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Discovery

Western Michigan University
Research Annual Report 2013



Western Michigan University Research Annual Report



Western Michigan University has been engaged in strategic planning for discovery on many fronts. Based upon leadership, scholarship, collaboration, and resources, we have created Discovery Plans and identified specific Discovery Focus Areas. The Discovery Plans from our departments and units have identified more than 200 current and emerging areas of research and creative activities while the Discovery Focus Areas have crystallized our strengths in evaluation and assessment, health, education, sustainability, STEM, and entrepreneurship. Our new WMU Discovery Experts system will be linked to the other Michigan research universities through a Michigan-created portal. This effort will facilitate collaboration and help bring our faculty and staff together with research partners, industry and larger collaboratives as they jointly seek to discover answers to complex problems.

WMU faculty and staff continue a strong research tradition that ensures our local, regional, and global reach. From individual scholarship to the creation of team-based collaboratives both here and throughout the nation, the stories you're about to read speak of the successes of our esteemed faculty and research partners. We understand the importance of a research institution's contribution to the global community—to generate new knowledge and to transfer knowledge through education, technology development and commercialization to advance the wellbeing of people and society. Our faculty and researchers also contribute to our community, which is a culturally rich epicenter of the visual arts, theatre and music.

Kalamazoo leads in biomedical and pharmaceutical research and innovative start-ups as evidenced by the BRCC's success in the Business Technology Research Park. Our commitment to Starting Gate, a business accelerator for students, helps nurture the entrepreneurial spirit in our students and our impact in Michigan's economy and industry. We invite you to join us in our efforts to strengthen industry partnerships.

This year's annual report showcases some of these research endeavors at Western Michigan University. As you read the accomplishments of our faculty, research staff and students—both graduate and undergraduate—know this is the tip of the iceberg of all that transpires daily in our classrooms, research communities, labs and commercial areas.

In all we do, we remain true to Western Michigan University's mission as a learner centered, discovery driven and globally engaged research institution. To learn more about Western Michigan University and our outstanding research, visit us at wmich.edu/research.

A handwritten signature in cursive script that reads "John M. Dunn".

John M. Dunn
President

A handwritten signature in cursive script that reads "Daniel M. Litynski".

Daniel M. Litynski, PhD
Vice President
Office of the Vice President for Research





BRCC spells return on investment



A decade ago then-Gov. Jennifer Granholm traveled to Kalamazoo with a \$10 million ceremonial check representing a special appropriation from the Michigan Legislature and designed to stave off the loss of human and financial resources that threatened to derail a 125-year-old engine of economic development—West Michigan’s preeminent role in the life sciences industry.

It was a sound investment.

That \$10 million check, dated Aug. 6, 2003, supported the establishment of Western Michigan University’s Biosciences Research and Commercialization Center. That center, in turn, has used Kalamazoo’s unique history and expertise in pharmaceutical and medical device development to help fund the startup of 33 new companies from across the state. The center has leveraged that original state investment into more than \$160 million in new capital funds and supported the creation of more than 240 new high-paying technical jobs in Michigan.

This fall, celebrating its 10th anniversary, the BRCC continues its work, having secured an additional \$3.8 million in state funding to support the life sciences field throughout the state. WMU also has contributed \$3.45 million in BRCC funding since its establishment. The center is embarking on a new relationship as well, as part of the apparatus in place to support the enormous research potential of WMU’s new School of Medicine.

The BRCC focuses on:

- Early-stage technology transfer,
- Pre-seed gap funding, and
- Support for Contract Research Organizations—CROs

“Most companies we invest in don’t have a product yet,” says BRCC Executive Director Stephen Haakenson. “They’re in the early stages—typically too early for a venture capitalist to support.”

Nearly 50 percent of the center’s funding has supported drug discovery and development. Pharmaceutical services represent more than a third of the work, while a smaller portion covers the development of medical devices and diagnostic tools.

Kalamazoo and the state of Michigan were natural locations to support talented scientists who wanted to launch their own successful businesses. The original vision for the BRCC was to support such talent when West Michigan was faced with dimming economic prospects due to the withdrawal of Pfizer’s major research and development functions. The funding of these early-stage technologies, pre-seed companies and CRO businesses has produced a network for supporting the commercialization of life science products throughout the state.

Today, located at the life sciences incubator known as the Southwest Michigan Innovation Center, the center has lived up to both the promise of that vision and the state’s investment.

MDOT Collaborates with WMU, a leading public research university, to extend its research impact in 2013 by investing \$1.29 million regionally

Commercial Vehicle Enforcement

Principal Investigator: Dr. Valerian Kwigizile, construction and civil engineering

Award: approximately \$268,000

The growth in truck traffic in Michigan has resulted in the need for expanded commercial vehicle enforcements in order to maintain safety and minimize pavement damage caused by overweight trucks. The goals of this project: define the benefits of each of the 14 weigh stations in Michigan; assess the cost of upgrading and maintaining those stations; and identify the cost of alternative solutions in place of or as an enhancement of the stations.

Pedestrian Crossings

Principal Investigator: Dr. Ron Van Houten, psychology

Award: approximately \$219,000

There is a need for low-cost countermeasures to increase yielding to pedestrians at crosswalks on multi-lane roads with moderate-to-high average traffic. Initial studies have demonstrated that in-street signs used as a gateway treatment (three signs for each two-lane approach) can produce yielding levels comparable to those produced by much more costly treatments. This study determines conditions favorable for this treatment in place of others. The results of the study will assist MDOT in determining how to maximize pedestrian safety benefits with limited financial resources.

Engineering Improvements for Older Drivers

Principal Investigator: Dr. Valerian Kwigizile, construction and civil engineering

Award: approximately \$296,000

By 2030 adults age 65 and older will comprise 20 percent of the population in Michigan and in the nation. Since Michigan began considering this segment of the population in 2004, a number of engineering improvements have been installed. The objectives for this project include evaluation of the safety benefits of each of these improvements and to develop safety performance functions for each improvement.

Accelerated Bridge Construction

Principal Investigator: Dr. Haluk Aktan, civil and construction engineering

Award: approximately \$250,000

The primary focus of this research is related to Accelerating Bridge Construction implementations of Self-Propelled Modular Transports (SPMT) and bridge slides. Prefabricated Bridge Elements and Systems implementations will also be in part integrated with the proposed work in order to allow MDOT to make ABC decisions with site specific data for comparing multiple ABC technologies. In addition to PBES progresses, the study will document and evaluate those progressions that will positively impact projects in Michigan.

Intelligent Transportation System Deployment

Principal Investigator: Dr. Jun-Seok Oh, civil and construction engineering

Award: approximately \$234,000

MDOT has invested significantly in Intelligent Transportation System (ITS) deployments across the state over the past six years. This research is to review the benefits and costs of individual ITS devices and systems in Michigan.

Starting Gate puts student entrepreneurs on the FAST TRACK

Aspiring student entrepreneurs have a new resource dedicated to their ventures at Starting Gate, a business accelerator open to all Western Michigan University students and operated by the Haworth College of Business Center for Entrepreneurship and Innovation in partnership with the WMU Office of Community Outreach. The accelerator tests students' business ideas, provides mentorship from faculty and members of the business community, and helps participants build a network of contacts to support their growing businesses.

In order to be accepted into the accelerator, students participate in a competitive application process where they must demonstrate a promising idea for a product or service, which can be launched within a short period of time.

"Limitless possibility," is what Dr. Kay Palan, dean of the Haworth College of Business, sees in the 12 companies that have already taken part in Starting Gate. "This is a valuable opportunity for students interested in starting their own companies," she says. "Research shows us that companies that start their ventures with resources, mentors and support are much more likely to succeed. And Western students are very entrepreneurial in nature. We are excited to provide another avenue to nourish our students' passion for entrepreneurship."

Starting Gate is founded on the principle of mentorship, and the students have access to an array of resources, including faculty members from across campus, successful entrepreneurs from the local community, experts in areas such as manufacturing, commercial law and venture capital as well as organizations like the Small Business and Technology Development Center and WMU Business

Connection. Writing business plans, adjusting business models, considering potential markets, and research and development are just some of the areas in which Starting Gate mentors offer their expertise.

The student teams themselves offer another valuable resource. With students from a variety of disciplines, the makeup of individual teams and the entire accelerator is cross-disciplinary. Since Starting Gate is designed to be collaborative in terms of programming and physical space, students have the benefit of diverse approaches to problem solving and creative thinking.

And creativity abounds in the accelerator. From the development of technologies that can provide everything from remote



Palan

"Limitless possibility,"

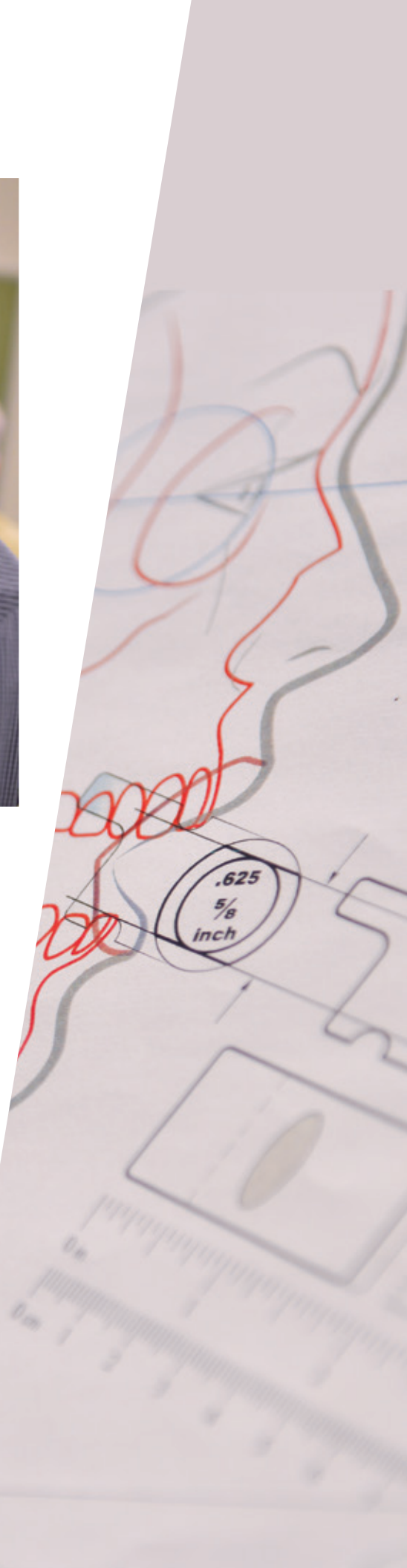
is what Dr. Kay Palan, dean of the Haworth College of Business, sees in the 12 companies that have already taken part in Starting Gate.





aquarium maintenance to assistance for adults and children with speech disorders to connections among motorcycle enthusiasts, the companies in Starting Gate are as varied as the students working in it. Five companies that have graduated from the accelerator have patents pending.

