Grants and Sponsored Projects

Funding Year in Review

July 1, 2017 - June 30, 2018

"Overall, the research I conducted over the summer, thanks to this grant, further developed my scientific skills and built my competence in completing procedures, different common techniques, and designing experiments to answer research questions. I believe that research was the most important experience I have taken part of in my undergraduate career and is the most valuable education I have received at Kutztown."

-Brett Graver, KU BEARS Student

Kutztown University Bringing Experiences About Research in Summer (KU BEARS)

The purpose of the KU BEARS program is to support faculty/student research pairs over the summer. The goals are twofold: to develop the necessary skill set of undergraduate students to help them become student researchers and to provide faculty members with paid student research assistants. Undergraduate students selected for the program will receive summer pay for research tasks assigned by a faculty supervisor. By assisting faculty members in their research, students selected for the program will learn the knowledge and skills necessary for conducting advanced research in their field.

Tabetha Bernstein-Danis
College of Education | Special Education

Emily Rudderow
Major: Special Education

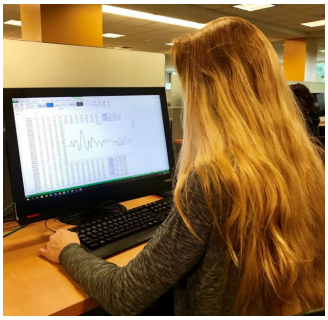
Jennifer Jenkins
Major: Elementary Education

Developing Culturally Responsive Literacy Materials to Implement in a Study Abroad Course in Cape Town, South Africa

Amount Awarded: $2,000

Overview: The research engaged pre-service teachers as student researchers in the development of culturally responsive literacy interventions with culturally relevant texts that were then implemented by their peers in a literacy interventions study abroad course that paired pre-service teachers with primary school students in South Africa. To best meet the needs of students from diverse backgrounds, particularly those who have struggled with literacy, it is paramount to develop instructional tasks that acknowledge students' ways of knowing, understanding, and learning in the context of their own home communities (Gay, 2010; Ladson-Billings, 2009). This requires that pre-service and in-service teachers be open to honoring ways of learning, understanding, and demonstrating knowledge that may be quite different from their own educational experiences, which for the majority occurred in predominantly white, middle class communities. Further, use of both literature that students connect to culturally and familiar pedagogical practices have been found to lead to improvement in the area of literacy for students of color (Bui and Fagan, 2013).

In addition to learning about and developing culturally responsive lessons, the pre-service teachers who served as student researchers through the grant learned to work with community insiders (culture coaches) to ensure texts used and lessons developed were truly relevant to the primary school students in the program and served as peer mentors for this year's study abroad students as they implemented the lessons developed by the student researchers.



Michael Davis

College of Liberal Arts & Sciences | Geography

Elizabeth Geesey

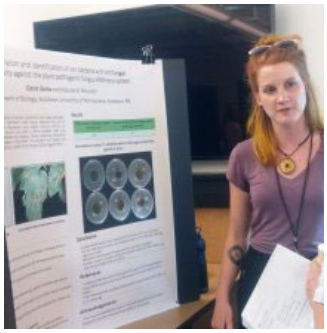
Major: Environmental Sciences / Geography

Flood Frequency Distributions in the Northeast United States

Amount Awarded: $2,000

Overview: The United States National Climate Assessment, as well as climate science literature, depicts a much wetter climate across the north-east region of the country. This trend in increased moisture is the result of atmospheric warming, largely from anthropogenic forcings, which allows for a greater water carrying capacity. Heavy rainfall events can lead to flash flooding conditions in communities within this highly populated re-gion of the United States leading to high economic and property loss and potential loss of human life.

An aspect of this emerging, and significant, climate research topic, is the consideration of wet/dry events that precede flash flooding. Utilizing pre-cipitation and drought data from the National Center of Environmental In-formation, seasonal trends in precipitation and the Palmer Drought Severity Index (PDSI) are used to assess the vulnerability of the 42 climate divisions that comprise the northeast US region. Spatial trends will be analyzed to assess whether specific sub-regions are exhibiting seasonal tendencies in terms of "pre-flash flooding." Climate model projections will also be in-corporated to augment the historical trends and identify regions that may see significant flash flooding in the future.



Kaoutar El Mounadi

College of Liberal Arts & Sciences | Biological Sciences

Angeline Digiugno

Major: Environmental Sciences / Biology

Claire Santa

Major: Environmental Sciences / Biology

Isolation of Soil Bacteria with Antifungal Activity against the Fungal Pathogen Alternaria Solani

Amount Awarded: $2,000

Overview: Early blight is an economically important disease of tomato caused by the fungal pathogen *Alternaria solani*. The disease can lead to significant yield losses. Despite the use of fungicides and breeding tomato plants for resistance, early blight remains difficult to control. Microbial agents with antifungal activity can offer a more durable, safer and sustaina-ble alternative to control and eradicate the disease. These potential

continued

(Kaoutar El Mounadi continued)

biocontrol agents can be found naturally in soils in organic crop fields. In this project we have isolated bacteria from the soil of organic fields at Rodale Institute. The bacteria were then tested for their ability to inhibit the growth of the fungus. Out of the 104 bacteria isolated, 9 showed potent antifungal activity. Molecular biology techniques were then used to determine the species of these bacteria. The ultimate goal of this research is to find bacteria that can be used to control fungal growth but are also safe for humans and animals. These preliminary data provide us with a pool of bacterial candidates that have the potential to be developed as biocontrol agents. Plant pathology is a field that has significantly less female scientists compared to other areas in biology. Thus, training and mentoring the next generation of women in plant pathology and disease control is necessary to close the gender gap in this field. The grant has offered a great opportunity for two female students to learn techniques in microbiology, fungal biology and plant disease control. The students also had a chance to present their findings at a regional meeting which strengthened their oral and written communication skills.

Brooks Emerick

College of Liberal Arts & Sciences | Mathematics

Safal Raut Chhetri

Major: Mathematics

Host-Parasitoid Model with Parasitoid Migration

Amount Awarded: $2,000

Overview: Extensive work has been done on analyzing host-parasitoid interactions using discrete-time models, the most notable of which is the Nicholson-Bailey model. Recent work on host-parasitoid modeling incorporates a continuous feature in the traditional discrete-time system. A set of differential equations is used to capture the dynamics during which the two species interact, allowing specific host and parasitoid characteristics to be included and analyzed. We use this semi-discrete approach to study the effects of parasitoid migration between two sites, both of which contain a proportion of the entire host population. We find that in the simplest case, when the migration and parasitism rates are constant, a stability region exists. This suggests that parasitoid migration to and from host sites has a stabilizing effect that depends on the distribution of the host population among each site at the beginning of the vulnerable period. The stability of the system is characterized by relatively lopsided migration rates in the sense that parasitoids will likely not revisit a patch previously parasitized. In this work, we present analytic and numerical results that describe the region in parameter space in which coexistence among the two species is possible. This parameter space is characterized by two factors: the number of viable larvae per adult host and the fraction of host larvae present at the initial location each year.

Jennifer Forsyth

College of Liberal Arts & Sciences | English

Lauren Verna

Major: Secondary Education / German

Transcribing Recipes and Project-Based Learning in the Secondary Education and College Classrooms

Amount Awarded: $2,000

Overview: My research goal was to work with an undergraduate student, Lauren Verna, to prepare transcriptions of a large number of recipes involving garden flowers from manuscript recipe books available in academic libraries' digitized images that had not yet been transcribed, in order to better understand how authors such as William Shakespeare were using floral references in more complex ways than is currently recognized. In order to accomplish this, Lauren and I worked to identify appropriate texts with a variety of floral references, to transcribe the very difficult-to-read Renaissance handwriting, and to prepare preliminary analyses of the results. We located numerous valuable texts at the Welcome Library in London, and Lauren prepared transcriptions for over 100 recipes. This form of crowdsourcing using trained scholars is becoming increasingly recognized as a valuable form of scholarship, and employing project-based learning motivates and empowers young scholars.

Following our initial work with transcription, Lauren, who is a Secondary Education German major, worked with Dr. Patricia Pytleski, whose area of specialization is pedagogy in the secondary education classroom, to research best practices in the use of project-based learning and to prepare instructional materials for teaching transcription. These materials would be useful either in college or high school classrooms.

The value of our work is already being recognized: the editors of a well-known academic blog relating to Renaissance recipes have invited Lauren and me to write posts about our experiences and results for publication.

"Seeing the real-life impact of doing research like this has inspired me to teach my future students about what it means to do purposeful research and contribute to a field of study."

-Lauren Verna

Richard Heineman

College of Liberal Arts & Sciences | Biological Sciences

Christine Holland

Major: Biology / Pre-Med & Health

Anneliesse Braden

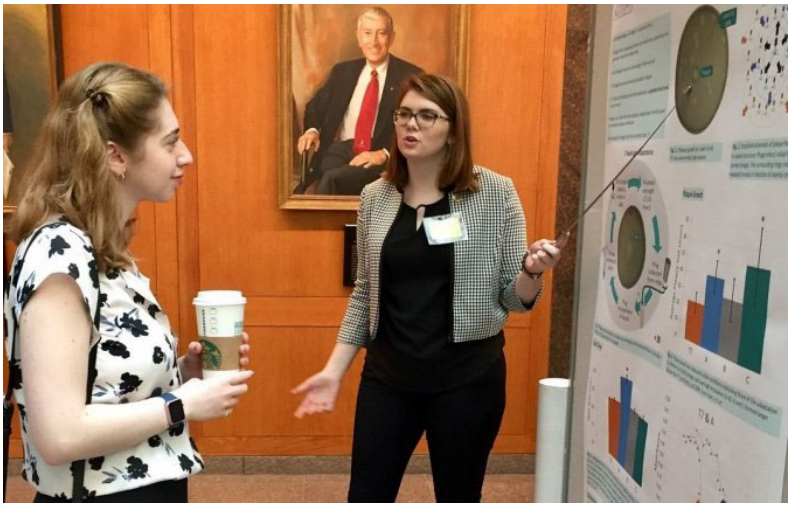
Major: Biology / Pre-Med & Health

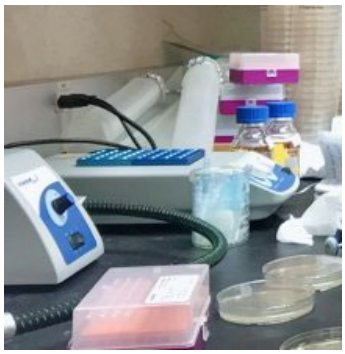
The Cost of Antibiotic Resistance and Its Effect on T7 bacteriophage

Amount Awarded: $2,000

Overview: Christine Holland Project (Nalidixic Acid): Antibiotics, widely used to prevent bacterial infections, are becoming less reliable over time as bacteria evolve to resist their effects. This resistance can involve a variety of mutations, which may differ in their effect on both resistance and the growth rate of the cell when no antibiotics are present. Bacteriophages, viruses that infect bacteria, can be used to treat bacteria, an approach known as phage therapy. As phage therapy typically involves antibiotic-resistant bacteria that can be treated no other way, understanding how phages reproduce in resistant cells may be clinically important. In the presence of antibiotics, T7 preferentially kills antibiotic-resistant cells suggesting that phage therapy combined with antibiotic usage could interact favorably.

Anneliesse Braden Project (Adaptation on a Plaque): Bacteriophages, viruses that infect bacteria, may be useful to treating bacterial infections. However, they have for the most part been studied in liquid culture, an environment that mixes cells and bacteria and allows viruses to infect any bacteria in the culture. In nature, these viruses may more often be found in spatial structure, in conditions that allow phages to infect only cells that are close to the previous site of infection. These conditions can be replicated on a Petri dish. We adapted phage populations to grow on a Petri dish overnight over many generations and observed the phenotypic and genotypic results. The evolved phages dispersed farther on a Petri dish, and one replicate adaptation appears to have evolved to take more time to kill its host.





