The Office of Grants, Research and Sponsored Programs has enjoyed an active and successful year once again as evidenced in this Year in Review. This success was made possible through the dedication and hard work of the faculty, staff and students highlighted in this publication. In FY17, fifty-four grant applications requesting $7,641,301 were submitted to external funding agencies. A total of 40 award notices were received in FY17 totaling $1,701,811 in awards. Thanks to all the grant writers who made this possible. We are looking forward to an even more exciting and rewarding year in FY18!

The amount of external funding requested in FY17 totaled $7,641,301. (FY16 totaled $3,082,412)

In FY17, a total of 54 grant applications were submitted to external funding sources. (FY16 totaled 42)

The total number of new grant writers for FY17 was 13. (FY16 had 12)

Fifty-five faculty, staff and students submitted grant applications to external funding sources in FY17. (FY16 had 45)

Forty award notices were received in FY17 totaling $1,701,811. (FY16 received 34 notices totaling $1,359,936)
The mission of the Office of Grants, Research and Sponsored Programs is to facilitate research and sponsored programs by increasing awareness and competitiveness in the pursuit of internal and external funding to support the mission of the university.
Annual Metrics for External Funding

The Office of Grants, Research and Sponsored Programs has made progress in advancing external funding at SRU. Growth continued in FY17 as SRU faculty and staff participated in submitting 54 proposals: 17 federal, 8 state, 23 other/private and 6 State System transfers.

Submissions total $7,641,301 and resulted in grant awards totaling $1,701,811.

The metrics below reflect the awards received.

External Awards Received
July 1, 2016 - June 30, 2017

- Federal ($422,375)
- State ($840,430)
- Other/Private ($404,546)
- PASSHE Flow Through ($34,460)
### Awards by College and Division

<table>
<thead>
<tr>
<th>College</th>
<th>Proposals Submitted</th>
<th>Proposals Awarded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic and Student Affairs</td>
<td>10</td>
<td>6</td>
</tr>
<tr>
<td>College of Business</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>College of Education</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>College of Health, Environment and Science*</td>
<td>23</td>
<td>14</td>
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<td>College of Liberal Arts</td>
<td>4</td>
<td>4</td>
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<tr>
<td>Finance, Administrative Affairs and Advancement Services</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>President's Office*</td>
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<td>2</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td><strong>54</strong></td>
<td><strong>40</strong></td>
</tr>
</tbody>
</table>

*Includes grants submitted in FY15 and FY16 that were awarded in FY17.
“Rock Prevention”

Funding Source: Pennsylvania Liquor Control Board  
Amount Proposed: $39,445  
Project Dates: July 1, 2017 to June 30, 2018  

Overview: The purpose of this project is to provide SRU students with a comprehensive health promotion program and increase enforcement to reduce underage and dangerous drinking.

“College Health Center-Based Alcohol and Sexual Violence Intervention Study”

Funding Source: National Institutes of Health through University of Pittsburgh  
Amount Awarded: $1,000  
Project Dates: Aug. 1, 2016 to Sept. 30, 2017  

Overview: The purpose of this project is for the Student Health Center to work with the research team to inform SRU students about the study and refer the students to the research team after their clinical visit. This funding is for Year 02 of a two-year grant.
“U.S. Academic Host Institution Application 2017-18 International Undergraduate Student Programs”

Funding Source: International Research & Exchange Board (IREX)
Amount Awarded: $12,911
Project Dates: Aug. 28, 2017 to May 31, 2018

Overview: The purpose of this project is to support the vision and mission of the university by hosting exchange students through the U.S. Department of State’s Bureau of Education and Cultural Affairs, Global UGRAD Program.

“Pre-K Counts”

Funding Source: Pennsylvania Department of Education through Lifesteps, Inc.
Amount Awarded: $281,320
Project Dates: July 1, 2016 to June 30, 2017

Overview: The purpose of the Lifesteps and SRU/SGA Preschool and Child Care Center joint grant is to coordinate services so that eligible children can participate in a developmentally appropriate, research-based early learning program that ensures a smooth transition to kindergarten. This is Year 04 of a five-year grant.
“SRU/SGA Preschool and Childcare CCAMPIS Grant”

Funding Source: U.S. Department of Education
Amount Awarded: $14,283
Project Dates: Oct. 1, 2016 to Sept. 30, 2017

Overview: The purpose of this program is to assist student-parents who wish to enroll in college and complete a degree program but do not have the funds to pay for childcare while they attend classes. This is Year 04 of a four-year grant.

“SRU/SGA Preschool and Child Care Center CCAMPIS Program”

Funding Source: U.S. Department of Education
Amount Proposed: $57,176
Project Dates: Oct. 1, 2017 to Sept. 30, 2018

Overview: The purpose of this project is to assist student-parents who wish to enroll in college and complete a degree program but do not have the funds to pay for childcare while they attend classes. This is Year 01 of a four-year grant.

“Sophomore Retreat: Confident, Clear – Ready for a Career”

Funding Source: Pennsylvania Association of Colleges and Employers (PennACE)
Amount Awarded: $500
Project Dates: April 29, 2017 to April 30, 2017

Overview: The purpose of this project is to promote the reflective career development of sophomore students, including those in the Sophomore Living Learning Community, by providing an off-campus reflective retreat promoting the career and network development through reflection, healthy activities and collaboration with employers and successful alumni.
“It's On Us SRU”

Funding Source: Pennsylvania Department of Education  
Amount Awarded: $14,866  
Project Dates: Feb. 1, 2017 to June 30, 2017

Overview: The purpose of this project is to expand the role that SRU has on combatting sexual violence by engaging conversations about sexual violence on our campus, developing a better understanding of how sexual violence impacts our students, educating students about consent, improving reporting and response structures and building momentum to create sustained changes to our campus culture.

“The Hearst Scholarship for Underrepresented Minority STEM-H Majors”

Funding Source: The Hearst Foundation  
Amount Proposed: $200,000  
Project Dates: July 1, 2017 to June 30, 2021

Overview: The purpose of this project is to provide scholarship opportunities for academically-talented, first generation, lower income, underrepresented minority students in an effort to assist them with their pursuit of science, technology, engineering, mathematics and health-related (STEM-H) fields of study.
“Life or Death in Shanghai: Providing Access to the Nien Cheng Collection”

Funding Source: National Endowment for the Humanities
Amount Proposed: $93,410
Project Dates: May 1, 2017 to Aug. 31, 2018

Overview: The purpose of this project is to process, digitize and make available for research the University's Nien Cheng archival collection.
“Empowering Women – SRU Enactus Team Partnering with Women’s Solar Center”

Funding Source: Enactus
Amount Awarded: $1,500
Project Dates: Dec. 1, 2017 to Dec. 1, 2018

Overview: The purpose of this project is to help empower women in the local area through a series of workshops. We will provide short presentations and workshops to assist women in the area with resume writing, cover letters, professional photographs for online LinkedIn profiles and establishment of LinkedIn profiles.

“Government Contracting Assistance Center”

Funding Source: Defense Logistics Agency through California University of Pennsylvania
Amount Awarded: $20,000
Project Dates: Sept. 1, 2016 to Aug. 31, 2017

Overview: The purpose of the Government Contracting Assistance Center (GCAC) is to provide services to companies interested in pursuing federal, state and local government contracts and subcontracts. GCAC provides services to help local businesses sell their products and/or services to the government and also provides training in government contracting procedures and issues through seminars and webinars.
“HotLips Instrumental Supplies Venture Capital”

Funding Source: PASSHE Foundation, Inc.
Amount Awarded: $4,500
Project Dates: April 1, 2016 to March 31, 2019

Overview: The purpose of this project is to develop a business plan for a venture concept. This project was awarded 2nd place in the State System Business Plan Competition 2015-2016.
“Highly Qualified Adapted Physical Education Teachers in Pennsylvania”

Funding Source: U.S. Department of Education  
Amount Awarded: $250,000  
Project Dates: Oct. 1, 2016 to Sept. 30, 2017

Overview: The purpose of this project is to train nine graduate scholars per year for five years to become highly qualified adapted physical education specialists to meet Pennsylvania’s need for adapted physical education instructors. This funding is for Year 05 of a five-year grant.