The hope is that some of these young companies will choose to remain in Michigan and contribute to both the local economy and the local entrepreneurial community. Dr. Robert Landeros, interim director of the Haworth College of Business Center for Entrepreneurship and Innovation, says, "If we can help students test their business ideas so they are more successful, that is the goal, and if they choose to remain a local business that can help the economy, it's a win-win."



2013 Woodrow Wilson Michigan Teaching Fellows at WMU



The third class of the W.K. Kellogg Foundation's Woodrow Wilson Michigan Teaching Fellows brings 13 new math and science professionals to Western Michigan University to be part of a program designed to provide Michigan's high-need urban and rural schools with teachers who offer both cutting-edge preparation and real-world expertise in math and science.

The 13 fellows selected to attend WMU are among this year's 51 Michigan Teaching Fellows. Each will receive \$30,000 to complete a specially designed, cutting-edge master's degree program based on a yearlong classroom experience. In return, fellows commit to teach for three years in Michigan's high-need urban and rural secondary schools.

The 2013 class is the third group of fellows named in Michigan since the W.K. Kellogg Foundation launched this initiative, providing \$18 million in funding for it. The statewide program recruits recent college graduates or career-changers with strong backgrounds in science, technology, engineering or mathematics.

The 2013 fellows attending WMU include, among others, a professional ornithologist, two former Peace Corps members, a pharmaceutical industry professional and a wireless consultant. Each has already earned at least a bachelor's degree from universities around the nation. Four have received master's degrees as well, and one fellow already has earned a doctoral degree.

The Woodrow Wilson Teaching Fellows program ultimately will impact more than 100,000 Michigan high school students, providing them with the level of instruction they need to participate in the state's rapidly changing economy and workforce. Numerous studies have demonstrated that students in high-need schools are significantly less likely to have access to such teachers, particularly in the STEM fields—science, technology, engineering and math.

"Michigan's economic future will be driven by the STEM fields," says Arthur Levine, president of the Woodrow Wilson National Fellowship Foundation. "Getting strong math and science teachers into Michigan's high-need schools means both creating opportunities for the young people who most need them and building the state's workforce. There's no greater need in Michigan education today, and we think these fellows will do a tremendous job in helping to meet that need. They are amazing people, and they will change tens of thousands of lives."

In addition to WMU, five other state universities hosting fellows are the Eastern Michigan, Grand Valley State University, Michigan State, Wayne State as well as the University of Michigan.

Faculty receive awards

DISTINGUISHED FACULTY SCHOLAR AWARD

This is the University's highest annual award for a faculty member. It pays tribute to an individual whose work constitutes a significant body of achievement that is widely recognized within the national and international academic communities.

Daneen Wardrop is a professor of English and an internationally known poet-scholar.



Wardrop

Wardrop joined the faculty in 1990 and has paired research and creative writing throughout her career. She has written three scholarly books

focusing on major 19th-century literary figures and has finished a book-length research project concerning Civil War narratives.

The winner of a National Endowment for the Arts creative writing fellowship, Wardrop was cited by her nominators as a talented poet, an excellent teacher and an internationally recognized scholar whose work has been vastly influential. Her contributions have been so great that one literary journal editor categorized her WMU award as a long-deserved acknowledgement of her significance to her field.

DISTINGUISHED EMERGING SCHOLAR AWARD

This award acknowledges the accomplishments of WMU faculty members who are among the rising stars in U.S. higher education. It celebrates the contributions of those who are in the first decade of their WMU careers and have achieved national recognition and demonstrated outstanding promise to achieve renown in their continuing work.

Chris L.S. Coryn is an associate professor and director of WMU's Interdisciplinary Doctor of Philosophy in Evaluation and an internationally known evaluation



Coryn

specialist. Coryn joined the faculty in 2003 as a research associate in evaluation and became director of the Interdisciplinary Ph.D. in Evaluation in 2008. He is the author of some 80 scholarly papers and the leader or methodologist for grants and contracts totaling nearly \$5 million.

Coryn was lauded by colleagues for modeling what it is to be a scholar and having amassed an international record of accomplishment. He has been the executive editor of the *Journal of MultiDisciplinary Evaluation* since 2010; has been an invited lecturer at The Evaluators' Institute, a prestigious national venue for workshops on evaluation; and earned the American Evaluation Association's 2008 Marcia Guttentag Award for contributions to his field.

Michael A. Famiano is an associate professor of physics and an expert in nuclear and astrophysics. Famiano joined the faculty in 2005 and recently



Famiano

entered the private sector after eight years at WMU. He has written 47 refereed publications and has been the recipient of more than \$2 million in research grants and contracts to support his work.

He was cited for contributing to breakthrough research and for mentoring students, taking many of those he was mentoring to the National Superconducting Cyclotron Lab at Michigan State University, where he carried out much of his research. Famiano also spent extensive time in Japan, collaborating there with that nation's leaders in the field of nuclear astrophysics.

Kristina Wirtz is an associate professor of anthropology and a linguistic and cultural anthropologist whose focus on linguistics has attracted global attention.



Wirtz

Wirtz joined the faculty in 2005, and emphasizes Cuba, the Caribbean, Latin America and African diaspora in her work. She is the author of two books, with a third one in progress, as well as book chapters, book reviews and peer- and editor-reviewed journal articles.

Scholars around the globe lauded Wirtz for having an enviable academic record even though she is in the early stages of her academic career. They noted that her first book suggests new directions for the broad study of religion and understanding the relationships between religious communities and their larger national and transnational contexts.



WMU research facility assists in rediscovery of rare mineral deposit



Rediscovery of a long-forgotten mineral deposit located under two West Michigan counties could spark a new multibillion industry in Michigan that will quickly position the state as the nation's leading source for a critical agricultural tool that is in demand internationally.

Potash—potassium chloride—is an essential plant nutrient and critical ingredient in fertilizer. Currently mined in only three locations in the nation, supplies are dwindling and prices skyrocketing. Now, one of the highest-quality potash ore deposits in the world has been identified below the surface of West Michigan.


The discovery of potash in Michigan was made with the use of the geologic data housed at Western Michigan University's Michigan Geological Repository for Research and Education. The result of the rediscovery, say geologists, will be the introduction of a new industry in Michigan worth as much as \$65 billion, easily surpassing the state's historical oil and gas production revenues and triggering explosive job growth in Osceola and Mecosta counties.

"This is conceivably one of Michigan's most valuable resources," says Theodore A. Pagano, a potash geologist, engineer and general manager of Michigan Potash Co. LLC. That firm now controls the rediscovered potassium ore reserve called the Borgen Bed that lies under more than 14,500 acres in the two counties. His company has worked quietly over the past three years to ensure the reserve could be technically, economically and logistically put into production and compete head to head with the New Mexico and western Canadian mines that are now the major North American sources of potash.

"This is the United States' only shovel-ready potash project," Pagano says. "Michigan is New Mexico untapped. What we're looking at is the introduction of an industry that is critical to the economic health of the state. We'll be producing a Michigan product for Michigan farmers that would dramatically reduce the expensive transport costs on the more than 300,000 tons of potash consumed in our state annually."

Verification of the quality and amount of the potash in the Borgen Bed was done by using core samples provided by WMU geologists under the direction of Dr. William B. Harrison III, professor emeritus of geosciences and former director of the department's Geological Repository for Research and Education.

WMU came into possession of geologic core samples collected in the early 1980s when a Canadian company was prospecting for potash in Michigan. That company established a mine and small processing plant in Michigan, but pulled back from fully commercializing the deposit. Over the years, changing business plans and corporate mergers pushed the Michigan operation into the background, and mineral leases for the area lapsed. The sample cores came to WMU by chance and were added into the University's statewide collection of such core samples.



Potash is found in just a few areas once covered by inland seas. The seas evaporated and the potassium and sodium chloride deposits crystallized into potash ore and were covered by successive layers of rock and soil.

The Michigan deposit is the purest and highest-grade potash being produced globally—600 percent higher than that being produced in New Mexico’s vast Permian Basin, according to Harrison. It is also twice the grade of deposits found in Canada and Russia, the two nations that control more than 80 percent of the world’s potash reserve.

“One of the things that makes this so valuable is that it is an incredibly rich deposit that is in easy reach of the enormous demand from Midwest corn and soybean farmers who operate within a 500-mile radius of this deposit,” Harrison says. “This is an opportunity for new wealth to come from the use of natural resources never tapped before.”

Pagano has been working with investors and state and national officials to move forward with the capital-intensive establishment of manufacturing and processing facilities. He estimates an initial demand for more than 300 workers employed in an enterprise that will produce more than a million tons of potash annually.

Bringing Michigan potash to market, Pagano says, will provide a domestic source of the element at reduced cost to Midwest farmers as well as to the national agriculture industry. It will reduce imports and improve the nation’s trade.



UNDERGRADUATE RESEARCH EXCELLENCE AWARD RECIPIENTS, 2012-2013

The Undergraduate Research Excellence Award provides undergraduates with research experience. Selected students receive \$500 toward a stipend, travel, or supplies for a mentored research project or creative activity experience with externally funded faculty. Under the program, faculty subsequently may apply for up to \$200 for additional supplies to support the student's work.

