmond Duso, Oscar Ghasab, Michael Lee, John Lowin, Courtney Marx, Jesse Nitchkey, Abigail Nolan, Christopher O'Connor, Kayla Pasake, Robert Sunderland, Kaitlyn Tuckey, Olivia Turner, and Miriam Volk

Faculty Sponsor(s): Dr. Tom Frielle and Dr. Robin McCann

COMMUNICATION/JOURNALISM**TIME: 7:00-8:30****LOCATION: ORNDORFF THEATRE*****Student Showcase***

Communication/Journalism students will present and discuss their work in the electronic media, print, and online media and public relations emphases. Featured work will include print, photo, video, audio, and multimedia projects that showcase the multifaceted skills of our undergraduate students.

Jamison Barker, Kaylee Beattie, Blair Garrett, Brendan Gates, Nolan McGraw, Sylvia McMullen, Alyssa Riegel, Matthew Trust, Madeline Walsh, and William Whisler

Faculty Sponsor(s): Dr. Michael Drager and Dr. Carrie Sipes

COMPUTER SCIENCE AND ENGINEERING**TIME: 5:45-6:15****LOCATION: 103*****Analyzing and Visualizing Data Gathered from Water Sensors around Wallops Island***

The Computer Science and Engineering Department and the Geography/Earth Science Department have partnered with the Marine Science Consortium, NASA, and US Fish and Wildlife Service to build a system to study the waterways around Wallops Island and the Chincoteague Island. In this presentation, the software engineering students will be demonstrating a web site they have developed that is designed to help the scientists and the environmental managers study the data that the sensors gather. Using the Google Satellite API, the data is displayed on satellite images of the area allowing the user to see trends across the region in addition to data specific to each sensor. The goal is to give users a view of the current state of the water, visualizations of how that state changes over time, and raw data from the sites for external analysis.

Ben Lehman, Zachary Semanco, and Stephen Clabaugh

Faculty Sponsor(s): Dr. Carol Wellington

COUNSELING AND COLLEGE STUDENT PERSONNEL

TIME: 3:00-3:45

LOCATION: 232

Archetypes of Social Advocates

The purpose about our ongoing study is to understand the ways in which social advocates perceive or experience their work as an archetype. It is a qualitative research project conducted by a group of graduate students in the Counseling and College Student Personnel Department and has received a graduate student research grant. We are currently in our second round of interviews and have started to extract themes, which we hope to have made significant progress on by the time of the Minds@Work conference. During the event, we were hoping to get the opportunity to talk about our research and its current status in the form of an oral presentation accompanied by a slideshow.

Stina Niemann, Julia Dematatis, Rosemarie Owoc, Anyea Abney, Alexandria Honsberger, and Olohire Oyakhire

Faculty Sponsor(s): Dr. Matthew Shupp

ENGLISH

TIME: 3:30-4:30

LOCATION: 104

Creative and Critical Responses to Modern World Dramatic Literature

Mixing critical commentary with recorded video performances and performed readings of scenes from contemporary student adaptations, the session presents responses to modern dramatic writing from around the world selected from the work of students in a fall 2017 class. Plays touched upon will include those by Büchner, Ibsen, Synge, and Beckett. Anyone interested in theatre and performance should find the session of interest.

Ryley Flanagan, Seth Flagle, and Trent Betham

Faculty Sponsor(s): Dr. Thomas Crochunis

TIME: 4:45-5:45

LOCATION: 104

Memory and Literature: Student Panel

Featuring interdisciplinary projects by students in an Honors general education literature class, the session offers a number of different perspectives on the interaction between memory and literature. Presentations may include some that focus on approaches informed by a variety of disciplines—the social sciences, history, and literary studies. Anyone interested in literary studies or the role of memory in the human experience should find the session of interest.

Paige Steffy, Alec Stimson, Nishi Natalia, Grace Tothero, Jeffrey Beyer, Matthew Cook, Brandon Hockenberry, Brianna Kling, Kaylyn Lampel, Jessica Schlesiger, Rachel Scull, and Nicole Shelton

Faculty Sponsor(s): Dr. Thomas Crochunis

TIME: 7:00-8:00

LOCATION: MPR A

Poetry: The Power of Voice

This panel features original work by writers in Introduction to Poetry Writing (ENG 307). Students will showcase a variety of unique voices and styles inspired by contemporary poetics, politics, women, America, and responses to inequality. The power of voice and individuality rise up and through these poets to remind us to listen to each other. The art of language and the craft of poetry at its best create powerful expression.

Bailey Albert, Kaylee Beattie, Kayla Bethea, Kamillah Burnett, Courtney Caro, Anthony Franklin, Jenna Hevner, Terri Hoover, Kady Keck, Shreya Long, Karen Mason, Erica McKinnon, Manuel Ortiz, Najiyah Roberts, Katlyn Stern, and Kaitlyn Wilson

Faculty Sponsor(s): Dr. Nicole Santalucia

TIME: 5:30-6:45

LOCATION: ORNDORFF THEATRE

Poetry Reading: Voice Matters Now

This panel features poets from Dr. Santalucia's Advanced Poetry Workshop (ENG 427). Students will present original poetic work that responds to the politics of the personal, the importance of place, and everything human. The art of description at its best is an expressive and shared moment. Come hear the sound of Shippensburg University rise off the page.

Korina Bachman, Christopher Carragher, Dwayne Ellis, Jessica Epstein, Emily Erby, Nastassia Foose, Rachael Henderson, Ali Laughman, Denice Lovett, Rebecca Masterson, BreeLynn Myers, Paul Pepi, Kate Saboe, Andrea Stock, Dishawn Vance, Joe Smith, and Colin Runge

Faculty Sponsor(s): Dr. Nicole Santalucia

TIME: 3:30-5:15

LOCATION: ORNDORFF THEATRE

Seminar: Writing and Representing Reality

This panel will combine the English Senior Seminar class (English 460) and the Honors Seminar 392 (1). Students will be performing/presenting work for their capstone seminar project. Each group will perform a short script (or some kind of researched performance) in response to an important issue that impacts our current society/culture.

Patrick Boddicker, Victoria Campbell, Joshua Coffey, Jennifer Farner, Jacob Gillespie, Moriah Hathaway, Patrick Hiller, Kelsey Kohler, Curtis Lamp, Rhiannon Leonard, Shannon Long, Samantha May, Morgan Mellott, Jessie Nagle, Sarah Nagy, Kristin Naumann, Jenna Neiderer, Amelia Rhoads, Daniel Rosen, Enoch Shissler, Rachel Smith, Matthew Troxell, Courtney Weaver, Korina Bachman, Abigail Cox, Courtney Hoch, Terri Hoover, Andrew Hought, Alexandra Knepper, Haley Krause, Henry Le, Casey Leming, Karen Mason, and Colin Runge

Faculty Sponsor(s): Dr. Sharon Harrow

EXERCISE SCIENCE**TIME: 3:30-5:30****LOCATION: 239***Mechanical Analysis of Sports Skills*

This panel features a selection of noteworthy student projects from the Mechanical Analysis of Sports Skills course (ESC 244). The session highlights the variety of interests of our students and includes the sports of track and field, baseball, boxing, wrestling, weightlifting, and softball. Presenters will provide background information, describe the methods used to examine the skill, and then share the results of their field-based research. The ESC 244 course provides students in the exercise science major and coaching minor with initial experiences in the research process. The presentations in this session showcase the students' first venture into research projects in the discipline.

Erica Helm, Madeline Mulhall, Dominic Stroh, Cash Gladfelder, Kathleen Mirgon, Evan Anthony, Dinh Bui, Dustin Steffenino, Christopher Miller, Kelsy Fitzgerald, Kaila Ocker, Ryan Narber, Christa Sebeck, and Kaitlin Yealy

Faculty Sponsor(s): Dr. Ben Meyer

GEOGRAPHY/EARTH SCIENCE**TIME: 5:00-6:00****LOCATION: 238***Assessing Groundwater Level Changes with Respect to Hydroclimatic Variables and Groundwater Withdrawals in Pennsylvania*

Throughout Pennsylvania, groundwater is relied upon for several uses, including domestic consumption, municipal supply, irrigation, mining, and industrial. In fact, rural Pennsylvania relies nearly exclusively on groundwater. The world over, groundwater resources are becoming increasingly stressed from high demand due to population growth, climate change and variability, land use changes, and urbanization. Whether this critical resource for Pennsylvanians is equally stressed can only be ascertained through collecting and analyzing groundwater and other associated hydroclimatic data. This study undertakes a time series analysis of daily groundwater level data in seventy-three monitoring wells across the state, provided by the USGS. Also analyzed are precipitation and groundwater withdrawal data covering different spatial scales across the state. Results will provide an overall picture of the groundwater situation in Pennsylvania with respect to climate and anthropogenic forces.

Heidi Ross

Faculty Sponsor(s): Dr. Joseph Zume

HISTORY/PHILOSOPHY**TIME: 4:30-5:30****LOCATION: 103***Monsters and Demons in Medieval Europe*

Each of these projects in one way or another deals with negatively constructed characters, some of whom are quite literally demons, others who are demonized by their cultures. Nicole Shelton's work focuses on the role of exorcism, showing how the Catholic Church utilized beliefs about demonic possession to gain power. Stephanie Barnett looks at a group of Cathars, Christian heretics who dealt with their demonization by the Church partly by developing cogent intellectual arguments to support their doctrines. Emily Schoenberger's medieval monsters are the women in the epic poem

"The Nibelungenlied," whose appearance mainly drives the action and characterization of the men in the work. Finally, Emily Slothower concludes that the behavior of the Spanish rulers of 1492, working complicity with a repressive Catholic Church, was ultimately a monstrous behavior, attacking the people and culture of Jewish and Muslim faiths.

Nicole Shelton, Stephanie Barnett, Emily Schoenberger, and Emily Slothower

Faculty Sponsor(s): Dr. Christine Senecal

TIME: 3:30-4:30**LOCATION: 119***New Perspectives in Social, Cultural, and Political History*

This panel features original, undergraduate research projects in the fields of social, cultural, and political history that were completed in the fall of 2017 for History 203: Theory and Practice of History. Kristian Carter will analyze the ways in which Orrin C. Evans used the publication *All-Negro Comics* following World War II to challenge traditional racist portrayals of African Americans. Kai Delp will closely examine the impact that the Pottawatomie massacre had on American debates over political violence and slavery during the Antebellum Period. Collin Gardner will trace the shifting attitudes of Franklin County Republicans on the issues of slavery and race during the Civil War and Reconstruction. And Samuel Tomblin will closely analyze the role that pamphleteers played in challenging traditional medical thought and ideas about the transmission of disease during and immediately after the Great Plague of London in 1665.

Kristian Carter, Kai Delp, Collin Gardner, and Samuel Tomblin

Faculty Sponsor(s): Dr. David F. Godshalk

TIME: 3:30-4:30**LOCATION: 103***Region and Religion in the Ancient World*

The three papers here each focus on the interaction of religion and culture in the Ancient World, and comprise original research projects undertaken in first-year history courses. Matthew Cook examines the ways in which Buddhism spread to China, and argues that changes to Buddhism happened primary for philosophical reasons, and not because of any political pressures. Erika Otthofer comes to a different conclusion in her research regarding the legend of El Cid. Comparing three different accounts from medieval Spanish sources, Erika shows definitively the ways that the famous Catholic leader El Cid was remembered had much to do with the political situation of contemporary authors. Finally, Brianna Miley's work on Jewish Memory of the Babylonian Exile argues that there were common themes about this era that Jewish writers across time emphasized. Each of these authors uses sources from the time periods involved to showcase the interaction of politics, theology, and memory.

Matthew Cook, Brianna Miley, and Erika Otthofer

Faculty Sponsor(s): Dr. Christine Senecal

HUMAN COMMUNICATION STUDIES

TIME: 8:00-9:00

LOCATION: 119

The Elephant in the Room: Understanding Relational Perspectives and Identities

Individual identities and relationships are situated within cultures. The expression of identity—whether between people or through mediated messages—has significant implications for individuals and culture. This panel features research grounded in a critical-cultural view of the self and communication, with emphasis on the expression of controversial issues, and how those interactions have consequences for the self.

Mary Spisak: Examining heterosexual and homosexual relationships on college campuses; Brittany Ort: Short term and long term effects of bullying on communication patterns; Karla Moses: African American women in the media: Consequences for work; Tylik Guilford: Discourse of racial profiling during routine traffic stops; Sianni Scott: Colorism in the African American community

Mary Spisak, Brittany Ort, Karla Moses, Tylik Guilford, and Sianni Scott

Faculty Sponsor(s): Dr. Kara Laskowski

TIME: 7:45-9:00

LOCATION: 105

Group Cohesion and Anxiety

Every intro level course for human communication requires some sort of group project, and often times it spans the whole year leading up to a final presentation. We believe that if each communication consultant is assigned to one HCS 100 class to work with the groups, final outcomes will be more desirable. We are researching the question: Does tutoring positively affect group cohesiveness and decrease anxiety when working in groups in HCS 100 classes at Shippensburg University?

Andrea Capitella, Candace Mekins, Terri Hoover, Tyler Rock, and Victoria Campbell

Faculty Sponsor(s): Dr. Misty Knight

TIME: 6:30-7:45

LOCATION: 105

Image Construction and Identity Management

Participants will discuss a variety of subjects as they relate to image development as viewed through the lens of a chosen method of rhetorical criticism. Individual presentations will concentrate on the impact of photographs on the Shippensburg University website, Apple's response to product recalls, former NFL player Ricky Williams, Dr. Martin Luther King Jr.'s rhetoric, and how the Truman Doctrine shaped America's view of "the other."

Kelsey Deemer, Antonio Lemme, Brendan Murray, Jonathan Hopple, and Jared Eveler

Faculty Sponsor(s): Dr. Misty Knight

TIME: 5:45-6:45

LOCATION: 119

Interpersonal and Computer Mediated Communication

This panel explores the key differences between computer mediated and face-to-face communication in a variety of contexts and relationships. Through qualitative and quantitative approaches, students examine the motivations for use of CMC and f2f interaction, and interrogate the consequences of each for individuals and their relationships.

Candace Mekins: CMC and interpersonal communication between college students; Crystal Hartman: Cyber harassment; Macy Luck: First impressions: Online vs face-to-face; Dalton Hoiles: Faculty office hours and students' use of e-mail.

Candace Mekins, Crystal Hartman, Macy Luck, and Dalton Hoiles

Faculty Sponsor(s): Dr. Kara Laskowski

TIME: 4:45-5:45

LOCATION: 119

Organizational Communication: Change, Collaboration, Climate and Culture

This panel explores communication within organizations, with emphasis on employer-employee communication. Student researchers interrogate cultural values expressed in organizational communication, the expression of power in hierarchical relationships, and the responses to verbal abuse in the workplace. This panel features a variety of methodological approaches that problematize organizational and communication climate and highlight the potentials for positive change.

Danielle Wineberg: Verbal abuse in employee/employer relationships; Emma Whelan: The organizational hierarchy; Jacob Qawasmy: Supervisor and subordinate communication; Tyler Marshall: Generational values and culture

Danielle Wineburg-Nelson, Emma Whelan, Jacob Qawasmy, and Tyler Marshall

Faculty Sponsor(s): Dr. Kara Laskowski

TIME: 7:00-8:00

LOCATION: 119

The Side of Sports You Don't See: A Critical Analysis of Athletic Culture

Communication between coaches and athletes, and between players, has the potential to make or break a team. This panel brings together research that focuses on communication in the context of sport in order to advance understanding of how the interaction between and among coaches and athletes can empower and improve, or undermine and undercut performance.

