



# ACHIEVE

RESEARCH & GRANTS ACTIVITIES @ ROBERT MORRIS UNIVERSITY • 10th Edition Volume 1 • Fall 2024

## Vice President’s Message

The Research & Grants Administration (R&GA) is happy to share the Fall 2024 issue of the R&G Newsletter. We hope this newsletter will play an important role in showcasing research & grant activities at RMU.

In this issue, we feature ten (10) grant applications submitted by RMU faculty from January to August 15, 2024. The summaries presented here are in the Principal Investigators’ own words. Some of these applications have been awarded and others are pending. For this period, fifteen (15) opportunities were discussed/explored and eleven (11) proposals were submitted. Most grant proposals were written by our faculty and staff with support from Research & Grants Administration, and Financial Operations. As always, supporting institution data was provided by the Office of University Data and Analytics (UDA).

The Research & Grants Administration encourages all faculty and staff to pursue research and participate in various research & grants related activities. The R&GA is available to help you answer questions related to grant searching, writing, budgeting, and managing. Please contact us with your questions, comments, suggestions, and concerns.

Have a great Fall semester!

Sincerely,

### Sushil Acharya

*Vice President for Grants, Research, and Global Initiatives*

*Professor of Software Engineering*



## ➤ Entrepreneurial Separation to Transfer Technology

### Grant Agency: Council for Innovation Promotion (C4IP)

RMU and its collaborative partners, David McFeeters-Krone (Intellectual Assets, Corp.) and Scott Winn (LDRSHIP.DEV LLC), will study the potential impact that the threat of the federal government exercising march-in rights have on entrepreneurial separation to transfer technology programs for federally funded research. Entrepreneurial Separation for Technology Transfer (ESTT) refers to the process by which individuals or small groups within a university or research institution separate from their day-to-day roles to pursue the commercialization of technologies developed through research. Once their role in the commercialization effort is complete, these individuals usually return to their previous role within the research organization.

In the context of the Bayh-Dole Act, which allows universities, laboratories and researchers to retain ownership of inventions resulting from federally funded research, ESTTs can be key to successful technology transfer since those with the knowledge of the intellectual property are instrumental to its commercialization. The project proposes to update prior work, now more than 10 years old, and to significantly extend the previous research to identify those best practices that will ensure a greater likelihood of success in ESTT programs. In the context of recent calls for funding agencies to exercise “march in” rights, ESTTs may represent a preemptive option that aligns stakeholder interests. "March-in rights" under the Bayh-Dole Act allow the federal government to intervene and license a federally funded invention to third parties or take other actions if certain conditions are not met by the original patent holder. This provision is designed to ensure that the benefits of federally funded research are available to the public. However, the exercise of march-in rights presents several risks and concerns.

### Grant Proposal Activities January to August 2024



Grant Opportunities  
Explored



Grant Proposals  
Submitted

**Marcel C. Minutolo**  
*Principal Investigator*  
University Professor of Management  
Rockwell School of Business



## ➤ “Spirited Animation” Podcast Series - Season Two

### Grant Agency: **National Endowment for the Humanities (NEH): Media Projects**

With this project we proposed to fund twelve one-hour episodes comprising the second season of the Spirited Animation podcast, a series about the lessons gleaned from using sacred reading practices to reflect on popular animated media. Religion and the desire to imbue life into static images reflect two of humanity’s earliest and most pervasive storytelling impulses. The combination of these two subjects in the Spirited Animation podcast is both unique and timely, providing an opportunity for a frank exploration of what both faith and visual narrative can reveal about human expression, the value of belonging in community, ethical parenting, citizenship in the face of religious extremism, social justice, and interfaith dialogue. Uncoincidentally these themes are also central to RMU’s educational mission in the humanities.

The podcast engages public awareness with humanities ideas - across disciplines from literature to user experience design. Through the unique lens of animation and spirituality, and respecting both belief and dis-belief, listeners gain a unique understanding of the overlapping roles of both entertainment media and faith communities in bringing people together in sustained relationships. In addition, the Spirited Animation website brings together an interdisciplinary community of academics, theologians, and practitioners invested in the overlap between animated media, collaborative learning, and faith formation. The objective of both the podcast and website is to develop an inclusive space for conversation among academics, emerging scholars and practitioners in Pittsburgh as well as a wider global audience around animation and faith.