“Work-Based Learning Experiences”

Funding Source: Pennsylvania Department of Labor and Industry/Office of Vocational Rehabilitation  
Amount Awarded: $150,000  
Project Dates: Oct. 1, 2016 to Sept. 15, 2017

Overview: The purpose of this project is to provide 15 high school students with disabilities who are OVR eligible with pre-employment, work-based learning experiences in the community.

“Rock Life Postsecondary Education Program”

Funding Source: Edith L. Trees Charitable Trust  
Amount Awarded: $50,000  
Project Dates: Jan. 1, 2017 to Dec. 31, 2017

Overview: The purpose of this project is to establish SRU’s Rock Life Program as a premier postsecondary education and residential option for students with intellectual and other developmental disabilities. This is Year 01 of a two-year grant.

“Innovation and Expansion – SRU Transition Program”

Funding Source: Pennsylvania Department of Labor and Industry/Office of Vocational Rehabilitation  
Amount Awarded: $149,519  
Project Dates: Jan. 1, 2017 to Dec. 31, 2017

Overview: The overreaching objective of this project is to provide a minimum of 25 students with disabilities with a pre-employment transition program at SRU and in the Armstrong, Beaver, Butler and Lawrence Counties. This is Year 02 of a two-year grant.
“Rock Life Post-Secondary Education Program”

Funding Source: DREAM Partnership  
Amount Awarded: $43,000  
Project Dates: Jan. 1, 2017 to Dec. 31, 2017

Overview: The purpose of this project is to support the start-up and initial operation of the Rock Life Post-Secondary Education Program for Students with Intellectual Disabilities. This funding is for Year 02 of a three-year grant.

“Rock Life Postsecondary Education Program”

Funding Source: Edith L. Trees Charitable Trust  
Amount Awarded: $50,000  
Project Dates: Jan. 1, 2018 to Dec. 31, 2018

Overview: The purpose of this project is to continue SRU’s Rock Life Program as a premier postsecondary education and residential option for students with intellectual and other developmental disabilities. This is Year 02 of a two-year grant.

“SRU Transition Program”

Funding Source: FISA Foundation  
Amount Awarded: $45,000  
Project Dates: Feb. 1, 2017 to Jan. 31, 2018

Overview: The purpose of this project is to secure general operating support to conduct the SRU Transition Program for individuals with disabilities between the ages of 14-25 years. This is Year 03 of a three-year grant.
“An Interdisciplinary Education Model for Preparing Adapted Physical Activity Specialists”

Funding Source: U.S. Department of Education  
Amount Proposed: $1,250,000  
Project Dates: Oct. 1, 2017 to Sept. 30, 2022

Overview: The purpose of this project is to prepare eight qualified scholars per year in adapted physical activity to serve children with disabilities with high-intensity needs to an interdisciplinary model.

“Physical Activity, Fitness and Health Through Physical Education”

Funding Source: National Institutes of Health  
Amount Proposed: $400,531  
Project Dates: July 1, 2017 to June 30, 2019

Overview: The purpose of this project is to test the feasibility of a program designed to improve the physical activity, fitness and health levels of children in their elementary years in school. The program involves testing compliance, feasibility and participation levels of teachers and parents, as well as the beliefs and behaviors of the elementary children.
“The Rock Center for Rural Behavioral Health”

Funding Source: Health Resources and Service Administration
Amount Proposed: $1,518,873
Project Dates: Sept. 1, 2017 to Aug. 31, 2021

Overview: The purpose of this project is to increase the number of highly trained behavioral health professionals working in rural communities by increasing the number of students completing internships in rural behavioral health agencies and schools in the area surrounding SRU and developing training activities for the current behavioral health work force.
“McKeever Environmental Learning Center”

Funding Source: Pennsylvania Department of Education
Amount Awarded: $200,000
Project Dates: July 1, 2016 to June 30, 2017

Overview: The purpose of this program is to provide environmental education programs for K-12 schools, professional development workshops for teachers, summer camps for children and special experiences for colleges and universities within the Commonwealth of Pennsylvania.

“CAREER: Investigating New Metallacrown-Based Single-Molecule Magnets”

Funding Source: National Science Foundation
Amount Proposed: $684,542
Project Dates: Jan. 1, 2017 to Dec. 21, 2021

Overview: The purpose of this project is to examine what role the connecting ligands play on the magnetic properties of lanthanide containing metallacrowns, incorporate new cyclic ligands to encapsulate a lanthanide ion, prepare new lanthanide containing cobalt-based metallacrowns and improve student understanding of the solid state and magnetic properties. Our goal is to increase the functional temperatures of molecular magnets and to improve student learning.
“The Comparative Effectiveness of an Educational Intervention With and Without Therapy Dogs for Children Who Have Experienced Trauma”

Funding Source: National Institutes of Health  
Amount Proposed: $122,569  
Project Dates: May 1, 2017 to April 30, 2019

Overview: The purpose of this project is to collaborate with the Victim Outreach Intervention Center to investigate the use of animal-assisted group interventions for children with a history of trauma.

“Assessment of Exposure to the Pesticide Imidacloprid During Metamorphosis on Amphibian Development”

Funding Source: Pennsylvania State System of Higher Education  
Amount Proposed: $5,000  
Project Dates: April 1, 2017 to Oct. 31, 2018

Overview: The purpose of this project is to provide a unique view of the effects of an environmentally relevant, yet little studied, route of exposure to pesticides and the diet. The study will provide information useful for the responsible management of pesticides for sensitive amphibian populations and life stages.
“Special Olympics Funding”

Funding Source: Pennsylvania National Horse Show Foundation  
Amount Proposed: $2,500  
Project Dates: Sept. 1, 2017 to Sept. 1, 2018

Overview: The purpose of this project is to host a horse show for Special Olympic Athletes who do not get to participate in the Pennsylvania state games.

“Equine Assisted Activities and Therapies for Veterans”

Funding Source: Professional Association of Therapeutic Horsemanship International (PATH)  
Amount Awarded: $1,000  
Project Dates: June 1, 2017 to Aug. 1, 2017

Overview: The purpose of this project is to purchase The Equicizer, which is a mechanical horse simulator which will help riders build strength, skill, balance, flexibility, fitness and confidence.

“Inter-arm Systolic Blood Pressure Difference: Developing Our Understanding at Rest and During Exercise”

Funding Source: Pennsylvania State System of Higher Education  
Amount Awarded: $5,000  
Project Dates: April 1, 2017 to Oct. 31, 2018

Overview: The purpose of this project is to study inter-arm systolic blood pressure (ISBPD) with the dual aims of understanding mechanisms of ISBPD and comprehensively examining the exercise response and possible implications of exercise intervention on ISBPD.
“Novel Regulators of Cytosolic Protein Quality Control”

Funding Source: National Institutes of Health through University of Pittsburgh
Amount Proposed: $25,363
Project Dates: July 1, 2017 to June 30, 2019

Overview: The purpose of this proposal is to confirm the role of novel factors in proteasomal protein turnover of several quality control substrates.

“Recreational Therapy Equine & Aquatics Program”

Funding Source: Council on Brain Injury
Amount Awarded: $1,886
Project Dates: Sept. 1, 2017 to March 31, 2018

Overview: The purpose of this project is to engage individuals with brain injuries in equine assisted activities and therapeutic aquatic activities within a university environment utilizing Recreational Therapy students as instructors and/or mentors.
“SRU Summer Undergraduate Research Experience”

Funding Source: American Psychological Association
Amount Proposed: $19,386
Project Dates: June 1, 2017 to August 2, 2017

Overview: The purpose of this project is to provide six undergraduates first-hand knowledge and research skills in the following programs: The Development of a Multidimensional Gender Expression Instrument, Social Adjustment in Young Adulthood of Former Bullies and Non-Bullies and Cortisol Reactivity in At-Risk Infants at Play.