Taylor Johnson: Player and coach communication: Trust and disclosure; Richard Nase: Verbal abuse between coaches and athletes; Jordan Howard: Communication in relationships on and off the field

Taylor Johnson, Richard Nase, and Jordan Howard

Faculty Sponsor(s): Dr. Kara Laskowski

TIME: 3:30-4:45**LOCATION: 105*****Popular Culture as Examined through Rhetorical Criticism***

Participants will discuss a variety of subjects as they relate to communication constructs viewed through the lens of a chosen method of rhetorical criticism. Individual presentations will concentrate on college campus “hook up” culture, the popular self-help book *What Color is your Parachute?*, gender constructs in Disney princess movies, metaphors in Disney’s *The Lion King*, and gender differences among the Smash community.

Jonathan Quann, Elizabeth McCurdy, Gabriella Cruz, Damon Brinkley, and Emma Starr

Faculty Sponsor(s): Dr. Misty Knight

TIME: 5:00-6:15**LOCATION: 105*****The Rhetoric of Social Movements***

Participants will discuss a variety of social justice movements or societal concerns as they relate to communication constructs viewed through the lens of a chosen method of rhetorical criticism. Individual presentations will concentrate on media portrayals of race, the #MeToo movement, the impact of documentaries about environmental concerns, the #BlackLivesMatter movement, and portrayals of substance abuse in music.

Emmanuel Span, Victoria Simmons, Andrea Capitella, Edward Gillespie, and Luis Pagan

Faculty Sponsor(s): Dr. Misty Knight

MANAGEMENT/MARKETING/ ENTREPRENEURSHIP

TIME: 6:00-6:15**LOCATION: 104*****Enhancing Understanding of World Englishes by Native English Speakers Working in Global Virtual Teams***

Communication is one of the central challenges facing those who work in global virtual teams (GVTs). Most often, the main language of communication in these teams is English but team members usually have very different levels of proficiency or speak versions of English unfamiliar to many American based students and professionals. Much effort has been expended and research has been conducted in helping people to learn foreign languages to enhance communication, and in helping non-native speakers of English enhance their ability to communicate in English. Very few have looked at the issue from the side of the native English speaker. This research presents a series of classroom exercises developed to help native speakers of English improve their abilities to understand non-native speakers and native speakers of non-American Englishes and then measures the perceived effectiveness of these exercises in the context of participation in actual global virtual teams.

Jan Striewe

Faculty Sponsor(s): Dr. Robert Stephens

PHYSICS

TIME: 5:00-6:00**LOCATION: 238*****Commercial Drone (Quad-Copter) Modified with Low-Cost Devices to Deliver a Payload***

Drones are simple, yet complex devices that can transport goods over long distances in a short amount of time as they are small, “low” cost, and travel at a high velocity. Some drones, like the DJI Phantom, can be modified with affordable materials, circuits, and programmable hardware that can be designed to carry different payloads up to 1 kilometer and keep said payload secured. Challenges to modifying a drone include its limited lifting capacity and the fact that the size of the package carrier can obscure the thrust. Design of the package carrier to minimize this problem, while still securing the payload, is also a challenge. The objective of this research project was to provide an example of how commercially available drones can be modified with readily available material. With the successful testing of the drone, we can now deliver payloads such as pizzas with little effects of traffic and reduce the amount of time required for pizza deliveries.

Gino Coleman

Faculty Sponsor(s): Dr. Kathryn Shirk

POLITICAL SCIENCE

TIME: 4:30-5:45**LOCATION: 226*****Climate Change, Energy Policy, and Taxation***

This panel will examine three current policy issues in the United States: climate change, energy policy, and taxation.

Julia Frey, Sarah Lewis, Desiree Stevens, and Rebekah Lyash

Faculty Sponsor(s): Dr. Mike Moltz and Dr. Sara Grove

TIME: 3:30-4:45**LOCATION: 238*****Comparative Politics: Drugs, Health Care, Immigration, and Failed States***

This panel will examine immigration policy, health care delivery, drug policy, and the concept of failed states in a comparative perspective.

Andrew Paladino, Cameron Capote, Brianna Petitti, and Aboubacar Keita

Faculty Sponsor(s): Dr. Cynthia Botteron and Dr. Lonce Bailey

TIME: 3:30-4:30**LOCATION: 226*****Issues in the Caribbean and the Western Hemisphere***

The panel is comprised of students who have attended and participated in the Washington Model Organization of American States. As part of their preparation, each student has thoroughly researched topics, such as environmental degradation, food security, human trafficking and corruption, which affect the Caribbean and the entire Western Hemisphere. Participants will outline and discuss these significant issues and problems and the role small countries, such as Trinidad and Tobago, play in addressing the challenges. The panel will discuss problems, challenges, and possible solutions in the context of regional diplomacy.

Patrick Carney, Quentin Clapper, Hayden Fulton, Sarah Lecher, Hayden Milam, Sophia Severson, Alexis Wolfe, and Imogen Wright

Faculty Sponsor(s): Dr. Mark Sachleben and Dr. Sara Grove

TIME: 5:45-7:15

LOCATION: 226

Race and Gender: Issues in Voting, Immigration, Drug Policy, and Education

This panel will discuss how race and gender have an impact on voting behavior, and policies relating to immigration, drug prosecution, and education in the United States.

Marcus Spence, Savannah Plant, Darnalious Brown, Adam Friscia, and Madeline Mulhall

Faculty Sponsor(s): Dr. Sara Grove and Dr. Cynthia Botteron

TIME: 7:15-8:45

LOCATION: 226

Venezuelan Politics

Students will discuss contemporary politics in Venezuela based upon their research and experiences at the Washington Model Organization of American States in March 2018.

Santiago Serrano, Ariadne Retzer, Caroline Fruchter, Moriah Hathaway, and Lucas Smith

Faculty Sponsor(s): Dr. Sara Grove and Dr. Mark Sachleben

SOCIAL WORK AND GERONTOLOGY

TIME: 6:00-7:00

LOCATION: 232

Resident Experiences of Living in Public Family and Senior Housing

An asset based community assessment model was utilized in implementing a community assessment among public family and senior housing by social work graduate students enrolled in Macro Practice in spring 2018. The panel discussion will identify the research process, design, and data analysis. While the project is just kicking off, the plan is to utilize door-to-door surveying methods in public family housing and focus groups in public senior housing to gather feedback on resident experiences. While presentation findings will be disseminated to service professionals working with low income populations, students will learn how social service providers walk between roles of being social control agents and human rights defenders.

Alicia Colon, Daniel Drachbar, Krystal Griffiths, Alexis Harbour, Sarah Herman, Emily Hutton, Victoria Karnas, Taylore Kerns, Marissa Kosko-Blyler, Morgan Kunes, Bria Mosley, Sonja Payne, Natalie Wismer, and Gigi Yelton

Faculty Sponsor(s): Dr. Dorlisa Minnick

SOCIOLOGY/ANTHROPOLOGY

TIME: 6:30-8:00

LOCATION: 103

Sociological Examinations of Disability

Disability is a social construct; in other words, we as a culture decide what it means to have a disability and how to respond to disability. Sociology examines the construction of disability in a variety of way, including analyzing policy responses to disability, media representation of people with disabilities, social movements that strive to change responses to disability, and the impact of disability on the lived experience. This panel represents each of these sociological approaches to disability and thereby illuminates a broad spectrum of sociological approaches to understanding disability as well as findings about disability in American culture.

Julie Price, Kara Killion, Henry Le, Marquis Matthes, Caitlyn Reese, and Colleen Driscoll

Faculty Sponsor(s): Dr. Allison Carey

Minds @ Work

HONORS SYMPOSIUM



Honors Symposium

Honors Seminar Room, Harley Hall

The Honors Symposium is the formal forum where Honors Program seniors present their capstone projects. The research, creative, and service-learning projects that our students are presenting today represent the culmination of their academic experience in the Honors Program. Thank you for joining us to learn about their projects and acknowledge their hard work!

ART AND DESIGN

TIME: 4:00-4:45

Friend or Food: Realities of the Meat Industry

This project uses a visual format to educate viewers about the impact of the meat industry. This creative approach is designed to display the impact of the meat industry on the animals that are used for meat. I illustrate several issues affecting the three main animals in the meat industry: cows, pigs, and chickens. I use three-dimensional forms on a two-dimensional surface in combination with the elements of art and principles of design to convey the issues. The issues reflected in the body of work will be represented from the standpoint of the animal. Accompanying the body of work will be an informational brochure highlighting the issues represented in the individual works.

Samantha Hillmuth

Faculty Sponsor(s): Dr. William Whiteley and
Dr. Michael Campbell

BIOLOGY

TIME: 6:30-7:30

Prevalence of Internal Helminths in Pennsylvanian Wild Canids

Our team examined the occurrence of various internal parasites in wild red fox, grey fox, and coyote fecal samples collected in Pennsylvania. We opportunistically obtained samples primarily from two large-scale wild canid hunts that took place in Cresson and Mosquito Creek. Our sample size consisted of the intestinal content from 397 individual canids, representing a near totality of the state. This project was designed to be a preliminary fact-finding mission into the current infection rate of harmful internal parasites, which can be used to communicate the risks that hunters/outdoorsmen may face when coming in close direct or indirect contact with these animals. Intestinal parasites can be detected even with a minuscule volume of fecal matter collected. Secondary goals of this process are to test the efficacy of a less intrusive method to remove samples and also to compile a definitive checklist of egg sizes to aid future studies in identification.

Macklin Hawkins

Faculty Sponsor(s): Dr. Richard Stewart

TIME: 6:30-7:30

Impact of CRISPR Modification of Endogenous Beclin-1 on Autophagy in Glioma Cells

Autophagy is a cellular process used for recycling, maintaining energy stores, and protecting the cell through targeting and degradation of old or damaged proteins and organelles. Cancer cell lines often show abnormal levels of autophagy. The main purpose of this project is to understand the regulation of Beclin-1 as it relates to autophagy. This presentation will detail a novel approach that uses CRISPR to endogenously tag genes of interest. The ability to easily determine expression levels using these tags will allow for rapid quantitation of regulation under various conditions. The elucidation of how cancers alter autophagy levels will give insight into possible treatment mechanisms.

Enoch Shissler

Faculty Sponsor(s): Dr. Sherri Bergsten

CHEMISTRY AND BIOCHEMISTRY

TIME: 6:30-7:45

Determination of the Pathway Leading to Zonula Occludin 1 Phosphorylation and Subsequent Tight Junction Alteration in Diabetic Retinopathy

Diabetes mellitus is a common metabolic disease in which aberrant control of glucose uptake can generate a variety of physiological issues. One problem associated with this disease is the onset of diabetic retinopathy, a condition in which the loosening of tight junctions between endothelial cells within the eye allows for the flow of blood and toxins into the retina, causing blindness. The aim of this study is the determination of possible participation in the mitogen-activated protein kinase pathway of phosphorylated Zonula Occludin 1 (ZO-1), a known contributor to the alteration of retinal tight junctions potentially following vascular endothelial growth factor signaling associated with onset of diabetic retinopathy. Determination of this participation was carried out using common biochemical techniques in an appropriate cellular model: quantitative protein assay, immunoprecipitation, sodium dodecyl sulfate gel electrophoresis and subsequent Western Blot analysis.

Rachel Shaffer

Faculty Sponsor(s): Dr. Robin McCann

TIME: 5:00-6:00

Synthesis and Characterization of Aza-Diels-Alder Products

Aza-Diels-Alder reactions are a dependable method for synthesizing six-membered ring structures in organic synthesis. Danishefsky's diene was reacted with several electron-withdrawing imines in an effort to produce multiple quinolones. Under the reaction conditions, product yields increased with increasing electron-withdrawing strength. Products were purified by column chromatography and characterized by 1D and 2D nuclear magnetic resonance spectroscopy.

Brandon Hockenberry

Faculty Sponsor(s): Dr. Dan Predecki

COMMUNICATION/JOURNALISM

TIME: 2:00-2:30

The Creation and Implementation of an Honors Multimedia Marketing Campaign

Video content has become an integral part of how businesses engage with their consumers. The budding fields of “brand journalism” and “content marketing” prove that businesses are employing workers with a full-time dedication to making top-notch video content. Through a creative project, I hope to use skills acquired as a communication/journalism major to make high quality video content for use on the honors website to engage current and prospective students. By showcasing the diversity of backgrounds of current honors students, I hope to show prospective students that no matter what field piques their interests, the Honors Program can enhance their academics and help them reach their goals.

Jacob Gillespie

Faculty Sponsor(s): Dr. Kim Garris

COMPUTER SCIENCE AND ENGINEERING

TIME: 5:00-6:00

The Prevalence and Impact of the “QWERTY Effect” on the Russian Language

This project intended to extend the scope of the “QWERTY Effect” to the Russian language. The “QWERTY Effect” is the idea that we perceive words made up of more right hand characters as positive and vice versa coupled with an observable and continued rise in Right Side Ratios (RSR) over time. This effect has been observed in many Roman-character languages but has not been observed or extended outside of those languages. This study uses various tests such as baby name usage over time and RSR’s link to positivity in product reviews. The results of these analyses can be used to determine the “QWERTY Effect’s” prevalence in the Russian language and will help to extend the research on the “QWERTY Effect.”

John Bucher

Faculty Sponsor(s): Dr. Alice Armstrong

TIME: 6:30-7:45

Particle Swarm Optimization: An Alternative to the Standard Solution to Storage Location Assignment Problem

My research focused on working with a distribution warehouse to optimize the locations of items in the warehouse so that the number of pallets needed to ship these items would be reduced. In general, this problem is known as the Storage Location Assignment Problem (SLAP). The common solution to SLAP is to use Genetic Algorithms (GAs). This research implements and compares both a GA and an alternative evolutionary algorithm: Particle Swarm Optimization (PSO). The purpose of this research is to implement a typically unexplored solution and compare it to the common approach. One of the key aspects of this research is to provide a fair comparison between the two algorithms. To ensure that one algorithm is not advantaged

over the other, the hyperparameters for each algorithm are selected using cross-validation. The two algorithms are then compared using the highest performing combination of hyperparameters for each on a hold-out set of data.

Curtis Lamp

Faculty Sponsor(s): Dr. Carol Wellington

TIME: 6:30-7:30

Producing Domain-General Intelligence in Super Mario World Using the NEAT Neural Network Algorithm.

Training an artificial intelligence (AI) may lead to over-fitting. This potentially yields poor results when the AI is tested against a new, previously unseen case. For example: a game playing agent that trains on one level will do poorly when tested on a new level. Domain-general intelligence, the ability to generalize information, is a solution to this problem; however, is it hard to produce due to a lack of algorithms available, and a requirement of a deterministic and stable training environment. This paper discusses required background information on neural networks, NEAT neural network algorithm, and research results on testing for domain general intelligence in Super Mario World (USA).

Jessica Schlesiger

Faculty Sponsor(s): Dr. Alice Armstrong

TIME: 5:00-6:00

Improving the Performance of Web Cache Replacement with Machine Learning

Web caching, the storage of copies of highly-requested web objects in intermediate locations across the Internet, is important with the rapid growth of web-based technologies in recent years. This research focused on cache replacement, which involves determining the optimal items—those with the smallest impact on performance—to remove from a limited-size cache to make room for newly-requested objects. The performance of the traditional Least Recently Used cache replacement algorithm was compared to that of a machine-learning-augmented algorithm referred to as Naïve Bayes-enhanced Least Recently Used, where the latter factors in the likelihood that a given object will be requested again in the future. A Naïve Bayes classifier predicts this likelihood from object characteristics such as size, type, and frequency of appearance. Initial findings suggest that the performance of supervised machine learning alternatives can differ significantly from traditional cache replacement algorithms.