Matthew Junker

College of Liberal Arts & Sciences | Physical Sciences

Brett Graver

Major: Biochemistry

Role of BIR2 Domain in the Ability of the DIAPI Protein to Inhibit Apoptosis Caspases

Amount Awarded: $2,000

Overview: Apoptosis (programmed cell death) occurs in all animals as a way to safely eliminate unneeded or potentially harmful cells. Apoptosis dysfunction can lead to cancer and neurodegenerative diseases. Apoptosis requires the activity of caspases, protein enzymes inside cells. These caspases are kept inhibited ("turned off") in living cells by inhibitor of apoptosis proteins (IAPs). The IAP-caspase interaction is a key regulatory point of apoptosis. The biochemical mechanism by which IAPs inhibit caspases was investigated using proteins from *Drosophila* (fruit fly) that were expressed in and purified from *E. coli*. Quantitative measurements comparing different fragments of a *Drosophila* IAP showed that each of two distinct BIR (baculovirus IAP repeat) domains in the IAP contributed equally to the IAP's ability to inhibit a caspase. Having both domains present in the same IAP fragment resulted in enhanced inhibition, revealing an additive effect. Recombinant DNA methods were used to modify the N-terminus of a *Drosophila* caspase in two different ways to further dissect the physical interactions between the caspase and IAP. Both modified caspases retained their catalytic function and are now being tested for alterations in their inhibition by the IAP.

Ahyoung Lee and Juliana Svistova

College of Liberal Arts & Sciences | Social Work

Caleb Baukman

Major: Social Work

Community Needs Assessment

Amount Awarded: $2,000

Overview: The purpose of this study was to conduct a community needs assessment for nonprofit social service agencies – *Friend, Inc*. and *Kutztown Strong* – serving Kutztown, Fleetwood, and Brandywine school districts. Specifically, this study aimed to investigate the unmet needs of the community members in terms of health services, mental health services, job trainings, transportation, elderly services, education, financial barriers as well as their knowledge of services available through these organizations. This project was initiated through the community-university partnership. The study employed online and in-person survey methodology. Survey questionnaire was developed and pilot-tested. Community-wide comprehensive recruitment was conducted through, but not limited to, the school

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(Ahyoung Lee and Juliana Svistova continued)

districts, social service agencies, trailer parks, and senior living facilities. The project employed one junior social work student who was eager to learn about community needs assessment and strengthen their research skills. Study results will be shared with the social service agencies and expected to be used as a way to evaluate current services and to develop future programs.

Steve B. Lem

College of Liberal Arts & Sciences | Political Science & Public Administration

Laura Graziano

Major: Geography

Redistricting and Third Party Emergence in the US House Elections

Amount Awarded: $2,000

Overview: Third party candidacies are an enigma in U.S. Congressional elections given the low likelihood of electoral success. Despite these odds, they continually challenge the major party duopoly. This project examines how decennial Congressional redistricting and apportionment incentivizes third party candidates by increasing the uncertainty of electoral outcomes for the major parties. Specifically, district boundaries determine the diversity of political interests that the successful candidate must represent in Congress. As such, a small number of candidates is unlikely to satisfy the interests of a heterogeneous electorate, which leads to the hypothesis that diverse districts should produce more third-party candidates.

To analyze the relationship between these elements, the project requires a quantitative measure of district heterogeneity. The Sullivan Index (1973), initially constructed as a state-level indicator of diversity, calculates the proportion of characteristics that differ if a pair of individuals are randomly drawn from the population. The index is calculated from data for six social, economic, and religious variables that are, in part, drawn from the Association of Religious Data Archives. Calculating the Sullivan Index for Congressional Districts is particularly challenging, since the raw data are collected at the U.S. county level and many Congressional districts cross county lines. As a result, estimates of religious affiliation must be calculated by disaggregating the county-level data into sub-county units and then re-aggregating those units into their respective Congressional districts.

Since this aspect of the project relies heavily on geographic deconstruction and reconstruction, Ms. Graziano, a geography major, served as the research assistant on the project. Given her coursework in Introduction to Geographic Information Systems (GIS) and Advanced Geographic Information Systems, she provided an invaluable skillset that is not common to students or scholars in political science. Ms. Graziano completed her 2018 Summer BEARS experience working with U.S. Census data and Congressional district maps in KU's state-of-the-art GIS labs.

Lauren Levine

College of Liberal Arts & Sciences | Physical Sciences

Jenna Kanyak

Major: Chemistry / Secondary Education Chemistry

Developing a Novel Polymer Based Laboratory for Incorporation into the Organic Chemistry Sequence

Amount Awarded: $2,000

Overview: The field of organic chemistry is constantly evolving. In order to keep our curriculum current, new laboratories need to be continually implemented into the program. Our work this summer developed innovative laboratories that combine contemporary topics dealing with polymer synthesis as well as analysis for incorporation into the Organic Chemistry laboratory curriculum. Polymers were chosen based on the clarity of synthetic procedures, variety of techniques used, and the novelty of inclusion into the undergraduate laboratory curriculum.

Khori Newlander

College of Liberal Arts & Sciences | Anthropology & Sociology

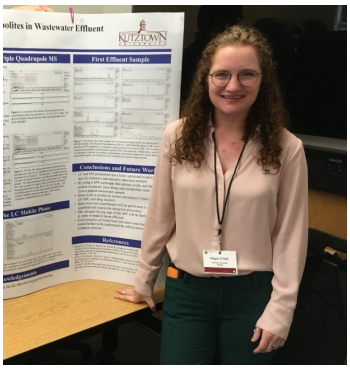
Haley Grebousky

Major: Anthropology

Reconstructing Work and Life at Stoddartsville, a 19th Century Milling Village in Northeast Pennsylvania

Amount Awarded: $2,000

Overview: Over the last 200 years, the United States was transformed from a mostly rural and agricultural society into a largely urban and industrial society. Historical studies of this period of dramatic socioeconomic transformation commonly focus on the lives of famous people. This project, in contrast, seeks to tell the stories of the "invisible" men and women who lived and worked at Stoddartsville, a 19th-century milling village built along the upper Lehigh River. During the summer of 2018, Haley Grebousky worked to analyze artifacts recovered during the last three seasons of archaeological fieldwork at Stoddartsville, focusing especially on glass bottles. Our analysis of these artifacts provides insight into the role of socioeconomic status and ethnicity in structuring work and life at Stoddartsville, and the connections established between Stoddartsville and the surrounding area as the villagers participated in the burgeoning regional economy.



Julie A. Palkendo

College of Liberal Arts & Sciences | Physical Sciences

Megan O'Neill

Major: Biochemistry

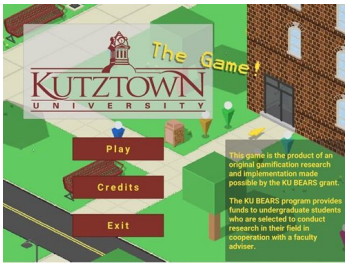
Building a Robust Screening Method for Drugs and Metabolites in Treated Wastewater Effluent

Amount Awarded: $2,000

Overview: Pharmaceuticals and their metabolites in recent years have become labeled as "newly-emerging contaminants" in drinking water by the U.S. Environmental Protection Agency (EPA). A likely source of contaminants is believed to be from treated wastewater, which flows back into watersheds that downstream communities may use as drinking water sources. Current wastewater treatment plants are very capable of removing pathogens, inorganics, and solid materials; however, little is known about if and how a treatment plant's design impacts the removal of drugs and their metabolites. Most studies in this arena have focused their results on estimating the amount of drug use in a given community's population. In this study, the focus to date has been to develop the analytical method. Analytes in wastewater effluent were concentrated using solid phase extraction (SPE), and a LC-MS/MS method was created to quantify over 30 drugs and drug metabolites. In order to assess the method, a sample of wastewater effluent was spiked with a standard pharmaceutical mix, amphetamine (AMP), methamphetamine (MAMP), and 11-nor-9-Carboxy-Δ9-THC (nor-THC). All compounds except acetaminophen, ciprofloxacin, and nor-THC were detected. Additionally, unspiked drugs of methadone, codeine, oxycodone, oxymorphone, and hydrocodone were easily detected in the wastewater sample. The SPE technique will be modified further to recover all target compounds, and the LC-MS/MS method is being refined to better elucidate and quantify drug isomers.

Thiep Pham

College of Liberal Arts & Sciences | Computer Science & Information Technology



Braden Luancing

Major: Computer Science/Software Development

Kutztown University: The Game!

Amount Awarded: $2,000

Overview: "Kutztown University: The Game!" (2018) aims to provide the video gaming generation an isometric 3D tour of a partial map of the North Campus and the Old Main lobby of Kutztown University. The point-and-click demo simulates how prospective students and incoming freshmen could have an opportunity to virtually explore the campus and interactively engage with non-player characters (computer AI).

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(Thiep Pham continued)

This KU BEARS project was set out to explore how gamification can be applicable for marketing a virtual 3D tour of the campus. Gamification, applying video gaming's competition and reward system to real life, has been used in a variety of ways, such as weight loss and learning a foreign language. It provides an economical and enjoyable approach for learning. The project also provides an opportunity for computer science and art students to engage in a collaborative learning environment to design and implement the functional product.

Paul V. Quinn

College of Liberal Arts & Sciences | Physical Sciences

Carlos Sosa

Major: Physics

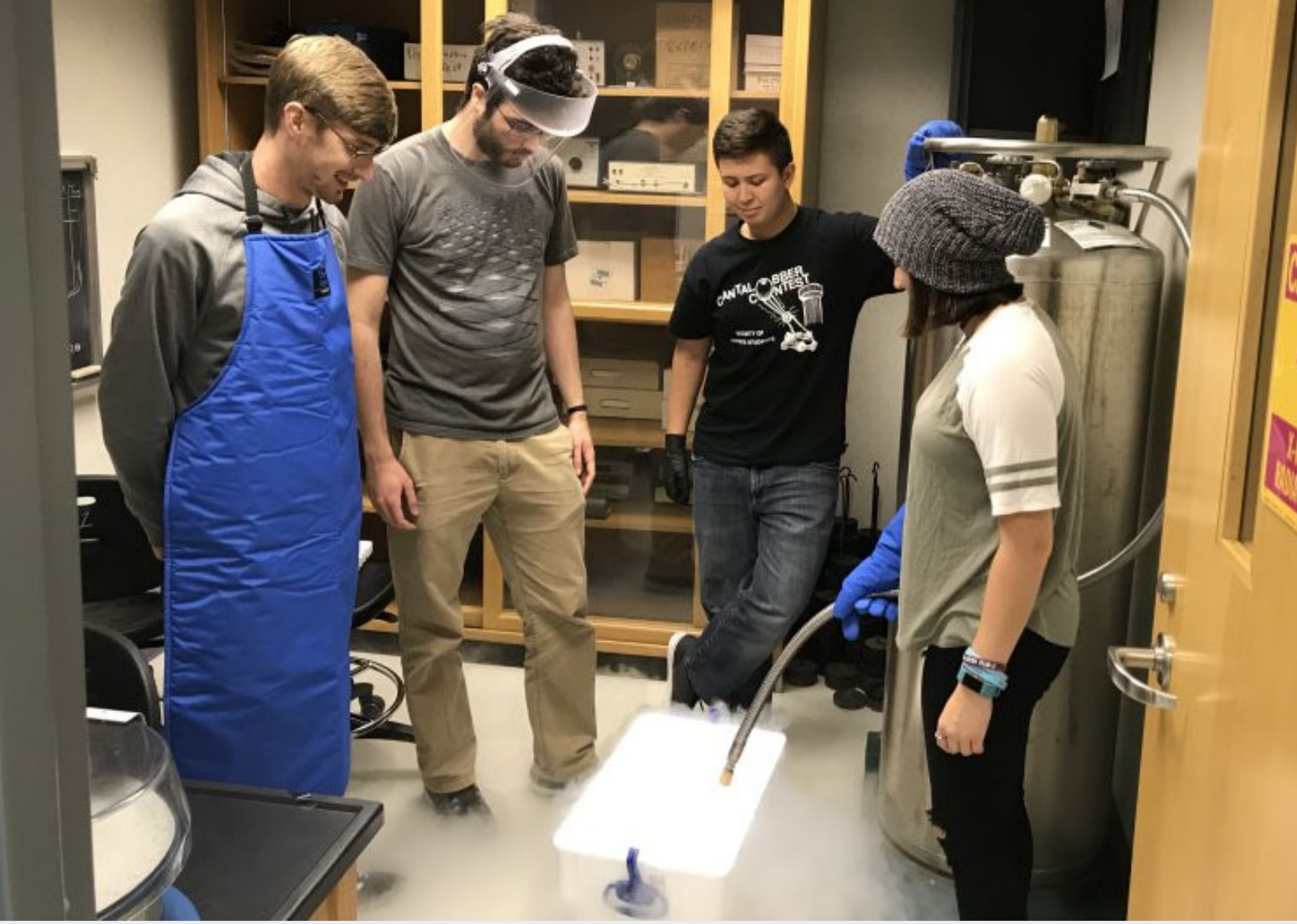
Performance Characteristics of Photo-Voltaic Cells Subjected to Temperature Gradients over Time

Amount Awarded: $2,000

Overview: The use of solar cells has continued to increase exponentially since their early incorporation into the space program. The overall worldwide capacity of photo-voltaic systems reached just under 305 gigawatts in 2016. While a promising green technology on earth to help reduce the consumption of fossil fuels, the extraction of solar energy from photo-voltaic cells in space based applications is a necessity. Both terrestrial and space based applications subject solar cells to large temperature variations. On earth, only a small portion of the electromagnetic energy from the sun, mostly in the visible spectrum, is used in the generation of electricity while the remainder is absorbed only as heat. In space based applications, the lack of atmosphere exposes the solar cells to extreme thermal variations on a regular basis.

