Office of Research Development and Administration
Award Report: April, May, June 2019
$1,736,446

Kasim Korkmaz, School of Visual and Built Environments
Federal Transit Administration ($134,122)
Transit Traction Power Cables: Replacement Guidelines (TCRP C-24): Over the last 10 years transit traction power cables have become critical for the transit industry. The conductor insulation system used for traction power cables as well as for lower voltage power distribution and signal/communication systems typically has a specified life of 30 years. Many of the transit systems in the United States are that age or older with original cables still in service. Cables within transit tunnels have had failures because of water penetration through and around the cable insulation, causing damage to the insulation and corrosion of the copper conductor. In some subway tunnels, the conduits have degraded to the point where they cannot be cleaned out and reused for their original purpose. Transit systems have experienced cable fires and system-wide closures due to the degradation of traction power cable insulation. In recent years, major storms affecting the United States have inundated transit tunnels with fresh and contaminated water and exacerbated cable lifecycle concerns. The present research will answer key questions to determine end of life and replacement criteria for transit traction power cables. The objective of this research is to develop guidelines for determining when to replace transit system cables.

Claudia Drossel, Department of Psychology
Michigan Health Endowment Fund ($99,041)
EMU Geropsychology - Detecting and Managing High-Conflict Care Situations: Dialectical behavior therapy (DBT) is an empirically supported treatment for individuals who encounter high-conflict situations, with frequent and pervasive interpersonal crises. Caregivers of individuals with Alzheimer's disease and other forms of cognitive loss with pre-existing problems, such as significant mental health and physical problems, frequent relationship conflict, and poor problem-solving and conflict management skills, are more likely to encounter high-conflict during care situations. High conflict contributes to accelerated functional decline and premature institutionalization of care recipients, threatening the health and safety of vulnerable older adults and their families. Our goal is twofold: (1) to extend DBT for managing high-conflict relationships to care situations that involve a person with Alzheimer's disease or similar cognitive decline; (2) to develop and roll out a screening tool for providers (e.g., Alzheimer's Association, primary care physicians), based on the interpartner violence literature and known risk factors for coercive care techniques, so that providers can screen care partners for their risk of encountering high-conflict situations with the person for whom they care. This will enhance the efforts within the State of Michigan to prevent elder abuse. Our project is in collaboration with Saint Joseph Mercy Ann Arbor and Trinity Health to support screening and intervention in the community. As a result of the proposed project, it is anticipated that caregivers who receive our group services will encounter fewer high-conflict events during care, exhibit increased use of problem-solving and coping skills to manage conflict, reduce harmful behaviors such as substance use, and will have increased access to community services for long-term support.

Wendy Thomas, Small Business Development Center
Community Foundation for Southeastern Michigan ($95,000)

2019-2020 NEI Capital Readiness Grant Renewal:
The overall purpose is to provide business support services to distressed Detroit neighborhoods. These business support services including training and no-cost consulting for individuals who want to start or grow a small business. The services will be delivered via business training programs and one-on-one counseling. The expected outcomes include helping participants to become better prepared with seeking business loans, accessing market research, and understanding how to operate a successful small business.

U S Small Business Administration ($484,500)
Small Business Development Center (SBDC) Host, 2019: The Michigan Small Business Development Center (MI-SBDC) at Eastern Michigan University is part of a statewide program that is primarily funded by the U.S. Small Business Administration to provide assistance to entrepreneurs at start-up stage and existing businesses seeking to grow and improve their operations. The MI-SBDC offers one-on-one counseling, training seminars and secondary research support to its clients. We also make presentations and other outreach efforts in the communities we serve to provide information about business support resources that are available to small business.

Cory Emal, Department of Chemistry
MDI Therapeutics ($5,000)
MDIT: Custom solution phase organic synthesis, purification, and spectroscopic identification of plasminogen activator inhibitor-1 (PAI-1) inhibitor candidates for ex vivo and in vivo evaluation. Dr. Emal will direct the project and work with Dr. Lawrence to determine appropriate target compound classes that will achieve sufficient structural diversity to ascertain the viability of future in-depth structure-activity relationship studies with PAI-1.

Audrey Bernard, Special Education & Communication Sciences and Disorders
Clinton County RESA ($7,000)
2019 Early On: The goal of this study is to understand and describe the ways in which early intervention (EI) content is delivered in graduate speech-language pathology programs and compare that to reported roles and responsibilities of Early On, EI Speech-language Pathologists (SLPs) in the state of Michigan. Critical exploration of EI content can help to support those teaching these subjects and promote better preparation of SLPs working in the field, specifically for Early On.

Amy Johnson, Department of Chemistry
Bringing Theory to Practice ($3,000)
Bridging Our Divides: Engaging our Local Campuses and Community in Dialogues about Signature Work: For our AMP project, we are proposing a series of three 2-hour dialogues organized around the concept of signature work. In a nutshell, students produce signature work as they purposefully integrate their learning in the classroom and connect it to substantial projects outside of the classroom that have meaning both to them personally and to society. While such projects are primarily completed independently by students, the university and surrounding community are deeply invested in the process as well. Faculty, staff, and administrators guide and support student efforts as they are engaged in this important work, while community members and organizations often provide the project sites and/or are recipients

of the work product from signature projects. Community employers often hire graduates who have developed a broad-based set of analytical and creative problem solving skills while developing, carrying out, and assessing their signature work.