Joshua Varone

Faculty Sponsor(s): Dr. Alice Armstrong

ENGLISH**TIME: 4:00-4:45*****Hairspray: A Case Study on Overcoming Discrimination***

The show *Hairspray* has become a popular musical around the world because it is so widely known and watched. This musical is not only entertaining, but exhibits inspiration surrounding discrimination for our society. There are four versions of the show, including the 1988 film, 2002 Broadway Musical, 2007 musical movie, and 2016 *Hairspray Live!* The process of creating a show is detailed in order to understand how each medium is presented, either through a movie, musical, or television special. The research includes how each version of *Hairspray* displays discrimination as a social issue differently and makes it a top priority using characters, certain scenes, song choices, and setting.

Samantha May**Faculty Sponsor(s):** Dr. Carla Kungl**FASHION ARCHIVES AND MUSEUM****TIME: 3:30-4:30*****Sewing for Family and Freedom in Ante-Bellum New York: Constructing a Narrative from Mary Morgan's Account Book***

Mary Elizabeth Steele Morgan (1820-1883), the wife of well-known sociologist Lewis Henry Morgan (1818-1881), would be relegated to the status of devoted spouse were it not for the chance survival of her expense account book, which the Shippensburg University Fashion Archives and Museum currently houses. Between 1851 and 1860, Mary carefully recorded all of her expenses, and close analysis reveals a meticulous woman who noted every purchase related to fashion and clothing alterations. This attention to detail demonstrates her use of costume to display the family's wealth and social status. Additionally, Mary strategically utilized her sewing abilities, a skill often connected to the concept of femininity and domesticity, to enter the public sphere as an advocate for the Abolitionist movement. This research reveals a woman dedicated to implementing social change while adhering to established fashion protocol and domestic responsibilities.

Emily Bach**Faculty Sponsor(s):** Dr. Karin Bohleke**HISTORY/PHILOSOPHY****TIME: 3:30-4:30*****Christianity as a Tool for Understanding Hinduism in British India***

Throughout their global empire, the British had intimate contacts with a myriad of different cultures, languages, and religions. In no place was this more true than in India where the largely Christian British ruled over millions of Muslims and Hindus. Of these two great religions, Hinduism seemed by far the more alien of the two. One of the most common ways that the British engaged and understood Hinduism was in the context of their own Christian faith. By examining the works of various academics, religious writers, and journalists, this research project demonstrates how Christianity influenced the way many Britons understood Hinduism.

Eli Bock**Faculty Sponsor(s):** Dr. Chandrika Paul**TIME: 3:30-4:30*****Choosing Between Two Chinas: The Geopolitical Impact of China's Investment and Trade Profile in the Dominican Republic***

Chinese economic activity in the Caribbean has been steadily increasing over the past decade. While China presents a challenge to United States' interests in the Caribbean, its primary contest for diplomatic power is with Taiwan. China regards Taiwan as a rebel province, and through the provision of investments and loans, China is financially incentivizing countries to abandon diplomatic relations with Taiwan. The increasing economic presence of China in Caribbean countries that are diplomatically allied to Taiwan has presented these nations with a choice as to which of the "two Chinas" they should align with, a choice whose benefits and drawbacks can only be fully realized after switching diplomatic recognition. China's increasing investment and trade in the Dominican Republic represents a deliberate strategy aimed at politically isolating Taiwan, consolidating natural resources, cementing another regional trading partner, and asserting itself as a world power.

Reece Dolbin**Faculty Sponsor(s):** Dr. Gretchen Pierce**TIME: 5:00-6:00*****Quiero Ser El Presidente: Producing Multicultural Children's Literature for a Dominican School***

My research on multicultural children's literature, writing theory, and the culture of the Dominican Republic culminated in the production of a bilingual historical fiction children's book, *Quiero Ser El Presidente* (I Want to Be the President). My project was part of the Honors Program's Reach Out service-learning initiative in the Dominican Republic. The book was produced for use in our partner school in Santo Domingo, and it was designed to enhance the teaching and learning of social studies at the school. The students interacted with the book through read-alouds, worksheets covering the story's content, and reader's theater.

Michael Donovan**Faculty Sponsor(s):** Dr. Gretchen Pierce

MANAGEMENT/MARKETING/ ENTREPRENEURSHIP

TIME: 2:00-3:00

A Hog Farm in S-Burg? An Interactive Townhall Negotiation Simulation and Teaching Plan

This negotiating exercise simulates a municipal governance meeting where the sole item on the agenda is the question of the construction of two large “hog barns” on a piece of farm property not far from the municipal center. Negotiation roles include three township supervisors (think city councilmen), the property owner (the lessor), the hog-farming businessman (the lessee), and more than a dozen other roles ranging from concerned citizen to environmental activist to rival developer. The exercise is designed as an end-of-course activity in a negotiation course—an opportunity to see and practice the portfolio of skills developed throughout the semester. Concepts covered include emotions in negotiation, coalitions, fairness norms, and multiparty negotiations. The final product includes a teaching plan, fifteen unique roles, and two additional generic roles for additional students.

Jason Laubach and Cody Olson

Faculty Sponsor(s): Dr. Nathan Goates

TIME: 2:00-3:00

Intersectional Discrimination in Personnel Selection

The United States is currently experiencing its lowest rate of unemployment in over seventeen years, which means that job creation and hiring is at an all-time high. Personnel selection is a complex process that is often overlooked. Hiring managers and human resources professionals must be able to find qualified talent that meets their needs while following all laws set in place by government agencies. This research project will analyze how discrimination can take place during the different steps in personnel selection along with how individuals who are affected by two or more minority groups experience intersectional discrimination. This research will make hiring managers and human resources professionals aware of the different forms of discrimination during personnel selection and how to avoid these biases. This research project will also make people aware of the intersectional discrimination that people face and how that can be avoided.

Jenna Neiderer

Faculty Sponsor(s): Dr. Jerry Carbo

MATHEMATICS

TIME: 2:00-3:00

Chambersburg Borough's Municipal Electric Utilities: A Look at Alternative Energy Sources

The falling prices of clean and renewable energy sources have caught the attention of many, including utility companies. Chambersburg Borough was interested in analyzing the opportunity to make an investment in solar energy, and it requested the creation of a functional model that would perform a cost-benefit analysis. The model compared the benefit of generating solar energy with the cost of purchasing power from the regional wholesale electricity market. Users can tailor the model to their own specifications, such as the type, size, and capacity of the panel, the location of the solar system, and current electricity rates. The presentation will detail the research and calculations that were performed, as well as the discoveries that were made through analysis and mathematical modeling that ultimately allowed for the creation of a comprehensive model.

Leah Fleming

Faculty Sponsor(s): Dr. Ben Galluzzo

PHYSICS

TIME: 6:30-7:45

Fully Ordered fct Pt-Co Intermetallics for Oxygen Reduction Reaction (ORR)

Platinum—Cobalt intermetallic nanocrystals were synthesized for use as a cathode catalyst in Proton Exchange Membrane Fuel Cells (PEMFCs) to perform the oxygen reduction reaction (ORR). After synthesis, the particles were deposited on Carbon and were annealed to allow for a transition from the random face-centered-cubic (fcc) crystal structure to the ordered face-centered-tetragonal (fct) crystal structure. The transition metals Copper, Silver, and Gold were used as dopants in some samples. The particles were characterized both by Transition Electron Microscopy (TEM) to determine if any negative particle aggregation had occurred, and by X-Ray Diffraction (XRD) to determine whether or not the transition into the fct crystal phase had been successful. After determination of crystal structure with XRD, Cyclic Voltammetry (CV) and Linear Sweep Voltammetry (LSV) with a Rotating Disk Electrode (RDE) were used to determine the catalytic properties of the particles.

Daniel Rosen

Faculty Sponsor(s): Dr. Kathryn Shirk

PSYCHOLOGY**TIME: 1:00-1:45***Who Knows More: Parental/Educator Knowledge Base on Types of Schools*

These days there are many types of schools in which a child can be enrolled. In order for parents to choose what school to send their child to, they must have at least a basic understanding of their options. An obscured interruption of this information could result in a parent being less than satisfied with the school they have chosen for their child. This project was interested in measuring the difference between what educators thought they understood about different types of schools versus their actual knowledge base when compared to ordinary parents.

Angel Barfield**Faculty Sponsor(s):** Dr. James Griffith**SOCIOLOGY/ANTHROPOLOGY****TIME: 1:00-1:45***Thru-Hiking The Appalachian Trail: The Intersection of Gender, Sub-Cultures, and Geographies*

Thru-hiking the Appalachian Trail is a feat attempted annually by several thousand individuals. This study investigates how women navigate the trail, a space that is demographically and culturally male-dominated. The research is based on interviews conducted in the summer of 2016 with eighteen thru-hikers of different gender identities. Following the interviews, the data was transcribed, coded, and analyzed, based on the principles of grounded theory. Throughout the interviews, it was evident that the hikers' created a strong community based on mutual experience, but divided along lines of gender inequality. These divisions were reflected in respondents' safety on the trail, views of natural vs. human dangers, and the reactions of others regarding their decision to hike the trail. This study demonstrates a specific display of the ways in which women are restricted in public spaces.

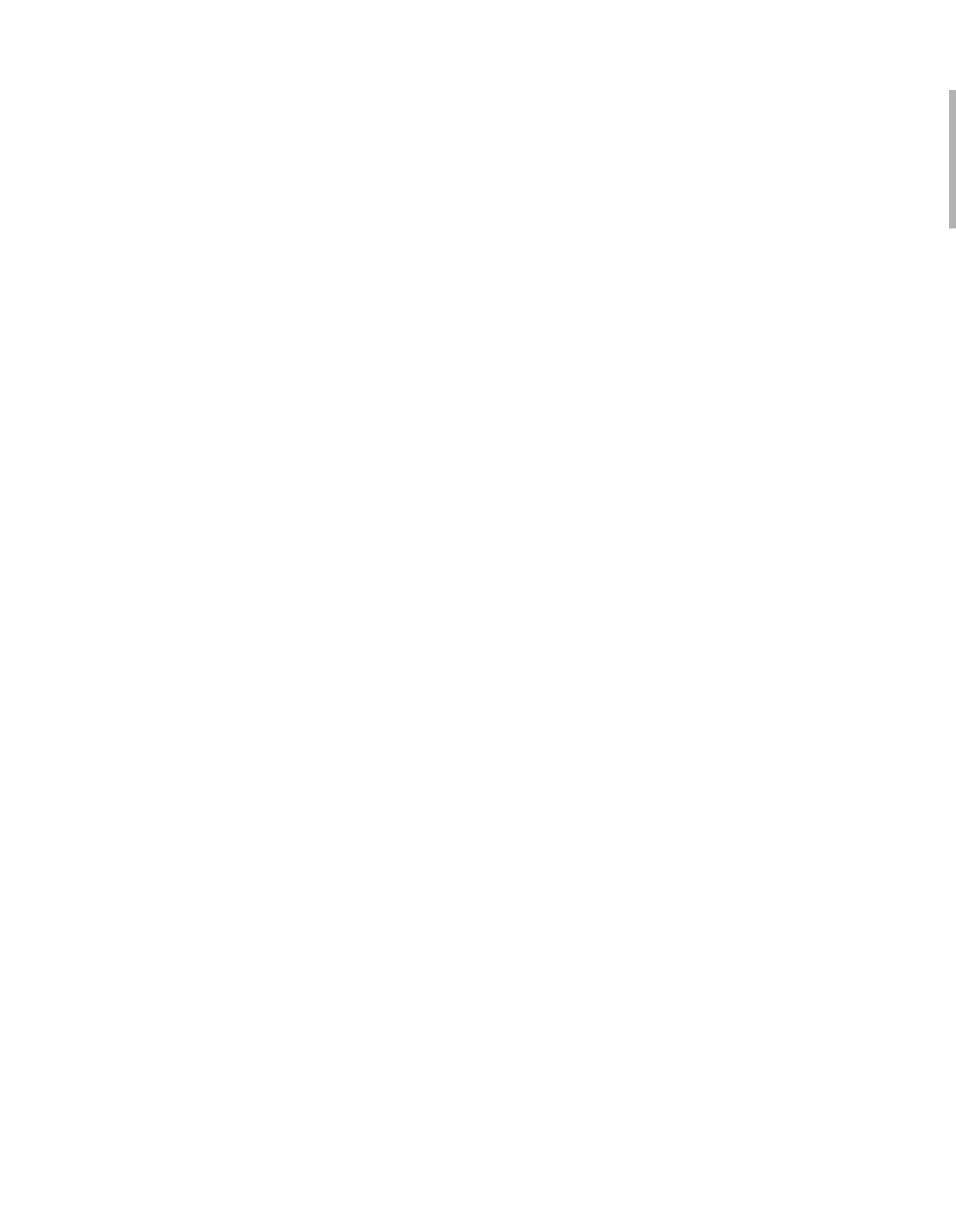
Hayden Fulton**Faculty Sponsor(s):** Dr. Allison Carey**TEACHER EDUCATION****TIME: 5:00-6:00***For the People: A Manual for History and Civics Education in the Dominican Republic*

Many developing countries, including the Dominican Republic, struggle to provide quality education for their children. To address the issue of educational inequality in the Dominican Republic, in 2009, the Shippensburg University Honors Program started the Reach Out service-learning project. It is a partnership with a school that serves very low-income children in Santo Domingo. Each year, Honors Program education majors apply their disciplinary knowledge and skills to address the curricular needs of teachers and students at the school. Based on the needs that the school's teachers expressed this year, I prepared a curricular manual focusing on the teaching of social studies, specifically civics and history. I researched best practices in social studies education, and developed lessons and activities based on best practices. My presentation will discuss the development of my manual and the workshops that I led for teachers at our partner school.

McKenzie Horn**Faculty Sponsor(s):** Dr. Christopher Keyes**TIME: 5:00-6:00***Geography and Culture: A Look Around the World*

Each year, through the Honors Program's Reach Out service-learning initiative, Honors students create curricular materials to enhance teaching and learning at the Pathways of Learning School in Santo Domingo, the Dominican Republic. My contribution to Reach Out was researching best practices for teaching social studies in order to create the curricular manual, "Geography and Culture: A Look Around the World." The manual is broken into two parts: 1) geographical and cultural highlights from each continent; and 2) lesson plans for students in preschool and kindergarten, first and second grade, and third and fourth grade. The curricular manual was implemented during the Reach Out trip to the Dominican Republic in January 2018.

Jessica Querry**Faculty Sponsor(s):** Dr. Andrea Malmont



Minds @ Work

POSTERS



BIOLOGY**TIME: 6:00-7:30****LOCATION: MPR BC*****Effects of Vitamin C and Vitamin D Concentrations on Regulation of Autophagy in Glioma Cells***

Under stress, autophagy allows cells to recycle unnecessary molecules. To do this, autophagosomes enclose unwanted material and transport it to the lysosome for degradation. Autophagy plays a role in cancer cell proliferation versus death. We looked at the role of vitamin C and vitamin D in a brain cancer cell line because previous research has shown that both have stimulatory effects on autophagy. It has been shown that the vitamin D receptor acts as a transcriptional regulator, and vitamin C accelerates degradation of proteins brought to the lysosome. Our goal is to monitor lysosome and autophagosome interactions after treatment with vitamins C and D. A glioblastoma cell line that expresses a fluorescently tagged protein, DsRed-LC3, is used to visualize autophagosomes for evaluation of autophagy levels. We confirmed that cells treated with vitamin D do have increased levels of autophagy. Lysotracker is currently being used to monitor lysosomes within the treated cells.