“Expansion of the Adaptive Sports Program for Veterans with Disabilities”

Funding Source: Office of Veterans Affairs
Amount Proposed: $59,377
Project Dates: Sept. 1, 2017 to Sept. 30, 2018

Overview: The purpose of this project is to continue a rehabilitative, therapeutic program for disabled Veterans and members of the Armed forces at the Storm Harbor Equestrian Center.
**"The Comparative Effectiveness of Therapeutic Riding and Stress Management Techniques on the Stress in Young Adults with Autism Spectrum Disorders"**

Funding Source: Horses and Humans Research Foundation  
Amount Awarded: $88,059  
Project Dates: Feb. 1, 2017 to Aug. 1, 2018

Overview: The purpose of this project is to compare two different therapeutic interventions (therapeutic riding and stress management training) for effectiveness in promoting stress reduction in young adults with autism spectrum disorders. In addition, we hope to better understand the relationship of the equine stress level to the participants’ stress level.

**"Commit to Inclusion"**

Funding Source: President’s Council on Sport, Fitness and Nutrition through Vantage Human Resource Services, Inc.  
Amount Awarded: $3,000  
Project Dates: Jan. 1, 2017 to Aug. 31, 2017

Overview: The purpose of this project is to increase awareness of the importance of inclusion for both children and adults with disabilities in physical activity, nutrition and obesity-related health promotion programs at the Robert A. Macoskey Center.

**"Thermodynamic Folding Studies of Peptides Containing \(\alpha,\alpha\)-Dialkylated Amino Acids"**

Funding Source: Pennsylvania State System of Higher Education  
Amount Awarded: $4,960  
Project Dates: April 1, 2017 to Oct. 31, 2018

Overview: The purpose of this project is to analyze a class of unnatural amino acid, the \(\alpha,\alpha\)-dialkylated amino acid. The ability of \(\alpha,\alpha\)-dialkylated amino acids with complex structures will be investigated to reduce potential destabilization of a peptide’s folded structure.
“The Effect of Kinesiology Tape on Breathing Mechanics at Rest in Healthy Adults”

Funding Source: Foundations of Physical Therapy
Amount Proposed: $22,787
Project Dates: Jan. 1, 2017 to Dec. 31, 2018

Overview: The purpose of this project is to investigate the influence of kinesiology tape on chest wall excursion, maximal inspiratory pressure and respiratory muscle activation.

“Law Enforcement Training for Managers”

Funding Source: Pennsylvania Department of Conservation and Natural Resources
Amount Awarded: $44,725

Overview: This project is to provide the PA DCNR’s Bureau of Forestry and State Parks with a three-week training session to park law enforcement managers.
“Walk the Rock”
Funding Source: Pennsylvania Faculty Health and Welfare Fund
Amount Awarded: $1,500
Project Dates: Sept. 1, 2016 to Dec. 31, 2016

Overview: The purpose of this project is to actively engage participants in a 12-week pedometer-based walking program.

“Collaborative Grant: Cranial Base Development in Primates”
Funding Source: National Science Foundation
Amount Proposed: $149,069
Project Dates: July 1, 2017 to June 3, 2021

Overview: The purpose of this study is to test hypotheses bearing on the development of the endochondral bones that form the skull in non-human primates.
“Scholarships for Catalyzing the Growth of Next Generation Computing Workforce: A Pathway to Foster and Sustain High Performing Low-Income STEM Scholars”

Funding Source: National Science Foundation
Amount Proposed: $996,474
Project Dates: Aug. 1, 2018 to July 31, 2023

Overview: The purpose of this project is to create opportunities for access and success for students with financial need and academic merit in Computer Science at SRU, encourage their advancement into the computing workforce and broaden underrepresented participation in STEM.

“Bridges to BSN Nursing Program”

Funding Source: U.S. Department of Labor through Community College of Allegheny College
Amount Proposed: $353,340
Project Dates: Sept. 1, 2017 to Aug. 31, 2020

Overview: The purpose of this project is to participate as an articulating school in Community College of Allegheny College’s (CCAC) Nursing Promise – Bridges to BSN Nursing Program. This project will build on existing articulations agreements with four-year institutions to develop a program that will increase the transfer and graduation rates for underrepresented populations in the nursing occupation.
“The Crosstalk Between the Wnt/beta-catenin Pathway and Osteopontin in Liver Regeneration Following Partial Hepatectomy and Hepatocellular Carcinoma in Mice”

Funding Source: Pittsburgh Liver Research Center
Amount Awarded: $5,000
Project Dates: May 1, 2017 to April 30, 2018

Overview: The purpose of this project is to better understand the role of osteopontin in liver regeneration under the regulation of Wnt/β-catenin Pathway.

“SRU Wellness Initiative - Meditation”

Funding Source: Pennsylvania Faculty Health and Welfare Fund
Amount Awarded: $720
Project Dates: Sept. 1, 2016 to June 30, 2017

Overview: The purpose of this project is to provide SRU faculty, staff, administration and family the opportunity to engage in professionally guided meditation classes to improve many aspects of their wellness (mental, physical, spiritual, emotional and intellectual) through stress management techniques.

“SRU Wellness Initiative - Yoga”

Funding Source: Pennsylvania Faculty Health and Welfare Fund
Amount Awarded: $1,440
Project Dates: Sept. 1, 2016 to June 30, 2017

Overview: The purpose of this project is to provide SRU faculty, staff, administration and family the opportunity to engage in yoga to improve many aspects of their wellness (mental, physical, spiritual, emotional and intellectual) through stress management techniques.
“Kaleidoscope Arts Festival 2017”

Funding Source: Pennsylvania Council on the Arts
Amount Awarded: $1,650
Project Dates: April 12, 2018 to April 28, 2018

Overview: The purpose of this project is to provide free or low cost quality arts programming to an underserved population through the annual Kaleidoscope Arts Festival.

Ms. Deanna Brookens
Theatre

“Humanities Ladder”

Funding Source: The Grable Foundation
Amount Awarded: $45,000
Project Dates: April 1, 2017 to April 30, 2018

Overview: The purpose of this project is to introduce college-level material in the humanities to high school students in economically and geographically isolated communities in southwestern Pennsylvania. This is for Year 01 of a two-year grant.

Dr. Aaron Cowan
Dr. Lia Paradis
History
“French Film Festival”

Funding Source: French American Cultural Exchange (FACE) Foundation  
Amount Proposed: $2,200  
Project Dates: March 26, 2018 to April 6, 2018

Overview: The purpose of this project is to present a French-language film festival for SRU and the surrounding communities.

“iPads for Distance-Learning Teaching Experience by Pre-Service Music Educators”

Funding Source: Pennsylvania Music Educators Association  
Amount Awarded: $1,000  
Project Dates: Oct. 1, 2016 to Apr. 30, 2017

Overview: The purpose of this project is to provide SRU Music students enrolled in Woodwind Methods and Instrumental Methods the opportunity to use technology, specifically iPads, to teach instrumental lessons to high school students.
“GEAR UP Summer Camp”

Funding Source: Pennsylvania State System of Higher Education  
Amount Proposed: $24,595  
Project Dates: Feb. 18, 2017 to June 24, 2017

Overview: The purpose of this program is to accept 40 students from the PASSHE GEAR UP summer camp program to attend the SRU Health Planet, Healthy People Environmental Summer Camp and Community Project Incubator.

“Healthy Planet, Healthy People Environmental Summer Camp and Community Project Incubator”

Funding Source: Pennsylvania Department of Environmental Protection  
Amount Proposed: $49,658  
Project Dates: July 1, 2017 to July 1, 2019

Overview: The purpose of this program is to enroll high school students and teachers from different school districts for a week-long summer camp on the campus of SRU. Participants will develop a meaningful environmental stewardship project to implement in their communities during the following year.
“Gravity and Other Myths”
Funding Source: Mid Atlantic Arts Foundation
Amount Awarded: $3,000

Overview: The purpose of this project is to introduce the SRU community to an acrobatic ensemble that creates and directs their own work with emphasis on an honest approach to performance, moving away from traditional circus and theater models, towards a fusion of acrobatic physical theater.