Acuna, Miguel

Manufacturing Engineering Technology
Multi-Purpose Desktop Machine for Prototyping and Machining
Faculty mentor:
Dr. Jorge Rodriguez

Alvey, Joel

Aviation Science and Administration
Integration of Tablet Technology into Flight Training
Faculty mentor:
Professor Lori Brown

Alvey, Joel

Aviation Science and Administration
Evaluation of Best Practices to Integrate iPad Applications in Collegiate Aviation Programs
Faculty mentor:
Professor Lori Brown

Asimba, Brian Omondi

Aeronautical Engineering
Simulation, Preparation and Characterization of Nanoparticle Based Hydrogels
Faculty mentor:
Dr. Muralidhar Ghantasala

Biswas, Atreya

Aeronautical Engineering
Simulation, Preparation and Characterization of Nanoparticle Based Hydrogels
Faculty mentor:
Dr. Muralidhar Ghantasala

Brown, Rapheal

Manufacturing Engineering Technology
Implementation of an Energy Management System
Faculty mentor: Dr. David Meade

Castelino, Avin Weith

Mechanical Engineering
The Crystallographic Base of Ductility in Novel Magnesium Alloys
Faculty mentor:
Dr. Pnina Ari-Gur

Corder, Billy I-Shone

Aviation Administration and Flight Science
Kites for Change: Flying High with Math and Science
Faculty mentor:
Professor Lori Brown

Donovan, Erin

Biomedical Sciences
Activity Dependent Regulation of Neurotrophic Factor Expression in Mouse Skeletal Muscle
Faculty mentor:
Dr. John Spitsbergen

Galas, Anthony

Biomedical Sciences
Anaerobe Science Evolved: Growing Geobacter Sulfurreducens in an Aerobic Fuel Cell
Faculty mentor:
Dr. Silvia Rossbach

Gold, David

Geology
Petrophysical Study of the Ordovician St. Peters Sandstone for Evaluation of Geological Carbon Sequestration Potential
Faculty mentor:
Dr. David Barnes

Grieve, Austin

Engineering Design Technology
Multi-Purpose Desktop Machine for Prototyping and Machining
Faculty mentor:
Dr. Jorge Rodriguez

Gwaltney, Bryn

Mechanical Engineering
Design and Creation of a Hydrogen-Electric Vehicle
Faculty mentor:
Dr. Bade Shrestha

Hartman, Christian

Chemistry
Selective Anion Encapsulation by Multimetallic Nanojars
Faculty mentor:
Dr. Gellert Mezei

Ihling, John

Manufacturing Engineering Technology
Facility Optimization Through ISO Certification and Landfill Assessment
Faculty mentor:
Dr. John Patten

Ihling, John

Manufacturing Engineering Technology
Implementation of an Energy Management System
Faculty mentor:
Dr. David Meade

Ingold, Jeff

Manufacturing Engineering Technology
Desktop 4 Axis Computer Numerical Control Milling Machine with 3D Printing Capability
Faculty mentor:
Dr. Pavel Ikonomov

Jerger, Stephanie

Biomedical Sciences
Age-Related Changes in GDNF Content of Skeletal Muscle
Faculty mentor:
Dr. John Spitsbergen

Klingler, Kenneth

Manufacturing Engineering Technology
Multi-Purpose Desktop Machine for Prototyping and Machining
Faculty mentor:
Dr. Jorge Rodriguez

Mattson, Travis

Engineering Design Technology
Design and Creation of a Hydrogen-Electric Vehicle
Faculty mentor:
Dr. Bade Shrestha

Miller, Scott

Mechanical Engineering
Design and Creation of a Hydrogen-Electric Vehicle
Faculty mentor:
Dr. Bade Shrestha

Mouch, Nicole

Biomedical Sciences
A Hydrometallurgical Alternative to the Extraction of Platinum Group Metals from Spent Automotive Catalytic Converters
Faculty mentor:
Dr. Gellert Mezei

Musaev, Damir

Biomedical Sciences
Is Mutation in CDC20 Gene Causing Zombie Phenotype in Zebrafish?
Faculty mentor:
Dr. Donald Kane

Nederhoed, Eric

Engineering Design Technology
Urban Three-Wheel Cycle Body Design
Faculty mentor:
Dr. Pavel Ikonomov

O'Hagan, David

Engineering Design Technology
Urban Three-Wheel Cycle Body Design
Faculty mentor:
Dr. Pavel Ikonomov

Onderlinde, Mark

Engineering Design Technology
Urban Three-Wheel Cycle Body Design
Faculty mentor:
Dr. Pavel Ikonomov

Sattler, Frank

Hydrogeology
Petrophysical Study of the Ordovician St. Peters Sandstone for Evaluation of Geological Carbon Sequestration Potential
Faculty mentor:
Dr. David Barnes

Subramanyam, Shubram

Aeronautical Engineering
The Crystallographic Base of Ductility in Novel Magnesium Alloys
Faculty mentor:
Dr. Pnina Ari-Gur

Talcott, Devin

Engineering Design Technology
Implementation of an Energy Management System Using ISO 50001
Faculty mentor:
Dr. David Meade

Urech, Alexander

Chemistry
Computational Study of Boron Nitrogen Dative Bonds Using the Block Localized Wavefunction (BLW) Method and the Density Functional (DFT) Level of Theory
Faculty mentor:
Dr. Yirong Mo

Walser, Olivia

Biology
Characterization of Scyllo-Inositol Catabolism in Sinorhizobium Meliloti
Faculty mentor:
Dr. Silvia Rossbach

Warning, Ryan

Engineering Design Technology
Design and Creation of a Hydrogen-Electric Vehicle
Faculty mentor:
Dr. Bade Shrestha

Watza, Spencer

Aeronautical Engineering
Analysis of TiNiCu Melt-Spun Ribbons
Faculty mentor:
Dr. Pnina Ari-Gur

Zanotti, Maren

Chemistry
The Role of Oxidation of BVOCs in SOA Production
Faculty mentor:
Dr. Steve Bertman

2012-2013 RECIPIENTS OF GRADUATE STUDENT RESEARCH AND TRAVEL GRANTS

The Graduate Student Research Fund and Travel Grant, fully funded and administered by the Graduate College, supports graduate students engaged in independent scholarly research, scientific inquiry, inventive technology and original artistic activity. The fund is intended to help students pay extraordinary or unusual costs incurred in research projects. Grants range up to \$1,000 and students may apply for up to \$600 of additional support to defray the cost of international travel.

** Indicates student received additional funding for international travel*

***Abdul Rahman, Hartini**
Counselor Education and Counseling Psychology

Travel

Fostering resilience as a protective factor in a college suicide prevention program

***Abotalib, Farag**

Geosciences

Research

Towards a better understanding of groundwater discharge in depressions, north Western Desert, Egypt: geochemical, isotopic and remote sensing constraints

Abrokwah, Stephen

Economics

Travel

Social health insurance in developing countries: Testing the tradeoff between alternative medicine and modern medicine

Alja'afreh, Ibtisam

Chemistry

Research

Structural Characterization of domains 5 and 6 of N-terminal metal-binding domain in Wilson protein by Fluorescence Spectroscopy

Aljadef-Abergel, Elian

Psychology

Travel

The effects of self-management package intervention on a fifth grade student's on-task behavior

Ariyadasa, Liyana A.

Wajira

Chemistry

Travel

Metal and metal oxide nanoparticles for biorenewable conversion via hydrogenation and photocatalytic reactions

Arnott, Megan

English

Travel

Alfred the Little: Medievalism, Politics and the Poet Laureate

Baird, Joseph

Computer Science

Travel

TAIRO: Trust-aware Automatic Incremental Routing for Opportunistic Resource Utilization Networks

Barthelemy, Ramon

Mallinson Institute for Science Education

Travel

Women's Choice of Graduate Research Field in Academic Physics and Astronomy

***Beagle-Ray, Molly**

Counselor Education and Counseling Psychology

Travel

Fostering resilience as a protective factor in a college suicide prevention program

Bechtel, Nathan

Psychology

Research

The Effects of the Temporal Placement of Feedback on Performance and Skill Acquisition of a Medical Data Entry Task

***Bohra, Hemant**

PhD in Engineering and Applied Sciences

Travel

New light cured media for use with cast prototypes

Bolandi, Ali

Chemistry

Travel

Multi-electron transfer from charged semiconductor surfaces to quantized bimetallic nanoparticles

Borges, Lauren

Clinical Psychology

Research

The effects of environmental context on mood induction and emotion regulation behaviors

Byczynski, John

History

Travel

City of Certainty: The Making of Crosby, Minnesota, 1910-1913

Callahan, Caitlin

Mallinson Institute for Science Education

Travel

Use of Time and Space in Geologic Mapping: A Video Log Study

Choong, Ee Leng

Biological Sciences

Research

*Characterization of a putative inosose isomerase in *Sinorhizobium meliloti**

Conard, Anna

Psychology

Research

Using normative messages and incentives to improve organizational performance

***Courtney, Donna**

Biological Sciences

Travel

The Ecological Correlates of Parasite Species Richness in Phyllostomid Bats

Cox, Kyle

Geosciences

Research

Spatial Distribution of Thermal Alteration of Inorganic Minerals in the Michigan Basin

***D'Elia, Erica**

Anthropology

Travel

Educational Benefits of Youth Collaborative Archaeological Programs

DiStefano, Daren

Mechanical and Aerospace Engineering

Travel

Development of laboratory testing apparatus and fatigue analysis for tracked vehicle rubber backer pads

Edson, Alden J.

Mathematics

Travel

Transition to College Mathematics and Statistics Project

***El Kadiri, Racha**

Geosciences

Travel

Radar interferometry for the detection and monitoring of Mass movement over Southern Red Sea Hills, using ERS-SAR and ENVISAT-ASAR Datasets

Enicks, April

Special Education and Literacy Studies

Travel

Findings on the Use of TeachLIVE, a mixed-Reality Teaching Environment, to Prepare Special Educators

Fernando, Isurika

Chemistry

Travel

Metal binding properties and dichroism of linear, rigid-axle [2] pseudorotaxanes

Garrett, Larry

Interdisciplinary Health Sciences

Travel

Using Box-Jenkins modeling techniques to forecast future disease burden and identify abbe

Ghimire, Shankar

Economics

Travel

Impact of Foreign Aid on Trade: Examining the Existence and Variation of this Relationship across Sectors

***Gong, Roland**

Chemical and Paper Engineering

Travel

Application of Wet Image Analysis on Recycled Paper Ink Elimination Evaluation

Graf, Patricia

Occupational Therapy

Research

Child Trauma Knowledge, Attitude and Practice Among Michigan Pediatric Occupational Therapists

Guzman, Ivan

Geosciences

Research

Determination of Glacial Deposition for Late Wisconsin Geometrical in Saginaw Lobe: Geotechnical Index Properties vs. Bulk Organic Carbon Dates

Hagge, Marlies

Psychology

Travel

Using Behavioral Interventions Among Unionized Workers to Increase Attendance

Hamam, Khalil

Physics

Travel

Organic photovoltaic based on copper phthalocyanine with high open circuit voltage and significant current and voltage stability

Harrison, Jennifer

Interdisciplinary Health Sciences

Research

Peers in Integrated Dual Disorder Treatment: Impact on Clinical Outcomes and Model Fidelity

Haskill, Christine

English

Travel

Rethinking the War Poets

Henriksen, Nicole

Psychology

Research

Impulsive Choice in Children and Adolescents Diagnosed with ADHD: Comparisons across Reward Type and Medication Status

Hiscox, Elizabeth

English

Travel

AWP Panel: Yoga and the life of the writer

Howard, Krystal

English

Travel

(a) Truth and Dare_ The Intersection of Girls, Risk, and Discovery in Children's Literature; (b) Playing at the Impolite: Risky Discourse Between Girl and Cat in Carroll's Alice_ And Gaiman's Coraline

Husovska, Veronika

Chemical and Paper Engineering

Travel

Graphite Inks and their Application

***Janes, Randall**
History
Research
Between the Ingenio and the Ingeniero: The Spanish Sugar Master and the Development of the Ibero-American Sugar Industry

Jia, Yumeizhi
Chemical and Paper Engineering
Travel
Inkjet printability of phthalocyanine dye ink

Jiang, Haolai
Statistics
Research
Sample Size and Power Determination for Data sets with Excess Zeros

Kothari, Catherine
PhD Program in Interdisciplinary Sciences
Travel
Using GIS to Examine the Relationship of Maternal Race and Neighborhood Racial Segregation with Birth Outcomes

Kreun, Patrick
Mechanical and Aerospace Engineering
Travel
Simulation of an intake manifold pre-heater for cold engine start-up

Lingle, Derrick
Geosciences
Research
Cause for High Levels of Ammonium in Groundwater, Ottawa County, MI: Natural or Anthropogenic?