Rita Benfer and Sarah Strause**Faculty Sponsor(s):** Dr. Sherri Bergsten**TIME: 6:00-7:30****LOCATION: MPR BC*****Comparison of Beclin-1 Dependent and Independent Autophagy***

Autophagy is a cellular recycling process that promotes homeostasis, in response to stress. Autophagy therefore affects a cell's ability to adapt and influences the decision between survival/death. The Beclin-1 protein is a known tumor suppressor, through its role in autophagy. Beclin-1 is involved in the initial steps of autophagy that create autophagic vesicles. Our research focuses on how manipulation of Beclin-1 impacts brain cancer cells. Three separate target sequences within the Beclin-1 gene were chosen for gene editing using the CRISPR system. The CRISPR vectors that targets Beclin-1 have successfully been transfected into the cancer cells. Subcloning our cell lines has begun to acquire populations consisting mostly of mutated cells. We will carry out experiments with variables such as drug exposure and starvation to analyze how mutant/non-mutant cell lines compare with respect to autophagy levels and other cell functions, to better understand potential anti-tumor effects.

Drew Barrett, Jessie Nagle, and Kaitlyn Chenard**Faculty Sponsor(s):** Dr. Sherri Bergsten**TIME: 6:00-7:30****LOCATION: MPR BC*****Reproductive Biology and Phenology of the Wood Frog, *Lithobates sylvaticus*, in South-central Pennsylvania***

Amphibians are common inhabitants of wetlands with thin sensitive skin, thus making them highly sensitive to environmental changes. For this they are considered bioindicators. The destruction/fragmentation of suitable habitats is causing worldwide amphibian population declines. The wood frog, *Lithobates sylvaticus*, is a common species in the North East and uses vernal pools for breeding. This research will use preserved specimens from the State Museum of Pennsylvania, Harrisburg. Frogs collected in south-central Pennsylvania will be dissected and reproductive parameters (i.e. adult body, gonad, clutch,

and ovum sizes) will be examined and recorded. These data will be compared to those in prior studies and locations. We expect phenology and reproductive parameters to be consistent with prior studies in the same region or at similar latitudes. These data will help expand our life history knowledge of this species, which is important for future conservation efforts.

Erika Coover**Faculty Sponsor(s):** Dr. Pablo Delis**TIME: 3:30-5:00****LOCATION: MPR BC*****Genetic Investigation of Aberrant tRNA Degradation by Rapid tRNA Decay in *Saccharomyces Cerevisiae****

The primary objective of this research project is to determine the role of the rapid tRNA decay pathway, which is mediated by the Rat1 exonuclease enzyme, in degrading different types of aberrant tRNA molecules isolated from *Saccharomyces cerevisiae*. The two aberrant tRNAs of interest are an isoleucine tRNA with an unprocessed 5' end and a hypomodified lysine tRNA that is missing a dimethyl group at the guanosine 26 position. Addition of doxycycline to the growth medium of the yeast cultures results in decreased synthesis of the RAT1 gene, which will result in decreased synthesis of the Rat1 enzyme. If Rat1 does degrade either type of aberrant tRNA, tRNA should accumulate in the cells grown in the presence of doxycycline. We hypothesize that the rapid tRNA decay pathway will degrade only the second type of aberrant tRNA (hypomodified lysine) based on previous research (Kramer & Hopper, 2013).

Hunter Funk and Lena Witthoff**Faculty Sponsor(s):** Dr. Emily Kramer**TIME: 6:00-7:30****LOCATION: MPR BC*****Ectoparasites of Coyotes (*Canis latrans*) from Pennsylvania During Winter***

Parasites have imperative pathogenic impacts and provide insight into the location of disease causing organisms. Licensed hunters harvested coyotes from across Pennsylvania at the 2018 Cresson and Mosquito Creek organized coyote hunts. The coyotes were surveyed for ectoparasites by combing their fur. The collected parasites were bagged and frozen until they could be identified. After the arthropods are identified, the type and location of each parasite will be mapped to determine patterns in distribution. Ectoparasite surveillance could potentially identify vectors of human and domestic animal diseases.

Claudia Knutelsky, Brooke Coder, and Erika Coover**Faculty Sponsor(s):** Dr. Richard Stewart

TIME: 3:30-5:00**LOCATION: MPR BC**

*Survey of Intestinal Helminths and Ectoparasites of the Virginia Opossum (*Didelphis Virginiana*) from Captured and Roadkilled Animals*

The Virginia opossum is an omnivore that will scavenge carrion, ingest scat, various plants, and invertebrates including ticks. Various worms and protozoa exist within a variety of carnivores living sympatrically with opossums and opossums have been previously used as sentinels for surveillance. Likewise, because these medium sized mammals cohabitate with many mesopredators, including raccoons, skunks, and groundhogs, they can acquire their ectoparasites and have been previously used as sentinels for surveillance. We have, thus far, collected four individuals and are in the process of identifying fleas and ticks as well as conducting visual examinations of the stomach for nematodes and performing fecal floatation with colon contents. Results will be compared to previous literature regarding the sharing of parasites between host species.

Bethany Krug

Faculty Sponsor(s): Dr. Richard Stewart

TIME: 6:00-7:30**LOCATION: MPR BC**

Breeding Phenology and Larval Density of Marbled Salamanders and Wood Frogs in Three Vernal Ponds of Letterkenny Army Depot, South-central Pennsylvania.

Amphibian phenology is influenced by a large number of factors, biotic and abiotic. There is evidence to support that early arriving species dominate community interactions in vernal pools. These species have the opportunity to grow faster when there is little competition and reduced risk of predation. Prior research in Letterkenny Army Depot (LEAD), Pennsylvania, has documented a variety of salamanders and frogs, typical of central Pennsylvania vernal pools. In 2017-18, we will study the amphibian community at three vernal ponds in LEAD, focusing on their phenology. We will survey chorus activities, mating behavior, egg masses, and larvae presence to determine their relative abundances. For this, we will utilize night surveys, dip netting, and opportunistic captures. Some larvae will be preserved for later laboratory analysis. I hypothesize that the Marbled Salamander, *Ambystoma opacum*, will be the dominant species occupying these ponds, followed by the Wood Frog, *Lithobates sylvaticus*.

John Lowin

Faculty Sponsor(s): Dr. Pablo Delis

TIME: 3:30-5:00**LOCATION: MPR BC**

*Populations of Eastern Garter Snakes, *Thamnophis sirtalis*, and Northern Water Snakes, *Nerodia sipedon*, in two South-central Pennsylvania locations: Letterkenny Army Depot and Shippensburg University Campus*

Snakes are important species, as predator and prey to other taxa. Their decline represents a threat to natural ecosystems health. In 2017-2018, we conducted surveys of snake assemblages at two south-central Pennsylvania locations: a natural site (Letterkenny Army Depot - LEAD) and a disturbed site (Shippensburg University Campus - SU). We focused on two common species in Pennsylvania, the Common Gartersnake, *Thamnophis sirtalis*, and the Northern

Watersnake, *Nerodia sipedon*. We surveyed these species by mark and release techniques using coverboards: fifteen at LEAD and near fifty at SU Campus. Snakes were identified, sexed, measured, tagged, and released in situ. There was a higher relative abundance of Northern Watersnakes, *N. sipedon*, at LEAD and a greater relative abundance of Gartersnakes, *T. sirtalis*, at SU. Both locations showed a female biased sex ratio. Comparable snake assemblages at both SU and LEAD, support the idea of these two species being tolerant to anthropogenic disturbances.

Emeleigh Luckenbaugh

Faculty Sponsor(s): Dr. Pablo Delis

TIME: 3:30-5:00**LOCATION: MPR BC**

Description and Quantification of Anti-Predatory Behavior in the Most Common Snakes in Two Sites of the Southern Delmarva Peninsula, Wallops Island and Savage Neck Dunes Preserve, Virginia.

Snakes are important predators and significant in natural ecosystems. They also are difficult to study because of their secretive lifestyle. There is a generalized fear toward snakes; a product of misunderstood antipredatory behaviors (i.e. biting, tail rattling, dead feigning, hissing, puffing, and musking). These behaviors are rarely quantified in natural populations. Studying and quantifying these behaviors will yield a better understanding of the natural history of snakes. In 2018, we will study snakes at two sites, Wallops Island and Savage Neck Dunes Preserve, Virginia. Snakes will be captured under metal boards or opportunistically. Encountered snakes will be observed and each antipredatory behavior, and its duration, will be quantified. To detect potential covariations with biological parameters, we will also measure, sex, and assess the reproductive and health status of each snake. We expect closely related and ecologically comparable species to share similar behaviors.

Rachel McCarthy

Faculty Sponsor(s): Dr. Pablo Delis

TIME: 6:00-7:30**LOCATION: MPR BC**

Endogenous Tagging of Beclin-1 and LC3 using CRISPR

Autophagy is a cellular process used for recycling, maintaining energy stores, and protecting the cell through degradation of damaged proteins and organelles. Beclin-1 is considered a high-level regulator of autophagy since it is at the top of one of the protein cascades for autophagic vesicle formation. The main purpose of this project is to understand the regulation of Beclin-1 as it relates to autophagy, through quantification of fluorescent GFP/Beclin-1 response to varying conditions. CRISPR combined with a repair template for homology-directed repair is being used to generate the endogenously tagged GFP/Beclin-1. The sequences necessary for genomic editing of Beclin have been designed; we made and sequenced the CPF1/target vector as well as the Beclin repair template. After determining the best conditions for transfection of the CRISPR vector and repair template into glioma cells, GFP expressing cells will be selected and used for further experimentation.

Christopher Miller, Enoch Shissler, Chris Atkins, and Megan Allison

Faculty Sponsor(s): Dr. Sherri Bergsten

TIME: 3:30-5:00**LOCATION: MPR BC*****Bioassay of Repellency of Various Products for Black Legged Ticks (*Ixodes scapularis*)***

Ticks are capable of transmitting diseases such as Lyme disease, Ehrlichia, and Rocky Mountain Spotted Fever, and Pennsylvania leads the nation in the reported number of Lyme cases. Ticks may acquire disease agents during feeding and pass them along to other animals during subsequent feedings. Ticks often feed on the blood of their host, which can include humans, birds, reptiles, and wild and domestic mammals and acquire hosts through questing and by identifying certain queues. Repellants block queue identification and/or adversely affect individuals. We are conducting assays with various commercial products and essential oils to determine their repellency against Black-legged Ticks (*Ixodes scapularis*).

Brian Royer**Faculty Sponsor(s):** Dr. Richard Stewart**TIME: 6:00-7:30****LOCATION: MPR BC*****Prevalence of *Baylisascaris Procyonis* in the North American Raccoon (*Procyon lotor*) in Various Western and South-central Pennsylvania Counties***

Baylisascaris procyonis is a parasite that is commonly found in and distributed by the North American Raccoon. *B. procyonis* eggs are deposited in fecal matter, the fecal matter is expelled, and, after an incubation period, the parasite becomes viable to be passed onto other organisms. Parasitic infection of *B. procyonis* causes inflammation, blockages, and tumors in the digestive tract of North American Raccoons. Due to the close proximity of raccoons and humans, it is important to know the prevalence of this parasite within local raccoon populations. Once passed to humans, *B. procyonis* causes skin irritation, blindness, small cysts, and in some severe cases, neurological problems and death. Raccoons used in this study were trapped in the respective counties by trappers and a popsicle stick was inserted into the anus to obtain feces. It was then frozen and tested, using fecal floatation, at a later date.

Kyle Schutt and Kasey Long**Faculty Sponsor(s):** Dr. Richard Stewart**TIME: 3:30-5:00****LOCATION: MPR BC*****Stable isotope determination of Whitetail Deer Diet in Adjacent Agriculture and Forest Habitats of Pennsylvania: Refinement of Estimates with Measured Trophic Fractionation of Known Diet***

The controversy of deer management has made Pennsylvania's game commission the center of much criticism by all parties involved; farmers, hunters, forest managers, and naturalists. Our objective is to build on the research that was previously done in 2011 by Dr. Todd Hurd and undergraduate Stacey McCanuel. The former research project had an objective to show what types of foods are contained in deer diet during hunting season, i.e. whether it is from forest or farmland, so that resource managers can make better informed decisions and implement the best management practices for controlling deer populations across their varied habitats. This research project will build on the results presented in the previous study by testing the carbon footprint present in samples of deer liver with a known diet (those from a deer farm).

Adriana Townsend**Faculty Sponsor(s):** Dr. Todd Hurd**CHEMISTRY AND BIOCHEMISTRY****TIME: 6:00-7:30****LOCATION: MPR BC*****In Depth Analysis of Metal-organic Framework Degradation in Various Chemical Environments***

The porosity and thermal stability of metal-organic frameworks (MOFs) make them suitable for gas storage and separation, but many have limited stability in aqueous conditions. Enhancing MOF stability has been studied, but the mechanism behind the crystal degradation is still not understood. For this project, a series of experiments were conducted on different types of MOFs with various metal-ligand bonds. The results provide a better understanding of the bond-breaking behavior and can be used for optimized structure design for future studies. bMOF-1, DMOF, MOF-5, and HKUST-1 were synthesized and exposed to acidic, neutral, and basic aqueous solutions for one-day, seven-day, and thirty-day periods. The composition and structure of each MOF was analyzed using Nuclear Magnetic Resonance (NMR) Spectroscopy, Scanning Electron Microscope (SEM), and Fourier-Transform Infrared Spectroscopy (FT-IR). After exposure, the results were compared to determine the effect each external condition had on the MOFs.

Dijana Katic**Faculty Sponsor(s):** Dr. Alexander Spore**TIME: 6:00-7:30****LOCATION: MPR BC*****Synthesis and Structure of Metallacrowns with Varying Alkali Metal Substitutions***

The presentation will describe replacing the sodium ion in both the manganese-based and aluminum-based 12-metallacrown-4 molecules using either other alkali metal ions or a series of ammonium-based species. The purpose of replacing the sodium ion with other species is to better understand the role of the sodium ion in determining the single-molecule magnet behavior of these metallacrown complexes. Since the other alkali metals have similar binding properties, they should also bind to the metallacrown via the ring oxygen atoms. The synthesis of manganese- and aluminum-based 12-MC-4 molecules with various carboxylate anions will also be described. Any structural changes may lead to different magnetic communication between the ring metal atoms and the central lanthanide atom; thus, the SMM behavior of these molecules may be different than the metallacrowns that have a sodium ion bound to the metallacrown opposite of the lanthanide atom.

Abigail Kauffman**Faculty Sponsor(s):** Dr. Curtis Zaleski

TIME: 6:00-7:30**LOCATION: MPR BC*****Synthesis and Single-Molecule Magnet Properties of Mn[12-MCMnIII(N)shi-4]2+ Metallacrowns with Various Bridging Carboxylate Ligands***

One of the classes of molecules that can exhibit single molecule magnet (SMM) behavior is metallacrowns (MCs). Previously, our group has determined that switching the bridging carboxylate ligands in the DyNa(X)₄[12-MCMnIII(N)shi-4] class of molecules (X is the identity of the bridging carboxylate anion) can affect the SMM behavior of the metallacrown. The reason for this diversity in SMM behavior is that the chosen carboxylates feature a wide range of pK_a values, in which a lower pK_a value correlates to more electron withdrawing ability of the ligand. Now, we are replacing acetate(-OAc) with various carboxylate ligands in a Mn(OAc)₂[12-MCMnIII(N)shi-4] molecule, hoping to alter the magnetic properties of the molecule and then better understand its SMM behavior. To keep variables minimal, all the syntheses will contain manganese as the central metal ion and will use salicylhydroxamic acid as the metallacrown framework ligand.

