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Discovery: Research Annual Report 2014

Office of Vice President for Research

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You

*The hill the lakes the shorelines only
Three thousand years old. Some faces
have this same settled freshness every time.
Few voices do. I have been trying to walk
Out of my body all my life. The flesh
doesn't belong to itself. Not a breath
we can understand so why this trust?
Understanding itself is a shape-shifter.
Even if I must accept your mortality,
I stay in love like nowhere else I stay.*

By William Olsen from his book of poetry, Sand Theory.

Dr. Olsen is a professor of creative writing.
Sand Storm is his collection of poetry about the Leelenau Penninsula.

On the cover

This map was digitized along with all of the 7.5 USGS quadrangles for the entire country, approximately 57,000 map sheets. The W.E. Upjohn Center for the Study of Geographical Change scanned that series because it is a standard base map used for a whole range of purposes. The maps are GPS enabled products available for sale in Avenza's PDF Maps application on iOS and Android platforms for uses such as field work, recreation and public safety. The center is currently negotiating a contract with another vendor to make the maps available for custom prints using a decollared version of the product.

Discovery

Western Michigan University
Research Annual Report 2014



Discovery initiatives are advancing on several fronts. WMU faculty members and research staff are envisioning discovery plans with specific focus areas, creating larger collaboratives and building discovery communities. These efforts spring from a broad tradition of research that has been, and will continue to be, applied locally, regionally and globally. The stories and successes of our esteemed faculty and research partners speak to the mission of a research institution in community—to discover, to educate and to transfer knowledge through people, publications, creative works, patents, commercialization and technology.

Connections to and among experts at WMU are enhanced by our new WMU Discovery Experts system that is now online. It brings research partners, industry and larger collaboratives together with our researchers to discover answers to complex problems. Working collaboratively with peer institutions or industry partners, we seek to impact the Michigan economy, license our research and expand our overall scholarship footprint. Throughout, we remain true to Western Michigan University's mission as a learner centered, discovery driven and globally engaged research institution.

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

One example involving WMU's Center for Research on Instructional Change in Postsecondary Education illustrates how collaboration can cultivate success and help build discovery communities. When the Department of Education issued a Request for Proposals for the First in the World grant program, the Office of the Vice President for Research convened researchers from across the University to spur discussions for a possible submission. Because of the expertise and leadership at WMU, we had a competitive advantage. WMU can be proud to know that out of nearly 500 proposals, ours was one of 24 selected for funding—and the only university in Michigan chosen to participate. This model of discovery communities is taking root, and we look forward to many more successful results.

We invite you to join in the efforts to discover, to educate, and to translate new knowledge for the benefit of our community, Michigan, the nation, and the world.

To learn more about Western Michigan University and our outstanding research, visit us at wmich.edu/research.

A handwritten signature in black ink that reads "John M. Dunn".

John M. Dunn, Ed.D.
President

A handwritten signature in black ink that reads "Daniel M. Litynski".

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





WMU boosts its autism research and professional training initiatives

Western Michigan University will receive \$4 million from the State of Michigan to boost its autism research and professional training initiatives, announced State Rep. Margaret O'Brien this summer at a news conference on campus.

The University, which has a national reputation for its work in behavior analysis as a treatment for autism, will use the funding to tackle the growing national incidence of the brain development disorder by:

Increasing the number of new professionals in the field each year and developing a training model that can be disseminated and replicated at other colleges and universities.

- Developing innovative on-campus support networks for college students on the autism spectrum.
- Directing and overseeing a community daycare and treatment center for young children.
- Directing, developing and maintaining community consultation resources, using such technology as podcasts and teleconsultation.

State Rep. Aric Nesbitt and State Sen. Tonya Schuuitmaker, both of Lawton, joined O'Brien for the announcement at WMU.

O'Brien noted that she and her two colleagues were among Michigan legislators who worked earlier to secure insurance coverage for autism services in Michigan. Once that was accomplished in 2012, she said, they began to hear too many stories about the shortage of service providers and long waits for families to get assistance. Allowing the situation to evolve over time and waiting for the supply of trained professionals to grow to match the need was not an option.

"By the time we built that capacity, it was going to be too late for too many children," O'Brien said. "We know that the earlier we reach them the better it is for families and kids."

The solution, she noted was "in my own backyard," where Western Michigan University already has an internationally known program in training people in behavioral health—especially those who serve those families that are dealing with autism.

Autism spectrum disorder and autism are general terms for a group of complex disorders of brain development. These disorders are characterized—in varying degrees—by difficulties in social interaction, verbal and nonverbal communication, and repetitive behaviors. Earlier this year, the Centers for Disease Control and Prevention indicated the prevalence of autism is rising and now affects one in 68 American children. Breaking this number down, the CDC estimates one in 42 boys have autism compared with one in 189 girls.

W.E. Upjohn Center internationally known for its topographical innovation

The W.E. Upjohn Center for the Study of Geographical Change was singled out last year by the International Map Industry Association (Americas) for development of outstanding map products and service. The association selected the center to receive its gold award for Best Digital Map Product of the year as well as its Americas Award for the year's overall most outstanding map product or service.

The Upjohn Center bested public and private organizations including the National Geographic Society and U.S. Geological Survey.

The Upjohn Center was recognized for its Authoritative U.S. Topos map initiative, which includes a Topographic Maps series and a hybrid sub-series called GeoChange maps. The hyper-accurately georeferenced maps in the two series can be used with GPS-enabled mobile devices and software based on Apple's iOS and Google's Android.

Each map is self-contained in the tablet or smartphone, so no wireless connection is required. This means the maps can be used in wilderness areas and on large water bodies out of range of cell towers. They can also be used for navigation and location finding, because a blue dot displays the user's location on the maps and moves across the maps as the user moves.

"Our maps have an elegant simplicity even though they are based on cutting edge technology" says Dr. Benjamin Ofori-Amoah, chair of geography.