**Tim Jones**  
*Principal Investigator*  
Director, Academic Media Center  
Associate Professor of Media Arts  
School of Communication and  
Media

## ➤ Development and Validation of Human Digital Twin to Predict Injury Risks under Military Relevant Conditions

### Grant Agency: **Office of Naval Research (ONR)**

Military personnel can suffer from a wide range of injuries ranging from severe singular impacts during active warfare and accidents to repetitive accumulation of acute injuries during routine operations. To minimize the risk of injury and increase military readiness, there is a critical need to design effective protective equipment and training protocols, which in turn require understanding the mechanical loads on military personnel in different operational environments and the corresponding risk of injury. Computational models serve as a powerful tool for providing crucial insight into the risk of injury for a wide range of operational environments where experiments may not be possible. In this proposed project, we will work towards developing a bio-fidelic human digital twin (HDT) to simulate accurate loading on military personnel and to perform full body injury risk assessment. The model performance will be demonstrated through two military-relevant case studies: (1) fuselage drop and (2) fast boat ride. These simulations will provide critical insight into safe exposure limits with the goal of reducing the risk of injury and maximizing military readiness.



**Rika Carlsen**  
*Principal Investigator*  
Director, Center for Outreach and Impact (COI)  
Coordinator, Biomedical Engineering  
Associate Professor of Mechanical and Biomedical Engineering  
School of Engineering and Science



**Anu Tripathi**  
*Co-Principal Investigator*  
Post-doctoral Researcher  
School of Engineering and Science

## ➤ **Enhancing Understanding of Poverty through Simulation-Based Training**

Grant Agency: **Grable Foundation**

According to the US Census Bureau, 11.5% of people are living in poverty in the United States. The Poverty Simulation experience is designed to help participants begin to understand what it might be like to live in a typical low-income family trying to survive from month to month. The objective is to sensitize those who frequently deal with low-income families and create a broader awareness of the realities of poverty among policymakers, community leaders, and others. The poverty simulation enables participants to look at poverty from a variety of angles and then discuss the potential for change within their local communities. In addition, the poverty simulation helps participants understand the situations of families living in poverty every day, the decisions they have to make, and the fears and frustrations they feel. This project aims to provide professional development workshops using the Community Action Poverty Simulation to pre-service teachers, students, and current teachers to enhance their understanding of poverty, foster empathy, and decrease stigma.



**Patricia Kardambikis**  
*Principal Investigator*  
Assistant Professor of Education  
Coordinator, Principal Certification  
School of Education and Social  
Sciences



**Erin Neuman-Boone**  
*Principal Investigator*  
Assistant Professor of Psychology  
School of Health Professions

## ➤ **Beaver County Head Start**

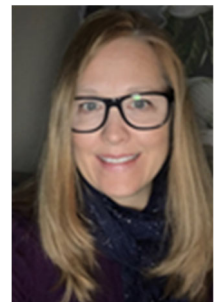
Grant Agency: **Private Industry Council**

The Back-to-Basics (b2b) Early Childhood Education Team (Dr. Jen Tepe, Dr. Susan W. Parker, and RMU doctoral student and graduate assistant, Ms. Shellie Grooms) provided consultation for teachers and staff who support children birth to five. b2b was a collaborative effort between Robert Morris University (RMU) and Private Industry Council to provide programming to Head Start faculty and Staff in Beaver County, PA for the academic year 2023-24. The program sought to provide direct support to faculty/staff around Social Emotional Learning (SEL); to coordinate with Children’s Literacy Initiative; to provide 3 formal professional development workshops around teacher identity, teacher efficacy and social emotional learning (SEL), and to facilitate a “Celebration of Learning” event at the end of the year at the Fred Rogers Institute. The overarching goal was to increase positive interactions between teachers’ children, families, and staff.

Private Industry Council has provided funding to build on the relationships and work that was started in year one of b2b with RMU and Head Start, Beaver County, PA. Starting in August of 2024 through May of 2025, two professional development workshops will be presented to all Head Start Administration, Faculty and Staff around the topics of “Getting Ready with Fred! Leave Your Worries at the Door” and “Building Family Partnerships: Having Tough Conversation with Families.” Additionally, the Head Start Administration will come to RMU’s campus to participate in a RISE center simulation led by Dr. Nicole Szalla focusing on how to have difficult conversations with GRACE.