Lumduanhom, Chira
Mathematics
Travel
Eulerian Walks in Graphs

Mange, Jeremy
Computer Science
Travel
Non-linear Programming Approach to Simulation of the General Adversarial Agents Problem

Manora, Tomesha
Psychology
Research
Behavioral Momentum in Humans

McCormick, Melinda
Sociology
Travel
Feminism and Confucianism: A Match Made in Heaven?

McKenna, Amanda
Biological Sciences
Research
Identification of Microglia and Correlation to Axonal Debris in the Peripheral Deafferentation Response of the Adult Zebrafish Olfactory Bulb

Mohamed, Lamees
Geosciences
Travel
The Expression of the Chemokine Receptor CXCR4 is Increased in Purkinje Cells of the Multiple System Atrophy Cerebellum

Mohammed Shazalli, Mohammed Hariz
Marketing
Travel
A Tale of Two Crises: Domino's Pizza U.S.A. and KFC Malaysia's Use of Online Image Repair Strategies in Food Tampering Crises

Mueller, Adam
Civil Engineering
Travel
A benchmark testing system for real-time hybrid simulation development

Mutambuki, Jacinta
Mallinson Institute for Science Education
Travel
Graduate Teaching Assistants' Experiences and Challenges in Teaching Inquiry-Based Integrated Chemistry-Biology Laboratory Units: The Impact of Professional Development

Myers, Kyle
Mechanical and Aerospace Engineering
Travel
Sound reduction from vibrating thin plates using dimpling and beading design

***Narakathu, Binu Baby**
Electrical and Computer Engineering
Travel
A Novel Fully Printed and Flexible Capacitive Pressure Sensor

Narasimhan, Lalith Prasad
Electrical and Computer Engineering
Research
Reconfigurable Wireless Physical layer using GPU and its Application to a MIMO-OFDM System

***Otis, James**
Philosophy
Travel
Rationality Revisited: A Dual-Process Defense of Reason as a Moral Epistemic Justifier

Peet, M. Melissa
Psychology
Travel
Locomotor Activity Screening of the Novel Kappa Opioid Receptor Agonist, Salvinorin A and Its Synthetic Analog, PR-37

***Perovic, Vasilije**
Mathematics
Travel
Linearization's of matrix polynomials in Bernstein Basis

Rasheed, Syed Hammad
Civil and Construction Engineering
Travel
Spatial mapping approach to component tracking using RTLS

***Ruiz Vargas, Natalia**
Biological Sciences
Research
Influence of migratory and non-migratory life histories in host plant use

Salahuddin, Mohammad
Computer Science
Travel
Opportunistic Service Promotion for End-to-End Delay Minimization in IEEE802.11P Vehicular Networks

Santa Maria, Anne
Geography
Research
Managing Dispersed Recreation in the Allegheny National Forest

Schroeder, Rachel
Sociology
Travel
Religiosity among American Orthodox, Protestants, and Catholics: A Comparative Analysis

Schweitzer VanDonkelaar, Ilse
English
Travel
Wilderness, Waste, 'westen': Into the Wild with Guthlac

Shaheen, Glenn
English
Travel
Arab-funeric Writing in the 21st Century: A Reading and Discussion

Sovis, Kristin
Philosophy
Travel
The future is now: Connecting with the next generation of English Teacher Educators

Stilling, Stephanie
Psychology
Travel
Sharing: Social Behavior in Situations of Risk

Subramain, Maran
The Evaluation Center
Travel
Why is it so? An analysis of evaluators-stakeholders communication based on Communication Theories

Tahmasebi Nick, Setare
Chemistry
Travel
Synthesis, catalytic properties, and immobilization of monodisperse bimetallic alloy nickel-based nanoparticles

Toma, Shino
Chemistry
Research
*Investigation of the Genetic basis of Chemotypic Variation of Biogenic Volatile Organic Compounds in Needles of White Pine (*Pinus strobus*)*

Trusty, Kelly
Public Administration
Travel
SIMO: A Model to Describe the Relationships between Nonprofit Organization Strategy, IT/Mission Alignment, and outcomes

VanderGalien, Stephanie
Speech Pathology
Travel
Effect of gender on Misbalance across speaking conditions

Waite, Mackenzie
Speech Pathology
Research
Development of Social Scripts Illustrating Executive Functions

Walters, Jennifer
Psychology
Research
Neurobehavioral Consequences of Perinatal and Chronic Atrazine Exposure

Warburton, Elizabeth
Biological Sciences
Travel
*Relative Roles of Host Exposure and Parasite Establishment in Determining Helminth Burdens of *Eptesicus fuscus**

Warburton, Elizabeth
Biological Sciences
Research
*Predicting relative roles of host exposure and parasite establishment using *Eptesicus fuscus* (Mammalia: Chiroptera) and its helminthes as a model system*

Welter, Megan
Biological Sciences
Travel
The Expression of the Chemokine Receptor CXCR4 is Increased in Purkinje Cells of the Multiple System Atrophy Cerebellum

Westine, Carl
Interdisciplinary PhD in Evaluation
Travel
Advancing Methodological Knowledge in STEM Education Research: An Empirical Investigation of Design Parameters for Planning Cluster Randomized Trials in Science Education

***Whitehurst, Geoffrey**
Educational Leadership, Research and Technology
Travel
Intervention Effects Using Single Subject Designs

Whitney, Rachel
Speech Pathology
Travel
Speech Pathology and Audiology

Wickramarachchi, Samantha
Physics
Travel
Transmission of electrons through a micro-size tapered glass capillary

Wigboldy, Kimberly
Human Performance and Health Education
Research
The Effects of Moisture-Wicking Fabric Shirt of the Physiological Responses

SUPPORT FOR FACULTY SCHOLARS AWARD IN 2012-2013

Wildman, Ashley

*Counselor Education and
Counseling Psychology*

Travel

*When A Student's Personal Values
Conflict with Training Needs*

***Wright, Benjamin**

Medieval Studies

Travel

*The Untranslatable Feeling: Jan
van Ruusbroec's un-translation
of William of St. Thierry's Latin
Discourse on Mystical Experience*

Wyman, Davina

Geosciences

Research

*Effect of road salt on Asylum Lake
geochemistry*

Yaqoob, Muthanna

Geosciences

Research

*Detection of Fractures and Joints
Beneath Cover: Geophysical
Approaches to an Engineering
Geology Problem*

Zhang, Tiantian

Biological Sciences

Research

*Biotherapy of human colorectal
cancer in nude mice*

Zheng, Wei

Chemical and Paper Engineering

Travel

*Toward Deinking of LEP Inks
Printed on Different Substrates*

Zhou, Baochun (JoJo)

*Counselor Education and
Counseling Psychology*

Travel

*(a) Infusing cultural sensitivity
to work with LBT Asians. Asian
Americans. (b) Understanding
the meaning of Hijab and Muslim
Arab American women: Implica-
tion for counseling.*

Adkison-Bradley, Carla

*Counselor Education and
Counseling Psychology*

Perceived Severity of Parent

*Discipline Practices: A Study of
Professional Counselors*

Apker, Julie

School of Communication

*Qualitative Study of Handoff Com-
munication Between Emergency
Physicians and Hospitalists in
Academic and Community Hospitals*

Bertman, Steve

Chemistry

MPAN and Atmospheric Aerosols

Berto, Luigi Andrea

History

*Between Dangerous Enemies
and Ineffective Christian Lords:
"The History of the Beneventan
Lombards" and the Crisis of
Ninth-Century Southern*

Lombardy, Cannon

Alexander

School of Music

*Time and Transformation
in Southern Vietnamese
Traditional Music*

Crotchett, Cat

Frostic School of Art

Encaustic Painting and Silkscreen

Foster, Jennifer

*Counselor Education and
Counseling Psychology*

*The World of Sexually Abused
Boys: A Thematic Analysis of
Trauma Narratives*

Foulk, Lin

School of Music

*Developing Classical Music
Improvisation*

Garber, Sharon

Gore, Caroline

Frostic School of Art

Technical and Material

*Explorations: Stone and Precious
Metal Alloys*

Gray, Marion

History

*Identities, Borders and Ecologies:
Change Over Time in Rural
Brandenburg and Metropolitan
Berlin*

Hennlich, Andrew

Frostic School of Art

*Scattered Histories: Diaspora,
Nation and Memory in the Work of
William Kentridge*

Hopfensperger, Jim

Frostic School of Art

The Significance of Making by Hand

Hurwitz, Mark

Political Science

*Judicial Diversity: Courting
Political Minorities in America's
Federal and State Courts*

Lagerwey, Mary

Bronson School of Nursing

*Professional Women and
Popularization of Eugenics in
the United States*

Lawoti, Mahendra

Political Science

*Inclusive Institutional Reforms:
Multiple Actors and Complex
Processes in Nepal*

Lewis, Ramona

*Educational Leadership, Research
and Technology*

*Experiences of African
American Older Adult Learners*

Mezei, Gellert

Chemistry

*Anion-Encapsulating Nanojars
for Selective Anion Extraction and
Environmental Remediation*