“Nobuntu”
Funding Source: Pennsylvania Council on the Arts
Amount Proposed: $1,750

Overview: The purpose of this project is to introduce the SRU community to a multi-award winning women’s a cappella ensemble from Zimbabwe.
The purpose of this internal grant initiative is to provide support to faculty research proposals that directly involve undergraduate or graduate students in scholarly research or creative activity directed toward a joint presentation, publication, demonstration and/or performance. The following faculty members prepared a grant proposal in response to the Request for Proposals.

Patrick Burkhart*
Geography, Geology & the Environment

“Searching for Evidence of Climate Change in the White River Badlands”
Our previous findings from study of the Badlands have revealed that sometime between 1,000-1,300 AD a significant erosional event dissected slopes across the region. We hypothesize that the erosion was triggered by a global event called the Medieval Climate Anomaly. If our postulate of climate change is correct, it is reasonable to expect that many different landforms would be simultaneously affected. Therefore, we now propose a new investigation of dunes, for climate change should affect both the wind and slopes. To identify when the dunes were last activated, we must date their age. We can use radiocarbon dating and optically stimulated luminescence to do so. We have extensive experience with the former and have established collaborations to assist with the latter. Jan. 23, 2017 to Dec. 18, 2017 $5,000

Xianfeng Chen*
Geography, Geology & the Environment

“Estimation of Vegetation Fractional Cover with Landsat Data in Arid Region”
In this study, spectral mixture analysis (SMA), a cutting-edge technology for image processing, will be applied to Landsat satellite data to quantify fractional vegetation cover in desert ecosystems. Desert vegetation plays an essential role in the physiological and biogeochemical function of arid ecosystems. Many ecosystems in these regions have been severely impacted by land use alteration, over-grazing and climate change. Fractional vegetation cover is a significant indicator of ecosystem degradation. SMA is a sub-pixel based algorithm to estimate proportions of endmembers within a pixel. The SMA approach will be used by the research team to evaluate changes in fractional vegetation cover in the Manes River watershed. This is also an interdisciplinary research project in which the expertise of image processing and Geographic Information Science and botany will be brought together. Jan. 1, 2017 to Dec. 31, 2017 $5,000

Susan Hadley
Music Therapy

“Dismantling the Binary Framework that Imprisons Sex and Gender”
Systematic binaries exist that define sex/gender with the categories being “man/male” and “woman/female.” These cultural definitions set expectations for each based sex, gender expression, behavior and sexuality. Their understanding places men/males in privileged positions and women/females in oppressed positions. Considering this, conversations on sexism shed light on the oppression of women; however, they are dichotomous as only men and women are referenced, leaving out individuals who don’t “fit” (e.g. transgender, genderqueer, non-binary, intersexed).
While cisgenderism is a term used to describe the oppression of non-binary individuals, I argue its effectiveness at really dismantling binaries. Both sexism and cisgenderism focus on the oppression of sex/gender identities, yet their separateness perpetuates binaries and excludes those who challenge these binaries. Finally, I argue that isolating conversations of sexism and cisgenderism is problematic and that there’s a need to challenge the ways we theorize sex/gender so that we are inclusive to all individuals.

Jan. 1, 2017 to May 12, 2017

Michael Holmstrup*
Exercise and Rehabilitative Sciences

“The Effect of Exercise Duration on Inter-Arm Systolic Blood Pressure Difference & Arterial Stiffness”
Clinically, when a difference of \( \pm 10 \) mmHg in systolic blood pressure between arms exists, it is identified as inter-arm systolic blood pressure difference (ISBPD). At rest, ISBPD is linked with hypertension, peripheral vascular disease, arterial stiffness and increased premature mortality. Recently, we determined that moderate-intensity exercise resulted in ISBPD not otherwise present at rest. However, to date, no investigations have examined the mechanisms underlying the effect of exercise on ISBPD. The purpose of this project is to determine if prolonged exercise alters ISBPD and investigate potential mechanisms relating to arterial stiffness. Participants will have pre and post exercise measurements (e.g. peripheral systolic and diastolic blood pressure, central blood pressure, pulse wave velocity and heart rate) performed using the Mobil-o-graph device and standard auscultation in both arms. The aerobic exercise will be 60 minutes in duration at an intensity of 60% VO2peak.

$4,905

George Lengyel*
Chemistry

“Thermodynamic Folding Status of Peptides Containing a,a-Dialkylated Amino Acids”
Unnatural amino acids, when used incorporated into a protein, can protect the protein from breakdown by enzymes (proteolysis) in the body. This resistance to proteolysis makes proteins with unnatural amino content valuable tools for research in therapeutics. Aminoisobutyric acid (Aib), an unnatural amino acid, has shown the ability to protect a protein from proteolysis, albeit with a cost to protein structural stability. We have recently published work showing unnatural amino acids similar to Aib can restore some, but not all, of this lost stability. We propose to synthesize several peptides containing unnatural amino acids with structures similar to Aib. These peptides will be analyzed to determine how to minimize the destabilization caused by unnatural amino incorporation. Results from this study will be used to guide future synthesis and incorporation of new unnatural amino acids in proteins.

Jan. 1, 2017 to May 12, 2017
$3,250

Jeremy Lynch*
Special Education

“PSTs’ Perceptions of Full Inclusion after Service-Learning Partnership with the Watson Institute”
The purpose of this project is to develop a service-learning partnership with the Watson Institute and to understand how preservice teachers’ (PSTs) perceptions of a full inclusion model of education for students with severe special needs changes, if at all, after participating in the project. For this study, we will utilize a phenomenological approach to understand is PSTs’ perceptions of full inclusion for students with severe special needs changes as a result of participating in a service-learning project.

Jan. 30, 2017 to May 12, 2017
$4,905
Rizwan Mahmood*
Physics and Engineering

“Hybrid Materials- Liquid Crystal and Gold Nanoparticles Composites”
Gold nanoparticles (GNPs) are excellent tools for basic research, drug delivery to cancer sites and for other emerging technologies that will take us well into the 21st century and beyond. The interaction of GNPs with electromagnetic waves is strongly dictated by their shape, physical dimensions and environment. Oscillating electric fields of light propagating near the surface of a colloidal nanoparticle interact with the free electron cloud causing a concerted oscillation of electron charge distribution that is in resonance with the frequency of light. These resonating oscillations are known as surface plasmon resonance (SPR). The SPR frequency can be tuned by varying the size or shape of the nanoparticles and may lead to the development of metamaterials with unusual tailored optoelectronic properties for a wide variety of applications. Our studies will focus on the side effects of GNP colloids in an organized and interesting fluid known as liquid crystals.
Jan. 1, 2017 to Dec. 31, 2017
$3,984

Vern Miller*
Music

“Teaching Clinical Applications of Music Technology: A Pilot Study”
Research by Slippery Rock music therapy faculty and music therapy students found the need for more education in the clinical application of music technology. Given that there has yet to be any publications on effective strategies for teaching music therapy students about the clinical application of music technology, there is a real need for the development of education strategies for teaching students a variety of clinical applications of music technology. This study aims to develop a protocol for teaching the clinical application of music technology.
Jan. 1, 2017 to Aug. 31, 2017
$4,200

Marketa Schublova*
Exercise and Rehabilitative Sciences

“The Effects of a Six-Week Training Program Utilizing a Suspension Training Strap and Swiss-Ball”
Core stability plays an important role in athletic injury and performance. Poor core stability increases the risk of upper/lower extremities injuries and lower back injuries. The use of instability devices to train the core muscles are an essential part of rehabilitation protocols and have a significantly greater effect on muscle activity than floor-exercises. The general purpose of this study is to determine the difference in muscular effects on core stability following a short, six-week training program using either the Swiss-ball or the suspension training strap. Examining the difference in muscle activation will provide the researchers with valuable data about rehabilitation prevention for chronic injuries caused by improper biomechanics form the core.
Jan. 1, 2017 to Dec. 31, 2017
$5,000

Kimberly Smith*
Exercise and Rehabilitative Sciences

“Physiological, Psychological and Social Impacts of a 12-week Exercise Intervention on Prison Inmates”
The purpose of this research study is to examine the physiological, psychological and social impacts of a 12-week exercise intervention on inmates who participate in the Community Reintegration Program at the Butler County Prison (BCP). Participants will attend 3 sessions a week providing them with structured
exercise routines. Prior to and following this intervention, participants will complete fitness tests and questionnaires evaluating their injury status, mood, aggression, resilience, depression, hopelessness, self-esteem, social adjustment, bullying, victimization, gender expression and gender roles.