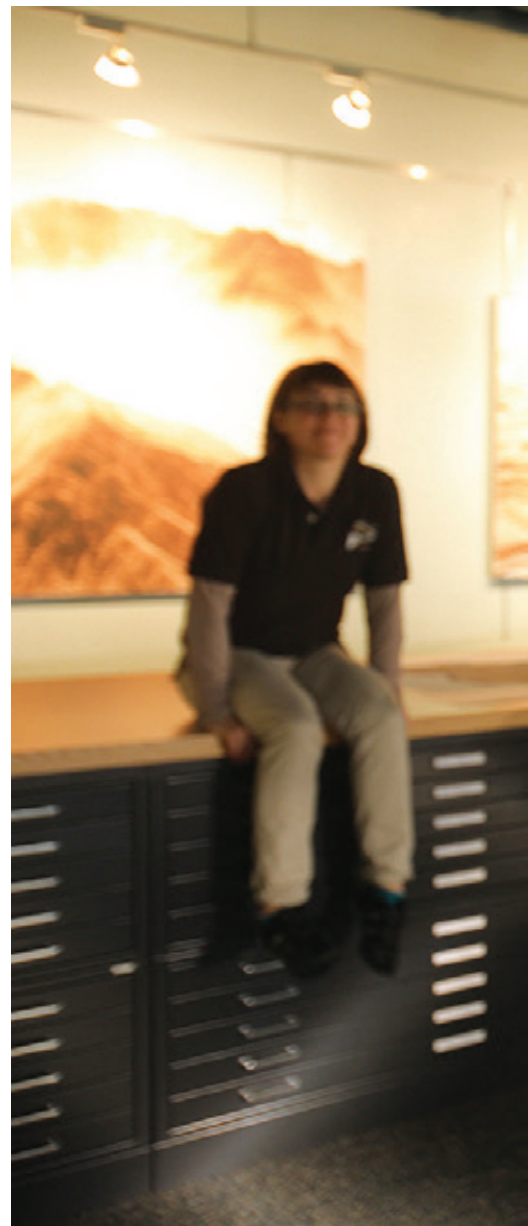
"The maps have incredible accuracy, but not only that; they are fast and easy to use in Avenza's PDF maps application. Users can easily add information and share it using Google Earth."

Professional and student staff members in the center began the Authoritative U.S. Topos map initiative in 2007 and have put years of effort into scanning, georeferencing, image processing and related work necessary to bring its maps to market.

Available so far are some 35,000 maps of U.S. places, primarily Michigan and the East and West coasts. In addition, the center is beginning to release maps of various Asian countries.

Invaluable for making comparisons, the Topographic Maps series consists of digitized and georeferenced versions of the U.S. Geological Survey's most recent fully quality-assured maps, the bulk of which were produced 25 to 35 years ago.

The GeoChange maps series combines those enhanced USGS topographic maps with digital aerial images of the same areas. Readers see through the maps transparently to the aerial images, most of which were taken in 2011 to 2013, so it is easy to see where changes such as road construction, river diversions and urban sprawl have occurred.





"Maps are scientific documents that allow us to compare areas over time and allow us to monitor, study and predict what happens next, and where it will occur," says Ofori-Amoah.

"GeoChange maps are useful for a variety of applications, from environmentalists monitoring the health of a watershed, planners monitoring land uses and engineers monitoring roads and streets, to researchers investigating variations in human health issues across neighborhoods. Because the maps are stored on mobile devices they are useful during power outages and emergencies for a variety of purposes."

From invention to commercialization

Technology Development Funds awarded in 2014 provided researchers with support to move their discoveries along the pipeline from invention to commercialization. Four projects received nearly \$60,000 in internal support.

An Interactive Online Notch Fatigue Analysis Tool

Principal Investigator: Dr. Daniel Kujawski Award amount: \$12,400

There is a need for low-cost online software tool designed to predict the fatigue life of notched components for users who need to easily obtain accurate data about how a material would react to external loading, even when several input conditions change at once. The goal is to help decision-making by design engineers who are not necessarily experts in fatigue disciplines.

Next Generation Information Systems for Pilots

Principal Investigator: Lori Brown; Co-Principal Investigator: Dr. Ala Al-Fuqaha Award amount: \$18,500

This project focuses on creation of a low cost mobile training solution for the airline industry to enhance aircraft system knowledge. The mobile apps build a bridge between high cost simulation and theory taught in classrooms. These low-cost apps for iPads and smart phones modernize the curriculum at WMU and position the University to be the leader in education and hands on interaction for pilots. The apps aid in learning and retention of specific aircraft systems and procedures, like hydraulics or de-icing before pilots enter the expensive simulator or aircraft.

Composite Matrix Material Development for low-cost, disposable, reagent-free, resistance-based multiplex, point-of-use immunodiagnostic biosensor platform technology

Principal Investigator: Dr. Brian Young Award amount: \$19,000

A revolution in clinical testing is taking place, wherein blood, serum, saliva and urine can be tested using very small sample volumes (microliters), with results provided immediately at the point of sample collection. This work will identify inexpensive, accurate, test chips and how to produce them. The test chips will be used in a hand-held, test-chip reader, and will test for multiple disease markers simultaneously in the field. Different chips will each contain an array of tests for different diseases. The TD funding provides for screening of a matrix of materials and methods for identification of optimal chip conformations and manufacturing. The candidate chips identified in the screening will then be extensively tested for reliability and accuracy. The optimal test chips will allow immunodiagnostic manufacturers to provide inexpensive, accurate, portable disease testing for hospitals and clinics, even in remote locations of the world.



Mobile Counselor

Principal Investigator: Scott Puckett; Co- Principal Investigator, Michael Sisk Award amount: \$10,000

The Mobile Counselor Web Application is designed to replace the Admissions Office student inquiry paper card and the ensuing data entry process at WMU with a customer relationship management-type system. Designed to be a mobile electronic data gathering system for Apple iPads, the mobile counselor will be a one-stop tool for admissions counselors to collect data, perform job tasks, and speed up recruitment efforts while traveling on the road and working on campus. The iPad interface will allow prospective students to provide their own information to the school, while the counselor is interacting with others. The goal is to create a commercialized and cloud-based version of Mobile Counselor.

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.

E. Rozanne Elder is a professor of history and the director of what is now the Center for Cistercian and Monastic Studies. She has directed the center and organized its



Elder

Cistercian Studies Conference since 1973 as well as been the primary editor for Cistercian Publications since 1979.

Nominators lauded Elder for elevating the University's international reputation in the fields of Cistercian and monastic studies, along with related fields. In addition, they praised her

for her remarkable work bringing some 300 texts to publication, as well as for participating fully in teaching and research and contributing to the ongoing development of the Medieval Institute's academic program.

Many also noted that she is well known for her own rigorous scholarship and the support she gives to students and colleagues on and off campus.

John Allen Jellies has been a faculty member since 1995 and is a professor of biological sciences. He uses experimental approaches with model systems to answer questions related to brain function, or more specifically, how the nervous system controls behavior.