Allen Kurta, Department of Biology
SmithGroup JJR ($1,305)
Habitat for the Endangered Indiana Bat in Mill Creek Park, Dexter, Michigan: Dr. Kurta will evaluate the habitat along a portion of Mill Creek, within the City of Dexter, to determine whether it is suitable for the endangered Indiana bat and threatened Northern Long-eared bat, and provide a written report

Consumers Energy Corporation ($2,514)
Habitat for the Endangered Indiana Bat in Mill Creek Park, Dexter, Michigan: Dr. Kurta will examine aerial photographs of the proposed route of the replacement transmission line, identify areas of potential habitat for the Indiana bat, and provide a field evaluation of suitable sites and a written report.

Roderick Wallace, Upward Bound
US Department of Education ($458,096)
Upward Bound 2017-2022: Year 3, 2019-2020: Eastern Michigan University (EMU) has successfully sponsored the Upward Bound (UB) program since 1967 and will continue providing needed services to target area students with the support of the Federal TRIO program. The EMU UB program is designed to identify, select, enroll, and maintain 89 eligible participants and focuses on preparing students to successfully graduate college within six years of their high school graduation. EMU UB programming meets the specific needs of target students in the form of an integrated academic year, a pre-collegiate summer residential program including an algebra Jumpstart program for rising 9th graders, and a collegiate bridge and work-study/internship for seniors transitioning to college.

Sarah Shea, School of Social Work
Michigan Department of Health & Human Services ($165,006)
Research-based training curriculum for foster, adoptive and kinship parents: In response to the MDHHS's call for the development and implementation of a new mandatory training curriculum for foster and adoptive parents in Michigan, Dr. Shea, Dr. Farley, and Dr. Fritz will conduct an assessment of all relevant foster/adoptive parent-training models, including but not limited to, the PRIDE, Pressley Ridge, and TIPPS-MAPP models. This assessment will include review of the curriculum, comparisons of relevant outcome data, as well as a literature review of research related to all relevant training models. Based on this comprehensive assessment, the team will identify what, if any, of these training models or elements thereof can be utilized in the new curriculum. The team will then begin to write curriculum to insure all of the components identified as essential elements by MDHHS are included in the curriculum.

Nancy Bryk, Geography and Geology
Cranbrook Educational Community ($6,750)
Historic Preservation Field School at Cranbrook, 2019: The EMU Historic Preservation Program will undertake hands-on preservation of Tower Cottage and will document the landscape and

exterior architecture of Stonelea Cottage at Cranbrook Educational Community (CEC) for six full days in May, 2019. Three professors will work with graduate students to restore exterior elements including windows and stucco; document the landscape as well as the exterior building of Stonelea Cottage so that the building is documented prior to renovation (done by CEC). This funding supports a construction manager/field school manager with extensive knowledge of historic preservation building systems and techniques, and may provide support for a paint analyst. It may also include some small funding for photographers who will assist with the documentation of Stonelea site and building.

Hitomi Oketani, World Languages
Japanese School of Detroit ($16,057)
EMU Student Teachers and Student Helpers at Detroit Ringo Kai Saturday School:
This project provides EMU graduate students and qualified undergraduate students an opportunity to assist with teaching in the Detroit Ringo Kai Saturday School. This experience in a bilingual setting is an integral part of their academic studies at EMU.

Ethan Lowenstein, Teacher Education
NoVo Foundation ($150,000)
Creating Transformational Educational Communities Through Place-Based Education:
The SEMIS Coalition seeks to help teachers and community educators enact a robust EcoJustice approach to place-based education in complex and dynamic systems and school environments, that currently and to a large degree, do not support sustained enactment of such an approach. This project has 3 Objectives: Objective #1: Continue to develop social emotional learning programming that is rooted in an EcoJustice framework and place-based educational approach. Objective #2: Increase our influence locally and nationally through sharing our story of, and vision for, teacher, youth, and community transformation. Objective #3: Create and magnify synergies between the SEMIS Coalition, the new EMU Place-Based Education Teacher Preparation program and Detroit partners that focus on transformative place-based education.

David Pawlowski, Physics and Astronomy
National Aeronautics and Space Administration, sub-award from University of Michigan ($29,053)
Understanding the effects of solar flares on the upper atmospheres of Mars and Venus - Year 4:
Dr. Pawlowski's work will primarily focus on the development and use of the Mars Global Ionosphere-Thermosphere Model (M-GITM) as well as the Venus Global Ionosphere-Thermosphere Model (V-GITM). He will assist in the development of V-GITM, simulate the response to both realistic and idealized solar flare cases within M-GITM and V-GITM, work closely with other team members to compare results and observations that illustrate how traveling atmospheric disturbances facilitate the transport of energy and momentum throughout the Mars and Venus upper atmosphere, and model results and observational analysis.

Elise Sturdivant, Academic Success Programs
Michigan Department of Education ($80,000)
Supplement 2018-2020: To provide services to 600-700 middle and high school students participating in the KCP State GEAR-UP grant. Services will be similar to those provided under the College Days Program.