Jan. 23, 2017 to May 5, 2017
$4,999

Langdon Smith*
Geography, Geology & the Environment

“Obama’s National Monuments”
The Antiquities Act allows U.S. presidents to create national monuments by signing Executive Orders. Barack Obama has used this tool to create 24 new units of public land—the most of any president in history. As the recent armed seizure of the Malheur National Wildlife Refuge in Oregon demonstrated, public opinion about federally owned lands is fiercely divided. It is rare for the U.S. Congress to pass legislation to create new protected areas, so it is safe to assume that the majority of new public lands will also be created by presidents using Executive Order. This rise in conflict, and the unprecedented amount of land set aside by Obama, demonstrates that this presidential tool deserves more attention by academics. This research first explores the significance of all the new monuments, and then focuses in depth on three sites as case studies.

Jan. 1, 2017 to Dec. 31, 2017
$4,553

Nitin Sukhija
Computer Science

“Stochastic Modeling for Analyzing and Evaluating Resilience of Scheduling Scientific Applications”
Two faculty and three students will investigate a high level modeling formalism based on stochastic process algebra for the analysis and evaluation of resilience of the scheduling approaches in presence of resource failures. With the aid of this formalism, a wide class of dependencies existing between applications and computing system will be captured within a stochastic performance model for quantifying the performance impact expected form changes in application and system characteristics. Ideally, the performance model will enable an introspective design and investigation of scheduling heuristics.

Jan. 1, 2017 to Dec. 31, 2017

*Awarded
The Green Fund Grants 2016-17

The Green Fund was established to support environmental initiatives on campus and in the community. The Advisory Board accepts proposals and distributes funding for programs promoting environmental education and projects related to environmental sustainability. The following proposals were submitted in response to the Request for Proposals.

Dallas Cott*
Facilities

“Campus Trees”
Forty trees of various species will be planted in two campus locations to replace trees that have been removed in the past and to add to the beauty of our campus.
Apr. 17, 2017 to May 12, 2017
$10,120

Dallas Cott
Facilities

“Campus Tree Inventory”
This project will entail creating an interactive map of our campus trees, excluding wooded areas, to include a record of tree species, estimated age of the tree and recommended maintenance procedures over the next 5 years. This information can be accessed online via ArborScope software which will allow campus employees to add, delete and plan for maintenance work of our campus trees.
Apr. 1, 2017 to June 30, 2017

Dallas Cott*
Facilities

“Tree Planting at Various Campus Locations”
Fifty trees of various species will be planted in various locations around campus to replace trees that have been removed from campus over the last few years.
Nov. 15, 2016 to Dec. 30, 2016
$9,356

John Golden*
School of Business

“SEA Pollination Garden”
The SEA Pollination Garden consists of SEA ambassadors and directors in collaboration with the Institute of Learning in Retirement (whom share a building with the SEA) and Brian Ringler of SRU’s Facilities and Maintenance Department. The garden will utilize only native plants to Pennsylvania. It will require re-purposing a 1,150 ft. grassy area in front of the Fowler Building.
Apr. 1, 2017 to Apr 1, 2018
$2,307

Edward Grossman
Facilities

“Campus Grounds Going Greener with 72 Volt Electric Cart”
This 72 volt electric utility cart would replace a 2006 diesel powered utility cart which would contribute to our departments efforts of helping the campus reach carbon neutrality.
This utility cart will be used year round to collect campus recycling and trash and various other grounds related tasks. The 72 volt system can get up to 50 miles on one charge.
Apr. 1, 2017 to May 31, 2017
The Green Fund Grants 2016-2017 (continued)

Paul Lueken
Athletics

“Gas Powered to Electric”
The SRU Athletic Department would like to replace current gas operated vehicles with battery powered electric vehicles. These vehicles are vital to both operations for transporting equipment and supplies to practice facilities and game day facilities for the benefit of the student athletes and staff that coordinate these activities.
Feb. 1, 2017 to Feb. 1, 2021

Tanner McCall*
Dallas Cott
Facilities

“Harrisville School Trees”
Planting of 15 trees of various species will be planted in the lawns of the Harrisville School that houses the Physician Assistant Program. These trees would replace trees that were removed when the building was purchased, as well as add trees to the existing lawn open spaces.
Apr. 7, 2017 to May 15, 2017
$6,807

Christine McHenry-Glenn*
Hospitality, Event Management and Tourism

“Event Recycling at SRU”
The current system of recycling at major events on campus is not highly visible, and little is done to educate or encourage event attendees to follow proper recycling procedures. This proposal offers a solution to these problems and significantly increases our recycling rate at specific events. Funding is requested to establish a portable recycling system. The system is comprised of two basis components: the infrastructural elements needed to set up highly visible and educational recycling stations, student volunteers at large-scale events to encourage effective recycling practices among guests. The proposed system would not only effectively reduce the waste stream, it would clearly communicate SRU’s commitment to sustainability to campus and area residents during events.
June 1, 2017 to Nov. 20, 2017
$9,607

Jessica O’Donnell
Facilities

“EMist Cleaning Machine”
The purpose of this project is to purchase an EMist electrostatic cleaning machine for campus use to aid in disinfecting locker rooms, showers and classrooms. This is a machine that uses tap water and electrolytes to create a hospital grade disinfectant without the use of harsh chemicals and the usual spray and wipe application process.
Apr. 24, 2017 to Apr. 28, 2017

Andrea Rodriguez
Office of Disability Services

“Going Green at the Office”
The Office of Disability Services wants to utilize an electronic file management system and learn new ways of providing class notes and exam requests electronically. Through the Assistive Technology Applications Certificate Program, the Office of Disability Services Graduate Assistants would learn current, cutting edge technology to assist students electronically and limit our overall waste.
Dec. 1, 2016 to May 31, 2017
Paul Scanlon
Office of Sustainability

“EPA Summer Camp”
SRU was awarded an EPA Model Environmental Education Grant in the amount of $90,166 to conduct a “Healthy Planet, Healthy People Environmental Summer Camp & Community Project Incubator” during the summer of 2017. The main goal of this project is to attract 100 high school student to attend our summer camp, then return to their communities and execute a local environmental education/stewardship project of their choosing. A secondary goal is to provide these students with an on-campus experience that increases the chances that they will enroll at SRU and become a CHES major, providing a significant financial benefit to SRU and a career-long contribution to sustainability efforts.

June 20, 2017 to June 24, 2017

*Awarded
The mission of Slippery Rock University’s Center for Student Research is to create a community of learners by facilitating the exchange of ideas, to provide a collegial venue that prepares students for further scholarly exploration and professional careers and to promote scholarly inquiry as a fundamental value of the SRU experience. The goal of this internal grant program is to support and promote high-quality student/faculty collaborative research, scholarship and create activity. The following students prepared a grant proposal in response to the Request for Proposals.

Nicole Benevenuto (U)*
Victoria Coleman (U)
Abigail Cornett (U)
Alexus Dutrieuille (U)
Lindsey Gehman (U)

Cooperating Faculty Mentor: Jennifer McGraw
Psychology

“Brain Awareness Week: The Brain Basis of Mental Disorders”
Brain Awareness Week is an annual event done in conjunction with the Dana Foundation. The Dana Foundation’s objective is to encourage groups to raise awareness about brain function and brain research. A team of students will host a week-long series of events to raise awareness about the biological basis of mental disorders. The team objective is to raise awareness with the goal that greater knowledge of mental disorders will impact others by reducing stigma. Fun and educational activities will be planned to raise awareness of post-traumatic stress disorder in military personnel, coping with anxiety in college, a better understanding of schizophrenia and current neuroscience research on obsessive-compulsive disorder.