Jellies

Jellies' career-long work has generated nearly \$4 million in grant funding from national funding agencies. His nominators noted that he is a world-renowned researcher with remarkable ingenuity who has made cutting-edge discoveries.

They also praised him as an inspired teacher, advisor and mentor for his students, as well as someone who has provided exemplary service to WMU, his discipline and academia.

That service has included leading the WMU Faculty Senate and the Michigan Chapter of the Society for Neuroscience, in addition to being a grant reviewer for the National Science Foundation and an editorial board member or manuscript reviewer for several leading journals.

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.

Fritz Allhoff is a professor of philosophy and an ethicist as well as a philosopher whose research has broken new ground in the areas of cyberwarfare, torture and



Allhoff

nanotechnology. He was cited for not only the incredible quantity of his research output, but also its quality, breadth and reach. Nominators also praised his boundless energy.

A prolific writer and editor, Allhoff has numerous books and journal articles to his credit. He also has been managing editor for

13 different publication series as well as a reviewer for multiple journals and presses.

Allhoff joined the faculty in 2005 and has served as director of graduate studies for his college since 2008. He recently earned a juris doctorate and took a professional development leave fall semester to serve as a judicial clerk for an Alaska Supreme Court justice.



Center for Research on Instructional Change in Postsecondary Education

The center was created at the University with the vision of becoming a nationally-recognized interdisciplinary research center focused on transformative change in post-secondary education.

Co-directed by Dr. Andrea Beach, educational leadership, research and technology and director of faculty development, and Dr. Charles Henderson, physics and the Mallinson Institute for Science Education, the center provides a focal point for WMU faculty to engage collaboratively in interdisciplinary research. It also functions to provide support and build capacity for principal investigators writing grants related to instructional change in postsecondary education.

Just recently, that goal was realized when the U.S. Department of Education's "First in the World" grant program awarded \$75 million to 24 universities in the nation. WMU was awarded \$3.2 million to build an institutional culture focused on increased access and degree completion for underrepresented, underprepared or low-income students. The work will be done with the input of students for whom the problem of affordability of college has been largely eliminated—Kalamazoo Promise students.

The grant will create and validate through ongoing research student success programs that can tackle the problem of low rates of degree completion. The goal is to create programs that other universities can adopt, knowing there is evidence-based research behind the strategies embraced and replicated.



UNDERGRADUATE RESEARCH EXCELLENCE AWARD RECIPIENTS, 2013-14

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.

Ahmed, Mohamed

Civil Engineering
NEESR: Near Collapse Performance of Existing Reinforced Concrete Frame Buildings
Faculty mentor:
Dr. Xiaoyun Shao

Avildsen, Hans

Mechanical Engineering
Heat Reduction & Improved Efficiency in the M-Lam Laser Beam Delivery System
Faculty mentor:
Dr. John Patten

Bayne, Tyler

Computer Engineering
Creating Virtual Reality 3D Simulations of Engineering Laboratory Experiments
Faculty mentor:
Dr. Pnina Ari-Gur

Bayne, Tyler

Computer Engineering
Developing Virtual Reality 3D Simulations of Engineering Laboratory Experiments
Faculty mentor:
Dr. Pnina Ari-Gur

Booker, Troy

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

Bootka II, Anthony

Mechanical Engineering
Heat Reduction & Improved Efficiency in the M-Lam Laser Beam Delivery System
Faculty mentor:
Dr. John Patten

Brand, Garrett

Mechanical Engineering
Design of a Supercharging Mounting System for a Single Cylinder Engine
Faculty mentor:
Dr. Claudia Fajardo-Hansford

Brown, Rapheal

Manufacturing Engineering Technology
Implementing an Energy Management System Based on ISO 50001
Faculty mentor:
Dr. David Meade

Brownell, Mitchell

Mechanical Engineering
Cold Gas Propulsion System for High Altitude Research Balloons
Faculty mentor:
Dr. Kristina Lemmer

Carpp, Nicole

Biomedical Sciences and Exercise Science
The Effect of Moderate Versus Low Intensity Involuntary Exercise on GDNF Expression and Neuromuscular Junction Morphology in Rat Diaphragm and Pectoralis
Faculty mentor:
Dr. John Spitsbergen

Carter, Theodore

Physics
The Use of Hybrid Perovskite (CH₃NH₃)PbI₃ in Low Cost Photovoltaic Cells
Faculty mentor:
Dr. Clement Burns

Cumpio, Genalou

Aeronautical Engineering
Controlled Retrieval of a Suborbital Weather Balloon Instrumentation
Faculty mentor:
Dr. Jennifer Hudson

Donovan, Erin

Biomedical Sciences
Walk-training Increases Expression of Glial Cell Line-Derived Neurotrophic Factor in Pectoralis Muscle But Not Diaphragm From Mouse
Faculty mentor:
Dr. John Spitsbergen

Hartman, Christian

Chemistry
Large 'Molecular Panel' Based Metal-Organic Architectures for Gas Storage and Catalysis
Faculty mentor:
Dr. Gellert Mezei

Heinze, Kevin

Biomedical Sciences
Investigating the Involvement of Caspase-3 in the Apoptotic Pathway Associated with an in vivo Glaucoma Model
Faculty mentor:
Dr. Cindy Linn

Hodgell, Brenda

Civil Engineering
NEESR-CR: NEESsoft: Seismic Risk Reduction for Soft Story Wood Frame Buildings
Faculty mentor:
Dr. Xiaoyun Shao

Ihling, John

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

Ives, Jacob

Engineering Management Technology
Hybrid 3D Printing and Machining Using Metal
Faculty mentor:
Dr. Pavel Ikononov

Johnson, Ashley

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

Lewandowski, Andrew

Physics
Ion Beam Irradiation Induced Defects in Superconductors
Faculty mentor:
Dr. Asghar Kayani

Masika, Noah

Chemistry
Nanostructured Materials for Catalytic Conversion of Biorenewables into Commodity Chemicals
Faculty mentor:
Dr. Sherine Obare

Maslanka, Veronica

Civil Engineering
Evaluation of Michigan's Engineering Improvements for Older Drivers
Faculty mentor:
Dr. Valerian Kwigizile

Matar, Simon

Civil Engineering
Extracting Useful Fatigue Monitoring Information for Practicing Engineers
Faculty mentor:
Dr. Upul Attanayake

McQueen, James

Manufacturing Engineering Technology
Hybrid 3D Printing and Machining Using Metal
Faculty mentor:
Dr. Pavel Ikononov

Neff, Greg

Mechanical Engineering
Cold Gas Propulsion System for High Altitude Research Balloon
Faculty mentor:
Dr. Kristina Lemmer