Nassaney, Michael

Anthropology

*The Archaeology of the North
American Fur Trade*

Owen, Ginger

Frostic School of Art

*Modernizing Uses for Collodian
Wet Plate as a Means of Displac-
ing the Digital Void*

Rubin, Eli

History

*Arc of Destruction: Urban Space,
Memory, and War in Germany
1937-1975*

Sauck, William

Geosciences

*Geophysics to Aid an Archeo-
logical Investigation; Gotland,
Sweden*

Thakurta, Joyashish

Geosciences

*Examination and Sampling of
Exploratory Drill Cores from the
Upper Peninsula Area of Michigan*

Torres, Benjamin

Spanish

*Iconografía: Lo Visual en la Obra
de Edgardo Rodríguez Julia*

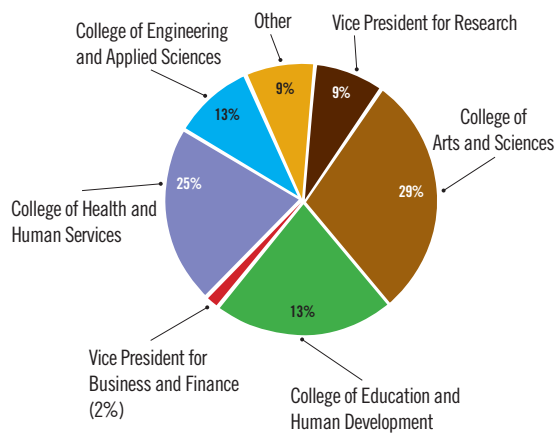
Zielinski, Ruth

Bronson School of Nursing

*Living and Working at Oasis
Hospital: Recollections of
Missionary Nurses*

External Funding Year-to-Date Award Recipients

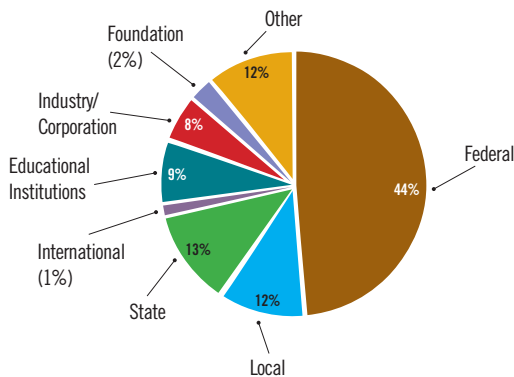
July 1, 2012 to June 30, 2013



College of Arts and Sciences	\$7,018,763	29.03%
College of Education and Human Development	\$3,070,663	12.7%
College of Engineering and Applied Sciences	\$3,214,075	13.29%
College of Health and Human Services	\$5,978,371	24.72%
Vice President for Business and Finance	\$602,765	2.49%
Vice President for Research	\$2,062,485	8.53%
College of Aviation	\$45,606	.19%
The Graduate College	\$142,828	.59%
Provost and Vice President for Academic Affairs	\$846,475	3.5%
Vice President for Diversity and Inclusion	\$1,066,554	4.41%
Vice President for Student Affairs	\$131,764	0.55%
TOTAL (as of 6/30/2013)	\$24,180,349	100%

External Funding Year-to-Date Award Sources

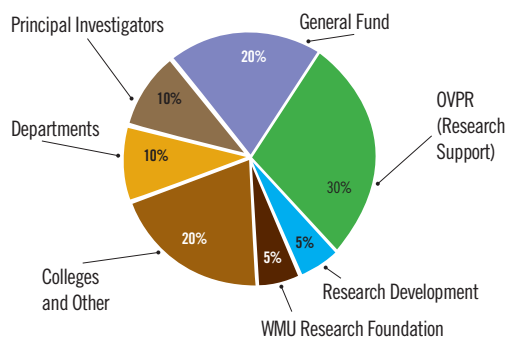
July 1, 2012 to June 30, 2013



Federal	\$10,551,486	43.64%
State	\$3,180,111	13.15%
Local	\$2,859,190	11.82%
International	\$289,931	1.2%
Industry/Corporation	\$1,957,360	8.10%
Educational Institution	\$2,176,663	9%
Foundation	\$370,441	1.53%
Other	\$2,795,168	11.56%
TOTAL (as of 6/30/2013)	\$24,180,349	

Distribution of Facilities and Administrative Funds Recovered

June 1, 2012 to May 31, 2013



TOTAL FUNDS RECOVERED	\$3,378,498	
Academic Units Research Support	\$1,351,400	40%
Principal Investigators	\$337,850	10%
Departments	\$337,850	10%
Colleges and Other	\$675,700	20%
University Research Support	\$1,351,399	40%
OPR Research Support	\$1,013,549	30%
Research Development	\$168,925	5%
WMU Research Foundation	\$168,925	5%
University Cost Recovery	\$675,700	20%
General Fund	\$675,700	20%

EXTERNAL AWARDS TO FACULTY AND STAFF IN 2012-2013 (JULY 1, 2012 TO JUNE 30, 2013)

Aktan, Haluk M.
Attanayake, Upul Bandara
Civil and Construction Engineering
 Michigan Department of
 Transportation
\$135,736

Aktan, Haluk M.
Civil and Construction Engineering
 Michigan Department of
 Transportation
\$24,999

Aktan, Haluk M.
Civil and Construction Engineering
 Michigan Department of
 Transportation
\$19,999

Allhoff, Fritz
Philosophy
 Texas State University-San
 Marcos
\$15,781.0

Anemone, Robert L.
Anthropology
Emerson, Charles
Geography
 National Science Foundation
\$180,459

Angles, Jeffrey Matthew
World Languages and Literatures
Covell, Stephen G.
Comparative Religion
 Japan Foundation New York
\$59,319

Atashbar, Massood Zandi
*Electrical and Computer
 Engineering*
Grunert, Megan Leanne
Chemistry
 Michigan Space Grant Consortium
\$5,500

Atashbar, Massood Zandi
*Electrical and Computer
 Engineering*
 Michigan Space Grant Consortium
\$1,200

Attanayake, Upul Bandara
Civil and Construction Engineering
Aktan, Haluk M.
Civil and Construction Engineering
 Michigan Department of
 Transportation
\$249,997

Baker, Lisa E.
Psychology
 Tetra Discovery, LLC
\$366

Bautista, Manuel A.
Physics
 National Aeronautics and Space
 Administration
\$173,221

Bensley, Robert J.
*Human Performance and Health
 Education*
 County of Riverside Community
 Health Agency
\$367,000

Bensley, Robert J.
*Human Performance and Health
 Education*
 Michigan Department of
 Community Health
\$196,065

Bensley, Robert J.
*Human Performance and Health
 Education*
 State of Utah
\$104,780

Bensley, Robert J.
*Human Performance and Health
 Education*
 State of Nevada WIC
\$37,620

Bensley, Robert J.
*Human Performance and Health
 Education*
 State of Louisiana
\$29,945

Bensley, Robert J.
*Human Performance and Health
 Education*
 Washington State Department of
 Health
\$28,875

Bensley, Robert J.
*Human Performance and Health
 Education*
 Prevention Works
\$23,000

Bensley, Robert J.
*Human Performance and Health
 Education*
 State of Oklahoma WIC Services
\$16,000

Bensley, Robert J.
*Human Performance and Health
 Education*
 North Carolina Department of
 Health and Human Services
\$15,000

Bensley, Robert J.
*Human Performance and Health
 Education*
 Prevention Works
\$13,500

Bensley, Robert J.
*Human Performance and Health
 Education*
 Iowa Department of Public
 Health
\$13,000

Bensley, Robert J.
*Human Performance and Health
 Education*
 State of Vermont Department
 of Health
\$13,000

Bensley, Robert J.
*Human Performance and Health
 Education*
 Kansas Department of
 Administration
\$9,500

Bensley, Robert J.
*Human Performance and Health
 Education*
 State of South Dakota
\$7,425

Bensley, Robert J.
*Human Performance and Health
 Education*
 Alaska Department of Health and
 Social Services
\$5,000

Bensley, Robert J.
*Human Performance and Health
 Education*
 North Dakota Department of
 Health
\$4,340

Bensley, Robert J.
*Human Performance and Health
 Education*
 Inter Tribal Council of Nevada WIC
\$3,500

Bensley, Robert J.
*Human Performance and Health
 Education*
 Iowa Department of Public Health
\$1,550

Berrah, Nora
Physics
 U.S. Department of Energy
\$200,000

Berrah, Nora
Physics
 Lawrence Berkeley National
 Laboratory
\$19,800

Bertman, Steven B.
Chemistry
 U.S. Environmental Protection
 Agency
\$387,483

Black-Pond, Connie
School of Social Work
 Michigan Department of
 Community Health
\$16,500

Black-Pond, Connie
School of Social Work
 The Trauma Center at Justice
 Resource Institute, Inc.
\$3,000

Bolar, Gordon M.
WMUK Radio
 Corporation for Public
 Broadcasting
\$153,828

Brown, Lori J.
College of Aviation
 MEEMIC Foundation
\$2,337

Burns, Clement
Physics
 U.S. Department of Energy
\$100,000

Burns, Clement
Physics
 U.S. Department of Energy
\$100,000

Burns, Clement
Physics
 Argonne National Laboratory
\$11,511

Bush, Jonathan
English
 Memorial Library
\$350

Carr, Erika Ann
Division of Multicultural Affairs
 U.S. Department of Education
\$236,925

Carr, Erika Ann
Division of Multicultural Affairs
 State of Michigan Workforce
 Development Agency
\$149,263

Carr, Erika Ann
Division of Multicultural Affairs
 State of Michigan Workforce
 Development Agency
\$87,451

Carr, Erika Ann
Division of Multicultural Affairs
 Michigan Campus Compact
\$15,000

Carr, Erika Ann
Division of Multicultural Affairs
 Michigan Campus Compact
\$15,000

Carr, Erika Ann
Division of Multicultural Affairs
 State of Michigan Workforce
 Development Agency
\$1,500

Carr, Erika Ann
Division of Multicultural Affairs
 State of Michigan Workforce
 Development Agency
\$1,500

Carr, Erika Ann
Division of Multicultural Affairs
 State of Michigan Workforce
 Development Agency
\$1,500

Chapleau, Ann
Occupational Therapy
 Kalamazoo Center for Youth and
 Community
\$10,000