Sarah Nagy**Faculty Sponsor(s):** Dr. Curtis Zaleski**TIME: 6:00-7:30****LOCATION: MPR BC*****Synthesis and Structure of a Manganese Dimer Complex***

Metallacrowns, the inorganic equivalent to crown ethers, are macrocyclic molecules that follow a metal-nitrogen-oxygen [M-N-O] repeat in the ring of the molecule, unlike that of the carbon-carbon-oxygen [C-C-O] of a crown ether. Metallacrowns have been used for applications such as single-molecule-magnets (SMM), MRI contrast agents, and antimicrobial agents. The chemical and physical properties of metallacrowns can be altered by replacing the metal in the ring, the central metal, and the ligand framework comprising the metallacrown ring. Reported here is the use of manganese in a sandwich metallacrown complex known as a dimer. The synthesis and properties of the sandwich complex will be described.

Alyssa Smihosky**Faculty Sponsor(s):** Dr. Curtis Zaleski**COMMUNICATION/JOURNALISM****TIME: 3:30-5:00****LOCATION: MPR BC*****Have Saudi students in the US Successfully Spread their Culture into American Society?***

Since Saudi Arabia started sending students to the United States to study abroad, thousands of Saudis have completed their education in every US state. Those students who came to the US beginning in 2006 faced a lot of challenges where they studied. Now, after twelve years of the study abroad program has been completed, what is the impact of the program on the American people? Have Saudi students successfully spread their true image and culture into American society through social events and social media platforms?

The study will answer the debated and controversial question in KSA about the benefits of studying abroad. Certainly, it is not the primary goal of the Saudi government to let their students exchange cultures with American people, but they expect that from their students. However, I would like to use monkey survey and the snowball sample

to conduct my research survey by reaching at least 200 participants at Shippensburg University and others.

Muath Alamri**Faculty Sponsor(s):** Dr. Kyle Heim**TIME: 3:30-5:00****LOCATION: MPR BC*****Gender and Sports Reporting: Do College Students Find Male or Female Sports Reporters More Credible?***

With the rise of females in the male-dominated field of sports reporting and broadcasting, this study will examine students' perceptions about whom they believe to be more credible: male or female sports reporters. This research study will examine young adults, aged eighteen to twenty-four, to test if they perceive one sex to be more credible than the other within this field. A survey questionnaire will be administered to Shippensburg University students to determine if they hold any personal biases. The survey questionnaire will be administered to both student-athletes and non-athletes.

Darrian Duncan and Lauren Gold**Faculty Sponsor(s):** Dr. Kyle Heim**TIME: 3:30-5:00****LOCATION: MPR BC*****Has Instagram Taken the Place of Consumer Magazines as an Influence on Body Image?***

Consumer magazines, featuring celebrities and popular culture figures, have long influenced beauty standards for both men and women. But recent advances in technology have given celebrities the ability to be content creators through images posted on their social media feeds. Platforms such as Instagram allow celebrities to have control of their image as opposed to the magazine industry crafting it for them. The most prominent popular culture figures have incredible influence over their followers and can shape beauty standards and self-image. This study examines whether Instagram has taken the place of consumer magazines as an influencer on body image and its effects on both men and women. Through survey research of Shippensburg University undergraduate and graduate students ages eighteen to twenty-four, this study will analyze the Instagram use of college students compared to magazine use, as well as students' exposure to images of celebrities and popular culture figures.

Elise Lubinsky and Tope Osunsanya**Faculty Sponsor(s):** Dr. Kyle Heim**TIME: 3:30-5:00****LOCATION: MPR BC*****How Social Media Influences College Students' Academic Involvement***

With the development of technology in the past decades, digital media is now playing an indispensable and important role in daily life of every person around the world. Social media allows Internet users to get involved and to keep up with events all over the world and in their local communities. The research study examines how social media influences college students' academic involvement in the college community by conducting a survey of Shippensburg University (SU) students. The aim of the research is to analyze the role of social media in SU students' college lives, and how it influences SU students' academic involvement both in and out of class.

Zhiyin Mai**Faculty Sponsor(s):** Dr. Kyle Heim

TIME: 3:30-5:00**LOCATION: MPR BC*****The Relationship Between Social Media and Crowdfunding in the Nonprofit Industry***

Social media platforms such as Twitter, Facebook, and YouTube have changed the way that individuals communicate with one another. Crowdfunding pages give users the ability to share, like, and even add hashtags to pages that have been created for numerous causes. It is now easier than ever to have an awareness of organizations in need of assistance, especially those that are not in your immediate community. A donor now possesses the ability make a gift supporting a cause without ever leaving their home. Through a questionnaire distributed to Shippensburg University students, this study seeks to determine how social media influences which causes they choose to support online.

Jordan Marshall**Faculty Sponsor(s):** Dr. Kyle Heim**TIME: 3:30-5:00****LOCATION: MPR BC*****How Age Influences New Consumers' Media Preferences***

The advent of the Internet created new ways for people to consume news, specifically via social media and websites. The new media subsequently competed with traditional media (newspapers, television stations, and radio stations). The goal of the study is to determine how the media preference of people who grew up with the Internet (age eighteen to twenty-five) compares to people who grew up only with traditional media (age forty-one to sixty-eight). News is separated into two types: breaking and political. Preference is determined by which media (Internet or traditional) a person is more likely to use. The study's methodology uses a purposive sample to get an equal number of respondents by age group, and it is administered via an online and printed survey. The results of the study can help media outlets determine the preferred news medium for future generations.

Troy Okum**Faculty Sponsor(s):** Dr. Kyle Heim**TIME: 3:30-5:00****LOCATION: MPR BC*****Understanding Instagram's Impact on Self-Esteem: A Look at Shippensburg University Students***

As social networking sites continue to maintain popularity as mass communication channels, their potential impact on users has become an area of interest. To target a specific channel and area of impact, this study looks at Instagram and its potential impact on self-esteem among Shippensburg University students. Instagram is a relevant and popular social network among college-age students. In 2016, Pew Research Center found that the majority of college age students use Instagram (59 percent of online adults aged eighteen through twenty-nine years old). In addition, self-esteem is a valuable area to assess because it is an important aspect of student well-being. This study takes a look at the connection between Instagram use and self-esteem. The main research method is a survey of undergraduate and graduate students at Shippensburg University.

Ashly Sterner**Faculty Sponsor(s):** Dr. Kyle Heim**COMPUTER SCIENCE AND ENGINEERING****TIME: 3:30-5:00****LOCATION: MPR BC*****Tabletop RPG Character Generator***

This program guides the user through building a character or randomly generates one compatible for Dungeons and Dragons fifth edition. This is an unofficial build not affiliated with Wizards of the Coast or Hasbro. Our program encompasses the Dungeons and Dragons fifth edition players handbook and makes character building more efficient and clear to the user.

Courtney Rush, Carmino Bonacci, Justin Denchy, Tehmi Lowe, and Joe Newcamp**Faculty Sponsor(s):** Dr. Dudley Girard**TIME: 3:30-5:00****LOCATION: MPR BC*****Performance Analysis of Cooperative Wireless Communications***

Conventional wireless networks generally involve point-to-point communication links, which can suffer from unreliable transmission in less-than-optimal conditions. Cooperative wireless networks, in contrast, offer greater network reliability as other users in the network act as relays to support the transmission of data. Such networks enable the creation of a virtual antenna array, exploiting spatial diversity to improve overall system performance. The purpose of this project, which included the creation of a practical relay platform in a real wireless environment, was to analyze the performance improvement possible through the use of cooperative communications. To this end, the cooperative relaying schemes of amplify-and-forward and decode-and-forward were examined and implemented. The experience gained from this project will be valuable in the further development of courses and research projects within the Department of Computer Science and Engineering.

Joshua Varone**Faculty Sponsor(s):** Dr. Sangkook Lee**CRIMINAL JUSTICE****TIME: 6:00-7:30****LOCATION: MPR BC*****Work Related Homicides***

The data represented will represent the work-related homicides within each industry in the United States.

Brett Paul**Faculty Sponsor(s):** Dr. Matthew Fetzer

ECONOMICS

TIME: 6:00-7:30

LOCATION: MPR BC

Schooling and Income

The study investigates the correlation between schooling and income by looking closely at the significance of each type of degree earned by an individual i.e. GED, high school degrees, associate's degrees, bachelor's degrees, master's degree, PhD, and professional degrees. To increase the accuracy of the results, other variables were also included like gender, age, race, jobs held, geographic location, location in the city, and health status. The results showed that schooling is positively correlated to income, which is consistent with results from previous research. Other results showed that race, gender, jobs held, and health status are also correlated to the income an individual earns.

Emmanuel Chibeze

Faculty Sponsor(s): Dr. Freddy Siahaan

TIME: 6:00-7:30

LOCATION: MPR BC

The World Container Shipping Industry

This research compares the four container shipping companies Maersk Line, Hapag-Lloyd AG, CMA CGM Group, and COSCO Shipping based on their market share and shipping routes. For this purpose, the actual data are from the companies' websites and annual reports. By using graphical and map analysis, we find that each company shows its individual strategy concerning shipping routes. CMA CGM and COSCO Shipping focus on Asia, Maersk Line on both Asia and Europe, and Hapag-Lloyd AG shows an approximately equal distribution among the geographical areas.

Gesa Hedrich

Faculty Sponsor(s): Dr. Freddy Siahaan

ENGLISH

TIME: 6:00-7:30

LOCATION: MPR BC

The Ethics of Vaccine Refusal

My research focused on the ethics of vaccine refusal, and I ultimately determined that vaccination is a moral imperative, necessitated by the dire consequences of vaccine refusal. Refusing a vaccine causes a decline in a population's herd immunity, which means communicable disease is given license to spread freely among a group of people. The only instances in which I found an ethical reason for vaccine refusal was when people who had a compromised immune system refused a vaccine per the advice of a medical professional, or when a person was too young to receive a specific vaccine. Vaccination is a controversial topic for many people, but the details of this controversy must be presented in order to promote civil discussions that may lead people to a better understanding of the core arguments of the issue.

Stephanie Barnett

Faculty Sponsor(s): Dr. Sharon Harrow

TIME: 6:00-7:30

LOCATION: MPR BC

European Migration Crisis

Immigration is a widespread issue throughout the world. Currently, Europe is facing one of the worst refugee crises. Thousands of Syrian refugees are arriving yearly, and few European countries are willing to accept this large influx. Leaders of these countries express worry about possible negative effects on their economy and loss of jobs. While

these are legitimate concerns, many studies prove that an increase of immigrants strengthens a country's economy. Unlike many European countries, Germany realizes the importance of providing these relocated refugees a place to stay, as well as the positive impact this will have on their economy. Although Germany is open to receiving more immigrants, they will not be able to continue at this rate for many years to come. Other European countries must step up and do their part in providing refugees with a place to stay. If each country does their part, the European economy will be strengthened, and many individual lives will be saved.

Jessica Bauer

Faculty Sponsor(s): Dr. Sharon Harrow

TIME: 6:00-7:30

LOCATION: MPR BC

Museum 2.0: Technology and its Global Impact on Museums

When we think of museums, we can't help but imagine drab walls with endless descriptions of century old objects. However, with the advent of new technology, museums have been able to redefine visitors' experiences in a variety of ways. To examine how museums are evolving to the current, technology-consumed generation, I chose three main topics to research: social media, app development, and implementing interactive technology. Museums are no longer known as the stuffy and exclusive institutions of the past. With technology, even the smallest historical society can make a local impact on the global stage.

Jessica Chernich

Faculty Sponsor(s): Dr. Laurie Cella and Dr. Steven Burg

TIME: 6:00-7:30

LOCATION: MPR BC

A Lens for Reevaluating Young Adult Literature

This poster display looks at a set of young adult texts through a critical lens that may alter how we evaluate them and their uses in secondary school classrooms. Anyone interested in literature for young adults, adolescence, or secondary schooling will likely find the project to be of interest.

Ian Davies

Faculty Sponsor(s): Dr. Thomas Crochunis

TIME: 6:00-7:30

LOCATION: MPR BC

The Benefits of Teaching Medieval Literature in Middle Schools

Teaching certification students are taught to provide instructional procedures, assessment methods, and engaging activities that allow for differentiation in the classroom. Throughout my research, I have discovered that the topic of medieval literature not only combines subject areas such as history, geography, and literature, but it also has a wide array of instruction materials, including project options and dramatic presentation choices, to appeal to every student's interest and ability. By introducing middle school students to medieval literature, teachers provide the opportunity to become engaged with the text, strengthening student understanding of literary elements, and application of the material.

Emily Fogelsanger

Faculty Sponsor(s): Dr. Shari Horner

TIME: 6:00-7:30**LOCATION: MPR BC*****Women's Impact on Shippensburg University The Journey from Secretary to President***

Historically, the distribution of power among the sexes has been unbalanced. Men as opposed to women hold power and powerful positions most often. As gender equality increases, women now hold more and more positions that were once predominately male positions. Shippensburg University has seen its first female president. However, this is not the first time Shippensburg University has seen women tackle fields dominated by men. Research has shown that proportional representation of women in systems is beneficial to the long-lasting success of the system. This poster presentation will show the impact of powerful women on the Shippensburg University community.

Terri Hoover**Faculty Sponsor(s):** Dr. Shari Horner**TIME: 6:00-7:30****LOCATION: MPR BC*****From Victim to Victimized***

At Minds@Work, I would like to discuss my research and evaluation of the further victimization of survivors of domestic and sexual violence within the criminal justice system. What I've learned through both research and personal experience is that there is a point at which a victim's needs are simply disregarded when prosecuting cases of sexual violence and intimate partner violence. Despite our knowledge of the lingering effects of trauma, the justice system conforms to an antiquated way of thinking that provides considerable rights to defendants and minimal rights to victims. From being forced to face their abusers in a court room to the invasive questions and accusations of defense attorneys, many victims report feeling just as violated by the trial process as the abuse itself. Minds@Work would provide an opportunity to speak out on these issues and raise awareness of the lasting effects of trauma, while drawing attention to the need for change in the criminal justice system.

Emily Mitchell**Faculty Sponsor(s):** Dr. Laurie Cella**TIME: 6:00-7:30****LOCATION: MPR BC*****Body of Evidence: The Physical Body as the Source of Truth for Crossdressing Saints***

Crossdressing was a surprisingly prevalent part of mainstream culture during the Medieval time period. While few Europeans actually cross-dressed in daily life, it was an accepted part of their literary canon, especially in the form of religious stories. In many saint narratives read during the Middle Ages, crossdressing provided the means necessary to escape unwanted aspects of their lives and pursue existences they felt better glorified God. Some saints used crossdressing temporarily for safety or power, while others lived and died in their male identities. However, these saints were always identified by their physical sex in the end. No matter how long they lived as the other gender, the people around them relied on the saints' human figures to provide clarity in instances of gender confusion. While crossdressing saints were able to transcend the limitations of gender, their contemporaries trusted the physical body to provide absolute truth and determine one's gender.