Ong, Daoshen

Aerospace Engineering
The Aero-Shop Project
Faculty mentor:
Dr. Tianshu Liu

Putnam, Macey

Sales and Business Marketing
What Can Be Gleaned About the Outcomes of NSF STEP-Funded Projects Based On Publicly Available Data?
Faculty mentor:
Dr. Mary Ann Sydlik

Quainoo, Andreas

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

Rahimi, Ahmad Sear

Civil Engineering
NEESR-CR: NEESsoft: Seismic Risk Reduction for Soft Story Wood Frame Buildings
Faculty mentor:
Dr. Xiaoyun Shao

Roberts-Perazza, Ramon

Civil Engineering
Evaluation of Shape Memory Alloys Used at Junction of Steel Column Under Seismic Loading
Faculty mentor:
Dr. Xiaoyun Shao

Savard, Ryan

Mechanical Engineering
Cold Gas Propulsion System for High Altitude Research Balloons
Faculty mentor:
Dr. Kristina Lemmer

Schnell, Timothy

Civil Engineering
Nonshrink Cementitious Grout or Mortar for Prefabricated Connections
Faculty mentor:
Dr. Upul Attanayake

Schnell, Timothy

Civil Engineering
Digital Image Correlation for Strain Measurement of a Fatigue Sensitive Steel Bridge Detail
Faculty mentor:
Dr. Upul Attanayake

Shah, Richa

Biochemistry
Developing Biosensors for Bacteria Using Well-Defined Alloy Nanoparticles
Faculty mentor:
Dr. Sherine Obare

Simpson, Kyle

Physics
Programmable Pulse Motor Controller with Feedback Control for an Electric Vehicle
Faculty mentor:
Dr. Clement Burns

Simpson, Kyle

Physics
ZnSnN₂ RHEED Sample Analysis and Characterization
Faculty mentor:
Dr. Steve Durbin

Spriet, Kurt

Mechanical Engineering
Development of CFD Model for a Supercharged Single-Cylinder Engine
Faculty mentor:
Dr. Claudia Fajardo-Hansford

Subramanyam, Shubram

Aerospace Engineering
The Aero-Shop Project
Faculty mentor:
Dr. Tianshu Liu

Talcott, Devin

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

Thomas, Wade

Aviation Management and Operations
FAA PEGASAS Project B 'Unexpected Transition From VFR to IMC'
Faculty mentor:
Professor Lori Brown

Thompson, Walker

General University Studies (Pre-Med)
GDNF-Mediated Effects of Exercise on Motor Neuron Survival in Elderly Rats
Faculty mentor:
Dr. John Spitsbergen

Walser, Olivia

Biology
Characterization of scyllo-Inositol Catabolism in Sinorhizobium meliloti
Faculty mentor:
Dr. Silvia Rosssbach

Williams, Cory

Mathematics
Maker-Breaker Games in Ramsey Theory
Faculty mentor:
Dr. Andrzej Dudek

Ziemer, Dan

Manufacturing Engineering Technology
Hybrid 3D Printing & Machining Using Metal
Faculty mentor:
Dr. Pavel Ikononov

Ziemer, Matt

Manufacturing Engineering Technology
Hybrid 3D Printing & Machining Using Metal
Faculty mentor:
Dr. Pavel Ikononov

2013-14 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*

***Adams, Clara P.**

Chemistry

Travel

Sustainable synthetic approaches toward shape-controlled nanoscale materials

Alja'afreh, Ibtisam Y.

Chemistry

Travel

Probing Stability and Unfolding of the Most C-Terminal Metal-Binding Domains of ATP7B

Aljadef-Abergel, Elian

Psychology

Research

The Evaluation of Two Feedback Schedules on Teaching Performance of Undergraduate Applied Behavior Analysis Students Delivering Direct Instruction Lessons

Armbruster, Ann

Music

Research

The Status Of, Teacher Attitudes Toward, and the Effect of Music Therapy on Inclusive Music Education in Michigan

Aslaksen, Jared

Philosophy

Travel

Compassion and extending justice to non-human animals

Avuthu, Sai Guruva Reddy

Electrical and Computer Engineering

Research

Development of fully printed organic thin film transistors (OTFT) based flexible humidity sensors

***Bano, Abida**

Political Science

Research

Democratization and Pro Women Legislation in Pakistan

Barthelemy, Ramon S.

Mallison Institute for Science Education

Travel

(1) The Demographics and Experiences of Graduate Students in Physics: A Closer Look at Gender; (2) Gender and Sexual Diversity Issues in Physics

Bentz, Amy E.

Mallison Institute for Science Education

Travel

Using Scenarios to Identify Preservice Teachers' Ideas Regarding Formative Assessment

Bierema, Andrea M.

Mallison Institute for Science Education

Travel

Teaching Fruit Fly Genetics with Cards

Borton, Hannah

Biological Sciences

Research

Determining the Impacts of Land Use and Anthropogenic Nitrogen Inputs on Sediment Bacterial Community Structure and Denitrification Rates in the River Raisin Watershed

Bre'z, Skylar J.

History

Travel

Examining the Cultural and Political Limitations of Women's History Month

Burns, James Daniel

Industrial and Manufacturing Engineering

Travel

Opportunity costs for non-capital resources in job sequencing: A TSP approach for improved outcomes

Clark, Matthew L.

Civil and Construction Engineering

Travel

Cultural, Perceptual and Educational Factors on Non-Motorized Traffic Safety

Denby, Eric W.

History

Research

Gay Radicalism at the University of Michigan

Depuydt-Goodlock, Amber

Interdisciplinary Health Sciences

Travel

"The Association Between Physical Activity, History of Sexual and Mental Health: Findings from the 2011 BRFSS"

***Dobek, Peter P.**

History

Research

The Transition of Poland from Late Medieval to Early Modern: Society and Politics

Dudek II, Richard

Geosciences

Research

Investigation of Surface Water-Groundwater Interactions Using Natural Variations in Stable Oxygen and Hydrogen Isotopes

Edson, Alden J.