**Choudhury, Alamgir
 Rodriguez, Jorge**
*Industrial and Manufacturing
 Engineering*
 NFPA Education and Technology
 Foundation
\$100,000

Ciccantelli, Laura R.
Academic Advising
Cummings, Katharine E.
*College of Education and Human
 Development*
 U.S. Department of Education
\$213,180

Coryn, Chris L.
*Interdisciplinary Ph.D. in
 Evaluation*
Robertson, Kelly N.
The Evaluation Center
 World Vision International
\$8,000

Cure Vellojin, Laila Nadime
*Industrial and Manufacturing
 Engineering*
 Bronson Research
\$4,991

Curtis, Amy B.
Interdisciplinary Health Sciences
 Michigan Department of
 Community Health
\$2,000

Davis, Jon D.
Mathematics
 University of Rochester
\$73,551

**Davis, Tamara J.
 Palan, Kay M.**
Haworth College of Business
 Michigan State University
\$195,000

Dennis, Tony O.
The Graduate College
 Michigan Department of Energy,
 Labor and Economic Growth
\$98,328

Dickason, David G.
*W.E. Upjohn Center for Geography
Change*
Kalamazoo College
\$68,306

Docherty, Kathryn M.
Biological Sciences
University of Notre Dame
\$3,000

Sundberg, Carol
Center for Disability Services
Kalamazoo Community Mental
Health Services
\$992,986

Sundberg, Carol
Center for Disability Services
Kalamazoo Community Mental
Health Services
\$856,334

Sundberg, Carol
Center for Disability Services
Kalamazoo Community Mental
Health Services
\$671,185

Sundberg, Carol
Center for Disability Services
Kalamazoo Community Mental
Health Services
\$279,632

Dudek, Andrzej
Mathematics
Simons Foundation
\$35,000

Duncan, Lonnie E.
*Counselor Education and
Counseling Psychology*
American Psychological
Association
\$1,000

Eversole, Robert R.
Biological Sciences
Zoetis, Inc.
\$4,000

Famiano, Michael A.
Physics
University of Notre Dame
\$50,000

Famiano, Michael A.
Physics
University of Notre Dame
\$12,760

Frazier, Barbara J.
Family and Consumer Sciences
Iowa State University
\$6,268

**Fredericks, Tycho K.
Butt, Steven E.**
*Industrial and Manufacturing
Engineering*
Haworth, Inc.
\$90,000

Frieder, Jessica E.
Psychology
Summit Pointe
\$117,019

Frieder, Jessica E.
Psychology
Summit Pointe
\$48,783

Frieder, Jessica E.
Psychology
Summit Pointe
\$11,057

Ghantasala, Muralidhar K.
CAVIDS Center
Various Industries
\$50,000

Ghantasala, Muralidhar K.
CAVIDS Center
Various Industries
\$34,125

Ghantasala, Muralidhar K.
CAVIDS Center
Various Industries
\$34,125

Ghantasala, Muralidhar K.
CAVIDS Center
Various Industries
\$20,000

Ghantasala, Muralidhar K.
*Mechanical and Aerospace
Engineering*
Exactheat, LLC
\$7,499

Gilbert, Kathryn Marie
The Children's Place
Nelson, Regena Fails
*Teaching, Learning and
Educational Studies*
U.S. Department of Education
\$123,314

Gilbert, Kathryn Marie
The Children's Place
Michigan Department of
Education
\$3,238

Gilbert, Kathryn Marie
The Children's Place
Michigan Department of
Education
\$2,421

Gilbert, Kathryn Marie
The Children's Place
Michigan Department of
Education
\$2,081

Gilbert, Kathryn Marie
The Children's Place
Michigan Department of
Education
\$709

Gill, Sharon
Biological Sciences
Naghshineh, Koorosh
*College of Engineering and
Applied Sciences*
National Science Foundation
\$303,000

Giscombe, Charlotte L.
Academic Skills Center
U.S. Department of Education
\$284,754

Glasser, Harold
Office for Sustainability
Honeywell Building Solutions
\$70,000

Gorczyca, Thomas W.
Physics
National Aeronautics and Space
Administration
\$100,000

Greene, Timothy J.
*Provost and Vice President
for Academic Affairs*
Fetters, Marcia K.
*Teaching, Learning and
Educational Studies*
Mingus, Tabitha
Mathematics
The Woodrow Wilson National
Fellowship Foundation
\$16,863

Gunter, Whitney D.
Sociology
Kalamazoo Public Library
\$11,460

Gustafson, Peter A.
*Mechanical and Aerospace
Engineering*
Western Michigan University
School of Medicine
\$40,801

Gustafson, Peter A.
*Mechanical and Aerospace
Engineering*
Western Michigan University
School of Medicine
\$4,250

Gustafson, Peter A.
*Mechanical and Aerospace
Engineering*
Metal Mechanics, Inc.
\$2,740

Gustafson, Peter A.
*Mechanical and Aerospace
Engineering*
Metal Mechanics, Inc.
\$2,287

Gustafson, Peter A.
*Mechanical and Aerospace
Engineering*
Metal Mechanics, Inc.
\$1,143

Hallett IV, Lucius F.
Veeck, Gregory
Geography
Veeck, Ann
Marketing
Michigan Department of
Agriculture
\$45,658.00

Harrison III, William B.
Geosciences
Arizona Geological Survey
Headquarters
\$99,315

Harrison III, William B.
Geosciences
U.S. Geological Survey
\$20,000

He, Chansheng
Geography
Michigan State University
\$15,000

Henderson, Charles R.
*Mallinson Institute for Science
Education*
Iowa State University
\$30,192

Henderson, Charles R.
Physics
Beach, Andrea L.
Office of University Assessment
Greene, Timothy J.
*Provost and Vice President for
Academic Affairs*
Grunert, Megan Leanne
Chemistry
Stapleton, Susan R.
The Graduate College
National Science
Foundation
\$299,536

Henderson, Charles R.
Physics
National Science Foundation
\$190,852

Henderson, Charles R.
Physics
National Science Foundation
\$190,852

Henry, James A.
School of Social Work
Black-Pond, Connie
Richardson, Margaret
Unified Clinics
U.S. Department of Health and
Human Services
\$639,364

Henry, James A.
School of Social Work
Black-Pond, Connie
Richardson, Margaret
Unified Clinics
U.S. Department of Health and
Human Services
\$399,975

Henry, James A.
School of Social Work
Atchison, Ben James
Occupational Therapy
Black-Pond, Connie
Unified Clinics
Hyter, Yvette D.
Speech Pathology and Audiology
U.S. Department of Justice
\$250,000

Henry, James A.
School of Social Work
RAND Corporation
\$30,000

Henry, James A.
School of Social Work
RAND Corporation
\$20,000

Henry, James A.
Black-Pond, Connie
School of Social Work
Michigan Department of
Community Health
\$1,500

Hernandez, Diana
Division of Multicultural Affairs
U.S. Department of Education
\$407,706

Hernandez, Diana
Division of Multicultural Affairs
Doublestein, Vunsin Hiew
Division of Multicultural Affairs
State of Michigan Workforce
Development Agency
\$150,000

Hernandez, Diana
Division of Multicultural Affairs
U.S. Department of Education
\$709

Hirsch, Christian R.
Mathematics
National Science Foundation
\$1,120,552

Hudson, Jennifer
*Mechanical and Aerospace
Engineering*
Michigan Space Grant
Consortium
\$5,000

Kayani, Asghar
Physics
Argonne National Laboratory
\$20,000

Kehew, Alan
Geosciences
U.S. Geological Survey
\$77,637

Kehew, Alan
Geosciences
U.S. Geological Survey
\$58,829

Kim, Dae Shik
Blindness and Low Vision Studies
U.S. Department of Education
\$98,195

Kim, Dae Shik
Wall Emerson, Robert
Shawn
Blindness and Low Vision Studies
Naghshineh, Koorosh
Mechanical and Aerospace
Engineering
Nissan Technical Center North America
\$3,016

Kohler, Paula D.
Vice President for Research
University of North Carolina at Charlotte
\$518,276

Kohler, Paula D.
Coyle, Jennifer L.
Vice President for Research
California State University-Northridge
\$25,245

Kujawski, Daniel
Mechanical and Aerospace
Engineering
Office of Naval Research
\$60,000

Kujawski, Daniel
Mechanical and Aerospace
Engineering
Office of Naval Research
\$59,973

Kwigizile, Valerian
Civil and Construction
Engineering
Michigan Department of Transportation
\$268,560

Kwigizile, Valerian
Oh, Jun-Seok
Civil and Construction
Engineering
Michigan Department of State Police
\$53,094

Kwigizile, Valerian
Oh, Jun-Seok
Civil and Construction
Engineering
Michigan Department of State Police
\$25,399

Kwigizile, Valerian
Civil and Construction
Engineering
U.S. Department of Transportation
\$5,000

Lawie, Tracey
Miller Auditorium
Michigan Humanities Council
\$3,000

Lee, Helen
Blindness and Low Vision Studies
U.S. Department of Education
\$98,195

Linn, Cindy
Biological Sciences
U.S. Department of Health and Human Services
\$415,660

Liou, William W.
CAVIDS Center
Hansford, Claudia M.
Bade Shrestha, Shiva Om
Mechanical and Aerospace
Engineering
Eaton Corporation
\$312,151

Liu, Tianshu
Mechanical and Aerospace
Engineering
Innovative Scientific Solutions, Inc.
\$76,076

Liu, Tianshu
Mechanical and Aerospace
Engineering
Western Michigan University
Research Foundation
\$10,000

Long, Richard G.
Blindness and Low Vision Studies
National AHEC Organization, Inc.
\$500

Long, Richard G.
Washington, Earlie M.
College of Health and Human
Services
Wayne State University
\$175,500

Long, Richard G.
Washington, Earlie M.
College of Health and Human
Services
Wayne State University
\$80,000

Lu, Yan
Biological Sciences
National Science Foundation
\$589,384

Lu, Yan
Biological Sciences
National Science Foundation
\$6,250

Mallak, Larry A.
Lyth, David M.
Industrial and Manufacturing
Engineering
Stryker Instruments
\$66,032

Malott, Richard W.
Psychology
Kalamazoo Regional Educational Service Agency
\$121,830

Manley, Robert Adam
Zinser, Richard W.
Family and Consumer Sciences
Michigan Department of Education
\$14,573

McCloud Sr., Donald G.
Haenicke Institute for
International Studies
Confucius Institute
Headquarters
\$148,030