Rachel Smith**Faculty Sponsor(s):** Dr. Shari Horner**EXERCISE SCIENCE****TIME: 6:00-7:30****LOCATION: MPR BC*****The Effects of Vision Impairment on Balance in Athletes and Non-Athletes***

PURPOSE: To compare athletes' and non-athletes' balance when visual impairments (VI) were induced with alcohol impairment simulation goggles. **METHODS:** Twenty subjects performed three balance tests in a randomized order under various VI conditions. A nine-step tandem walk and modified Y-Balance test were completed under the following conditions with: (1) no VI, (2) 0.07-0.10 blood alcohol content goggles and (3) 0.17-0.20 BAC goggles. Postural sway was also assessed. Data were analyzed using group by condition repeated measures ANOVAs. **CONCLUSION:** While there were no differences found between the groups, changes were noted among the conditions when vision was impaired. These results suggested both dynamic and static balance were negatively impacted. More specifically, subjects made more errors during the tandem walk, did not reach as far while standing on the right leg, and swayed more while wearing vision impairment goggles.

Dylan Beaver**Faculty Sponsor(s):** Dr. Sally Paulson**TIME: 6:00-7:30****LOCATION: MPR BC*****Physiological Effects of an Elevation Mask on Endurance Trained Athletes vs. Non-Endurance Trained Athletes While Performing 100-Yd Sprints***

Many athletes train with an elevation training mask to enhance vital capacity. However, studies are still unclear regarding the effectiveness of these training tools. The purpose of this research is to observe physiological adaptations in collegiate endurance trained athletes and non-endurance trained athletes while performing a protocol with and without an elevation training masks. The subject's heart rate, blood pressure, rate of perceived exertion (RPE), and lactic acid values will be recorded multiple times throughout the exercise protocol to test for changes over time. The sample size includes ten collegiate athletes (four females, six males) between the ages of eighteen and twenty-five. The results of this analysis show significant differences between pre- to post-time values, but no significant interaction effects between groups. The outcome of this experiment is the identification of significant physiological adaptations when training with and without an elevation training mask over time.

Tara Bicko, Makenzie Magnotta, Kyle Fields, and Jamie Blair**Faculty Sponsor(s):** Dr. Sam Forlenza

TIME: 6:00-7:30**LOCATION: MPR BC*****Effects of Sodium Bicarbonate Dosage on Blood Lactate Levels in Trained and Recreational Athletes***

PURPOSE: To test if NaHCO₃ will cause blood lactate levels to increase and improve performance time in sprint cycle work in anaerobic and non-anaerobic populations. **METHODS:** Thirteen healthy, college males (nine anaerobic athletes and four recreational athletes) participated in the study. Subjects were required to pedal a distance of 0.6 km on a bike ergometer at a KP load relative to their body. Subjects repeated protocol for four different trials [(1) Baseline, (2) twenty-four hr. dose, (3) one hr. dose, (4) control]. **RESULTS:** The anaerobic athletes' post exercise blood lactate levels, when supplementing with the NaHCO₃, were higher than the baseline and control days. The recreational athlete's blood lactate level was highest during baseline testing. However, these differences were not statistically significant. **CONCLUSION:** Though not significantly different, ingesting NaHCO₃ could moderately aid in performance time and boost blood lactate levels as shown in this study.

Tyler Cover**Faculty Sponsor(s):** Dr. Joohee Sanders**TIME: 6:00-7:30****LOCATION: MPR BC*****Acute Effects of Loaded Jump on Vertical Jump Performance and Perception***

The purpose was to see if performance and perception of the vertical jump were impacted by applying an external load prior to a vertical jump test. Sixteen subjects completed three testing sessions, in a randomized order. Each session consisted of three sets of five VJ. The baseline and performance test, were completed without an external load. During the second set, subjects wore a weighted vest at either 5, 10 or 15 percent of their body mass. Jump height, average power, and average velocity were measured and the subject's perception of their performance was measured. Significant differences were found in VJ height among the conditions. The 5 percent condition showed the greatest increase in mean VJ height. Perception results showed all subjects perceived to jump higher and feel lighter during the 10 percent and 15 percent conditions; only 75 percent of the subjects reported that during the 5 percent loaded condition. It appears that performing VJ with external load can increase jumping performance after the load is removed.

Taylor Halteman and Selma Hamzabegovic**Faculty Sponsor(s):** Dr. Sally Paulson**TIME: 6:00-7:30****LOCATION: MPR BC*****The Influence of Caffeine on Resistance Exercise Performance and Post-Exercise Glucose Control***

The effects of oral caffeine on resistance exercise performance and blood glucose control were studied in active, young adults. Seven subjects completed four experimental trials (two resting: Rest; two resistance exercise: Ex). Each trial was preceded by ingestion of caffeine (Caf) (4mg/kg) or placebo (PL). Oral glucose tolerance tests (OGTT) were performed for each trial. On Ex days the 75 min OGTT followed the exercise. Ex Caf area under the glucose curve was 7.5% > Ex PL; Rest Caf was 7.3% > Ex Caf; and, Rest PL was 3.2% > Ex PL. Blood Lactate was significantly greater for the Ex Caf condition (7.9 vs. 5.8 mmol/L in Ex PL condition). Rest Caf mean arterial pressure tended to be higher than Rest PL (p=0.053). No significant difference was present for repetitions to fatigue. Caffeine ingestion did

not affect resistance exercise performance; however, it was associated with a mild, non-significant reduction in glucose control during the post-exercise OGTT.

Gabriel Hirsch**Faculty Sponsor(s):** Dr. William (Turi) Braun**TIME: 6:00-7:30****LOCATION: MPR BC*****The Effects of Small Group Exercise on Rate of Perceived Exertion and Mood State in College Students***

Our purpose was to compare differences in rate of perceived exertion (RPE), mood state, and enjoyment in individual and small group exercise. Eighteen subjects completed two cycling exercise sessions; one individual and one small group. For the small group, subjects were randomly placed into groups of three and verbally interacted with each other during the exercise. Each exercise session consisted of a warm up and twelve minutes of cycling at a workload (kp) equal to 2 percent of their body weight in kg. Subjects' RPE, blood pressure (BP), and heart rate (HR) were measured at rest, during, and after exercise. Subjects completed pre- and post-exercise mood state questionnaires. Small group exercise showed higher HR but lower SBP when compared to individual exercise. Small group exercise also showed differences in positive and negative affect. Additionally, group exercise revealed higher motivation than individual exercise. Statistically, there were no significant differences in any of the measures.

Nicholas Lewis, Nicole Martorella, Xiomara Espinosa, Zachary Altland, and Tyler Emerich**Faculty Sponsor(s):** Dr. Sally Paulson**TIME: 6:00-7:30****LOCATION: MPR BC*****Influence of Acute Resistance Exercise on Glycemic Control***

The effects of resistance exercise on blood sugar regulation in resistance-trained adults were studied. Eight participants (two female, six male; age: 20.63 years) completed the study. Each subject completed three testing days: resting control (CON) and two experimental trials. On experimental testing days, subjects completed five sets (six reps/set) of one lift (squat only) or three lifts (bench press, biceps curl and squat: full body) using ten-repetition maximum for all lifts. Upon completion of exercise, a 25 percent carbohydrate beverage (4ml/kg) was administered. Blood glucose was sampled over seventy-five minutes of recovery each day. BG response was not significantly different based on trial. However, BG area under the curve was 5.8 percent larger for CON than for full body and 2.5 percent larger than squat exercise. No exercise treatment differences occurred for heart rate, blood lactate or mean arterial pressure. The volume of active muscle did not influence the regulation of blood glucose after lifting exercise.

Nicholas Lewis, Daniel Hauck, Gabriel Hirsch, Acacia Rightmyer, Helene Miller, and Schuyler Harting**Faculty Sponsor(s):** Dr. William (Turi) Braun

TIME: 6:00-7:30**LOCATION: MPR BC*****The Effects of Aerobic Vs. Anaerobic Exercise on Cognitive Function in College-Aged Individuals***

Many college students enjoy exercising, but what they do not know is that it can possibly aid in cognitive function. **PURPOSE:** To evaluate effects of aerobic and anaerobic exercise on memory recall (MR) and reaction time (RT). **METHODS:** Seventeen college-aged individuals were evaluated on three separate days. On the first day, subjects performed baseline MR and RT test. On the second and third day, subjects completed same tests before and after aerobic and anaerobic exercise, respectively. As for MR and RT, a computerized MR test was administered. Two-way ANOVA was used to compare differences in exercise conditions and time on MR and RT. **RESULTS:** Average number of words recalled decreased after both exercises. However, choice RT improved after both conditions. Simple RT also slightly improved after aerobic exercise, but not after anaerobic test. **CONCLUSION:** This study suggests that there may not be significant benefits of short bouts of exercise on MR but modest improvements in RT may be achieved.

Megan Marquart**Faculty Sponsor(s):** Dr. Joohee Sanders**TIME: 6:00-7:30****LOCATION: MPR BC*****A Comparison of Normal Gait Pattern vs. Everyday Dual Task in College Students***

Purpose: To compare how dual tasks such as texting, carrying objects, and cognitive thinking affect stride length, velocity, time, and cadence in college-aged individuals. The hypothesis stated that when individuals performed dual tasks, their stride length, velocity, cadence, and time were altered due to an increase in concentration, on the task, rather than walking. **Results:** The repeated measures ANOVA determined a statistical significance for velocity, time five seconds, time ten seconds, and time at fifteen seconds all at the $p < .05$ level. Stride length was statistically significant ($p < .01$) in several trials. Cadence showed no significant difference between the different trials. **Conclusion:** Overall, gait patterns are affected when texting and walking as well as cognitive thinking in all three factors measured. During carrying time, subjects took longer steps making their time shorter and their velocity faster.

Jennifer Pruskowski, Natalie Dalfo, Sean Castillo, and Megan Coppola**Faculty Sponsor(s):** Dr. Sally Paulson**FINANCE****TIME: 6:00-7:30****LOCATION: MPR BC*****Investment Management Program***

The class will be presenting our annual return for the Shippensburg University's Investment Management Program. Our \$180,000 portfolio is used in order to gain scholarships for finance students in need.

Jose Polanco and Andrew Crum**Faculty Sponsor(s):** Dr. Hong Rim**GEOGRAPHY/EARTH SCIENCE****TIME: 3:30-5:00****LOCATION: MPR BC*****Analysis of Specific Conductance and Major Ions at Green Spring, Pennsylvania***

Conductance is a measure of water's capability to pass an electrical current, which is directly related to the concentration of dissolved ions such as chlorides, sulfides, and carbonate compounds. Abnormally high conductivity readings (700 μ S) at Green Spring in western Cumberland County suggest contamination. This study focused on specific conductivity and its relationship to concentrations of seven major ions being discharged from Green Spring. The methods for this analysis included performing laboratory titrations to assess bicarbonate concentrations, and using a professional laboratory to determine the concentration of the remaining six major ions. This research attempts to increase the body of knowledge on conductivity in carbonate aquifers, and to identify potential contaminants.

Tyler-Anne Buck**Faculty Sponsor(s):** Dr. Thomas Feeney**TIME: 3:30-5:00****LOCATION: MPR BC*****Seasonal Trends of Nitrate Concentration and Load in Green Spring, Pennsylvania***

On a karst terrain, nitrate from agricultural fertilizers often leach into the groundwater. Green Spring in central Pennsylvania supports a trout hatchery that is vulnerable to receiving elevated nitrate concentrations due to an area dominated by agriculture. Weekly nitrate concentration and fifteen-minute interval discharge data was used to calculate nitrate load and determine a seasonal trend in nitrate. Discharge was found to have a direct effect on nitrate load but little effect on concentration. The presence of a subcutaneous zone, which stores nitrate leachate and releases it at a continuous pace during base flow, would explain the lack of a seasonal nitrate concentration trend. A seasonal trend was found in nitrate load due to its relationship with discharge. The seasonal trend from least to greatest total load was winter.

Michael Dofner**Faculty Sponsor(s):** Dr. Thomas Feeney

TIME: 3:30-5:00**LOCATION: MPR BC*****Locating the Revolutionary War POW Camp Security: An Investigation using Geophysical Technology***

The location of Camp Security, a colonial era POW camp, in Springettsbury Township, York County, Pennsylvania, is unknown to date. Previous archaeological investigations have been attempted but limited by an insufficient understanding of the subsurface. By using GPR for a non-invasive investigation based on changes in dielectric properties in subsurface materials, we hope to detect anomalies related to human disturbances such as stockades, trenches, graves, water wells or hospital foundations. The regional geology will be analyzed through a geophysical context to locate and add information on the geoarchaeological extent of Camp Security. The project area will be gridded for GPR data collection, topographically surveyed to correct for elevation changes, and data processed using RADEXPLORER. Anomalies detected will be provided in a final report to the Friends of Camp Security to help plan later archaeological and geophysical studies.

Nathaniel Fricke and Thomas Vento**Faculty Sponsor(s):** Dr. Sean Cornell**TIME: 3:30-5:00****LOCATION: MPR BC*****Impacts of Forest and Agricultural Land Use on Nitrate Concentrations in Burd Run Watershed, Pennsylvania***

The study examined the relationship between land use and stream nitrate concentrations during the autumn. The main goal of the study was to analyze the correlation between land use and nitrate concentration. The study area is in the Burd Run Watershed, Cumberland County, Pennsylvania. Four sample sites were selected based on two forms of land use; forest (27.3 percent) and agriculture (15 percent). Water samples were collected on a weekly basis between early September and mid-November, 2017. Nitrate concentrations were analyzed using the cadmium reduction method.

The nitrate concentration at Briton Rd. (AG2) averaged at about 2.60 mg/L. The amount of agricultural land use was found to have an impact on stream water quality. Stream discharge was also a determinant for nitrate concentrations. It is confirmable that agricultural activities can have an impact on nitrate concentration in streams.

Eric Peregor**Faculty Sponsor(s):** Dr. Christopher Woltemade**TIME: 3:30-5:00****LOCATION: MPR BC*****Creation of Migration Maps for Pennsylvania Songbirds***

A series of maps was created based on a request from The Pennsylvania Audubon Society that will be published in a workbook Geography is for the Birds for grades five through eight. It helped grow my skills of creating more desirable products in ArcMap and Adobe Illustrator, along with knowing the requirements for a publishable product. The project required me to create several versions of the map, a blank map for the students to fill out, answer keys corresponding to each bird for the instructors, and one big map containing all of the pathways for the migration. My part has been completed, but as this is a workbook encompassing grades five through eight, there are a lot more activities to be added. In final publication credit will be given to me and the other creators of

different activities of the workbook.

Andrew Pritchard**Faculty Sponsor(s):** Dr. Alison Feeney**TIME: 3:30-5:00****LOCATION: MPR BC*****Mapping the Ordovician-Silurian Boundary in South-Central Pennsylvania Using Magnetic Susceptibility***

The end-Ordovician glaciation produced a worldwide lowering of sea level that resulted in a large erosional unconformity known as the Cherokee Unconformity. In Pennsylvania and surrounding states, rocks straddling the Ordovician-Silurian transition boundary (OSB) contain the sedimentary record of the event. However, this event is poorly resolved and not well defined. This study focuses on the innovative use of Magnetic Susceptibility (MS) in order to determine if this event has left unique magnetic signatures in the adjacent rocks of the OSB. Our research focuses on the Bald Eagle-Juniata-Tuscarora interval where minerals with magnetic properties can be identified. Previous research indicates that the Juniata formation possesses higher levels of FeO₂ within its lithology in contrast to the quartz-dominated Tuscarora and Bald Eagle formations. This research tests whether the MS will be capable of identifying these mineralogical variations and whether the unconformity can be detected.