Mathematics

Travel

Implications of Deeply Digital Materials for TPACK

Eshkeiti, Ali

Electrical and Computer Engineering

Research

Fabrication of Electronic Circuit Board on Different Substrates Using Screen Printing

Eshkeiti, Ali

Electrical and Computer Engineering

Research

Screen printed flexible capacitive pressure sensor

***Fara, Abotalib**

Geosciences

Research

Paleohydrology of Sinai Peninsula, Egypt- a link to the paleoclimatic Circulation over the Middle East using isotopic, luminescence dating and remote sensing constraints

***Field, Sean**

Psychology

Travel

*1. Assessing Observer Effects on the Fidelity of Implementation of Functional Analysis Procedures
2. Behavior Treatment Committee for Summit Pionte*

Fuller, Nathaniel

Geography

Research

Michigan's Clay Bluffs Natural Community Description

Gayman, Catherine

Psychology

Research

Deposit Contracts in Contingency Management for Smoking Cessation

***Gomez, Jamie**

Anthropology

Travel

A Biocultural Investigation of Rates and Location of Dental Disease and Treatment in a Turn of the Century Low SES Sample from the Hamann-Todd Collection

Goss, Joshua M.

Mathematics

Research

Assessing and categorizing students' informal inferential reasoning

Griffey, Denisha

Geosciences

Research

The Effect of Road Salt Deicers on Eutrophication and Salinization of Kettles in Southwest, MI, USA

Harvey, Eric

Psychology

Research

Discriminative Stimulus Properties and Neuropharmacological Mechanisms of Action of Synthetic "Bath Salt" Cathinone Derivatives

Haynes, Jonathan

Geosciences

Research

Evaluation of the Sturgeon Falls Sill in Michigan's Upper Peninsula as a Prospective Target for Sulfide Mineralization

Hinz, Krista L.

Psychology

Travel

The Effects of Altering Response Effort During Data Collection on Observer Accuracy: Data Collection Procedures on Hand Hygiene Compliance

***Hirsh, Jamie**

Psychology

Travel

Functional Assessment for Colic

Hobson, Kristin Ann

Interdisciplinary PhD in Evaluation

Travel

Make a difference: Help validate the metaevaluator qualifications checklist

Howard, Krystal

English

Travel

A Diversity of Forms in Young Adult Literature: Exploring the Isolated Protagonist in Contemporary Verse, Film, and Fictions Paper: Diverse Perspectives: Exploring Lyricality and Narrativity in Virginia Euwer Wolf's "Make Lemonade" and Helen Frost's "Keesha's House"

***Hunt, Spencer**

History

Research

To Exchange or to Ransom: Mercedarian Use of Slave Exchanges to Redeem Captives in the Fouteenth-Century

Izumi, Mitsuyo

Educational Leadership, Research and Technology

Research

Family Resilience and Sojourning Japanese Families in the U.S.

***Kadiri, Racha El**

Geosciences

Research

Remote Sensing Applications for Assessing, Modeling and Mitigating Environmental Hazards in Mountainous Areas: A Case Study from Jazan, Saudi Arabia

Kapenga, Ian

Philosophy

Travel

Moral hesitance: Deriving an obligation from the skepticism of famous modern philosophers

Kipka, Robert John

Mathematics

Travel

Optimality conditions for problems of geometric optimal control

Kothari, Catherine L.
Interdisciplinary Health Sciences
Travel
Racial Disparity in Birth Outcomes: Diversity between Local Communities

Kratky, James Lyle
Mathematics
Travel
Connecting and Reconnecting to What It Means to Understand Mathematics

Kyle, Catherine Elizabeth
English
Travel
Thawing Frozen Hearts: How Disney's Latest Film Radically Redefines True Love

Laurent, Vanessa
Counselor Education and Counseling Psychology
Travel
Navigating Two Worlds: How Multiracial Identity Development Informs the Counseling Process

***Lichtenberger, Sarah**
Psychology
Travel
WoodsEdge Learning Center Practicum at Western Michigan University

***Manche, Cameron J.**
Geosciences
Travel
A Remote Sensing-Based Early Warning System for Algal Blooms in Kuwait Bay and Coastal Waters

McDowell, Christine Marie
English
Travel
(Re) Inventing the methods course: Moving beyond exemplar texts towards mentor texts

Mghanga, Edwin
Chemistry
Travel
ACAC as an Anchoring Group: Does Surface Morphology Influence Charge Transfer Dynamics

Mghanga, Edwin
Chemistry
Research
Solar Cells from Natural Curcumin Dyes: Dynamics and Mechanism

Mohamed, Lamees M.
Geosciences
Research
Structural Control of the Distribution of Groundwater in Wadi Feiran, Egypt: Constraints from Geophysical and Remote Sensing Observations

Mohammed, Abdel Mawgoud
Geosciences
Travel
Structural control of the deep nubian sandstone aquifer system constrained by Hydrochemical, stable isotope and noble gas data

Mutambuki, Jacinta
Mallison Institute for Science Education
Research
Increasing chemistry relevance by integrating nanotechnology into the undergraduate chemistry curriculum: Authentic learning

Narakathu, Binu Baby
Electrical and Computer Engineering
Travel
Opto-Electrochemical based dual detection of heavy metal compounds using a novel flow cell

***Duellette, Katie**
Psychology
Travel
1. The Operant Conditioning Laboratory (Rat Lab) Experience at Western Michigan University; 2. Psychological Assessment and Treatment Services: A Practicum Opportunity at Western Michigan University

Petty, Iris
History
Travel
Hilbert's Deductivism and the Fruitfulness of Mathematics in the Sciences

Reid, Matt
Sociology
Travel
This Isn't Christian Mingle: Gay Men Dating Online

Revalla, Madhuri
Computer Science
Travel
On providing user-level data privacy in cloud

Sandor, Katelyn
Communication
Travel
Understanding Work Socialization Through Young People's Part-Time Job Experiences and Community Learning Portfolio: Communication and Community Engagement Through Selfies

***Schenk, Yannick**
Psychology
Travel
1. Establishing and Testing Conditioned Reinforcers—Comparison of the Pairing vs. Discriminative Stimulus Procedures With Individuals With Disabilities 2. A Model and Discussion of a Parent Training Workshop for Parents Raising Children With Autism 3. Presenting Western Michigan University's Psychological Assessment and Treatment Services

***Stevens, Chelsea**
History
Research
Memory, Commemoration, and Gender: Rosa Luxemburg and German Communism in the Twentieth Century

Sundberg, Daniel
Psychology
Travel
Goal Setting and Incentive Research Outside Behavior Analytic Literature

Szkody, Jessica
Geosciences
Research
Recent Seismicity on Basement Faults and Regional Extension in Southwestern Montana, USA

Taibu, Rex Nyadaufe
Mallison Institute for Science Education
Travel
Textbook Presentations of Weight: Conceptual and Associated Terminological Ambiguities