Previously, students investigated the performance characteristics of mono-crystalline, silicon, photovoltaic cells subjected to a high and low temperature thermal shock as compared to baseline measurements of the unaltered cells. In this study, we will investigate the real time performance characteristics of mono-crystalline, silicon, photovoltaic cells subjected to gradients between high and low temperatures. This will allow us to monitor changes in the performance characteristics of the cell while the temperature is changing. In particular, we will be examining effects to the open circuit voltage, Voc, and the fill-fraction as a function of temperature.

Results showed that cooling the cells with liquid nitrogen for significant amounts of time permanently improved the performance of the cells at low temperatures. The Voc of the photovoltaic cells increased when the cell was cooled at low temperatures for long periods of time. This lead to an improved performance of the photovoltaic cells when tested at low temperatures. This improvement is a low temperature effect that is not noticeable at room temperature, but is significant for the use of solar cells at low temperatures, particularly in space, where temperatures can be as low as 4 K.


CANTALOUBER
CONTEST

Glenn W. Richardson Jr.

College of Liberal Arts & Sciences | Political Science & Public Administration

Uttam Paudel

Major: Political Science

Organized Labor and External Threats in the Age of Social Media

Amount Awarded: $2,000

Overview: This research project explored communication on Twitter about and by organized labor unions. Data was collected over a several month period involving tweets mentioning the word "unions," as well as nearly two dozen collections of Twitter messages mentioning specific unions or labor related topics. Additional data was compiled to explore the networks of communication on Twitter about unions and specific unions, with an eye toward identifying the role of a union in communication about that union, as well as illuminating the Twitter users who were most influential in and central to these communication networks.

Christine Saidi

College of Liberal Arts & Sciences | History

Elizabeth Tumbleson

Major: Women & Gender Studies - Self-Designed Program

Family and Before Gender: A History of Matrilineages in Central and Eastern Africa

Amount Awarded: $2,000

Overview: The research student worked on the linguistic and ethnographic data that was secured in Tanzania and Zambia this summer. The project was part of a three-year National Endowment for the Humanities Grant entitled, "Expressions and Transformations of Gender, Family, and Status in Eastern and Central Africa, 500-1800 CE." The central research for this project involved examinations of pre-colonial histories in Eastern and Central Africa and the intersections of three vital humanities topics: 1) gender (social concepts of female, male, masculinity, and femininity); 2) family (extended in matri/patrilineage); and 3) status (power, authority, prestige, and privilege). This research into pre-colonial histories of gender, family, and status is significant because it can inform understandings and approaches to issues concerning the role of gender in modern Africa.

This research has required several historical methodologies including oral traditions, archeology, comparative ethnographies and historical linguistics. The linguistic data collected for this research has been placed in a massive

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(Christine Saidi continued)

database on Google Sheets, which includes over a 2000 word translation for each of the 80 Bantu languages. The student researcher added words recently gathered in the field and from dictionaries. She also read recent field notes as well as ethnographic studies (published and unpublished) on these same 80 Bantu-speaking peoples and summarized them. The student became very excited about the data on female initiation and she is producing an article and a presentation for a gender conference on this subject.

Carsten Sanders

College of Liberal Arts & Sciences | Physical Sciences

Elaine Munoz

Major: Biochemistry

Victoria L. Salazar

Major: Chemistry

Recombinant Production of Engineered Cytochrome c-based Heme/Metal-Binding Proteins

Amount Awarded: $2,000

Overview: Project #1 - Recombinant Production of Engineered Cytochrome *c*-based Heme/Metal-Binding Proteins

In this project, plasmid vectors have been designed that contain a gene fragment encoding an amino-terminal part of the heme-containing protein cytochrome *c* from the baker's yeast. This gene fragment on the designed plasmid vectors is used for genetic fusion with DNA encoding eight different metal-binding heptapeptides. When produced, the engineered proteins would have two incorporated cofactors, a metal and a covalently attached heme. While the metals (such as iron, copper or zinc) are expected to interact with the corresponding high-affinity peptides within the engineered proteins *in vivo* or *in vitro* in the absence of specific biological catalysts, for the covalent attachment of heme to the used amino-terminal cytochrome *c* fragment, specific cytochrome *c* biogenesis systems are required. Upon construction of the genes encoding the aforementioned dual heme/metal-binding proteins, these proteins will be expressed with appropriate cytochrome *c* biogenesis components in a bacterial (*Escherichia coli*) host, purified via affinity chromatography using an added tag to the proteins (Strep-tag), and analyzed using several biochemical or biophysical techniques such as denaturing polyacrylamide gel electrophoresis, heme protein staining, UV/Vis spectrometry, and others.

Project #2 - Characterization of Cytochrome *c* Heme Lyase (CCHL) Mutants involved in Binding and Ligation of Heme and Apocytochrome *c*

In fungi, metazoans, and some protozoa, the enzyme cytochrome *c* heme lyase (CCHL), which is also known as holocytochrome *c* synthase (HCCS),

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catalyzes the thioether bond formation of heme *b* molecules to cytochrome *c* protein precursors (also called apocytochromes *c*) to produce functional cytochromes (also called holocytochromes) *c*. Functional cytochrome *c* is a mitochondrial protein, which has a key role in electron transport processes as well as in apoptosis (programmed cell death). In humans, certain mutations in CCHL are associated with the disease microphthalmia with linear skin defects (MLS). Despite its association with a human disease, little is known about the molecular mechanisms of substrate (heme *b* and apoctochrome *c*) binding and ligation. Here, we used site-directed mutagenesis to generate mutations within two highly conserved regions of CCHL and expressed these mutants together with apocytochrome c in an *Escherichia coli* host. Our data suggest that H128, H193, C135, W136, V139 are essential for either the binding of heme *b* or apocytochrome *c* to CCHL, or the ligation process of both substrates by CCHL, while residues M124, V125, Q126, V127, N129, F130, L131, N132 and L140 are not. However, in some mutants (N129C, L131C, N132C and L140H), the content of functional cytochrome *c* is significantly reduced, indicating that the affected amino acids are mechanistically involved in at least one CCHL-dependent step of substrate binding and/or ligation.

Justin L. Smoyer

College of Liberal Arts & Sciences | Physical Sciences

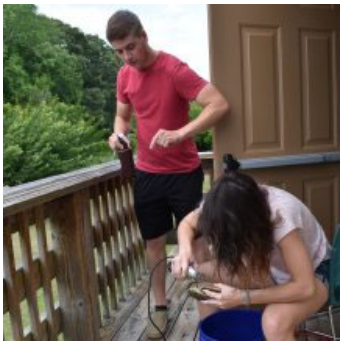
Andrew Venzie

Major: Physics

Temperature Dependent Performance Characteristics of Photo-voltaic Cells from 77 K – 300 K

Amount Awarded: $2,000

Overview: The use of solar cells has continued to increase at a nearly exponential rate since their early incorporation into the space program. The overall worldwide capacity of photo-voltaic systems reached just under 230 gigawatts in 2015. While a promising green technology to help reduce the consumption of fossil fuels, the extraction of solar energy from photo-voltaic cells is limited in its efficiency. In this study, to better understand the underlying physics of solar cell performance, and performance of the cell over its lifetime, the performance characteristics of silicon photo-voltaic cells was studied at temperatures ranging from 77 K - 300 K. The results of this study have shown a modification to the solar cell performance metrics with prolonged exposure to low temperature. When designing solar energy systems, this information will help to predict the performance of solar cells over the lifetime of the cell, rather than relying solely on performance characteristics of the pristine cell and provide an avenue to increase the efficiency of already produced solar cells.



Matthew D. Stone
College of Liberal Arts & Sciences | Biological Sciences
Noah Hish
Major: Environmental Science / Biology
Angeline Digiugno
Major: Environmental Science / Biology

Annual and Seasonal Variation in the Body Condition Index of the Diamond-back Terrapin

Amount Awarded: $2,000

Overview: Diamondback terrapin (*Malaclemys terrapin*) populations face a variety of direct and indirect anthropogenic threats throughout their range. One concern is the potential effects of climate change on terrapin habitat quality and physiology; another concern is related to the impacts of mesocarnivore (e.g. raccoon) abundance on the nesting success. The goal of this study was two-fold: to investigate the effects of various environmental factors on the reproductive biology of terrapins and to determine the impact of nest predators on terrapin nesting success. During summer 2018, we monitoring terrapin nesting activity at Wallops Island, VA. Specifically, we compared environmental data (e.g. cloud cover) to breeding behaviors and blood osmolarity. We also compared the distribution of mesocarnivore activity along the causeway to Wallops Island to determine where carnivore activity is the highest. This research provides important baseline data that will be useful in predicting the future impacts that climate change and nest predators will have on terrapin populations in the region. These are essential data for conservationists to make effective decisions for management of this species.

"It is one thing to talk and learn about these topics in a classroom, but to actually get my hands really dirty, to observe or hold the species I am observing every day, and to design a project around them gave me exciting and applicable experiences."

-Angeline Digiugno

"I got a sense for correctly and accurately following out research, such as gathering enough samples, and making changes to my research to achieve my goals when things are not working out."

-Noah Hish

Todd J. Underwood

College of Liberal Arts & Sciences | Biological Sciences

Justin Reel

Major: Biology

Behavioral Responses of Red-Winged Blackbirds to Experimental Cowbird Parasitism

Amount Awarded: $2,000

Overview: Brown-headed Cowbirds are obligate brood parasites that lay their eggs in the nests of other bird species and force these host birds to raise cowbird offspring. Because raising cowbird young is costly to hosts, some hosts have evolved defenses against parasitism, such as rejecting the cowbird egg by removing it from the nest, burying a cowbird egg under a new nest, or deserting the nest. Despite the benefits of rejection behavior, only about 10% of cowbird hosts have been documented rejecting cowbird eggs. In this study, we examined whether the lack of observed parasitism on Red-winged Blackbirds in eastern North America compared to central and western North America is due to rejection of cowbird eggs or due to cowbirds avoiding laying their eggs in blackbird nests. We found that Red-winged Blackbirds accepted the majority of experimentally added model cowbird eggs. Thus, rejection behavior does not explain the lack of cowbird parasitism on eastern Red-winged Blackbirds. However, blackbird response to parasitism differed significantly by stage of the nesting cycle with egg rejection higher during the nest building stage than other nest stages. In addition, we found relatively low frequencies of cowbird parasitism on other songbird host species in northern Berks County, PA. We suggest that the lack of parasitism on Red-winged Blackbirds in eastern North America compared to other areas is due to a combination of factors that include: a lower density of cowbirds here, aggressive nest defense by blackbirds, and the preference by cowbirds to use other hosts.

Todd Williams

College of Liberal Arts & Sciences | English

Kaitlyn Kerr

Major: English Education

Christina Rossetti's Environmental Consciousness

Amount Awarded: $2,000

Overview: The book in progress, *Christina Rossetti's Environmental Consciousness*, takes a cognitive ecocritical approach to Rossetti's writing as it developed throughout her career. It provides a unique understanding of Rossetti's identity as an artist through a cognitive model while also engaging significantly with her spiritual relationship to the non-human world.

continued

(Todd Williams continued)

The project treats Rossetti as a deliberate and conscious creator who used writing to simulate and evaluate possible selves. Rossetti used her writing for therapeutic purposes to create, maintain, verify, and, at times revise her identity. Her understanding of her autobiographical self and her place in the world often comes through observations and poetic treatments of the non-human. Rossetti, her speakers, and her characters seek spiritual knowledge in the natural world and share this knowledge with an audience. In nature, she finds evidence for and guidance from a loving God who offers salvation. Rossetti's work places a high value on nature from a Christian perspective that puts conservation over renunciation. Thus, this book displays new potential for Rossetti's writings in the face of twenty-first-century environmental issues as her work could serve to shape more ethical attitudes toward the environment from a religious perspective.