McCloud Sr., Donald G.
Haenicke Institute for
International Studies
Confucius Institute
Headquarters
\$40,000

Meade, David J.
Patten, John A.
Manufacturing Engineering
Various Industries
\$75,000

Meade, David J.
Manufacturing Engineering
Michigan Department of Environmental Quality
\$30,061

Meade, David J.
Patten, John A.
Manufacturing Engineering
Various Industries
\$25,000

Meade, David J.
Patten, John A.
Manufacturing Engineering
Various Industries
\$25,000

Meade, David J.
Manufacturing Engineering
Fabri-Kal
\$7,440

Meng, Lei
Geography
Cornell University
\$23,224

Metro-Roland, Dennis P.
Jones, Jeffrey N.
Teaching, Learning and
Educational Studies
National Endowment for the Humanities
\$21,365

Meyer, Donald J.
Economics
The W.E. Upjohn Institute for Employment Research
\$6,000

Mezei, Gellert
Chemistry
American Chemical Society
\$100,000

Mezei, Gellert
Chemistry
Go Metal, LLC
\$20,037

Mezei, Gellert
Chemistry
Western Michigan University
Research Foundation
\$19,576

Michmerhuizen, Terrance A.
College of Aviation
Parker Hannifin Corporation
\$31,268

Miller, Michael G.
Human Performance and Health
Education
Bronson Orthopedic and Sports Medicine
\$200,400

Miller, Michael G.
Human Performance and Health
Education
Bronson Orthopedic and Sports Medicine
\$123,900

Miller, Michael G.
Human Performance and Health
Education
West Michigan Rehabilitation, PC
\$70,800

Miller, Michael G.
Human Performance and Health
Education
West Michigan Rehabilitation, PC
\$66,800

Miller, Michael G.
Human Performance and Health
Education
Kalamazoo College
\$35,400

Miller, Michael G.
Human Performance and Health
Education
Bronson Orthopedic and Sports Medicine
\$33,400

Miller, Michael G.
Human Performance and Health
Education
Bronson Orthopedic and Sports Medicine
\$23,700

Miller, Michael G.
Human Performance and Health
Education
Bronson Orthopedic and Sports Medicine
\$3,600

Miller, Michael G.
Human Performance and Health
Education
West Michigan Rehabilitation, PC
\$1,200

Miller, Michael G.
Human Performance and Health
Education
West Michigan Rehabilitation, PC
\$1,200

Miller, Michael G.
Human Performance and Health
Education
Kalamazoo College
\$600

Miller, Michael G.
Human Performance and Health
Education
Bronson Orthopedic and Sports Medicine
\$600

Miller, Michael G.
Human Performance and Health
Education
Bronson Orthopedic and Sports Medicine
\$300

Kendrick, Joel
Auxiliary Enterprises
Various Industries
\$278,994

Kendrick, Joel
Auxiliary Enterprises
Various Industries
\$137,542

Kendrick, Joel
Auxiliary Enterprises
Various Industries
\$58,828

Nassaney, Michael
Anthropology
Michigan Humanities Council
\$10,000

Nelson, Regena Fails
Teaching, Learning and
Educational Studies
Child Care Resources
\$7,000

Obare, Sherine O.
Chemistry
National Science Foundation
\$145,000

Oh, Jun-Seok
Kwigizile, Valerian
Civil and Construction
Engineering
Michigan Department of Transportation
\$233,394

Oh, Jun-Seok
Twigizile, Valerian
Civil and Construction Engineering
McKean, Joseph W.
Statistics
Van Houten, Ron
Psychology
Michigan Department of Transportation
\$201,851

Olsen, William C.
English
Michigan Council for Arts and Cultural Affairs
\$15,000

Palmer, Jodie G.
Teaching, Learning and Educational Studies
State of Michigan Workforce Development Agency
\$53,700

Patten, John A.
Manufacturing Engineering
Denso North America Foundation
\$50,000

Paul, Annegret
Mathematics
National Science Foundation
\$65,946

Peterson, Stephanie M.
Psychology
Kalamazoo Community Mental Health Services
\$59,052

Peterson, Stephanie M.
Frieder, Jessica E.
Psychology
Residential Opportunities Inc.
\$49,436

Ramrattan, Sam N.
Industrial and Manufacturing Engineering
Sintokogio, LTD
\$50,000

Ramrattan, Sam N.
Industrial and Manufacturing Engineering
Pekarovic, Jan
Chemical and Paper Engineering
The American Foundry Society, Inc.
\$28,000

Ramrattan, Sam N.
Industrial and Manufacturing Engineering
The American Foundry Society, Inc.
\$20,000

Ramrattan, Sam N.
Industrial and Manufacturing Engineering
Fleming III, Paul D.
Chemical and Paper Engineering
Ikonomov, Pavel G.
Industrial and Manufacturing Engineering
Joyce, Margaret
Chemical and Paper Engineering
Western Michigan University Research Foundation
\$20,000

Ravotas, Doris J.
School of Interdisciplinary Health Programs
The John E. Fetzer Institute, Inc.
\$6,600

Robertson, Kelly
The Evaluation Center
Heart of West Michigan United Way
\$149,818

Sauer, Eric Martin
Counselor Education and Counseling Psychology
American Psychological Association
\$1,000

Schroeter, Daniela
The Evaluation Center
Coryn, Chris L.
Interdisciplinary Ph.D. in Evaluation
Wingate, Lori A.
The Evaluation Center
National Science Foundation
\$249,993

Schroeter, Daniela
The Evaluation Center
Applegate, Edward Brooks
Educational Leadership, Research and Technology
Coryn, Chris L.
Interdisciplinary Ph.D. in Evaluation
Risukhin, Vladimir N.
College of Aviation
Dmitry Zimin's Dynasty Foundation for Not-For-Profit Programs
\$101,901

Schroeter, Daniela
The Evaluation Center
Zinser, Richard W.
Family and Consumer Sciences
University of Louisville
\$70,301

Schroeter, Daniela
The Evaluation Center
AXIOM Sales Force Development
\$29,900

Schroeter, Daniela
The Evaluation Center
AXIOM Sales Force Development
\$28,500

Schroeter, Daniela
Robertson, Kelly N.
The Evaluation Center
International Labor Organization
\$20,000

Schroeter, Daniela
Wingate, Lori A.
The Evaluation Center
Centers for Disease Control and Prevention
\$9,375

Schroeter, Daniela
Robertson, Kelly N.
The Evaluation Center
International Labor Organization
\$8,000

Shao, Xiaoyun
Civil and Construction Engineering
Northeastern University
\$41,546

Shao, Xiaoyun
Civil and Construction Engineering
Colorado State University
\$35,081

Shao, Xiaoyun
Civil and Construction Engineering
Colorado State University
\$4,500

Sharer, Michael S.
Vice President for Research
University of Michigan
\$140,000

Sharer, Michael S.
Vice President for Research
University of Michigan
\$12,500

Shen, Jianping
Educational Leadership, Research and Technology
U.S. Department of Education
\$649,157

Spybrook, Jessaca K.
Educational Leadership, Research and Technology
Biological Sciences Curriculum Study Center for Research and Evaluation
\$182,112

Spybrook, Jessaca K.
Educational Leadership, Research and Technology
University of Chicago
\$27,600

Stapleton, Susan R.
The Graduate College
National Science Foundation
\$42,000

Stapleton, Susan R.
The Graduate College
University of Michigan
\$2,500

Strazdas, Peter J.
Landscape Services
Michigan Department of Environmental Quality
\$54,400

Sultan, Mohamed
Geosciences
Kuwait Institute for Scientific Research
\$168,730

Sydlik, Mary Anne
SAMPI
Wayne County Regional Educational Services Agency
\$100,000

Sydlik, Mary Anne
SAMPI
Michigan Department of Education
\$93,457

Sydlik, Mary Anne
Ruhf, Robert J.
SAMPI
Dickinson-Iron Intermediate School District
\$91,520.00

Sydlik, Mary Anne
Ruhf, Robert J.
SAMPI
Saginaw Valley State University Regional Math and Science Center
\$70,661

Sydlik, Mary Anne
Ruhf, Robert J.
SAMPI
Saginaw Valley State University Regional Math and Science Center
\$50,000

Sydlik, Mary Anne
SAMPI
Michigan Mathematics and Science Centers UCI Division
\$30,563

Sydlik, Mary Anne
Jenness, Mark
SAMPI
EarthForce
\$28,041

Sydlik, Mary Anne
Ruhf, Robert J.
SAMPI
Central Michigan University
\$18,615

Sydlik, Mary Anne
SAMPI
Michigan Department of Education
\$10,988

Sydlik, Mary Anne
SAMPI
WGBH Educational Foundation
\$10,298

Sydlik, Mary Anne
SAMPI
Michigan State University
\$3,500

Thompson, Raymond
Grant, Martin B.
Ludwiczak, Michael Ervin
Nicolai, Dominic
College of Aviation
General Electric Company GE Aviation
\$12,000

Tsang, Edmund
College of Engineering and Applied Sciences

Engelmann, Paul V.
Industrial and Manufacturing Engineering
Abdel-Qader, Ikhlas
Electrical and Computer Engineering
Anderson, Diane K.
Vice President for Student Affairs
Darrah, Laura L.
Residence Life
National Science Foundation
\$414,092

Tsang, Edmund
College of Engineering and Applied Sciences

Kline, Andrew A.
Chemical and Paper Engineering
University of Michigan
\$97,246

Unrau, Yvonne
School of Social Work
State of Michigan
\$750,000

Van Houten, Ron
Psychology
Dunlap and Associates, Inc.
\$59,359

VanZoest, Laura R.
Mathematics
National Science Foundation
\$257,544

Venter, Andre
Chemistry
Barkman, Todd J.
Biological Sciences
Michigan Department of Agriculture
\$75,000

Vizzini, Anthony J.
Patten, John A.
College of Engineering and Applied Sciences
Micro Laser Assisted Technology, LLC
\$25,546

Vonhof, Maarten
Biological Sciences
U.S. Fish and Wildlife Service
\$180,648

Vonhof, Maarten
Biological Sciences
Grand Valley State University
\$4,291

Wall Emerson, Robert Shawn
Anderson, Dawn
Blindness and Low Vision Studies
U.S. Department of Education
\$277,833

Wall Emerson, Robert Shawn
Blindness and Low Vision Studies
University of Oregon
\$150,654

Washington, Earlie M.
College of Health and Human Services
Cousins, Linwood H.
School of Social Work
Early Learning Neighborhood Collaborative
\$125,456