Oct. 10, 2016 to Apr. 28, 2017
$500

Kali Kirlangitis (U)
Alaina Marshall (U)
Kelly Rothrock (U)
Renee Schmitzer (U)

Anthony DeRosa (U)*
Cooperating Faculty Mentor: Tricia Bishop
Art

“Art from the Earth: Exploring Technical Applications of Minerals from Slippery Rock, Pennsylvania”
Building on previous research I conducted in the North American West, minerals in the form of rocks will be collected from the local geography of Slippery Rock, Pennsylvania for technical application in ceramic art production. Samples collected will be processed into powder to be tested raw at various temperatures commonly used in ceramic production. The results of these test will determine the formulation of at least 5 glaze recipes and 3 clay body recipes. Following the analysis of the recipe test results further testing may be required; however if satisfying results are achieved in the initial testing, then the selected recipes will be used on large scale ceramic sculptures. Through the research, the result shall be a series of artistic works whose aesthetics are unique to the local geographical location of Slippery Rock, Pennsylvania.

Nov. 1, 2016 to Mar. 5, 2017
$500
Katelynn Kletzi (U)*
Cooperating Faculty Mentor:
Kimberly Smith
Exercise and Rehabilitative Sciences

“Physiological, Psychological and Social Impacts of an Exercise Intervention on Prison Inmates”
Due to public sentiment, limited budgets and a changing political climate, many correctional institutions are choosing to reduce or eliminate exercise equipment in order to make prison life less comfortable and more punitive. However, it is imperative to consider that life in a correctional facility is often highly stressful and approximately one in seven inmates suffer from psychological conditions such as depression and anxiety. It is well established in the literature that regular physical activity is associated with a range of physical and psychological benefits, including decreased rates of depression and anxiety. The purpose of this research study is to examine the physiological, psychological and social impacts of a 12-week exercise intervention on inmates who participate in the re-entry program at the Butler County Prison.

Nov. 21, 2016 to May 31, 2017
$500

Dan Komoroski (U)*
Cooperating Faculty Mentor:
Michael Holmstrup
Exercise and Rehabilitative Sciences

“The Relationship Between ISBPD and Cognitive Function”
Links between vascular health and cognitive function in the elderly are well-known. However, a decline in cognitive function may begin as early as the second or third decade in life. In support of this connection, a relationship between vascular health (i.e. pulse wave velocity (PWV)) and cognitive function in young individuals has been uncovered. Therefore, PWV may be useful in determining the risk of cognitive decline; however, the clinical use of PWV is not well-established. Blood pressure measurement, however, is commonly performed and offers insight into the multi-faceted picture of vascular and cognitive health. Inter-arm systolic blood pressure difference (ISBPD), for example, has been tied to several measures of vascular health. If a relationship between ISBPD, as easily measured index, and cognitive function is determined the potential prognostic information may be very useful. To date, there have been no investigations into the potential relationships between ISBPD and cognitive function.

May 1, 2017 to Oct. 31, 2017
$500

Lauren Marriner (G)
Michael Pappas (G)
Kristen Parkins (G)
Cooperating Faculty Mentor:
Barbara Billek-Sawhney
School of Physical Therapy

“Physical Therapy Students’ Immersion into the Life, Culture and Health Care of Sri Lanka”
Ten third-year SRU doctor of physical therapy (DPT) students and a faculty member will complete an international educational experience in Sri Lanka. This international trip is educationally based with a three-fold agenda of developing cultural competence, learning more about Easter Ayurvedic medicine and providing services in Sri Lanka through teaching and providing physical therapy services to patients. The cultural competence component is to introduce us to life in Sri Lanka through direct interaction with Sri Lankans. The Ayurvedic piece will allow us to experientially learn about Ayurvedic medicine in two different settings. The service piece involves the provision of physical therapy through clinical care and teaching at the Centre for Handicapped Children and the Singithi Sevana home.

Dec. 9, 2016 to Dec. 23, 2016
$500
Jenna Massaro (U)
Cooperating Faculty Mentor:
Patrick McGinty
English

“Sigma Tau Delta’s Spring Colloquium”
The Sigma Tau Delta International Honor Society for the English humanities is an organization that strives to create student inspiration and success through its various chapters all across the globe. At the Eta Delta chapter at Slippery Rock University, we aim to go above and beyond these aspirations to bring educational opportunities to our chapter members, as well as individuals from other disciplines—both students and faculty. The Eta Delta chapter at SRU will sponsor a Spring Colloquium to showcase student and faculty work. This event will allow members to gain experience in preparation for larger-scale conferences, while also furthering their scholarly/creative work through enriching educational experience. The success of last year’s Sigma Tau Delta Spring Colloquium has prompted the Eta Delta Chapter to host another colloquium in the Spring of 2017, furthering this integral tradition.

Nov. 9, 2016 to Apr. 22, 2017

Savannah McCartney (U)*
Cooperating Faculty Mentor:
Teena Custer
Dance

“BDF/Gibney Connect”
The main goal of this project is to research how the “release style” and contemporary concert dance taught at Slippery Rock is applied in the field of dance, specifically at the BDF/Gibney Connect Intensive, to influence how the researcher will train creatively in preparation for post-graduation. A synthesis of the style taught by Kendra Portier, choreographic tools taught by David Parker, and what I have learned here at Slippery Rock will be presented through a choreographed solo at the Student Symposium. It will also provide opportunities to network with other future employers and co-workers, strengthen my technique, gather information and advice from current dancers, explore the geography and opportunities of New York City.

Jan. 8, 2017 to Jan. 21, 2017
$500

Kaylee Pitzer (U)*
Victoria Coleman (U)
Cooperating Faculty Mentor:
Jennifer Willford
Psychology

“The Influence of Massage Induced Hormones on Productivity”
Massage Therapy is another modality that corporations have used to diversify their wellness programs. Research has supported that massage therapy can resist occupational stress by lowering cortisol levels and systemic blood pressure. However, evidence supporting the notion that massage therapy can affect productivity is difficult to find. This is why we began the study of Massage Therapy on Productivity. We found that those who received a massage performed significantly better on their post-test compared to their pre-test. Through conducting our research, we have determined that massage therapy is an effective treatment for increasing productivity. We are now aiming to continue the study to determine if levels of the hormones oxytocin and cortisol have a direct impact on increasing productivity due to the massage treatment received.

Oct 31, 3016 to Apr. 7, 2017
$500
Devin Porter (G)*  
Kiley Fletcher (G)  
Larissa Zeigler (G)  
Cooperating Faculty Mentor:  
Mary Ann Holbein-Jenny  
School of Physical Therapy

“Physical Therapy in Arequipa, Peru”
SRU’s Doctor of Physical Therapy program (SRU DPT) will be sending a group of students in August to provide physical therapy services to the local underprivileged communities in Arequipa, Peru. They will spend two-weeks under supervision of licensed American physical therapists. This service-learning trip will permit the students to apply SRU’s vision to “…excel as a caring community of lifelong learners connecting with the world.” The trip is being coordinated by Medical Ministry International-Canada (MMI-Canada), a non-profit organization that “…seek[s] to establish medical platforms for service and education that build medical capacity for those that need it most.” MMI-Canada has coordinated this very successful service learning experience with the SRU DPT program annually for the past eight years.