Mark Wolfmeyer

College of Education | Secondary Education

Anna Nissley

Major: English

Addressing the Opportunity Gap through Teacher Preparation: Teaching as Performance and Teacher With-It-Ness

Amount Awarded: $2,000

Overview: The purpose of this research is to question the concept of teaching as performance, building new frameworks and methods off of, and in response to, former conceptions. We've all heard the metaphor that teachers are performers, as in the example of secondary education teachers offering "five shows a day, five days a week." What is truly meant by this comparison, and does it benefit teacher development? The teaching as performance metaphor has been explored for decades and by innumerable scholars (e.g. Rubin, 1985), but only in recent years has it been the subject of more precise criticism. Falter (2015) suggests that analysis of teaching as performance through the lens of poststructural feminism complicates the metaphor for teachers. Thus, this teacher education research project poses the central questions: How effective is the teacher as performer metaphor in preparing teacher candidates for the diverse settings in which they will work? How can this concept be reformed --through considering what a teacher should look like, whose script they should follow, how to address broader socio-political contexts that affect the field of education, and how to --develop culturally-responsive pedagogies relevant to the identities of teachers and students? While the metaphor has its uses in higher education programs, it must be questioned before being applied to teacher education. This research addresses the question of how to find frameworks for preparing future teachers that are culturally relevant and that promote awareness of teachers' own personas within the classroom setting.

Gwendolyn Yoppolo

College of Visual and Performing Arts | Art Education & Crafts

Emily Reichelderfer

Major: Art Education & Crafts

Color-Shifting Glaze Development and Experimentation with Ceramic Raw Materials

Amount Awarded: $2,000

Overview: When the color of an object shifts dramatically as it moves from one lighting source to another, we feel the limitations of human perception and the restrictions of using language to describe what we perceive. The Lanthanide family of elements, when used as colorants in ceramic glazes, provide a range of color shifting as well as fluorescent properties, due to the nature of how they absorb and reflect light waves.

Our research explored these effects by testing those elements in various base glazes, including shiny, matte, satin, and crystalline. From there, we chose certain base glazes to work with using some more advanced glaze blending techniques, such as line blends, triaxial blends, quadraxial blends, and multiaxial blends, a new test devised by the researcher. We produced a range of glazes that shift in color: from peach to chartreuse; from sky blue to lavender; from slate blue to pink purple; and from yellow to pink, for example. We also developed the following fluorescent colored glazes: neon orange, neon red, neon yellow, lavender, and mustard yellow. These glazes glow when exposed to UV light or a blacklight.

Ceramic art produced using these glazes can stretch the boundaries of human perception, opening our minds to our limitations and questioning our usual mode of understanding our world. When a piece of pottery challenges us in this way, a deeper level of meaningful interaction is engaged. As the coming year unfolds, the researcher will exhibit artwork in various contexts to explore those possibilities.

Ju Zhou

College of Liberal Arts & Sciences | Mathematics

Alexander Miller

Major: Mathematics

Angelo Vardaxis

Major: Mathematics

Characterization of Perfect Matching Transitive Graphs and Non-Perfect Matching Transitive Graphs

Amount Awarded: $2,000

Overview: Graph G is perfect matching transitive if for any two perfect matching M and N of G, there exists an automorphism f such that f(M)=N In this project, we first proved or disproved some special graphs are perfect matching transitive. Then we worked on some general conjectures and obtained some preliminary results.

Kutztown University Research Committee Funding

The Kutztown University Research Committee provides funding to support research, scholarly activity and professional development. The maximum award is $8,000.

Moira Conway

College of Liberal Arts & Sciences | Geography

Measuring Accessibility to Dental Care in Pennsylvania

Amount Awarded: $1,844

Overview: This project seeks to spatially analyze the accessibility of dental providers to Pennsylvania residents of varying geographic locations. Having access to dental care is an essential public health need for Pennsylvania residents. Using GIS (Geographic Information Science) methods, this project aims to identify the location of dental providers and compare those to residential locations of residents, examining differences between urban, suburban and rural populations. Further examination of accessibility of residents to dental providers will be examined using considerations of distance and time necessary to travel, transportation availability, and socioeconomic characteristics of the populations. While rural areas have traditionally had less access to dental and health care than urban areas, examining the differences in access between geographic locations will provide an opportunity to understand the issues preventing the availability of dental care at varying geographies and create policy to ensure access.

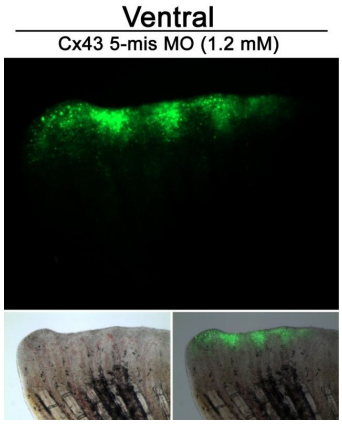
Cheryl Hochberg

College of Visual & Performing Arts | Art & Art History

Artwork Created at Residency Programs

Amount Awarded: $2,695

Overview: The project is to create between 6 and 8 unique works of art-paintings and woodblock prints- that respond to the visual and experiential qualities of 2 different unique geographical settings. This work will happen at two artist residency programs, one in Oregon and the other in China. The paintings utilize the format of collage, while the prints utilize a corresponding quality, layering of color, to accomplish similar intentions.



Angie Hoptak-Solga

College of Liberal Arts & Sciences | Biological Sciences

The Role of Cx43 on Gap Junction Structure during Zebra Fish Fin Regeneration

Amount Awarded: $2,482

Overview: Zebrafish have the remarkable ability to regrow missing caudal fin tissue upon amputation making them an ideal model to study bone growth. Mutations in the gap junction gene connexin43 (Cx43) can cause short fin mutants to develop short fins. In humans, mutations in Cx43 cause oculodentodigital dysplasia (ODDD), a disorder characterized by skeletal and craniofacial malformations. Gap junctions serve as pathways for the exchange of molecules between cells, particularly, signals between bone cells that coordinate bone growth. Therefore, gap junctional intercellular communication may be responsible for the regulation of bony segment length. An electron microscopic study of gap junction structure in these mutants can determine if structure affects the function of gap junction channels and thus communication between the cells. This grant supports the embedding and sectioning of fin tissue for use in electron microscopy. In addition, the CRISPR-Cas9 technique will be utilized to selectively edit the connexin43 (human GJA1) gene to measure cell-cell communication between transfected HeLa cells to determine channel function. Understanding the role Cx43 plays in cell-cell communication will serve as a model to study how cells can coordinate a response to re-grow missing tissue.

Matthew Junker

College of Liberal Arts & Sciences | Physical Sciences

Dissecting the Function of Domains within an Inhibitor of Apoptosis Protein

Amount Awarded: $6,527

Overview: Apoptosis is programmed cell death, a process in all animals that eliminates unneeded or potentially harmful cells. Within cells, apoptosis is carried out by caspase enzymes that are normally kept inhibited ("turned off") in living cells by inhibitor of apoptosis proteins (IAPs). This research is investigating the biochemistry for how IAPs inhibit caspases, and how this inhibition is removed to allow apoptosis to occur. IAPs are multi-domain proteins and the role each domain plays in regulating caspases is being determined. Purified fragments of IAPs containing different domains are being generated by recombinant DNA methods. These fragments are being tested for their ability to bind and inhibit purified caspases using a quantitative caspase activity assay. Understanding the mechanistic details for how IAPs regulate caspases can aid in developing new therapies to treat cancer and neurodegenerative diseases where apoptosis dysfunction occurs.

Lynn Kutch

College of Liberal Arts & Sciences | Modern Language Studies

How is the German Integration Course Achieving Its Goals?

Amount Awarded: $2,985

Overview: Listening to the Learner: Eye-Opening Notes from a German Integration Class: In January 2018, Dr. Lynn M. Kutch, Modern Language Studies, worked with adult learners in Beth Hejl's *Integrationskurs*, federally funded language classes for refugees, migrants, and EU citizens. Kutch aimed to: develop a thorough understanding of the German integration course model and implementation; assess the effectiveness of integration courses for skills development (cultural competency and language acquisition); and devise action plans for American instructors who might like to teach these courses. During her 10-day stay, Kutch completed classroom observations, and interviewed students and program administrators. The classroom observations offered significant insights into factors that certainly affected students' ability to concentrate and their progress in achieving course goals, such as constantly worrying about family in their home countries. The personal interviews were also particularly enlightening. A 33-year-old student from Iran summed up the feelings of many: "I am happy. I'm in Germany. I am content." Above all, Kutch learned that the needs of the diverse group of students must take priority when planning, funding, and designing the integration courses.

Heather LaBarre

College of Liberal Arts & Sciences | Social Work

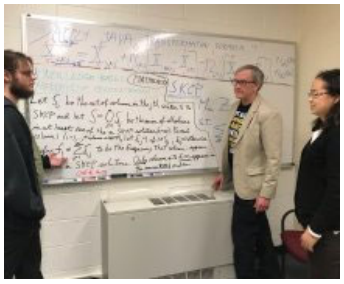
Juliana Svistova

College of Liberal Arts & Sciences | Social Work

Hungry for More: Understanding the Impact of Food Insecurity on College Students

Amount Awarded: $5,775

Overview: Food insecurity among college students has been well-documented nationwide. It is estimated that 35-50% of college students are food insecure during academic semesters (Maroto, 2013; Martinez, Maynard, & Ritchie, 2016 Dubick, Mathews, & Cady, 2016). Moreover, food insecurity has been found to be closely linked to lower academic performance. Starting with Kutztown University, this study seeks to understand the association between food insecurity and academic success. This research is essential for devising effective strategies for student engagement and retention in the system of public higher education in Pennsylvania. The researchers have conducted 12 interviews and received 92 pictures from KU students who have experienced food insecurity and/or have used campus food pantry, and the researchers continue data collection and analysis.



Yun Lu

College of Liberal Arts & Sciences | Mathematics

Francis Vasko

College of Liberal Arts & Sciences | Mathematics

Simple Metaheuristics to Efficiently Solve the Set K-Covering Problem

Amount Awarded: $7,960

Overview: The set K-covering problem (SKCP) is a recent extension of the classical set covering problem. This is computationally complex problem that has many important real-world applications, for example, in computational biology and wireless networks. However, because of its complexity, exact solution methods (procedures that guarantee a best solution is determined) typically require excessive computing time—hours, days, weeks or longer to solve one problem. There has been limited work done on developing approximate solution strategies (metaheuristics) that can generate near-optimal SKCP solutions in reasonable computing time (seconds or minutes). The approximate solutions developed to-date, are fairly complex in nature. In this proposed research, our goal is to develop metaheuristics that generate very good solutions quickly, but are simpler to use and therefore, will be more accessible to operations research practitioners who are trying to solve important real-world problems modeled as SKCPs.

Robert Portada

College of Liberal Arts & Sciences | Political Science & Public Administration

Private Security Companies and Limited Statehood: The Case of KASS in South Sudan

Amount Awarded: $7,110

Overview: This project is a comparative study of the provision of security by international agencies, national forces, and private security companies under conditions of limited statehood in South Sudan. The principal investigator (PI) engaged in extensive fieldwork in South Sudan to conduct a case study of the private firm, Kerbino Agok Security Services (KASS). The project examines how private security companies (PSCs) interact with South Sudan's national military and the United Nations Mission in South Sudan (UNMISS) to address security challenges in South Sudan.

Paul Victor Quinn

College of Liberal Arts & Sciences | Physical Sciences

Justin Smoyer

College of Liberal Arts & Sciences | Physical Sciences

Performance Characteristics of Photo-voltaic Cells Exposed to Temperature Variations

Amount Awarded: $8,000

Overview: The use of solar cells has continued to increase at a nearly exponential rate since their early incorporation into the space program. The overall worldwide capacity of photo-voltaic systems reached 303 gigawatts in 2016. In the solar research laboratory at Kutztown University we have been investigating the performance characteristics of silicon photo-voltaic cells subjected to high and low temperature thermal exposure as compared to baseline measurements of the unaltered cells. To date, results from the research conducted point towards alteration of the photo-voltaic structure at both temperature extremes. However, these variations appear to be driven by different mechanisms. The results to date show evidence of a permanent alteration to the solid-state structure of the cell and to its electrical properties. The focus of the research moving forward will be to expand and analyze these results, in both temperature regimes, in order to elicit an explanation of the mechanism driving the observable changes. An in-depth understanding of these mechanisms would provide the potential to optimize the structural changes for maximum photo-voltaic performance and the potential to realize the increased performance across a larger temperature range.