Thanthirige, Viraj D.
Chemistry
Travel
Optical Properties of Bi-Icosahedral Au25 and Au24 Clusters: Influence of Central Gold Atom

Tremble, Carrie
Counselor Education and Counseling Psychology
Research
The counselor experience in counseling clients who have been sexually assaulted

Vanfosson, Jason
Psychology
Travel
"Just Words. No More Pictures.": Queer Narrative Techniques in Winger

Wei, Wan
Economics
Research
The Effects of Unconventional U.S. Monetary Policy on Exchange Rate Volatility

Wyman, Davina Allie
Geosciences
Travel
Salinization of Asylum Lake: Effects on turnover and lake geochemistry

Yahamed, Azem Khalifa
Chemical Engineering and Paper Engineering
Research
Three dimensional printing in Medical applications

Zhou, Baochun
Counselor Education and Counseling Psychology
Travel
(1) Will You Be My Chair? The Important Yet Overlooked Role of Doctoral Advisors; (2) Phenomenological Examination of Doctoral Students' Experiences in the Doctoral Advising Relationship

SUPPORT FOR FACULTY SCHOLARS AWARD IN 2013-14

Adkison-Bradley, Carla

Counselor Education and Counseling Psychology
Perceived Severity of Parent Discipline Practices: A Study of Professional Counselors

Akanmu, Abiola

Civil and Construction Engineering
A Sustainable Approach to Building Design

\$2,000

Angles, Jeffrey

World Languages and Literatures
Orikuchi Shinobu and The Book of the Dead

\$2,000

Beane, Wendy Scott

Biological Sciences
Establishing Planaria as a Model for Whole Eye Regeneration

\$2,000

Blickle, Peter

World Languages and Literatures
Research for Novel

\$1,912

Bondarchuk, Karen

Frostic School of Art
Kith and Kin Catalogue

\$2,000

Borish, Linda

History
Charles Ornstein, the National Jewish Welfare Board, and American Jewish Sportswomen in the Boycott of the 1936 Summer Olympics

\$1,994

Coryell, Janet

History
Standing By: The Women of Ripcord

\$2,000

Docherty, Kathryn

Biological Sciences
Belowground Effects of Fire as a Restoration Tool in Michigan Tallgrass Prairies

\$2,000

Eng, Jacqueline

Anthropology
Bioarchaeological Study of Gender-Related Activity Among Ancient Populations of China

\$2,000

Gullon-Rivera, Angel

Family and Consumer Sciences
Evaluating the Effectiveness of Storytelling with Children with Behavioral and Emotional Challenges

\$2,000

Hillenbrand, James

Speech Pathology and Audiology
Software for Experiment Design and Control

\$2,000

Hoffmann, Susan

Political Science
Housing Finance Reform in the U.S.: Acquisition of Proprietary Data

\$787

Keele, Denise

Political Science and Environmental Studies
Environmental Litigation: Understanding Judicial Review of the U.S. Environmental Protection Agency

\$1,973

Kersting, Jessica

Speech Pathology and Audiology
Describing Mismatches in Reading Comprehension Performance Predicted By the Simple View of Reading Model

\$2,000

Kiddle, James

Chemistry
Unexpected Reaction of N-heterocyclic Carbenes in Water

\$2,000

Machiorlatti, Jennifer

School of Communication
Peace During War - Documentary Short Film

\$2,000

Maury, Nichole

Frostic School of Art
Fine Art Publication for Printmaking

\$1,996

Meng, Lei

Geography
Examining the Relationship Between Soil Moisture and Precipitation in CMIP5 Simulations

\$1,960

Obare, Sherine

Chemistry
Catalyst Development for the Photocatalytic Conversion of Biomass into Commodity Chemicals

\$2,000

Schoffers, Elke

Chemistry
Novel Receptor Agonists in Medicinal Chemistry

\$2,000

Smith, Jesse

Sociology
The Church of Unbelief: Understanding the Interactional Basis of America's Non-Believer's

\$2,000

Steuer, Susan

University Libraries
A Step Toward Grace: Widows and Religious Life in Late Medieval York (1300-1536)

\$2,000

Tripp, Brian

Biological Sciences
Investigation of C-Terminal Core Flagellin Residues on Export and Assembly of Flagella

\$2,000

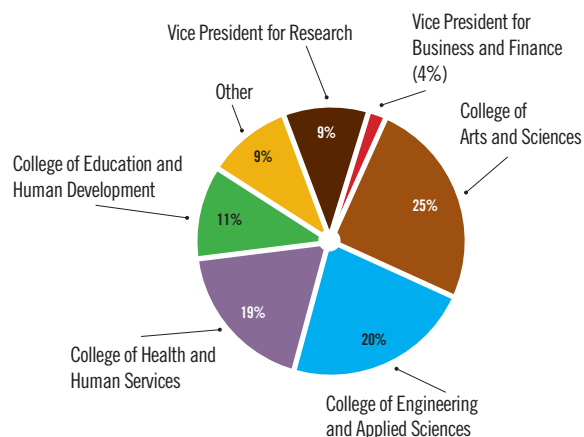
Wirtz, Kristina

Anthropology
Ethnographic Research in Cuba on Shifting Moral Narratives in a Time of Reform

\$1,995

External Funding Year-to-Date Award Recipients

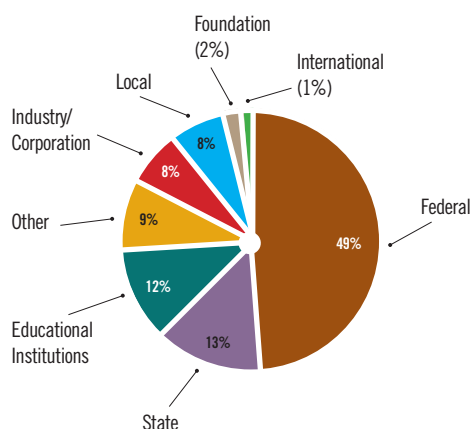
July 1, 2013 to June 30, 2014



College of Arts and Sciences	\$6,776,479	24.93%
College of Education and Human Development	\$3,093,539	11.38%
College of Engineering and Applied Sciences	\$5,470,020	20.13%
College of Health and Human Services	\$5,240,151	19.28%
Vice President for Business and Finance	\$1,747,930	6.43%
Vice President for Research	\$2,346,864	8.63%
College of Aviation	\$208,166	0.77%
The Graduate College	\$213,803	0.79%
Provost and Vice President for Academic Affairs	\$919,744	3.38%
Vice President for Diversity and Inclusion	\$1,055,563	3.88%
Haworth College of Business	\$81,349	0.30%
Vice President for Student Affairs	\$26,303	0.10%
TOTAL (as of 6/30/2014)	\$27,179,910	100%