Aug. 6, 2017 to Aug. 19, 2017  
$500

Grascen Shidemantle (U)*  
Cooperating Faculty Mentor:  
Paul Falso  
Biology

“Effects of Imidacloprid Exposure on Amphibian Thyroid Hormone Levels Throughout Metamorphosis”
Amphibian populations are declining at alarming rates worldwide. Amphibians utilize both aquatic and terrestrial habitats and are, therefore, greatly affected by chemical contamination. Agricultural chemicals are common pollutants of aquatic ecosystems. One relatively new, but popular class of systemic insecticides, the neonicotinoids, has been found as a contaminant of ground and surface water. This ongoing research project aims to analyze how imidacloprid, the most widely used neonicotinoid insecticide, affects the development of larval frogs as they transition into adults. We exposed the larvae of Xenopus laevis (African clawed frog) to four different imidacloprid concentrations. The influence of exposure on development will be evaluated based on thyroid hormone levels produced throughout development. Thyroid hormone is directly responsible for amphibian metamorphosis. By analyzing the developmental effects of imidacloprid exposure, we can begin to explore potential consequences of imidacloprid use among other amphibians and across vertebrate classes.

May 1, 2017 to Dec. 31, 2017  
$500

*Awarded
Summer Undergraduate Research Experience Grants 2016-17

The Summer Undergraduate Research Experience (SURE) grant is a program designed to introduce undergraduate students to the world of academic research. The program requires that each proposal be prepared as a joint effort between the faculty member and a qualified undergraduate student, and that the proposal describes a research project that will engage the student in research skills and techniques of that discipline. The following proposals were submitted in response to the Request for Proposals.

Melanie Clarke (U)*
Faculty Mentor: Michael Holmstrup
Exercise and Rehabilitative Sciences

“The Effect of Exercise Duration on Inter-Arm Systolic Blood Pressure Difference & Arterial Stiffness”
Inter-arm systolic blood pressure difference (ISBPD; a systolic difference of =10 mmHg between arms) is linked to cardiovascular disease and is present in ~10% of individuals. Recently, we published the first study investigating the effect of exercise on ISBPD. We determined that a short bout of endurance exercise increased the occurrence of ISBPD. Despite the novelty of the prior study, our understanding of the link between exercise and ISBPD is very limited. Further, the underlying mechanisms of ISBPD are not well established. Therefore, this project aims to better understand the effect of exercise (i.e. duration) on ISBPD. Additionally, we aim to identify mechanisms (e.g. decreased heart rate variability, arterial stiffness, endothelial dysfunction) that may offer, in part, an explanation for the ISBPD response. A greater understanding of how exercise effects ISBPD may provide plausibility for the diagnostic, prognostic, and treatment uses of exercise in the clinical setting.
May 17, 2017 to Aug. 18, 2017
$780

Jenna Duff (U)*
Faculty Mentor: Kimberly Smith
Exercise and Rehabilitative Sciences

“Physiological, Psychological and Social Impacts on a 12-Week Exercise Intervention Program on Prison Inmates”
Due to public sentiment, limited budgets, and a changing political climate, many correctional institutions are choosing to reduce or eliminate exercise equipment in order to make prison life less comfortable and more punitive. However, it is imperative to consider that life in a correctional facility is often highly stressful. In fact, approximately one in seven inmates suffer from psychological conditions such as depression and anxiety. It is well established in the literature that regular physical activity is associated with a range of physical and psychological benefits, including decreased rates of depression and anxiety. The purpose of this research study is to examine the physiological, psychological, and social impacts of a 12-week exercise intervention on inmates from the Butler County Prison.
May 17, 2017 to Aug. 18, 2017
$780
Alysha Federkeil (U)*  
Faculty Mentor:  
William Bergmann  
History  
“The Butler Typhoid Epidemic of 1903-1904 and the Environment of the Connoquenessing Creek Watershed”  
This project examines how the disease and environmental conditions in the Connoquenessing Creek watershed contributed to the Butler (Pennsylvania) typhoid epidemic in 1903-1904. Using newspapers, as well as city and county government records, it illustrates how rural environments continued to influence urban conditions. This project builds on scholarly literature of urban and environmental historians and brings new attention to one of the worst acute epidemic outbreaks in the United States history.  
May 17, 2017 to Aug. 18, 2017  
$780

Jordan Goodrick (U)*  
Faculty Mentor:  
James Preston  
Elementary Education/Early Childhood  
“Student Teacher Evaluation Reliability Study”  
This study involves the examination of student teacher evaluations by cooperating teachers and university supervisors during the Fall 16 and Spring 17 semesters. The researchers will analyze the data from those semesters to calculate the inter-rater reliability of the evaluation instruments and the evaluators. This research will be shared at the Association of Teacher Educators Conference in Pittsburgh, PA during August 2017.  
May 8, 2017 to Aug. 8, 2017  
$780

Sarah Hess (U)*  
Faculty Mentor:  
Sarah Kuehn  
Criminology and Security Studies  
“Physiological, Psychological, and Social Impacts on a 12-Week Exercise Intervention Program on Prison Inmates”  
Due to public sentiment, limited budgets, and a changing political climate, many correctional institutions are choosing to reduce or eliminate exercise equipment in order to make prison life less comfortable and more punitive. However, it is imperative to consider that life in a correctional facility is often highly stressful. In fact, approximately one in seven inmates suffer from psychological conditions such as depression and anxiety. It is well established in the literature that regular physical activity is associated with a range of physical and psychological benefits, including decreased rates of depression and anxiety. The purpose of this research study is to examine the physiological, psychological, and social impacts of a 12-week exercise intervention on inmates from the Butler County Prison.  
May 17, 2017 to Aug. 18, 2017  
$780

McKayla Miller (U)*  
Faculty Mentor:  
George Lengyel  
Chemistry  
“Synthesis of Complex a,a-Dialkylated Amino Acids”  
Inclusion of a,a-dialkylated amino acids, a type of unnatural amino acids, in peptides has been shown to destabilize their folded structures. However, our previous studies focused on using a,a-dialkylated amino acids with relatively simple side-chains. We hypothesize that inclusion of a,a-dialkylated amino acids
with more complex side-chains may restore some of the lost stability.
To examine this possibility, the goal of this project is to synthesize
and isolate complex α,α-dialkylated amino acids for inclusion into a
peptide model system.
June 1, 2017 to Aug. 4, 2017
$780

Zachariah Miller (U)*
Faculty Mentor:
Nitin Sukhija
Computer Science

“Performance Optimization of Big Data Analytics”
The complexity of working with applications involving big data
requires computing in parallel and distributed environments.
Scheduling big data computations on parallel non-dedicated
heterogeneous systems, where the computing resources may differ in
availability, is a challenging task requiring robust scheduling methods
for an efficient execution. In this work, we will investigate the benefit
of employing various dynamic scheduling algorithms for efficient
execution of graph walk on heterogeneous computing systems. The
proposed work will address significant challenges faced by algorithms
used to parallelize graph walk computations (for instance, in the form
of DO/FOR loops) over very large data sets in order to achieve best
performance. The scheduling algorithms will take into account various
properties of graph problems such as data-driven computations,
unstructured and highly irregular nature of data, poor data locality and
high data access to computation ratio.
May 17, 2017 to Aug. 1, 2017
$780

Victoria Pasquale (U)*
Faculty Mentor:
Paul Falso
Biology

“Life Stages Sensitivity to Pesticide Exposure in
Amphibians”
Amphibians are declining globally at an alarming rate. Amphibians
are prevalent in both aquatic and terrestrial settings, exposing
them to vast chemical changes in the environment throughout
their life span. This research project investigates exposure to
imidacloprid, a neonicotinoid pesticide, on the health of African
clawed frogs (Xenous laevis). We will examine the sensitivity of
different life stages to pesticide exposure by measuring common
endpoints of development such as weight and length. Additional
tests may be conducted to examine activity of the immune and
endocrine system. This research project may better inform us
on how a common contaminant such as imidacloprid effects
amphibians in different stages of their life cycle.
May 17, 2017 to Aug. 18, 2017
$780

Kylee Proudfit (U)*
Faculty Mentor:
Marketa Schublova
Exercise and Rehabilitative Sciences