Edward Simpson

College of Liberal Arts & Sciences | Physical Sciences

Inverted Topography in Early Cretaceous Ruby Ranch Member, Cedar Mountain Formation, Unraveling Processes in a Preserved Fluvial System

Amount Awarded: $8,000

Overview: During the Spring and Summer 2018 KU students examined Mill Canyon Dinosaur Tracksite north of Moab, Utah to determine the distribution of characteristics preserved in microbial mats. Three-dimensional modelling techniques were used to delineate the variation in microbial mat parameters across preserved paleotopography. Unmanned Airborne Vehicles (UAV) were deployed to start the examination of elevated fluvial channels that have been used as analogs for similar types of features on Mars. Photographs from the UAV's were manipulated with software to develop the three-dimensional models that demonstrate that the channels are not single but consist of a complex array of erosional remnants that mimic a single channel.

John Vafeas

College of Liberal Arts & Sciences | Social Work

Yasoda Sharma

College of Liberal Arts & Sciences | Social Work

Study of the Network of Services to Victims of Domestic Violence in Pennsylvania

Amount Awarded: $7,600

Overview: Pennsylvania has sixty community-based services and programs for the domestic violence victims funded by state and federal government. Services include shelter, healthcare, and job readiness programs for clients and their families. This research will describe services and programs in rural versus urban settings and assess its adequacies from an organization's perspective.

There will be two stages of data collection. The first stage will focus on collecting the data from the service providers and during the second phase the data will be gathered from the client population. This grant will be executing the first stage and shall focus on collecting the data from the service providers. The current study will utilize Center for Rural Pennsylvania's definition of rural and urban counties, and shall collect the data from 48 rural counties and 19 urban counties.

"What you do makes a difference, and you have to decide what kind of difference you want to make."

-Jane Goodall

Kutztown University Research Committee Facts

The Research Committee awarded $60,978 in grants to 15 faculty members (11 awards). Research was funded in the following disciplines: political science, modern language studies, mathematics, social work, art and art history, geography, biochemistry, biology, geology, and physics.

	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
Received	19	28	21	26	14	15
Awarded	17	20	12	17	12	11
Total Requested	$ 100,940	$ 144,454	$ 111,044	$ 137,654	$ 89,668	$ 95,682
Total Awarded[1]	$ 82,421	$ 87,236	$ 64,079	$ 96,976	$ 78,235	$ 60,978
Annual Funding Available	$ 75,783	$ 75,783	$ 75,783	$ 75,783	$ 75,783	$ 75,783

1.Total Awarded may exceed Annual Funding Available due to the return of grant funding not expended from prior awards.

Kutztown University Undergraduate Research Committee Funding

The Undergraduate Research Committee primarily supports laboratory or field research, as well as research projects in the arts, humanities, and computer science. Funding is available for undergraduate students who plan to conduct research and/or present their research at conferences or research symposiums. The committee awarded 53 students funding, for a total of $41,671.

	SUBCOMMITTES		TOTAL
	Science	Arts & Humanities	
Awarded	43	10	53
Total Awarded	$ 33,491	$ 8,180	$ 41,671

EXTERNAL FUNDING

Maria Asteriadou

College of Visual & Preforming Arts | Music

Collaboration with Students from Greece on Exploring New Greek and American Works for Chamber Ensemble

Funding Source: Kutztown University Foundation
Amount Awarded: $1000

Overview: In May 2018, Dr. Asteriadou took a group of KU music students to Greece for ten days to study, perform, and collaborate with the students and professors at the University of Macedonia, in Thessaloniki. There, the KU students had the opportunity to take lessons and perform together with the Greek students in several performances in the concert hall of the University. In addition, KU students were able to explore the Greek culture by visiting museums, Byzantine churches, the natural beauty of the surrounding area, and connect with the people through the shared language of music. There were five KU students participating in this cultural exchange, and the grant from the KU Foundation provided assistance for two of them. The students reported that it was an illuminating experience for them to be able to discuss politics, philosophy, and music as it relates to Greek cultural life with the local students, and sharing their vision for the future was a truly vital part of the experience.

Tabetha Bernstein-Danis

College of Education | Special Education

Development of Culturally-Responsive Curriculum for SPU 316: Literacy in Core and Intervention Areas

Funding Source: Kutztown University Foundation
Amount Awarded: $5000

Overview: To best meet the needs of students from diverse backgrounds, particularly those who have struggled with literacy, it is paramount to develop instructional tasks that acknowledge students' ways of knowing, understanding, and learning in the context of their own home communities (Gay, 2010; Ladson-Billings, 2009). Use of both literature and pedagogical practices that students connect to culturally have been found to lead to improvement in the area of literacy (Bui and Fagan, 2013).

This project entailed hiring four KU student researchers to select literature and develop lessons to be used as part of the Summer 2018 Study Abroad Course (SPU 316: Literacy Development and Instruction in Core

continued

(Tabatha Bernstein-Danis continued)

and Intervention Areas) that requires tutoring students at a primary school in Cape Town, South Africa. Additionally, four culture coaches, members of the same community as the primary school students and their families, were hired to provide feedback to the student researchers on the texts and lessons they developed. The KU students were afforded the opportunity to make genuine collaborative connections with the community where they provided tutoring to students with reading difficulty.

Amy Botwright

Division of University Relations & Athletics | KU Presents!

Pennsylvania Council on the Arts – KU Presents!

Funding Source: Pennsylvania Council on the Arts
Amount Awarded: $5,000

Overview: KU Presents! Mission is to be the center of cultural life at Kutztown University and the regional community through presentations of innovative and engaging live music, theatre and dance of the highest quality. With generous grant funding from the Pennsylvania Council on the Arts (PCA), KU Presents! Performing Artist Series is supported in presenting world-class artists, bringing together thousands of community members, faculty, alumni, and students to Schaeffer Auditorium each year. The 2017-2018 season hosted television and Broadway star Aaron Tveit, ukulele virtuoso Jake Shimabukuro, Boston Brass, Chanticleer, Birdland All-Stars featuring Tommy Igoe, National Dance Company of Ireland, and the Joey Alexander Trio. PCA funding helps defray the costs of artist fees, production, hospitality, hotel, FOH, and educational outreach.

Paige Brookins

Division of Academic Affairs | Center for Academic Success & Achievement

ACT 101

Funding Source: Pennsylvania Higher Education Assistance Agency
Amount Awarded: $31,000

Overview: The purpose of Act 101 funding is to support Pennsylvania students who have an academic and financial need. During the 2017-2018 academic year, Kutztown University's Act 101 program served fifty-eight full-time students. The program collaborates with campus offices to create a student success culture that assists in their completion of a college degree. The services provided include: personalized academic support; academic advising/coaching counseling; tutoring; workshops on a variety of subjects such as time-management, note taking, test taking, and study skills; leadership experience; and assistance with financial aid. A program goal is

continued

(Paige Brookins continued)

to assist students in their transition to the demands of college life and to provide the extra support necessary for their academic success at Kutztown University. This year the program incorporated an Act 101 University Studies three credit course taught by Dr. Carolina Moctezuma and a lunchtime programming series.

Frances Cortez Funk

Division of Enrollment Management & Student Affairs | Health and Wellness Center

Underage and Dangerous Drinking

Funding Source: Pennsylvania Liquor Control Board
Amount Awarded: $36,213

Overview: The project supports efforts to reduce underage access and underage choice of alcohol consumption as well as dangerous drinking with evidence-informed programs in forming the Kutztown Living/Student Coalition Project. The grant goals will be reducing self-reported underage access to alcohol at off campus settings by 2.0% and increase non-use of underage second and third-year students by 2.0%. Additionally, prevention methods to reduce dangerous and underage drinking, will be used such as *Alcohol EDU for College* for first-year and transfer students and build a student coalition with using *Communities Mobilizing for Change on Alcohol*.

Kunal Das

College of Liberal Arts & Sciences | Physical Sciences

Ultracold Atoms in Ring-Shaped Lattices

Funding Source: National Science Foundation
Amount Awarded: $135,000

Overview: This research aims to utilize ultracold atoms near absolute zero confined in ring-shaped traps to thoroughly examine and understand phenomena associated with quantum non-locality, and find ways to harness them for creating new technology. Ultracold atoms form quantum states at much larger scales than is typical in nature, and provide greater control and access. Forcing the extremities of such states to coincide, by wrapping them around a ring, can make nonlocal features directly manifest. Additionally, the closed geometry allows introduction of gauge fields, like electromagnetism, to effectively exist only in the space enclosed by the loop, but which can yet induce a whole class of nonlocal effects in the quantum states

continued

(Kunal Das continued)

confined within the channel of the ring, despite no field presence there. Creating a periodic lattice structure along the azimuth can enhance or simplify these effects, and will therefore be of particular interest in this project. Applications of the results towards quantum information, better sensors and new quantum materials will be continuously explored.

Warren Hilton

Division of Enrollment Management & Student Affairs

Providing Resources and Opportunities to Future Stars (PROFS)

Funding Source: ChildPromise, Inc.
Amount Awarded: $59,125

Overview: Kutztown University has partnered with ChildPromise, Inc. to present a one-of-a-kind support program for students who are current or former members of the foster care system. To show dedication to successful students in foster care, PROFS provides college access programs, such as college prep and financial knowledge workshops, for high school students and connects Kutztown University students to the campus resources that will help them succeed. The PROFS program encourages students to reach their potential and be a positive example for others who have also gone through the system.

Loriann Irving

Division of Academic Affairs | Academic Enrichment

Student Support Services Program (SSSP)

Funding Source: U.S. Department of Education
Amount Awarded: $308,643

Overview: Students with motivation and the potential to succeed in college are given support to help realize their academic, personal, and career goals. Eligible students must be first-generation or learning disabled and meet certain academic and economic criteria. SSSP provides students with opportunities for academic development, assists them with college requirements, and motivates them toward the successful completion of their post-secondary education. The program provides academic tutoring, advice and assistance in postsecondary course selection, and assistance with information on obtaining financial aid, education to improve financial and economic literacy, and assistance in applying for admission to graduate and professional programs.

As a comprehensive academic support program, SSSP is dedicated to excellence and to the success of its diverse community of students. Through intrusive advisement, counseling, tutoring, learning communities, mentoring, support groups, and cultural activities, the program helps prepare its students "to meet lifelong intellectual, ethical, and career challenges."

Jeremy Justeson

College of Visual & Performing Arts | Music

2017-2018 Presser Undergraduate Scholar Award

Funding Source: The Presser Foundation
Amount Awarded: $4,000

Overview: Undergraduate schools of music at accredited colleges, universities and independent institutions of higher education are invited to apply for the opportunity to present the Presser Undergraduate Scholar Award to an outstanding music major whom they select. The Award is $4,000 payable at the end of a student's junior year. The student is to be selected by the music faculty guided solely by consideration of excellence and merit. This award is an honor award and the student, in his/her senior year, is to be known as a Presser Scholar.

Schools of Music selected for participation in the Undergraduate Scholar Award Program must maintain a minimum enrollment of 60 undergraduate music majors, offer a curriculum of study that includes at least one-third non-music academic subjects, and show evidence of meeting high professional standards for faculty, curriculum and facilities.

Lynn Kutch

College of Liberal Arts & Sciences | Modern Language Studies

Bringing the Faust Legend to Life

Funding Source: Kutztown University Foundation
Amount Awarded: $1,232

Overview: In May 2018, Megan Reed (English major) and Lauren Verna (German major) traveled to Germany as part of the KU Foundation grant. While in Germany in May, Reed and Verna produced original photographs and video in order to develop educational units with themes ranging from food to recycling to travel etiquette. For example, Reed and Verna visited a German supermarket where it is common and expected for patrons to return cans and bottles for a deposit. Footage for this lesson shows Reed using the machine that Germans use to sort their recyclables and automatically receive their deposit. The students plan to make their materials available online for other German-language instructors to utilize.