Wiebold, Jennipher
Counselor Education and Counseling Psychology
Leja, James A.
Blindness and Low Vision Studies
Munley, Patrick H.
Counselor Education and Counseling Psychology
U.S. Department of Education
\$147,336

Wilson, Brian
Comparative Religion
American Academy of Religion
\$3,000

Wingate, Lori A.
Gullickson, Arlen R.
The Evaluation Center
National Science Foundation
\$536,036

Wingate, Lori A.
The Evaluation Center
Deloitte Consulting, LLP
\$83,227

Wingate, Lori A.
Martens, Krystin S.
The Evaluation Center
Delaware State University
\$38,188

Wingate, Lori A.
Martens, Krystin S.
The Evaluation Center
New York City College of Technology
\$13,100

Wingate, Lori A.
Schroeter, Daniela
The Evaluation Center
Centers for Disease Control and Prevention
\$9,375

Wingate, Lori A.
Schroeter, Daniela
The Evaluation Center
Centers for Disease Control and Prevention
\$9,375

Wingate, Lori A.
Schroeter, Daniela
The Evaluation Center
Centers for Disease Control and Prevention
\$9,375

Wirtz, Kristina
Anthropology
Spencer Foundation
\$38,900

Wirtz, Kristina
Anthropology
Wenner-Gren Foundation for Anthropological Research, Inc.
\$13,454

Zhang, Jiabei
Human Performance and Health Education
U.S. Department of Education
\$295,372

Zielinski, Ruth
School of Nursing
University of Michigan
\$14,945

Zoeller, Linda H.
Bergman, Karen
School of Nursing
Bronson Healthcare Group
\$25,000

RESEARCH DAY AND CREATIVE ACTIVITIES POSTER DAY 2013 GRADUATE STUDENT PARTICIPANT WINNERS

Bedoor, S.
Lighthall, J.C.
Marley, S.T.
Sponsor: Dr. Alan Wuosmaa
Physics, College of Arts and Sciences
"Study of 14B Using (d,p)
Reaction in Inverse Kinematics"

Callahan, Caitlin
Sponsor: Dr. Heather Petcovic
Mallinson Institute for Science Education, College of Arts and Sciences
"From Map to Mind: Using Video Logs to Explore the Process of Geologic Mapping"

Chen, Ting
Sponsor: Dr. Margaret Joyce
Chemical and Paper Engineering
"Zinc Coating Composition Influence Inflections in Quickset Ink Setting Profiles to Improve Sheet-fed Print Quality and Efficiency"

Christensen, Nathan Glass, Marilyn
THIRD PLACE
Sponsor: Dr. David Meade
Industrial and Manufacturing Engineering, College of Engineering and Applied Sciences
"Landfill Audits"

Ghuzini, Diny
Sponsor: Dr. Susan Pozo
Economics, College of Arts and Sciences
"Bank Leverage and Asset Positions: Cross Country Evidence"

Gyorkos, Amy Morrison
FIRST PLACE
Sponsor: Dr. John Spitsbergen
Biological Sciences, College of Arts and Sciences
"GDNF's Expression in Slow- and Fast-Twitch Muscle Fibers are Dependent on Exercise Intensity"

Hobson, Kristin A.
Sponsor: Dr. Chris Coryn
Interdisciplinary Ph.D. in Evaluation, The Evaluation Center
"Meta-Analysis as a Method of Multi-Site Evaluation of International Development Projects and Programs"

McCowen, Robert
Sponsor: Dr. Chris Coryn
Interdisciplinary Ph.D. in Evaluation, The Evaluation Center
"An Evaluation of the Overall Quality Assurance and Transparency of Evaluation at the Swiss National Science Foundation"

Mohamed, Lamees Zaki, Abotalib
Sponsor: Dr. Mohamed Sultan
Geosciences, College of Arts and Sciences
"Towards a Better Understanding of Modern and Paleo-hydrologic Settings in Arid Lands"

Mohammed, Abdul Wahed Ibralebbe, Rusthi Mohamed
SECOND PLACE
Sponsor: Dr. Upul Attanayake
Civil and Construction Engineering, College of Engineering and Applied Sciences
"Greening Cement-Based Products with Waste Powder Paints (WPP)"

O'Donnell, James P.
Maison, David P.
Clark, Teresa J.
Wessendorf, Ryan L.
Sponsor: Dr. Yan Lu
Biological Sciences, College of Arts and Sciences
"Functions of a Thylakoid Zinc-Finger Protein, TZFP2, in Thylakoid Biogenesis"

Ratkos, Thomas Field, Sean
Sponsor: Dr. Jessica Frieder
Psychology, College of Arts and Sciences
"Effects of Varied Response Methods on Student Performance and Preference"

Rusthi, Mohamed
Sponsor: Dr. Upul Attanayake
Civil and Construction Engineering, College of Engineering and Applied Sciences
"Remote Monitoring of Fatigue Sensitive Details on Steel Bridges"

Strong, Katie
Sponsor: Dr. Nickola Nelson
Speech Pathology and Audiology, College of Health and Human Services
"Supporting Identity in Aphasia: A Survey of Speech-Language Pathologists"

TECHNOLOGY DEVELOPMENT FUND 2013 AWARDS

The Technology Development Fund is an internal grant program to provide funding to further develop faculty inventions. As such, it represents the significant investment WMU has made to enhance the impact of WMU's research through commercialization. The WMU IP Management and Commercialization Faculty Advisory Committee (IPMCC) awarded three proposals for 2013.

Liu, Tianshu
Mechanical and Aerospace Engineering
Design and Testing of a Scaled Prototype Wind Oscillator for Power Generation
\$10,000

Mezei, Gellert
Chemistry
Selective, High Efficiency Anion Extracting Agents for Solvent Extraction
\$19,576

Ramrattan, Sam
Industrial and Manufacturing Engineering
3D Rapid Prototyping System Utilizing Focused Light Energy
\$20,000

FACULTY RESEARCH AND CREATIVE ACTIVITIES AWARD 2013 RECIPIENTS

Bautista, Manuel

Physics
Time Dependent Photoionization of Quasar Outflows

\$10,000

Brown, Lori

Flight Science
Effects of Light Exposure on Flight Crew Alertness Levels

\$9,980

Curtis, Amy

Interdisciplinary Health Sciences Ph.D.
Mapping and Spatial Analysis of Diabetes Rates and Resources

\$10,000

Dudek, Andrzej

Mathematics
Research on Ramsey-Type Numbers

\$9,921

Gogan, Brian

English
Integrating Models of Reciprocity

\$9,971

Omlion-Hodges, Leah

School of Communication
Hennich, Andrew
Frostic School of Art
unFixing the Eye: William Kentridge and the Optics of Witness

\$10,000

Hudson, Jennifer

Mechanical and Aerospace Engineering
Low-Thrust Spacecraft Mission Design

\$9,566

Jellies, John

Biological Sciences
Intersegmental Coupling Within A Peripheral Neural Network

\$10,000

Lemmer, Kristina

Mechanical and Aerospace Engineering
Measuring Boron Nitride Erosion Using Emission Spectroscopy

\$10,000

Mallak, Larry

Industrial and Manufacturing Engineering
Development of a Workplace Resilience Instrument

\$9,953

Moonert, Judy

School of Music
Coalescence Percussion Duo Commissioning and Recording Project

\$6,490

Pearl, Christopher

Biological Sciences
Estrogen and Male Aging

\$10,000

Prieto, Diana

Industrial and Manufacturing Engineering
Model-Based Detection of Breast Cancer Treatment Disparities

\$9,689

Stark, Mary Ann

Bronson School of Nursing
Therapeutic Showering in Labor: A Pilot Study

\$9,948

Suarez, Michelle

Occupational Therapy
Physiology of Food Selectivity in Children with ASD

\$9,801

Thakurta, Joyashish

Geosciences
Origin of Back Forty Sulfide Mineral Deposit in Menominee, MI

\$10,000

Veeck, Gregory

Geography
Ecological Economic Multi-Scale Study of China's Pasture Areas

\$9,831

Zinser, Richard

Family and Consumer Sciences
The Study of Technical Education in Russia Since the Ending of the Soviet Era

\$4,374

WMU CENTERS AND INSTITUTES*

College of Engineering and Applied Science

Center for Advanced Smart Sensor and Systems
Center for Advanced Vehicle Design and Simulation
Center for Advancement of Printed Electronics
Center for Coating Development
Center for Excellence in Engineering Education
Human Performance Institute
Center for Information Technology and Image Analysis
Center for Ink and Printability
Center for Integrated Design
Manufacturing Research Center
Center for Recycling Technology

College of Arts and Sciences

Center for African Development Policy Research
Rawlinson Center for Anglo-Saxon Studies and Manuscript Research
Biological Imaging Center
Light Center for Chinese Studies
Center for Cistercian and Monastic Studies
Great Lakes Center for Environmental and Molecular Sciences
Center for the Study of Ethics in Society
Upjohn Center for the Study of Geographical Change
University Center for the Humanities
Medieval Institute
Michigan Geological Repository for Research and Education
Science and Mathematics Program Improvement (SAMPI)
Mallinson Institute for Science Studies
Kercher Center for Social Research
Soga Japan Center

Haworth College of Business

Center for Entrepreneurship and Innovation
Global Business Center
Center for Health Information Technology Advancement
(with the College of Health and Human Services)
Center for Sustainable Business

College of Education and Human Development

National Research Center for Grandparents Raising Grandchildren

College of Health and Human Services

Center for Disability Services
Center for Gerontology
Center for Health Information Technology Advancement
(with the Haworth College of Business)
Center for Health Data Research, Analysis and Mapping
Foster Success Center
University-Community Empowerment Center

Office of the Provost and Vice President of Academic Affairs

Haenicke Institute for Global Education (includes the Confucius Institute and the Center for English Language and Culture for International Students)
Walker Institute for the Study of Race and Ethnic Relations

Office of the Vice President for Research

Biosciences Research and Commercialization Center
Evaluation Center

**Submitting annual reports to the Office of the Vice President for Research*

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dan.litynski@wmich.edu

Paula Kohler
Associate Vice President for Research
(269) 387-8283
paula.kohler@wmich.edu

While every effort has been made for accuracy, there is still the possibility for errors or omissions. We apologize for any that might occur. Please contact us with any corrections for our next issue.

Editor
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Photographer
Mike Lanka

Contributors
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Cheryl Roland

WESTERN MICHIGAN UNIVERSITY

Office of the Vice President for Research
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