Joao Silveira Meyers and Jacob Percey**Faculty Sponsor(s):** Dr. Sean Cornell**TIME: 3:30-5:00****LOCATION: MPR BC*****Geophysical Mapping of Karst Features around Shippensburg, Pennsylvania***

Environmentally, Karst features such as caves, sinkholes, and closed depressions could constitute a hazard to human activities. Around Shippensburg, construction projects have been delayed several times due to the presence of sinkholes. Sinkholes are easy to miss before construction as they are not always visible at the surface but can become problematic later. It is important to locate and map Karst features and geophysics provides an efficient, environmentally friendly, and cost-effective means for doing so. In this study, ground-penetrating radar (GPR) and electromagnetic induction (EM), were used to test the applicability of geophysics at a locally known sinkhole site in Shippensburg. The goal of this study was to map the dimensions of the sinkhole including the depth of burial. The results obtained with GPR were compared with those of the EM. Both methods could successfully image the sinkhole but GPR provided the best resolution. Therefore, the goal of the study was met.

Shyanne Stouffer**Faculty Sponsor(s):** Dr. Joseph Zume**TIME: 3:30-5:00****LOCATION: MPR BC*****Examining the Geologic Origin and Age of Thrust Faults Present along Cross-Strike-Discontinuities (Lineaments) in Streams Entering Lake Erie using Fourmile Creek as a Proxy Study***

Numerous thrust faults and anticlinal folds have been identified along post-glacial streams paralleling Cross-Strike Discontinuities (CSDs) and draining northward into Lake Erie in Erie County, Pennsylvania. However, the geologic evidence for structural controls on streams entering Lake Erie, such as Fourmile Creek, suggests several possible scenarios of development. Thus, the primary objective of this study is

to determine whether the streams entering Lake Erie are entrenched into structures produced by ancient tectonism (i.e. Allegheny Orogeny) or are more recent and related to isostatic rebound post last glacial maximum (i.e. 22,000 years ago). This study began with an in-field analysis of all identifiable geologic features along FourMile Creek, including faults and joint sets. Stereographic projections, rose diagrams, and a GIS trend analysis of the data collected in this study as well as from archived data should provide context to evaluate either claim.

Thomas Vento

Faculty Sponsor(s): Dr. Sean Cornell

HISTORY/PHILOSOPHY

TIME: 3:30-5:00

LOCATION: MPR BC

Ancient Egypt: Currency in the New Kingdom

When considering the topic of currency, the New Kingdom of Ancient Egypt (1500-700 BCE) had a very flexible and open policy in its economy when it came to coinage and types of currency used in economic transactions. Although there were many complex economic transactions occurring in both the public and private sectors, nevertheless, there was still a flexibility of what could be used as a unit of account throughout the kingdom. Although some may feel the need to list Egypt's economy as a backwards economy, I would argue that this diversification and flexibility enhanced their economy to a point where it rose above a simple barter system and backwards economy to a simple, yet better, economy. This flexibility combined with no known widespread use of a national currency allowed Egypt to use currency in many different forms and, therefore, allowed for their economy to diversify and grow exponentially.

Jared Bixler

Faculty Sponsor(s): Dr. Christine Senecal

TIME: 3:30-5:00

LOCATION: MPR BC

The Vague Commands of the Hippocratic Oath

With in-depth analysis of certain case studies, it becomes clear that the Hippocratic Oath was not followed as closely as most would have perceived. As I analyzed the specific use of anesthetics on the patients, different point-of-views that could have been derived from the phrase "do not harm," and the increase of medical malpractices, it has become clear that my argument was in fact true. This phrase, "do not harm," is a fundamental precept, but it was a vague command to give. The Ancient Greek case studies, ranging from pus in the chest to carpentry in the skull, can further prove that there was indeed pain inflicted upon most patients because physicians saw it was for the greater good for the patient's future health, among various other reasons.

Samantha Brayton

Faculty Sponsor(s): Dr. Christine Senecal

TIME: 3:30-5:00

LOCATION: MPR BC

Shaming Society: A Different Look at Pennhurst State School and Hospital's Closing

Pennhurst's problems were not completely internal and just their own. It is possible that outside society aided in the process of its destruction by pushing the institution far past its realistic capabilities. Information from numerous patient files, Halderman vs. Pennhurst court records, newspaper clippings, statements from the superintendent and assistant superintendent regarding everyday problems at the hospital, and institutional policy notices provide a reason to doubt that Pennhurst was just a bad place run by exceptionally bad people. Instead of faulting the institution itself, society ought to take some of that blame because the state hospital became a direct reflection of the community's mindset toward the mentally disabled. It seems very hard to believe that mental hospitals everywhere collectively decided to become shameful failures; instead, I believe that there must be some underlying cause.

Nastassia Foose

Faculty Sponsor(s): Dr. Brian Ulrich

TIME: 6:00-7:30

LOCATION: MPR BC

Representation of Brazilian Women in Advertising

This presentation will analyze the societal progress that women in Brazil have made in recent decade, and then outline the subsequent representation of these women. Brazilian women, as a whole, have made noticeable progress in their nation in terms of society, politics, and education, however the media and advertising field still demeans the gender by overly sexualizing advertisements. This display will specifically focus on advertisements that were available to viewers in the United States, which proves that the exploitation of Latin American women is prominent in a widespread geographical sphere.

Abigail Jones

Faculty Sponsor(s): Dr. Gretchen Pierce

TIME: 6:00-7:30

LOCATION: MPR BC

The Temple of Inscriptions and Gender Roles

The Temple of Inscriptions is an ancient tomb and religious ritual site for the Mayan Empire. This temple provided the Mayan people with connections to their religion and their honored king. Like many archeological sites during this time, The Temple of Inscriptions provides insight into how the people of the Mayan Empire conducted their daily life, including religious ceremonies, political views, and the gender roles of males and females.

Mackenzie Livingston

Faculty Sponsor(s): Dr. Gretchen Pierce

TIME: 6:00-7:30

LOCATION: MPR BC

Lighthouse of Alexandria

I will be presenting information on an ancient civilization I have previously put time and effort into researching. The civilization I have researched is from Ancient Greece. I will be focusing on the aspect of the development of the religion in this civilization. I will also be connecting their religion to a well-known piece of architecture from this time period. The architecture is called the Lighthouse of Alexandria and is just one of the Seven Wonders of the World. I plan to display my research on a trifold poster displaying an image of the

lighthouse, as well as incorporating facts about the civilization and their religious beliefs and practices.

Veronica Lynch

Faculty Sponsor(s): Dr. Gretchen Pierce

TIME: 6:00-7:30 **LOCATION: MPR BC**

Decline of Buddhism in India

Buddhism, a once prominent and powerful religion in India, experienced a variety of changes between 300 BCE and 1100 CE leading to the disappearance of the religion from the political and social realms of Indian culture. Although many scholars attribute the collapse of Buddhism to have occurred in the sixth century, this reductiveness perspective only encompasses a small portion of the history of the decline of this world religion. The religion did not collapse, but rather faded and assimilated into Indian culture. With the introduction of new elements politically, socially, and economically into Indian culture, the religion faced the consequences of a declining practicing population. Various factors, such as economic dependency of Buddhists and lack of patronage, along with favor rising among the elite and commoners for Brahminical Hinduism, and the social changes to Buddhism and its practice in new ways in monasteries, led to the decline of this religion.

Nishi Natalia

Faculty Sponsor(s): Dr. Christine Senecal

TIME: 6:00-7:30 **LOCATION: MPR BC**

Goats, Graves, and Sustainable Cemetery Preservation: Considering the Use of Livestock to Maintain Historic Cemetery Grounds

This project seeks to examine the feasibility, benefits, and challenges of using either goats or sheep to control the growth of grass and invasive plant species at small, historic cemeteries. In addition to the practical issues of determining how animals might be used, the circumstances under which they would be successful, and the impact they might have on the cemetery grounds, we will also be considering how such an approach would be viewed by the community and the family members of individuals laid to rest on the cemetery grounds.

Joseph Oleski, Angelica Masser, and Parker Bispel

Faculty Sponsor(s): Dr. Steven Burg

TIME: 6:00-7:30 **LOCATION: MPR BC**

Rape in Native Women

Rape has been always existing in the history of humanity. But native women in Mexico are a more vulnerable group for example: the Otomies, Huastecas, and Tarahumaras. Why are native people more vulnerable to suffer from sexual abuse in the XX and XXI centuries?

Carina Ramirez

Faculty Sponsor(s): Dr. Gretchen Pierce

TIME: 3:30-5:00 **LOCATION: MPR BC**

Politics in the Lighthouse of Alexandria

Throughout history and even into modern times, we can see reoccurring themes and patterns that helped shape the world and our beliefs into what they are today. One of these themes that had, and still have a major impact on the world, is politics and the idea of

government. I will be presenting how this theme can be seen in the materials and resources used in building the Lighthouse of Alexandria, as well as the construction itself and the reasons it was built.

Rebecca Rosikiewicz

Faculty Sponsor(s): Dr. Gretchen Pierce

TIME: 3:30-5:00 **LOCATION: MPR BC**

The Analysis of the Late Roman Senate

The late Roman Republic dated 153-53 BC was led by an oligarchy that used unfair money-lending practices, corruptive use of the judicial system in criminal court, and manipulated the government and army for their own personal gain rather than to help the overall well-being of the Roman state. Although in terms of territorial expansion, Rome appeared to be growing in strength, the Republic began to fall because the wealthier class was more focused on how they were going to get into office and stay powerful rather than helping the Roman state. Researchers can see this specifically through the imbalance of power and influence they put on government institutions to have things in their favor.

Alexandra Spease

Faculty Sponsor(s): Dr. Christine Senecal

LEARNING CENTER

TIME: 6:00-7:30 **LOCATION: MPR BC**

Does Tutoring Impact the Writing Quality and Complexity of Undergraduate and Graduate Writers: A Mixed-Methods Analysis

We created and implemented a mixed-methods research design to assess the potential benefits of tutoring on writing quality and complexity. We assessed a representative sample of undergraduate ENG 113 writers in conjunction with a small sample of graduate international writers. We employed a variety of measurements, including two quantitative assessments and one qualitative survey. The first quantitative measure was the Flesch-Kincaid Reading Level, while the second measure was the Written Communication Value Rubric. We evaluated writers' written texts before and after receiving tutoring services to determine if tutoring impacted their development of writing abilities. Additionally, writers completed surveys to assess their perceptions of any changes in their writing skills. Our results will provide authentic data to reveal if we are truly living out our narrative to help all writers experience improvement in their writing abilities.

Deah Atherton, Brian Hutchison, Michelle Coughlin, and Mallory Griest

Faculty Sponsor(s): Dr. Karen Johnson

MANAGEMENT/MARKETING/ ENTREPRENEURSHIP

TIME: 3:30-5:00 **LOCATION: MPR BC**

Antecedents and Outcomes of Competitiveness

In this study, we will investigate the antecedents of competitiveness. This study will delve into the effect of narcissism on a person's competitiveness. Then, this study will explore the effect competitiveness has on cheating and gambling. The statistics gathered from surveying individuals at Shippensburg University demonstrate that competitiveness positively predicts cheating and

gambling. However, narcissism was not found to significantly predict competitiveness. The data obtained from this research may aid in the attempt to obstruct a person from behaving in a deviant or unhealthy manner. The associations of these constructs may lead to a more productive workplace and educational institution.

Evan Callahan, Megan Frederick, Nick Grant, Alexis Broadbent, and Daniel Nyswaner

Faculty Sponsor(s): Dr. Blake Hargrove

TIME: 3:30-5:00 **LOCATION: MPR BC**

Enhancing Understanding of World Englishes by Native English Speakers Working in Global Virtual Teams

Communication is one of the central challenges facing those who work in global virtual teams (GVTs). Most often, the main language of communication in these teams is English, but team members usually have very different levels of proficiency or speak versions of English unfamiliar to many American-based students and professionals. Much effort has been expended and research has been conducted in helping people to learn foreign languages to enhance communication, and in helping non-native speakers of English enhance their ability to communicate in English. Very few have looked at the issue from the side of the native English speaker. This research presents a series of classroom exercises developed to help native speakers of English improve their abilities to understand non-native speakers and native speakers of non-American Englishes and then measures the perceived effectiveness of these exercises in the context of participation in actual global virtual teams.

Jan Striewe

Faculty Sponsor(s): Dr. Robert Stephens

MATHEMATICS

TIME: 6:00-7:30 **LOCATION: MPR BC**

Chambersburg Area Senior High School Basketball Analytics: Data Mining and Application of Team Performance

No matter the type or level of a sport, every team has one end goal: to win. This goal is no different for the Chambersburg Area Senior High School basketball team, the Trojans. The team has had to be rebuilt after several bad seasons, and deal with two head coaches switching control back and forth on the players. The coaches are seeking a way to gather and compile data on their players to improve strategies and overall performance. Chambersburg's athletic department has been uploading game videos into a database called Hudl, where they detail their team statistics. We will look to export the data from this database into Microsoft Excel, and attempt to build a program in R that will replace and/or supplement our model in Excel. We hope to provide guidance to the coaching staff as to what trends help when winning and what hurts when losing. In conjunction with game strategies, we want to suggest areas players should focus on in practice and what should not be as big of a priority.

Crystal Evans, Conner Chapman, and Rebecca Feaser

Faculty Sponsor(s): Dr. Ben Galluzzo

TIME: 6:00-7:30

LOCATION: MPR BC

Population Dynamics of Oysters: An Exploratory Approach

Since 2012, the Nature Conservancy has installed man-made oyster reefs in multiple locations in the area of Chincoteague, Virginia. These reefs are meant to help restore habitat, improve water quality, and protect the shoreline from erosion. However, there is little research that exists examining the dynamics of oyster populations that would help guide where to best place man-made oyster reefs. We explore mathematical and statistical analyses in order to establish important variables and subsequent parameters that may better promote oyster population growth on these reefs. Along the way, we also explore a new, potentially more efficient technique to conduct an oyster census using Photogrammetry technology to replace the traditional method of hand counting. This project is interdisciplinary, involving the Mathematics Department and Geography-Earth Science Department.

Jesse Helman, Levi Nicklas, and Julienne Nicklas

Faculty Sponsor(s): Dr. Ben Galluzzo

MODERN LANGUAGES

TIME: 6:00-7:30

LOCATION: MPR BC

Subir la edad de fumar / Raising the Smoking Age

This work aims to argue that the age of smoking and purchasing of tobacco products, such as cigarettes, should be raised from eighteen to twenty-one years old. The main argument for raising the smoking age stems from the health problems that have been discovered in recent years due to smoking, such as cancer and the damaging effects on the developing brain, especially since many people begin smoking even before the age of eighteen. Another argument is the age to consume alcohol is already twenty-one, and alcohol has fewer dangers than cigarettes since alcohol can be addictive, while cigarettes are always addictive. If the age is raised to twenty-one, it is less likely that underage persons can obtain access to tobacco products, therefore decreasing the number of people who become addicted to tobacco. This work also addresses the counterarguments that are presented against raising the smoking age and aims to use different resources and data to dispute them.

Rachel Brodie

Faculty Sponsor(s): Dr. Robert Lesman

TIME: 6:00-7:30

LOCATION: MPR BC

Les Humannaires, par delà la Terre et la Lune: traduire le 'Manuel d'instruction pour astronautes' de Mike Mongo.

“Le Manuel d'instruction pour astronautes” (titre original: “The Astronaut Instruction Manual”) de Mike Mongo est un livre pour la jeunesse qui prodigue des conseils et raconte des histoires pour encourager dans leur entreprise ceux qui s'intéressent à l'exploration de l'espace et qui veulent y travailler. La traduction de ce texte s'est révélée difficile à plusieurs égards : les néologismes, les références culturelles spécifiques à la culture américaine, la terminologie spatiale, et le public visé. En analysant ces difficultés à l'aide des sept techniques de traduction proposées par J.-P. Vinay et J. Darbelnet (1958), le poster vise à montrer comment l'utilisation des techniques de calque, d'adaptation et de transposition ont aidé à résoudre une partie des problèmes rencontrés.