Linda Lantaff

Division of Enrollment Management & Student Affairs | Disability Services

Program for Students with Autism Spectrum Disorders

Funding Source: Pennsylvania State System of Higher Education
Amount Awarded: $5,000

Overview: The KU Disability Services Office along with three sister universities including West Chester, Indiana, and Edinboro implemented support programs and resources to increase the degree completion rate for college students with autism spectrum disorders. This grant was funded by the PA Department of Education and the Pennsylvania Training and Technical Assistant Network to support the implementation of the My Place program during the 2017-18 school year. The students participating in the program received weekly support through one-on-one coaching/mentoring sessions, structured study sessions, and group activities and recreation.

Catherine McGeehan

College of Education | Elementary Education

Building Professional Dispositions and a Path for Lifelong Learning

Funding Source: Kutztown University Foundation
Amount Awarded: $1,800

Overview: On October 10th and 11th of 2017, Drs. Catherine McGeehan, Amy Kennedy and Sandy Chambers from the Elementary Education Department escorted one hundred Kutztown University Elementary and Special Education teacher candidates to the Keystone State Literacy Association's 50th Annual Conference in Hershey, PA. The Keystone State Literacy Organization (KSLA) is a state chapter of the International Literacy Organization. This is one of the leading national literacy organizations in the field.

Teacher candidates had the opportunity to see and hear presentations being made by the same researchers they learned about in their coursework. This opportunity also allowed teacher candidates to learn first-hand the kind of innovative and researched based practices that are occurring in the field today. This conference provided KU teacher candidates with the opportunity to meet ILA accreditation standard 6, element 6.2: "Pursue the development of individual professional knowledge and behaviors, join professional organizations of reading and writing and participate."

"Education is the power to think clearly, the power to act well in the world's work, and the power to appreciate life."

-Brigham Young

Ernie Post

College of Business | Small Business Development Center

PA SBDC Lead Center

Funding Source: U.S. Small Business Administration
Amount Awarded: $2,861,656

Overview: Kutztown University was awarded the Lead Office for the PA SBDC in May 2018. The KU SBDC will continue providing consulting, educational and informational services to entrepreneurs and small business in Berks, Chester, Dauphin, Lancaster and Lebanon Counties, but will also serve as the Lead Office for the other 17 Centers across Pennsylvania as the Administrative Office and Fiscal Agent for the PA SBDC.

Small Business Administration Core SBDC Funding

Funding Source: U.S. Small Business Administration
Amount Awarded: $304,715

Overview: The Kutztown University Small Business Development Center provides services to small businesses in Berks, Chester, Dauphin, Lancaster and Lebanon counties. The program focuses on activities to strengthen the small business community by providing consulting, educational and informational services to entrepreneurs and small business owners through all phases of business development.

Areas of assistance include: 1) assistance in international business, including referrals to other SBDCs, and federal, state and local agencies; 2) activities to emphasize minority and women enterprise development; and 3) maintain working relationships with the local business and financial community, as well as economic development organizations, technical assistance providers and government agencies.

Department of Defense Logistic Agency

Funding Source: U.S. Department of Defense
Amount Awarded: $70,000

Overview: Federal, state, and local governments purchase billions of dollars of goods and services every year. Federal purchasing offices are often required to set aside contracts or portions of contracts for exclusive bidding by small and/or minority-owned businesses. In addition, major prime contractors are required to subcontract part of their work out to small firms. The Procurement Technical Assistance Center (PTAC) helps businesses of all sizes market to the government – federal, state and local. Businesses interested in government contracting and needing assistance can talk to a PTAC counselor to learn how to explore the government arena for possible market opportunities.

State SBDC Core Funding

Funding Source: Pennsylvania Department of Community & Economic Development
Amount Awarded: $381,621

Overview: The Kutztown University Small Business Development Center provides services to small businesses in Berks, Chester, Dauphin, Lancaster and Lebanon counties. The program focuses on activities to strengthen the small business community by providing consulting, educational and informational services to entrepreneurs and small business owners through all phases of business development.

Berks County Community Foundation-Neighborhood Assistance Program (BCCF-NAP)

Funding Source: Pennsylvania Department of Community & Economic Development
Amount Awarded: $110,000

Overview: The Berks County Community Foundation (BCCF) and the Kutztown University SBDC (KU SBDC) will build upon the past four years of success with the Jump Start Diversity program by expanding the 8-week bilingual business skills for success program. This new series will market a new English version to the City of Reading African American nascent and early stage entrepreneurs as well as other underserved low to moderate income residents and those who are working in various life transition programs to assimilate back into the community.

Community Development Block Grant

Funding Source: City of Reading
Amount Awarded: $60,000

Overview: This program targets both established entrepreneurs within the Downtown Improvement District (DID) and nascent entrepreneurs residing within the city who are identified as having a high potential of being successful entrepreneurs and who meet the HUD low-to-moderate household income guidelines. Goals include: 1) Increase the capacity of existing entrepreneurs to expand in the downtown corridor; 2) Increase the number of eligible clients to start new businesses; 3) Increase the level of customer service and customer experiences; 4) Create a digital presence to attract customers; and 5) Increase awareness and participation in government contract opportunities.

continued

(Ernie Post continued)

Engage!

Funding Source: Pennsylvania Department of Community & Economic Development
Amount Awarded: $38,750

Overview: *Engage!* is a PA statewide business and retention program with an overall goal to retain existing businesses in a community and to help them grow and expand by building solid relationships with business owners or key decision makers and economic development partners and their representatives. *Engage!* is intended to regularly interact with companies for purposes of: 1) Identifying needs and matching resources to help existing businesses and industries address their challenges to become more competitive and successful; 2) Demonstrating to local businesses and industries that the community recognizes and depends on their contributions to the local/state economy; 3) Building community capacity to sustain growth and development; 4) Understanding and addressing the common themes articulated by PA businesses in order to drive policy and the menu of the Department of Community and Economic Development (DCED) and partner services for long range business retention and expansion (BRE) efforts.

WEDNet Pennsylvania

Funding Source: Pennsylvania Department of Community & Economic Development
Amount Awarded: $330,933

Overview: WEDnetPA brings training funds to qualified companies across the Commonwealth through a network of community colleges, state system universities, and other educational institutions.

"We are excited about this opportunity to provide leadership for one of the highest performing SBDC programs in the country."

-Ernie Post, PA SBDC State Director

Christine Price

Division of Enrollment Management & Student Affairs | Women's Center & GLBTQ Center

2017-2018 PA Governor's It's On Us Grant

Funding Source: Pennsylvania Department of Education
Amount Awarded: $20,672

Overview: The PA Governor's It's On Us Grant provides the opportunity to improve sexual assault awareness, prevention, reporting, and response systems in colleges and universities to better serve all students. Our campus initiated several new campus-wide keynote programs and initiatives this year. We partnered with the national organization, *Men Can Stop Rape (MCSR)*, by bringing in expert speakers and engaging male students in a campus conversation about masculinity, cultural norms and healthy relationships. MCSR also provided two Bystander Intervention workshops. In December, *End Rape On Campus (EROC)* will present on campus: Title IX: Where it's been and Where it's going, and Creating an Environment of Support for Survivors.

Athletics, Greek Life, Residence Life, GLBTQ Resource Center, and various student organizations, partnered to recruit male leaders to be in the foreground of an *It's On Us poster campaign*. Through proactive marketing strategies, we increased awareness and pledges.

In collaboration with SCAR (Student Campaign Against Rape) we photographed survivors for an artistic project called "*The Kourage Project.*" Framed photos were displayed in the McFarland Student Union Art Gallery.

Safe Space Train the Trainer

Funding Source: Kutztown University Foundation
Amount Awarded: $3,700

Overview: Funding enabled us to work with Campus Pride, the leading national nonprofit organization for LGBTQ student and campus leadership. A twelve-hour (two-day) Safe Space Train the Trainer workshop was facilitated by Campus Pride for 14 campus constituents, including students, faculty and staff. This will allow us to facilitate trainings to our campus community, which will aide in supporting the safety and academic success of LGBTQ+ identified students. The Safe Space Train the Trainer initiative creates a foundation for a sustainable Safe Space program on our campus.

Upon completion of the workshop, participants were able to identify the essential components of a campus Safe Space Program, create learning activities to be used in a Safe Space training program, provide resources for an assessment of our campus climate, and describe effective practices for creating an inclusive campus environment for LGBTQ+ students.

continued

(Christine Price continued)

Safe Space Train the Trainer

Funding Source: Berks County Community Foundation
Amount Awarded: $1,000

Overview: The Berks County Community Foundation grant afforded us the ability to provide printed materials to supplement the Campus Pride Safe Space Train the Trainer workshops. Our materials for distribution include: Safe Space Pamphlets; Flyers on LGBTQ+ Tools for Allies; Friendly Healthcare Providers; General LGBTQ+ Terms and Definitions; Actions Steps for Being a Trans Ally; Easy Steps to Gender Inclusiveness for Educators; Gender Pronoun Guide; Gender Spectrum Definitions; PA Transgender Resources; and Understanding Gender Variations. In addition, after one has completed the training and visits the GLBTQ Resource Center for a tour of the facility and introduction to the services we provide, they are eligible to receive a Campus Pride Safe Space decal. Decals can be displayed on an office door to signify that the individual is a Safe Space resource within our campus community.

Juliana Svistova

College of Liberal Arts & Sciences | Social Work

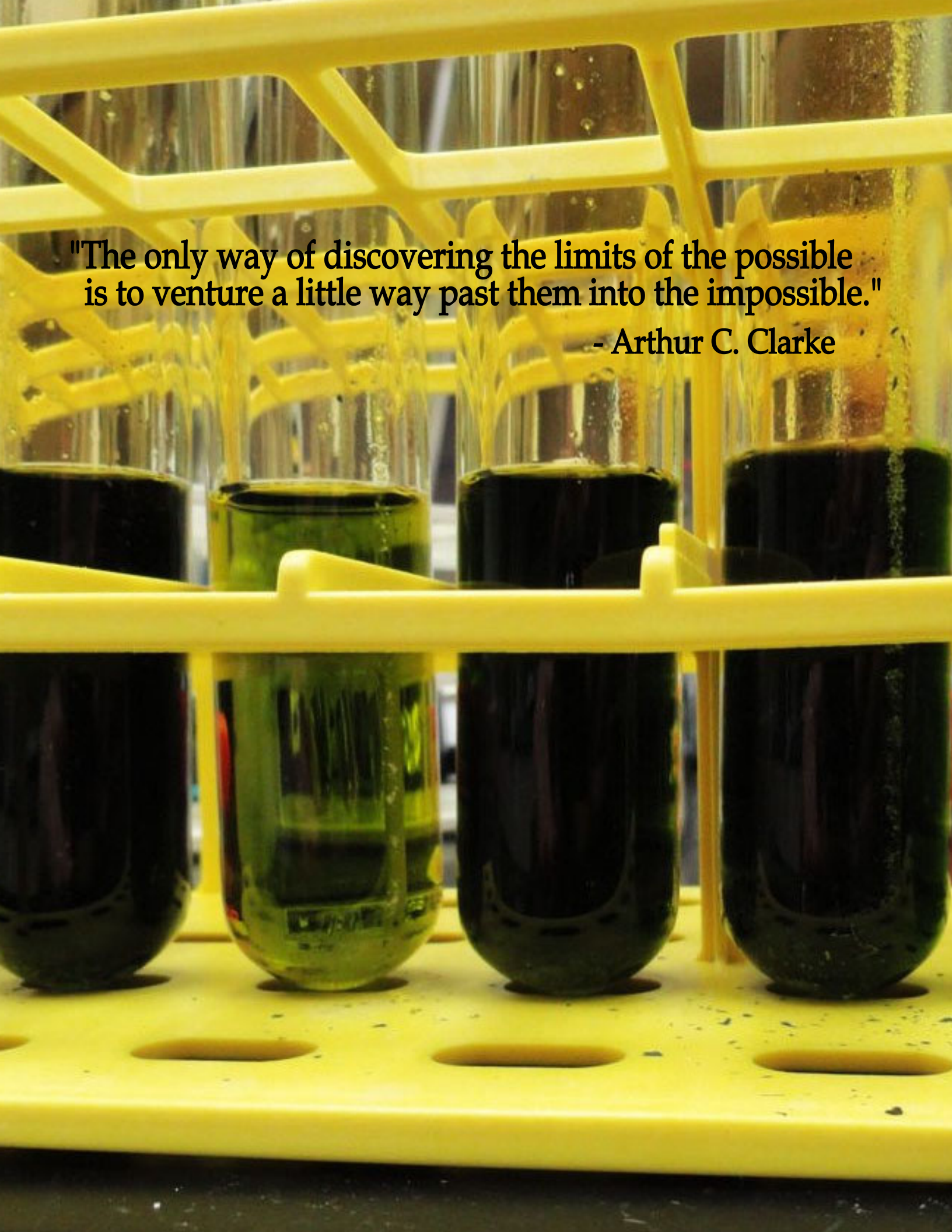
Candida Madrigal

College of Liberal Arts & Sciences | Social Work

Learning from Disasters, Supporting Disaster Recovery: Service Learning Trips and Community-Based Research in Haiti and Puerto Rico

Funding Source: Kutztown University Foundation
Amount Awarded: $4,000

Overview: The Department of Social Work at Kutztown University has recently established a new institute of *Local-Global Connections*. As part of this initiative, Dr. Madrigal and Dr. Svistova created two one-time service learning opportunities and post-disaster community-based research. Three undergraduate students traveled to Haiti and three graduate students traveled to Puerto Rico from March 11 to March 17, 2018. These social work students were required to engage in fundraising activities prior to the trips that helped them in covering some of the travel expenses, as well as to raise funds to share with the local communities at each site, the students, the residents, and the local organizations. Upon return, experiences and research findings were shared in the form of presentations offered to the KU community and two podcasts.