External Funding Year-to-Date Award Sources

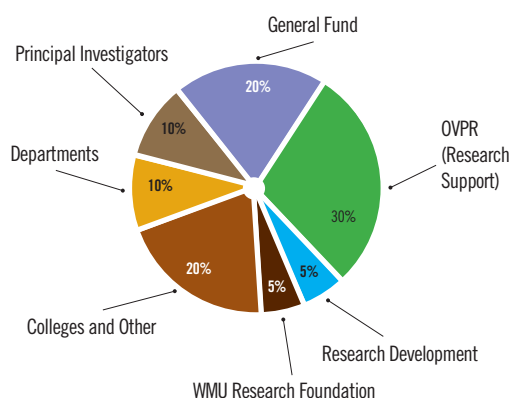
July 1, 2013 to June 30, 2014



Federal	\$13,338,619	49.08%
State	\$3,550,557	13.06%
Local	\$2,289,260	8.42%
International	\$177,058	0.65%
Industry/Corporation	\$1,915,609	7.05%
Educational Institution	\$3,130,796	11.52%
Foundation	\$409,681	1.51%
Other	\$2,368,330	8.71%
TOTAL (as of 6/30/2014)	\$27,179,910	100%

Distribution of Facilities and Administrative Funds Recovered

June 1, 2013 to May 31, 2014



TOTAL FUNDS RECOVERED	\$3,216,071	100%
Academic Units Research Support	\$1,286,428	40%
Principal Investigators	\$321,607	10%
Departments	\$321,607	10%
Colleges and Other Units	\$643,214	20%
University Research Support	\$1,286,429	40%
OVPR Research Support	\$964,821	30%
Research Development	\$160,804	5%
WMU Research Foundation	\$160,804	5%
University Cost Recovery	\$643,214	20%
General Fund	\$643,214	20%

EXTERNAL AWARDS TO FACULTY AND STAFF IN 2013-14 (JULY 1, 2013 TO JUNE 30, 2014)

Abubakr, Said M.
Chemical and Paper Engineering
Newell Rubbermaid
\$49,000

Abubakr, Said M.
Chemical and Paper Engineering
Newell Rubbermaid
\$21,935

Aktan, Haluk M.
Civil and Construction
Engineering
Michigan Department of
Transportation
\$249,163

Aktan, Haluk M.
Civil and Construction
Engineering
Michigan Department of
Transportation
\$36,542

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

Al-Fuqaha, Ala I.
Computer Science
Traumasoft, Inc.
\$27,593

Allhoff, Fritz
Philosophy
National Science Foundation
\$69,620

Anderson, Mary
Counselor Education and Coun-
seling Psychology
Michigan College Access
Network
\$10,000

Angles, Jeffrey Matthew
World Languages and Literatures
Covell, Stephen G.
Comparative Religion
Japan Foundation New York
\$60,630

Ari-Gur, Pnina
Mechanical and Aerospace
Engineering
Newell Rubbermaid
\$20,437

Ari-Gur, Pnina
Mechanical and Aerospace
Engineering
The Kazoo School
\$3,896

Atashbar, Massood Zandi
Electrical and Computer
Engineering
Michigan Space Grant
Consortium
\$10,000

Atashbar, Massood Zandi
Electrical and Computer
Engineering
University of Michigan
\$6,000

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

**Attanayake, Upul
Bandara**
Civil and Construction
Engineering
Wisconsin Department of
Transportation
\$84,999

Baker, Lisa E.
Psychology
University of Michigan
\$20,000

Baker, Lisa E.
Psychology
Tetra Discovery, LLC
\$20,000

Barnes, David A.
Geosciences
Battelle Memorial Institute
\$525,666

Barnes, David A.
Geosciences
University of Illinois at
Urbana-Champaign
\$100,000

Barnes, David A.
Geosciences
Battelle Memorial Institute
\$44,300

Barnes, David A.
Geosciences
Battelle Memorial Institute
\$22,525

Barnes, David A.
Geosciences
Battelle Memorial Institute
\$7,509

Bautista, Manuel A.
Physics
National Science Foundation
\$602,160

Bennett, David
Vice President for Research
The Michigan Initiative
for Innovation and
Entrepreneurship (MIIE)
\$42,000

Bennett, David
Vice President for Research
University of Michigan
\$12,500

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

Bensley, Robert J.
Human Performance and
Health Education
North Carolina Department of
Health and Human Services
\$67,900

Bensley, Robert J.
Human Performance and
Health Education
Washington State Department
of Health
\$35,500

Bensley, Robert J.
Human Performance and
Health Education
State of Colorado
\$22,600

Bensley, Robert J.
Human Performance and
Health Education
North Carolina Department of
Health and Human Services
\$21,252

Bensley, Robert J.
Human Performance and
Health Education
State of Utah
\$19,583

Bensley, Robert J.
Human Performance and
Health Education
Iowa Department of Public
Health
\$19,200

Bensley, Robert J.
Human Performance and
Health Education
North Carolina Department of
Health and Human Services
\$16,875

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

Bensley, Robert J.
Human Performance and
Health Education
State of Vermont Vermont
Department of Health
\$10,000

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

Bensley, Robert J.
Human Performance and
Health Education
North Dakota Department
of Health
\$9,300

Bensley, Robert J.
Human Performance and Health
Education
Alaska Department of Health
and Social Services
\$7,440

Bensley, Robert J.
Human Performance and
Health Education
State of South Dakota
\$3,300

Bensley, Robert J.
Human Performance and
Health Education
Inter Tribal Council of
Nevada WIC
\$3,000

Bergman, Karen
School of Nursing
Bronson Healthcare Group
\$26,255

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

Blair, Kevin L.
Chemistry
Stryker Instruments
\$20,000

Bolar, Gordon M.
WMUK Radio
Corporation for Public
Broadcasting
\$133,959

Bolar, Gordon M.
WMUK Radio
Corporation for Public
Broadcasting
\$7,399

Bolar, Gordon M.
WMUK Radio
Corporation for Public
Broadcasting
\$5,233

Brown, Lori J.
College of Aviation
Texas A&M University
\$77,072

Brown, Lori J.
College of Aviation
Texas A&M University
\$46,759

Brown, Lori J.
College of Aviation
Western Michigan University
Research Foundation
\$18,531