“The Effect of Using a Six-Week Training Program Utilizing a
Suspension Training Strap and Swiss-Ball on Core”
Core stability plays an important role in athletic injury and
performance. Poor core stability increases the risk of upper/
lower extremities injuries and lower back injuries. The use of
instability devices to train the core muscles are an essential part
of rehabilitation protocols and have a significantly greater effect
on muscle activity than floor-exercises. The general purpose of
this study is to determine the difference in muscular effects on
core stability following a short, six-week training program using either the Swiss-ball or the suspension training strap. Examining the difference in muscle activation will provide the researchers with valuable data about rehabilitation prevention for chronic injuries caused by improper biomechanics from the core.  
*May 17, 2017 to Aug. 18, 2017*  
$780

**Emily Reed (U)***  
Faculty Mentor:  
Nicole Dafoe  
Biology

**“Involvement of CCS52 in the Regulation of Endoreduplication in Soybeans”**  
During the cell cycle, cells grow, DNA replicates and the cell divides. In cases, DNA replication occurs, but the cell does not divide. This is known as endoreduplication. This process is common in plants and is associated with growth and development. In many organisms, it is not understood how endoreduplication is regulated. In plants, cell cycle switch 52 (CCS52) proteins have been associated with endoreduplication. In plants, there are typically one to two genes CCS52A and one gene CCS52B. In soybeans (Glycine max), there is a total of four CCS52A genes and CCS52B genes. To analyze the function of CCS52 genes, the genes were cloned into a yeast expression vector (pSFL102). The yeast expression plasmid was transformed into Schizosaccharomyces pombe. We are in the process of analyzing these transformed yeast to understand if soybean CCS52 genes, specifically the CCS52B genes, complement the corresponding yeast gene resulting in endoreduplication.  
*June 1, 2017 to Aug. 14, 2017*  
$780

**Sarahmay Schlea (U)***  
Faculty Mentor:  
Tamra Schiappa  
Geography, Geology and the Environment

**“Fossil Lagerstatten of the Carnegie Museum of Natural History”**  
This project will investigate the paleogeographic distribution of Fossil Lagerstatten that are curated at the Carnegie Museum of Natural History. These fossil assemblages range in age from 640 million years ago to 40 million years ago and have recorded unique periods of life in Earth’s history. The paleogeographic distribution of these fossils will be plotted on maps to assist us in reconstructing the paleoclimate and paleocologies during these time periods. This new database of paleogeographic maps of the Carnegie Museum’s Lagerstatten will help provide valuable scientific data to improve literacy of fossils for public education outreach and research.  
*May 17, 2017 to April 28, 2018*  
$780

**Anna Swartwout (U)***  
Faculty Mentor:  
Mark O’Connor  
English

**“The Queens of Slippery Rock: An Oral History and Publication Project”**  
The purpose of this research is to record interviews of current and past Homecoming queens, investigating the roles of women in college as represented in events like the Homecoming Court. The interviews will be then transcribed and published in the upcoming issue of SLAB. The raw interviews will then be transformed into a creative nonfiction essay which could be sent out for publication.  
*May 17, 2017 to Aug. 28, 2017*  
$780
Spencer Upton (U)*
Faculty Mentor:
Andrew Winters
Philosophy

“Model Epistemology and Process Metaphysics”
This research project assesses the difficulties of developing an adequate modal epistemology and how these difficulties are the result of modal epistemology having been framed in a substance ontology, which states that the knowing subject is a different kind of thing from the object of knowledge. We then consider the possibility of adopting a modal epistemology framed in terms of a process metaphysics, which understands knowledge acquisition as a metastable process or activity, to then understand how, although something being conceivable does not entail its possibility, the activities of conceiving and entertaining possibilities are different instantiations of the same type of process.

May 17, 2017 to Aug. 18, 2017
$780

Maureen Walsh (U)*
Faculty Mentor:
Brock Jensen
Exercise and Rehabilitative Sciences

“The Effect of Exercise Duration on Inter-Arm Systolic Blood Pressure Difference and Arterial Stiffness”
Inter-arm systolic blood pressure difference (ISBPD; a systolic difference of ≥10 mmHg between arms) is linked to cardiovascular disease and is present in ~10% of individuals. Recently, we published the first study investigating the effect of exercise on ISBPD. We determined that a short bout of endurance exercise increased the occurrence of ISBPD. Despite the novelty of the prior study, our understanding of the link between exercise and ISBPD is very limited. Further, the underlying mechanisms of ISBPD are not well established. Therefore, this project aims to better understand the effect of exercise on ISBPD. Additionally, we aim to identify mechanisms that may offer, in part, an explanation for the ISBPD response. A greater understanding of how exercise effects ISBPD may provide plausibility for the diagnostic, prognostic, and treatment uses of exercise in the clinical setting.

May 17, 2017 to Aug. 18, 2017
$780

John Yanotty (U)*
Faculty Mentor:
Dil Singhabahu
Mathematics and Statistics

“Random Forest Classification of Brain Volume Data”
The Random Forest algorithm has been used widely in bioinformatics as well as neuroimaging to distinguish between brain patterns observed in patients with brain diseases. This will be a collaboration study with Dr. Howard Aizenstein from the University of Pittsburgh. We will use the Brain Volume data from the Gingko Evaluation of Memory (GEM) Study, a National Institute of Health (NIH) funded multi-center research project. The primary objective of the study was to investigate any relationship between Gingko biloba and dementia and Alzheimer’s. We will use the data for a supplementary study to identify any patterns in the data that was not identified by the traditional statistical analysis methods. This will include searching for abnormal brain volumes by region and any other underlying classifications that were not identified. There is no identification data of the subjects in our data set.

May 17, 2017 to Aug. 31, 2017
$780

*Awarded
Norton Undergraduate Research Scholarship 2016-17

The Norton Undergraduate Research Scholarship is a scholarship program designed to assist undergraduate students in their pursuit of academic research or creative activity. This scholarship program is intended to enhance quality mentoring relationships between faculty and students who work collaboratively to answer questions, solve problems and provide learning opportunities to the highest caliber. Research conducted by Norton Scholars with faculty mentors should contribute in meaningful ways to the knowledge base of a given discipline and support the strategic initiatives of the University.

Sarah Allen (U)*
Faculty Mentor: Brock Jensen
Exercise and Rehabilitative Sciences

“Inter-Arm Systolic Blood Pressure Difference: Exploring Mechanisms”
Blood pressure (BP) is a cardiovascular disease (CVD) risk factor and the measurement of BP is an important determinant in the process of implementing safe exercise. Inter-arm systolic blood pressure difference (ISBPD) has been reported in the literature in individuals with normal and high BP. This project aims to identify mechanisms that may offer an explanation for the ISBPD response.
April 1, 2017 to Dec. 31, 2017
$500

Christina Eisenreich (U)
Faculty Mentor: Nicole Hahna
Music Therapy

“A Sociological and Psychological Study of the Impact of Education on Prejudice Attitude”
The purpose of this project is to study the effect of education level on prejudice. My research question is to what extent does a person’s educational level influence his/her prejudice attitude toward minorities, and how such influence varies across class and gender.
March 1, 2017 to December 20, 2017

Cassidy Leasure (U)
Faculty Mentor: Ahmad Khalili
Interdisciplinary Programs

“A Sociological and Psychological Study of the Impact of Education on Prejudice Attitude”
The purpose of this project is to study the effect of education level on prejudice. My research question is to what extent does a person’s educational level influence his/her prejudice attitude toward minorities, and how such influence varies across class and gender.
March 1, 2017 to December 20, 2017

Grascen Shidemantle (U)*
Faculty Mentor: Paul Falso
Biology

“Effects of Imidacloprid Exposure on Amphibian Thyroid Hormone Levels Throughout Metamorphosis”
Amphibian populations are declining at alarming rates worldwide due to several environmental stressors. Studies have already demonstrated that one of those stressors, agricultural chemicals, negatively impact amphibian development. However, the developmental effects of many other common use pesticides on amphibians remain largely unstudied. In this proposal, I will address the need for further study of sensitivity to neonicotinoid pesticide exposure during development.
April 1, 2017 to December 31, 2017
$500

*Awarded
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