**Susan Parker**  
*Principal Investigator*  
Professor of Education  
Director, Women’s Leadership and  
Mentorship Program (WLMP)  
School of Education and Social Sciences



**Jen Tepe**  
*Principal Investigator*  
Assistant Professor of Education  
School of Education and Social  
Sciences

## ➤ **Tomorrow's Teachers: Diverse Voices, Bright Futures**

**Grant Agency: Pennsylvania Training and Technical Assistance Network (PaTTAN)**

The Pennsylvania Bureau of Special Education and the Pennsylvania Training & Technical Assistance Network (PaTTAN) offered a second round of grants under the Developing Future Special Educators Grant. This grant opportunity is designed to support one aspect within a multi-step approach to address the special education teacher shortage in Pennsylvania. RMU staff and three local education agencies will work on this project, The Neighborhood Academy, DePaul School for Hearing & Speech, and ACLD Tillotson School. The goal is to increase the interest of secondary students in pursuing a career as a special educator by providing experiential learning opportunities that support the success of students with disabilities. The grant runs from 2024-2026.



**Vicki Donne**  
*Principal Investigator*  
University Professor of Education  
School of Education and Social  
Sciences



**Zhou Yang**  
*Principal Investigator*  
Professor of Economics  
School of Education and Social  
Sciences

## ➤ **Land Value Taxation and Urban Sprawl: What Can We Learn from the Pennsylvania Experience?**

**Grant Agency: Robert Schalkenbach Foundation**

Economists have long stressed the virtues of land value taxes over other taxes. Despite the growing number of empirical studies on land value taxation, none of the existing studies provide the empirical evidence on the impact of land value taxation on urban sprawl. This project is the first to directly estimate the impact. The study constructs a highly valuable dataset covering all policy changes associated with land value taxation in Pennsylvania over the past several decades. Furthermore, it develops a novel empirical model to investigate the impact of land value taxation on urban sprawl. The research deepens our understanding of land value taxation and the findings have important policy implications regarding ways to curb urban sprawl.

## ➤ **Volunteer Income Tax Assistance (VITA)**

**Grant Agency: United Way of Western Pennsylvania**

Robert Morris University has collaborated with the United Way of Western Pennsylvania to operate a Volunteer Income Tax Assistance (VITA) site for several years. The current grant application was to support the 2024 tax return season. The VITA program offers income tax preparation services to low-income individuals and families. The grant provides funding for students paid internships to manage the tax site's activities, along with a group of RMU student volunteers. The student interns and volunteers are IRS-certified and trained in preparing international, military, and advanced individual tax returns.



**Ira Abdullah**  
*Principal Investigator*  
Associate Professor of Accounting  
Rockwell School of Business



## ➤ A Workforce Development and Manufacturing Assistance Proposal

Grant Agency: **Carnegie Mellon University**

With this project RMU proposes to develop and offer a training program for upskilling employed, underemployed, and unemployed blue-collar workers. Active-duty military members and veterans, military families, females, minorities as well as persons with disabilities will be targeted. This project is very relevant to our region as previous partner companies are interested in automating their processes. This project aims to have approximately 60 total seats in three or four different hands-on courses with emphasis in the areas of manufacturing engineering and robotics. Some of the specific topics of these courses are a) Industrial Robotics - integration, safety, and virtual simulation, b) Cobotics – work cells, machine vision, and virtual simulation; and c) Device control – programming of PLCs and PACs. In the past, Dr. Sirinterlikci of the Engineering Department offered similar courses related to the grant “2018 Pennsylvania Department of Community and Economic Development Manufacturing Training to Career.”



**Luis Monterrubio**  
*Principal Investigator*  
Associate Professor of Mechanical Engineering  
Coordinator, Mechanical Engineering  
School of Engineering and Science



**Arif Sirinterlikci**  
*Co-Principal Investigator*  
University Professor of Industrial and Manufacturing Engineering  
School of Engineering and Science

## ➤ Robert Morris University Police Department (RMU PD) Law Enforcement Recruitment

Grant Agency: **Pennsylvania Commission on Crime and Delinquency**

Earlier this year, the Robert Morris University Police Department submitted a grant application to the Pennsylvania Commission on Crime and Delinquency (PCCD). The application was submitted in response to a grant that was advertised for recruitment incentives for law enforcement. The grant would allow for funds to be used for marketing and advertisement of open police officer positions, or bonuses and stipends for hired officers.

Grants such as this are a significant benefit to small police departments like ours at RMU. Having the ability to use grant proposals to attract viable candidates to our department and the community that we serve is a great help.



**Jeff James**  
*Project Director*  
Chief of Police  
RMU PD

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