"The only way of discovering the limits of the possible
is to venture a little way past them into the impossible."
- Arthur C. Clarke

Terre Sychterz

College of Education | Elementary Education

Kutztown University Children's Literature Conference

Funding Source: The Anne M. and Philip H. Glatfelter, III Family Foundation
Amount Awarded: $11,200

Overview: The grant provided funding to bring nationally known authors/illustrators (Raul Colon, Peter Sis, Sharon Draper, Lee Harper) to Kutztown University for the Twentieth Annual Kutztown University Children's Literature Conference 2018. The purpose of the Kutztown University Children's Literature Conference is to heighten knowledge and excitement about children's literature for education, library science, communication and design, and art majors by bringing renowned authors/illustrators to campus; increase awareness of recent children's authors and illustrators among educators and librarians; and provide outreach to local school districts that otherwise could not afford such renowned authors and illustrators. The Kutztown University Children's Literature Conference provides professional development where teachers and librarians have the opportunity to hear from award-winning authors and illustrators of children's books at an all-day conference. It offers presentations for local school children and the KU community.

Robyn Underwood

College of Liberal Arts & Sciences | Biological Sciences

Tom Betts

College of Liberal Arts & Sciences | Physical Sciences

Julie Palkendo

College of Liberal Arts & Sciences | Physical Sciences

Are Honey Bees Bringing Dinotefuran back to their Hive from Ailanthus Trap Trees used for Spotted Lanternfly Control?

Funding Source: U.S. Department of Agriculture
Amount Awarded: $14,734

Overview: The spotted lanternfly, Lycorma delicatula, is an introduced plant hopper that causes significant damage to host plants in the United States. Because of its affinity for tree of heaven, Ailanthus altissima, control efforts have focused on the use of the systemic insecticide, dinotefuran, in designated trap trees. There is concern about exposure to this pesticide by non-target species, especially honey bees, via lanternfly honeydew.

continued

(Robyn Underwood, Tom Betts & Julie Palkendo continued)

Therefore, honey bee colonies were established in areas of high densities of trap trees. Samples of honey, bees and beeswax were collected in May, July, and October of 2017 for analysis. Samples were extracted by the QuEChERS method and analyzed using high performance liquid chromatography with tandem mass spectrometry to determine the presence and quantity of dinotefuran. Additionally, honeydew from lanternflies was analyzed for dinotefuran and informal observations of trap tree visitors were made. None of the honey, bee or wax samples indicated detectable levels of dinotefuran, which matches the informal observations at the trap trees; however, honeydew samples collected in August 2017 did contain dinotefuran above the detection limit with amounts ranging from 3 ng to 100 ng per sample.

Upward Bound

Funding Source: U. S. Department of Education
Amount Awarded: $257,500

Overview: Upward Bound provides fundamental support to high school participants in their preparation for college entrance. Participants are low-income, first-generation college students or students who have a high risk for academic failure. The program provides opportunities for participants to succeed in their precollege performance and ultimately in their higher education pursuits. Kutztown University and Allentown School District are working together on Upward Bound.

Academic year activities will consist of after-school tutoring, supplemental instruction and skills development. Activities will include information on financial literacy, financial aid, career planning and exploration, attending college, standardized testing preparation, education on the college application process, college visits, and cultural awareness activities.

The summer program will have instruction in a variety of subjects and to better prepare students for standardized tests such as the SAT, ACT and Keystone. Students will receive additional information to assist with the college application process. For seniors who look to attend college, the program will offer services to address the tasks needed to get ready for college such as paperwork, navigating the college's web portal, housing issues, placement exams and financial issues – including financial and college literacy.

Wing Hong Tony Wong

College of Liberal Arts & Sciences | Mathematics

Kutztown University Mathematics Olympiad

Funding Source: Mathematical Association of America
Amount Awarded: $5,000

Overview: Mathematics Olympiad (MO) refers to competitions in mathematics at the middle school and high school level. The content in MO largely overlaps with the standard mathematics curriculum before calculus, but the problems demand deeper understanding of the material and strong problem-solving skills, including creativity, persistence, and logical thinking. MO has many different levels and scales. Two of the major ones for middle school students are MATHCOUNTS and American Mathematics Competition (AMC 8).

In order to introduce the MO culture to local middle schools, this project does not only focus on providing an enrichment program to the students, but also to the teachers who can carry on with the program for a prolonged period of time. This project includes understanding the needs of local middle schools, providing training workshop to the teachers, and organizing a summer day camp to talented students in the region.

"The measure of greatness in a scientific idea is the extent to which it stimulates thought and opens up new lines of research."

-Paul Dirac

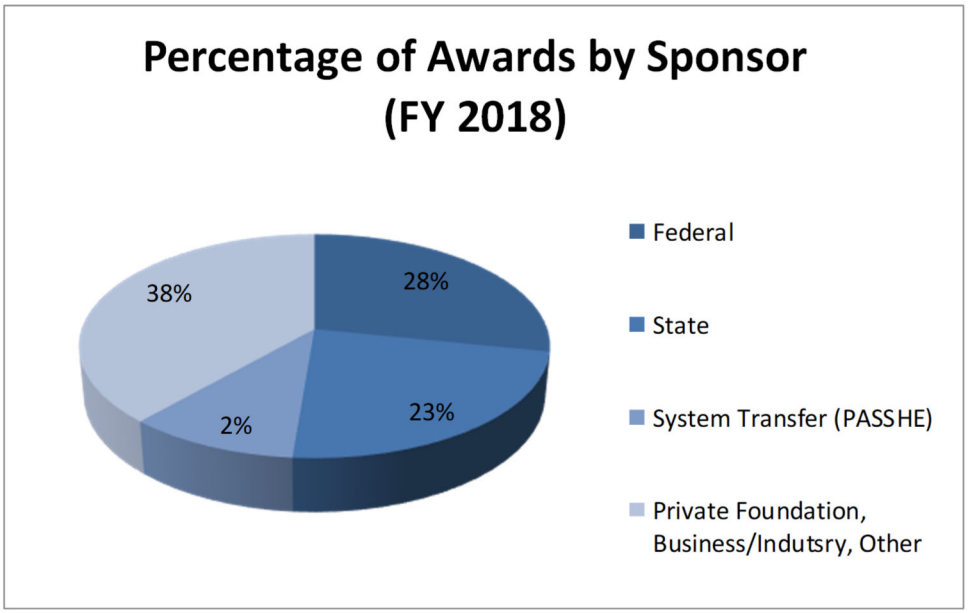
External Funding Facts and Figures

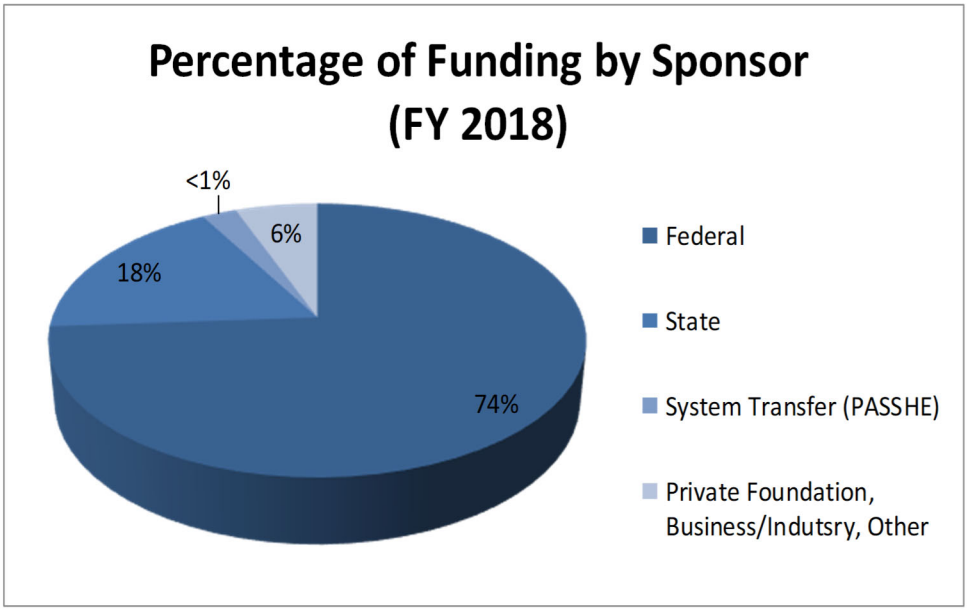
During Fiscal Year 2018, faculty and staff submitted 55 proposals to external sponsors requesting $6,052,265 (57% increase) and received 37 awards totaling $4,990,785 (89% increase). Eleven proposals were pending at the end of the fiscal year.

The largest number of awards came from the Private Foundation category (38%). Awards in other categories included Federal, State and System Transfer. The largest amount of funding came from Federal sponsors (74%), approximately $3,885,403.

	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018[1]
Submissions	72	65	51	72	55
Awards	41	42	40	44	37
Total Requests	$4,613,784	$4,783,487	$2,391,873	$3,866,534	$6,052,265
Total Awards	$1,832,577	$2,533,805	$2,078,547	$2,639,870	$4,990,785

1. 11 proposals were pending at the end of fiscal year 2018.





Kutztown University Professional Development Committee Funding

The Professional Development Committee provides funding to promote scholarship. Funding is available for 1) travel assistance for professional and scholarly activities, 2) projects that enhance instruction, and 3) the purchase of items necessary to develop a novel approach and/or new direction for a course.