English Translation:

Title: Humannaires, the Earth, the Moon and Beyond. Translating Mike Mongo's Astronaut Instruction Manual into French.

Abstract: The Astronaut Instruction Manual by Mike Mongo is a book for pre-teens that provides advice and tells stories to encourage those who have an interest in space travel to pursue their dream of working in outer space. The translation of this text into French proved difficult in many regards: neologisms, cultural references specific to American culture, space-related terminology, and younger target audience. By analyzing the difficulties encountered in light of J.-P. Vinay and J. Darbelnet's (1958) seven translation techniques, the poster aims to show how the techniques of calque, adaptation, and transposition contributed to resolving some of the issues encountered.

Bradley Foreman

Faculty Sponsor(s): Dr. Blandine Mitaut

PHYSICS

TIME: 3:30-5:00

LOCATION: MPR BC

Rebuild of an Industrial Ellipsometer

Research poster detailing rough overview of Ellipsometry and process of rebuilding an old industrial ellipsometer for research purposes, including experimental characterization of optical elements for wavelengths of light different than what the instrument was originally designed to operate with.

Jeffrey Pound

Faculty Sponsor(s): Dr. Michael Cohen

TIME: 3:30-5:00

LOCATION: MPR BC

Direct Comparison of 3D Printed and Conventionally Produced Microfluidic Devices

Microfluidic devices are currently produced mainly by the expensive and time-consuming process of photolithography. Previous research done by this laboratory has shown that it is possible to produce microfluidic devices using a MakerBot 3D printer. This research evaluated the effectiveness of the 3D printed design method in comparison to the conventional lithography methods. First a variety of devices were designed, followed by their fabrication by the two methods described above. Following fabrication, the flow of the devices was compared qualitatively through use of optical microscopy. During the fabrication process a comparison of length of time necessary to produce the devices as well as the cost of device production was recorded and compared. It is believed that the method of 3D printing devices will be able to significantly reduce device cost and time of fabrication, while maintaining similar flow quality.

Daniel Rosen and Nathan Bishop

Faculty Sponsor(s): Dr. Kathryn Shirk

TIME: 3:30-5:00

LOCATION: MPR BC

Computer Simulation of Fluid Flow in Microfluidic Devices

Computer simulations of fluids can be an efficient way to model the behavior of fluid flow without the need to build and test a physical device. To help expedite the design of microfluidic devices and reduce the cost of the production of such devices, a computer simulation will be built. The fluid flow in microfluidic devices can then be simulated to accurately predict the behavior of fluids in microfluidic channels via the numerical computation of the Navier-Stokes equations with the appropriate boundary conditions. This can drastically improve the ability to fabricate devices compared to traditional techniques. The effectiveness of the model will be tested to determine the advantage of using a simulation to aid in the process of the development of microfluidic devices.

Adam Yosua

Faculty Sponsor(s): Dr. Kathryn Shirk

PSYCHOLOGY

TIME: 3:30-5:00

LOCATION: MPR BC

Attitudes About Social Media

We have assessed college students from Shippensburg University on their social media usage, identity development, and depressive symptoms using the survey method. Our target subjects were freshman or sophomores in college who are still going through the transition into a new environment. From the data we have collected, we will analyze how using social media affects identity development in early adulthood, as well as influences depressive symptoms. Social media is a relatively new concept in the field of psychology, and this study will increase the knowledge of its influence on these factors.

Rachel Hain and Elyss Super

Faculty Sponsor(s): Dr. Suzanne Morin

TIME: 3:30-5:00

LOCATION: MPR BC

Burnout, Mindfulness, and Self-compassion Among Certified Peer Specialists

We are using data that was collected at the Mental Health Association in Franklin County from certified peer specialist over a six month time span. We will be analyzing data from five different certified peer specialists specifically. The participants received inventories a few times a month to develop a baseline period. They then went through a burnout psycho-education course. After this course, they continued to receive the inventories until the follow up period was complete. The data will give us information about burnout, compassion satisfaction and fatigue, and mindfulness. We are looking for any significant changes across the time span of before and after the education course, and if burnout is present in certified peer specialists in general.

Rachel Hain

Faculty Sponsor(s): Dr. Kim Weikel

TIME: 3:30-5:00**LOCATION: MPR BC*****The Effect of Switching from Intermittent to Continuous Reinforcement on Extinction of Behavior***

The partial reinforcement extinction effect (PREE) is the idea that extinction of behavior occurs faster after continuous reinforcement as compared to intermittent reinforcement. Four rats were studied, all of which were previously taught to perform a lever press for a reinforcer of a water droplet. After shaping up to a variable-ratio 8 (VR8) schedule, the rats were placed directly on extinction or exposed to a continuous reinforcement (CRF) schedule before extinction. Once the first phase was completed, each rat again was shaped up to a VR8 schedule but then underwent the opposite condition. The dependent variable was the number of sessions necessary to reach extinction criteria, or for the rats to stop lever pressing. Data indicated support for the PREE in three of four rats, in that extinction was faster after exposure to continuous reinforcement.

Katya Nolder and Nathaniel Sealover**Faculty Sponsor(s):** Dr. Kathryn Potoczak**TIME: 3:30-5:00****LOCATION: MPR BC*****Contingency Management Vs. Feedback Alone: A Comparison of Treatments for Smoking Cessation***

Cigarettes smoked over five weeks were measured to determine if feedback only (FO), in the form of saliva cotinine levels, would be as effective a treatment for smoking cessation as contingency management (CM). After a one-week baseline, participants were introduced to smoking reduction via a changing-criterion design, in which the allowed daily amount of cigarettes was 25 percent lower than their baseline level. Participants texted the daily amount of cigarettes smoked to a research associate and met twice per week to have their cotinine levels evaluated. Starting in Week Two, Participant A received cash lottery draws for attending meetings and if cotinine levels were reduced (CM). Participants B-D simply received feedback regarding cotinine levels (FO). Treatment continued for three weeks, with a 25 percent reduction targeted for each subsequent week. All participants did reduce daily smoking from baseline levels, and results indicate that FO was as effective in producing this result as CM.

Mallory Patterson and Josephine Dress**Faculty Sponsor(s):** Dr. Kathryn Potoczak**SOCIAL WORK AND GERONTOLOGY****TIME: 3:30-5:00****LOCATION: MPR BC*****Overrepresentation of Mental Health History and Racial Minorities***

The United States has been struggling with homelessness for years. Studies have shown that homelessness within the United States has greatly increased since the Great Recession (Gee, 2017). There are several factors as to why individuals are homeless. Some of these factors may include intergenerational transmission poverty, mental health, job loss and/or domestic violence. Homelessness is defined as an individual who lacks a fixed or adequate residence (McKinney-Vento Act P.L. 100-77. 1987). Typically, these individual(s) are living on the street and/or in a shelter.

The purpose of this research is to investigate if individuals with mental health history and racial minorities are overrepresented in the services provided by the Salvation Army. This study will analyze individuals who are homeless and have received services from the Salvation Army. In addition, this research will analyze if there is a possible correlation between race, mental health, and homelessness.

Paige Bankhead-Lewis**Faculty Sponsor(s):** Dr. Jennifer Clements**TIME: 3:30-5:00****LOCATION: MPR BC*****Baby Boomer Generation's Impact on Increase in Services***

There is no doubt that the average age of the world's population is getting older. A large population rise in the United States and in the United Kingdom has been triggered by the postwar baby boom of 1946-1964, otherwise known as the baby boomer generation. The problem now is that with the increasing number of older adults, it has been made clear that resources put in place for the future have been set up poorly (Gale, 2012). Historically, productive and educational lives concluded earlier resulting in a fierce midlife and then an easy and plentiful retirement. But recently, the health care and financial services are deemed unaffordable for the large cohort of the baby boomer generation (Gale, 2012).

Rebecca Bosak**Faculty Sponsor(s):** Dr. Dorlisa Minnick**TIME: 3:30-5:00****LOCATION: MPR BC*****The Impact of Sober Bars on Recovery Support Groups and the Community***

The "Sober Bar" is a new concept created out of the need for those wishing to abstain from alcohol to have a place similar to a local pub or bar to congregate. It originated in the United Kingdom from family members who lost a loved one to substance use disorder. Sober Bars are slowly making their way to the United States. This study researches The Harbor, a Sober Bar that opened in December 2013 in the eastern United States. The Harbor is located on the main street of the town and is open on the weekends as an alternative place for community members to come and connect over non-alcoholic drinks and milkshakes. The Harbor hosts a variety of recovery meetings throughout the week. An ethnography of The Harbor's attendees revealed findings that indicate the unique advantages and disadvantages of holding group interventions at a Sober Bar. The Sober Bar helps to bridge the gap between the community and those attending a recovery group or in recovery.

Marissa Kosko-Blyler, Sonja Payne, Alicia Colon, and Taylore Kerns**Faculty Sponsor(s):** Dr. Michael Lyman

TIME: 3:30-5:00**LOCATION: MPR BC*****Neighborhood Early Warning (NEWS) Model for Cumberland County, Pennsylvania***

The lack of affordable housing in our nation is a common barrier in social work practice. City officials and housing authorities struggle with blight and market availability to develop additional affordable housing options for their residents. Cities are now utilizing a predictive model of neighborhood distress to identify neighborhoods in need of rehabilitation. This study aims to create and run a predictive model of housing decline for Cumberland County, Pennsylvania, a Neighborhood Early Warning System (NEWS). Eleven indicators indicative of housing decline are used in a risk index scale to identify neighborhoods in four stages: stable, bubble, declining, and distressed. NEWS will allow community organizations, key stakeholders, and community development projects to know which neighborhoods to revitalize, when to revitalize them, and the data to support their claims when seeking funding for their project.

Sonja Payne**Faculty Sponsor(s):** Dr. Deborah Jacobs**TIME: 3:30-5:00****LOCATION: MPR BC*****Awareness of Veteran Needs and Issues Within a Bachelor's Level Social Work Program***

The purpose of this study is to identify bachelor's level social work students' knowledge of veterans' needs and issues. This research will be conducted through the use of an exploratory study, including a quantitative design. This study is an exploratory study, as data will be collected through survey's that will be analyzed. By using a structured questionnaire, consisting of forced-response questions, the process of collecting and interpreting data will be efficient. The participants of this study will be obtained through probability sampling, as the researcher will hand out questionnaires to students within the bachelor's level social work program at Shippensburg University. Knowledge of students will be determined by a questionnaire consisting of twenty questions. The questions have been developed to cover several domains, however the researcher has chosen specific domains for this study which the following are: Benefits and Services, Service Related Disabilities, PTSD, etc.

Morgan Pettner**Faculty Sponsor(s):** Dr. Jennifer Clements**TIME: 3:30-5:00****LOCATION: MPR BC*****A Comparison of Recidivism Rates of Participants in Two Group-Based Domestic Violence Perpetrator Programs***

AMEND is a group-based intervention program treating perpetrators of interpersonal violence with an emphasis on personal responsibility and recognizing and controlling abusive behavior. The purpose of this project is to evaluate the effectiveness of the AMEND program by comparing recidivism rates of AMEND participants and a control group of anger management participants. Many domestic violence perpetrators are court mandated to attend anger management focused programs, which emphasize individual deficits and the management of negative emotions. The data collection process confirmed that judges are not referring violators of protective orders to anger management

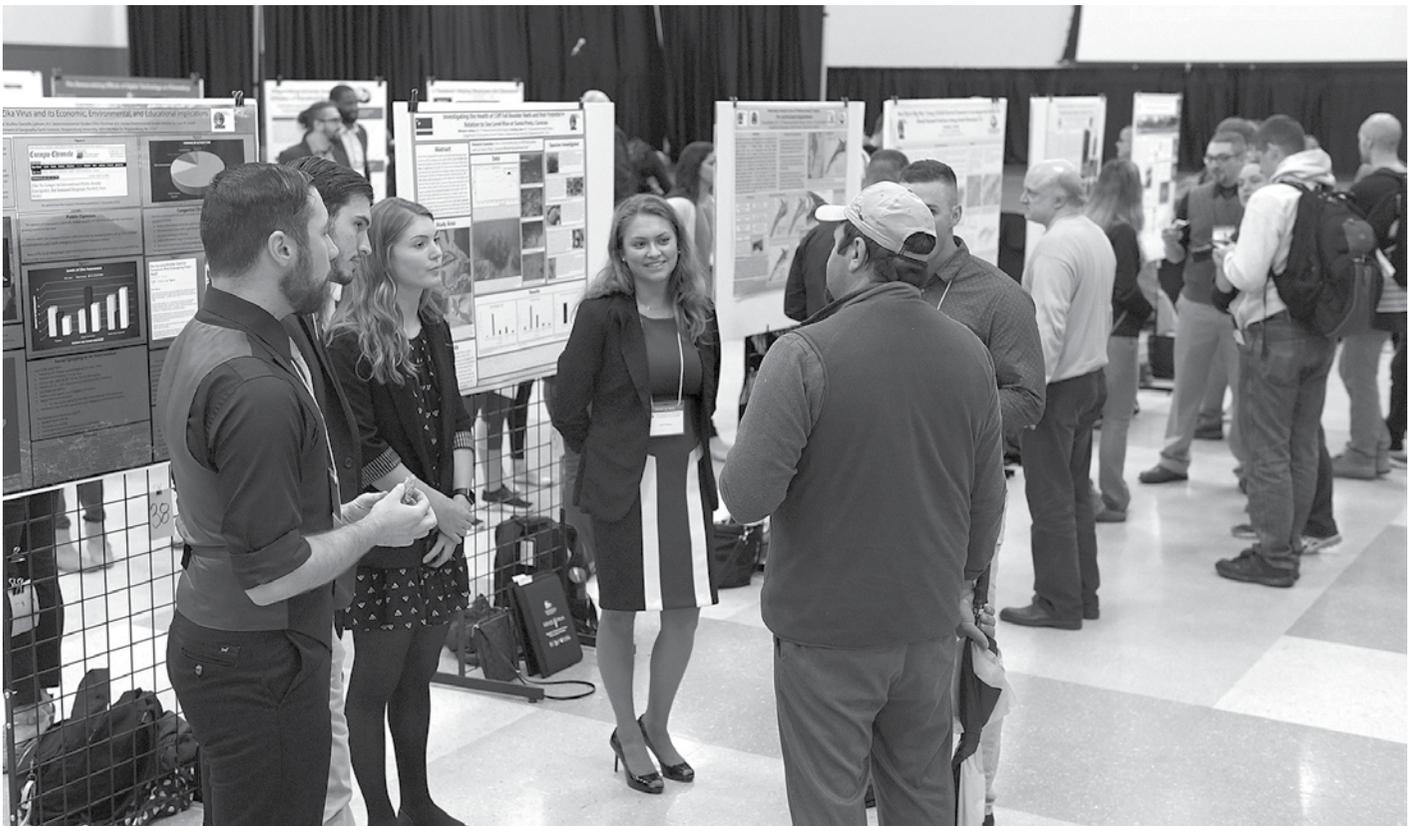
programs. Findings emphasize the differences between outcomes for AMEND participants versus anger management students.

Emily Stottlemyer, Cheyenne Port, Monica DeCarlo, Paige Bankhead-Lewis, Kimberly Washington, Michelle Cousins, and Laurel White

Faculty Sponsor(s): Dr. Michael Lyman

Minds @ Work

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