Recipients of Professional Development Committee Funding

NAME	DEPARTMENT
Darren Achey	Physical Sciences
Aimee Adams	Counseling & Psychological Services
Murshed Adeel	Philosophy
Roman Altshuler	Philosophy
Allan Back	Philosophy
Marilyn Baguinon	Biological Sciences
Michele Baranczyk	Psychology
Kristen Bazley	Elementary Education
Angel Bestwick	Elementary Education
Anthony Bleach	English
Philip Bolger	Criminal Justice
Anne Brawand	Special Education
Mario Cardozo	Geography
Kerri Cebula	Sport Management & Leadership Studies
Angela Cirucci	Communication Studies
Colleen Clemens	English
Joanne Cohen	Counselor Education
AnnMarie Cordner	Criminal Justice
Lisa Coulter	Counseling & Psychological Services
Jason Crockett	Anthropology & Sociology
Michael Davis	Geography
Rose DeSiano	Art & Art History
Summer Doll-Myers	Communication Design
Michael Downing	English
Deborah Duenyas	Counselor Education
Kenneth Ehrensal	Anthropology & Sociology
Cheri Ehrlich	Art Education & Crafts
Brooks Emerick	Mathematics
Lorri Engstrom	Sport Management & Leadership Studies
Muratcan Erkul	Business Administration
Robert Folk	English
Jennifer Forsyth	English
Kurt Friehauf	Physical Sciences

Lisa Frye	Computer Science & Information Technology
Albert Fu	Anthropology & Sociology
Michael Gabriel	History
Ashwini Gangadharan	Business Administration
Arthur Garrison	Criminal Justice
Janice Gasker	Social Work
Qin Geng	Business Administration
Soo Goh	Music
Joleen Greenwood	Anthropology & Sociology
Christopher Habeck	Biological Sciences
Gregory Hanson	Modern Language Studies
Qian Hao	Business Administration
Kathleen Hartman	English
Dina Hayduk	Sport Management & Leadership Studies
Cheryl Hochberg	Art & Art History
Angie Hoptak-Solga	Biological Sciences
Julia Hovanec	Art Education & Crafts
John Howell White	Art Education & Crafts
Tauqeer Hussain	Computer Science & Information Technology
Daniel Immel	Music
Peter Isaacson	Music
Jennifer Jacobson	Political Science & Public Administration
Joseph Jedwab	Philosophy
Mauricia John	Anthropology & Sociology
Deryl Johnson	Communication Studies
Nicole Johnson	Special Education
Matthew Junker	Physical Sciences
Jeremy Justeson	Music
Eun Yeon Kang	Business Administration
Mahfuzul Khondaker	Criminal Justice
Robert Kilker	English
Soojin Kim	Sport Management & Leadership Studies
Yongjae Kim	Sport Management & Leadership Studies
Yoon Mi Kim	Social Work
Diane King	Special Education
Erin Kraal	Physical Sciences
Jonathan Kremser	Criminal Justice
Karen Kresge	Communication Design
Brian Kronenthal	Mathematics
Frank Kumor	Music
Lynn Kutch	Modern Language Studies
Eric Landquist	Mathematics

Mathias Le Bosse	Geography
Ah Young Lee	Social Work
Perry Lee	Mathematics
Steve Lem	Political Science & Public Admininstration
Ann Lemon	Communication Design
Sandra Leonard	English
Liaoliao Li	Business Administration
John Lizza	Philosophy
Yun Lu	Mathematics
Patricia Lutz	Elementary Education
Debra Lynch	Special Education
Amy Lynch-Biniek	English
Sharon Lyter	Social Work
Candida Madrigal	Social Work
Mark Mahosky	Art & Art History
Mostafa Maksy	Business Administration
Carol Mapes	Biological Sciences
Jermaine Martinez	Communication Studies
Andrew Mashintonio	Biological Sciences
Kevin McCloskey	Communication Design
Nicole McClure	English
Catherine McGeehan	Elementary Education
Matthew McKeague	Cinema, Television & Media Production
Vicki Meloney	Communication Design
Joshua Miller	Communication Design
Lauren Moss	Counselor Education
Feisal Murshed	Business Administration
Khori Newlander	Anthropology/Sociology
Carrie Nordlund	Art Education & Crafts
Christine Nunez	Modern Language Studies
Adrienne Oakley	Physical Sciences
Amber Pabon	Secondary Education
Julie Palkendo	Physical Sciences
Rebekkah Palov	Art & Art History
Sophia Jung Am Park	Art Education & Crafts
Dale Parson	Computer Science & Information Technology
Amy Pfeiler-Wunder	Art Education & Crafts
Thiep Pham	Computer Science & Information Technology
Robert Portada	Political Science & Public Administration
Patricia Pytleski	English
Christine Rhoads	Business Administration
Glenn Richardson	Political Science & Public Administration

Angelo Rodriguez	Modern Language Studies
Jesus Rodriguez	Modern Language Studies
Wendy Rogers	Special Education
Elizabeth Rogol	Sport Management & Leadership Studies
Nicole Romanski	Art Education & Crafts
John Ronan	English
Christopher Sacchi	Biological Sciences
Christine Saidi	History
Jennifer Schlegel	Anthropology/Sociology
Steven Schnell	Geography
Yasoda Sharma	Social Work
Jesse Shaw	Art & Art History
Jonathan Shaw	English
Laura Sherrod	Physical Sciences
Kim Shively	Anthropology & Sociology
Edward Simpson	Physical Sciences
Michelle Sims	Library & Learning Technologies
Georgeos Sirrakos	Secondary Education
Dawn Slack	Modern Language Studies
Peg Speirs	Art Education & Crafts
Kathleen Stanfa	Special Education
Donna Steslow	Business Administration
Stephen Stoeffler	Social Work
Evan Summer	Art & Art History
Jennifer Suwak	Cinema, Television & Media Production
Julianna Svistova	Social Work
Joo Tan	Computer Science & Information Technology
Mary Theis	Modern Language Studies
Tashima Thomas	Art & Art History
Pietro Toggia	Criminal Justice
Chelsea Toth	Social Work
Valerie Trollinger	Music
Raymond Tumbleson	English
Todd Underwood	Biological Sciences
John Vafeas	Social Work
Francis Vasko	Mathematics
Michelle Vaughn	Sport Management & Leadership Studies
Patricia Walsh Coates	Secondary Education
Patrick Walters	English
Anke Walz	Mathematics
Carol Watson	Elementary Education
Lisa Weckerle	Communication Studies

FangHsun Wei	Social Work
Christopher Weiler	Elementary Education
Mary Rita Weller	Social Work
Todd Williams	English
Mark Wolfmeyer	Secondary Education
Wing Hong Tony Wong	Mathematics
Gwendolyn Yoppolo	Art Education & Crafts
Yong Zhang	Computer Science & Information Technology
Ju Zhou	Mathematics
Nancy Zimmerman	Modern Language Studies
Maximiliano Zuniga	Modern Language Studies

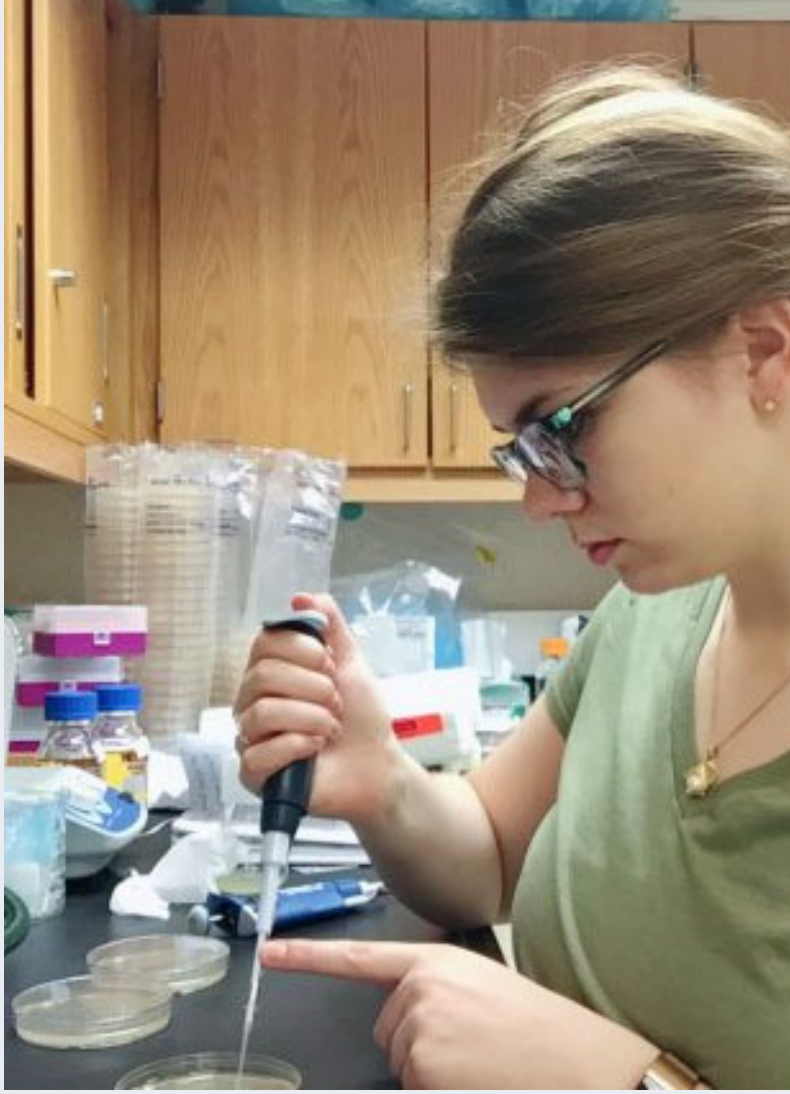
Professional Development Committee Facts

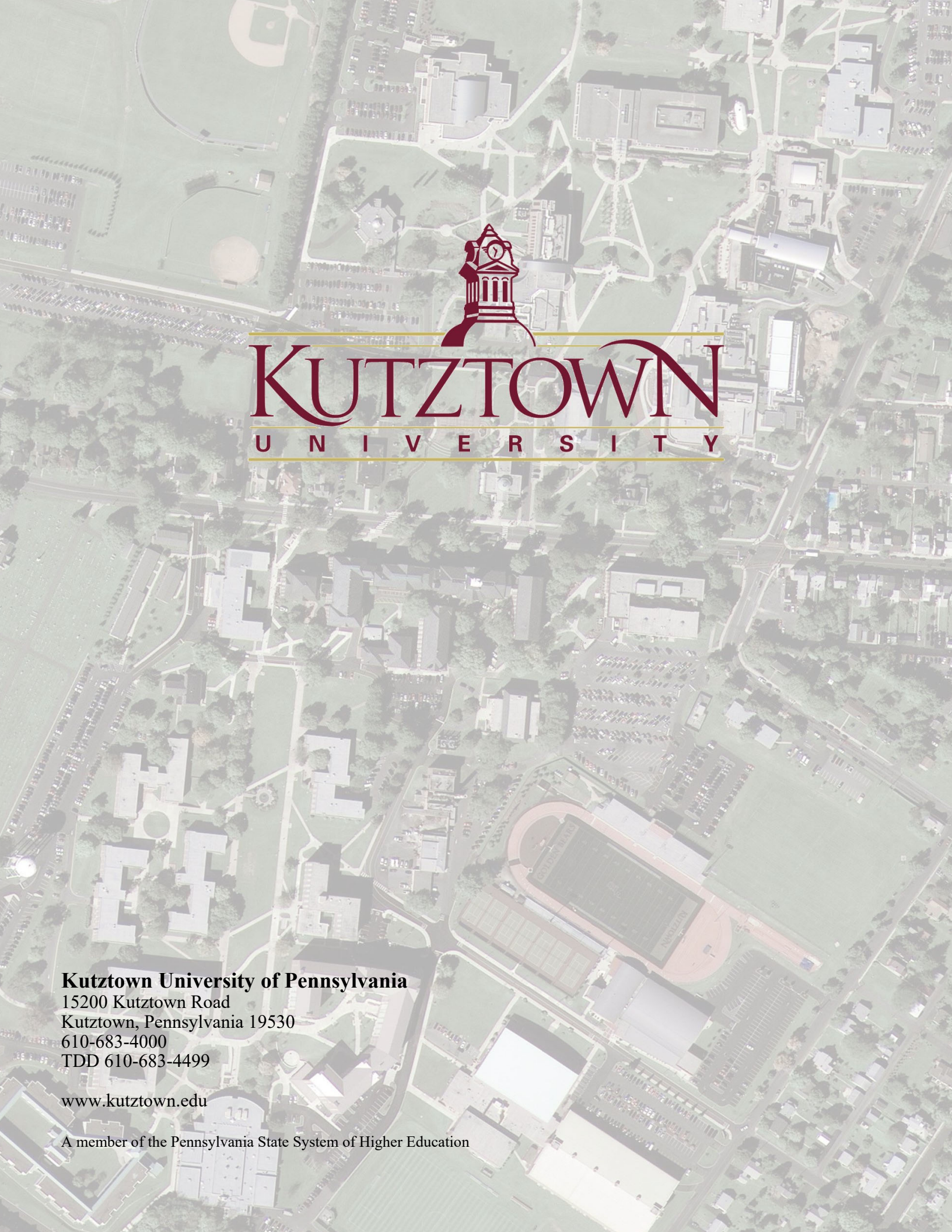
The Professional Development Committee awarded approximately $160,968 in funding to 184 applicants. The majority of the funding was used to support faculty travel to present scholarly work. Other funding was used to enhance instruction and support faculty purchases of materials to develop a novel approach and/or new direction for a course.

	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
Received	152	139	163	185	183	185
Awarded	146	137	159	182	181	184
Total Requested	$ 128,552	$ 113,372	$ 145,939	$ 171,426	$ 169,023	$ 161,568
Total Awarded[1]	$ 120,921	$ 112,372	$ 141,401	$ 169,084	$ 167,223	$ 160,968
Annual Funding Available	$ 120,482	$ 120,482	$ 120,482	$ 150,482	$ 165,482	$ 150,482

1. Total Awarded may exceed Annual Funding Available due to the carryover of funds from prior years.


HAMMER'S
ALL-PURPOSE
BUCKET





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