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

Bush, Jonathan
English
National Writing Project
Corporation
\$10,000

Carr, Erika Ann
Division of Multicultural Affairs
U.S. Department of Education
\$250,000

Carr, Erika Ann
Division of Multicultural Affairs
State of Michigan Workforce
Development Agency
\$148,530

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
State of Michigan Workforce
Development Agency
\$1,666

Carr, Steven
Computer Science
Michigan Technological
University
\$30,737

Cassidy, Daniel P.
Geosciences
AECOM Technology Corporation
\$11,818

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

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

Ciccantelli, Laura R.
Academic Advising
Cummings, Katharine E.
College of Education and Human Development
U.S. Department of Education
\$202,031

Coryn, Chris L.
Interdisciplinary Ph.D. in Evaluation
Springfield Technical Community College
\$14,234

Curtis, Amy B.
Center for Health Data Research, Analysis and Mapping
Michigan Department of Community Health
\$50,000

Davis, Jon D.
Mathematics
University of Rochester
\$113,823

Davis, Tamara J.
Haworth College of Business
Grand Valley State University
\$210,000

Davis, Tamara J.
Haworth College of Business
Grand Valley State University
\$40,000

Davis, Tamara J.
Palan, Kay M.
Haworth College of Business
Grand Valley State University
\$15,000

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

Dr. Carol Sundberg
Center for Disability Services
Kalamazoo Community Mental Health Services
\$588,698

Dr. Carol Sundberg
Center for Disability Services
Kalamazoo Community Mental Health Services
\$576,958

Dr. Carol Sundberg
Center for Disability Services
Kalamazoo Community Mental Health Services
\$554,114

Dr. Carol Sundberg
Center for Disability Services
Kalamazoo Community Mental Health Services
\$412,960

Durbin, Steven
Electrical and Computer Engineering
National Science Foundation
\$171,970

Emerson, Charles
Geography
University of North Carolina at Greensboro
\$12,157

Fredericks, Tycho K.
Industrial and Manufacturing Engineering
Haworth, Inc.
\$100,000

Butt, Steven E.
Fredericks, Tycho K.
Industrial and Manufacturing Engineering
Stryker Medical
\$58,550

Frieder, Jessica E.
Psychology
Summit Pointe
\$161,549

Frieder, Jessica E.
Psychology
Summit Pointe
\$130,756

Frieder, Jessica E.
Psychology
Summit Pointe
\$127,046

Garcia, Lisa R.
Haworth College of Business
Southwest Michigan Innovation Center
\$2,500

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
\$34,125

Ghantasala, Muralidhar K.
Mechanical and Aerospace Engineering
Central Manufacturing Technology Institute
\$10,000

Gilbert, Kathryn Marie
Parent and Family Programs
Kalamazoo Regional Educational Service Agency
\$17,035

Gilbert, Kathryn Marie
The Children's Place
Michigan Department of Education
\$5,061

Gilbert, Kathryn Marie
The Children's Place
Michigan Department of Education
\$2,797

Gilbert, Kathryn Marie
The Children's Place
Michigan Department of Education
\$1,410

Giscombe, Charlotte L.
Academic Skills Center
U.S. Department of Education
\$269,861

Gorczyca, Thomas W.
Physics
Smithsonian Astrophysical Observatory
\$30,000

Gorczyca, Thomas W.
Physics
Smithsonian Astrophysical Observatory
\$29,999

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
\$32,500

Greene, Timothy J.
Teaching, Learning and Educational Studies
The Woodrow Wilson National Fellowship Foundation
\$7,772

Gullickson, Arlen R.
The Evaluation Center
National Science Foundation
\$199,119

Gupta, Ajay K.
Computer Science
National Science Foundation
\$12,000

Gustafson, Peter A.
Mechanical and Aerospace Engineering
Western Michigan University
Homer Stryker M.D. School of Medicine
\$41,467

Gustafson, Peter A.
Mechanical and Aerospace Engineering
System Components, Inc.
\$4,958

Gustafson, Peter A.
Mechanical and Aerospace Engineering
Western Michigan University
Homer Stryker M.D. School of Medicine
\$4,782

Gustafson, Peter A.
Mechanical and Aerospace Engineering
System Components, Inc.
\$1,640

Han, Bernard T.
Business Information Systems
Secant Corporation
\$24,350

Hansford, Claudia M.
Mechanical and Aerospace Engineering
Stanford University
\$50,616

Harrison III, William B.
Geosciences
U.S. Geological Survey
\$32,548

Hartmann, David J.
Sociology
Michigan Department of Community Health
\$80,347

Hartmann, David J.
Sociology
Michigan Department of Community Health
\$48,208

Hartmann, David J.
Sociology
County of Kalamazoo
\$12,258

Hartmann, David J.
Sociology
County of Kalamazoo
\$11,378

Hartmann, David J.
Sociology
County of Kalamazoo
\$11,378

Hartmann, David J.
Sociology
County of Kalamazoo
\$11,378

Hartmann, David J.
Sociology
County of Kalamazoo
\$11,378

Hartmann, David J.
Sociology
County of Kalamazoo
\$9,978

Hartmann, David J.
Sociology
County of Kalamazoo
\$9,920

Hartmann, David J.
Sociology
Michigan Department of Community Health
\$8,992

Hassan, Wafa N.
World Languages and Literatures
U.S. Department of Defense
\$88,365

Hassan, Wafa N.
World Languages and Literatures
Qatar Foundation International
\$48,880

Henderson, Charles R.
Mallinson Institute for Science Education
Iowa State University
\$24,900

Henderson, Charles R.
Physics
National Science Foundation
\$37,845

Henry, James A.
School of Social Work
Black-Pond, Connie
Richardson, Margaret
Unified Clinics
U.S. Department of Health and Human Services
\$624,464

Henry, James A.
School of Social Work
Black-Pond, Connie
Richardson, Margaret
Unified Clinics
U.S. Department of Health
and Human Services
\$390,447

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
\$249,962

Henry, James A.
School of Social Work
Michigan Primary Care
Association
\$199,369

Henry, James A.
School of Social Work
Michigan Primary Care
Association
\$49,985

Henry, James A.
School of Social Work
RAND Corporation
\$27,000

Hernandez, Diana
Division of Multicultural Affairs
U.S. Department of Education
\$402,916

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

Holtzman, Jon D.
Anthropology
National Science Foundation
\$105,312

Hudson, Jennifer
Mechanical and Aerospace
Engineering
National Aeronautics and Space
Administration
\$99,999

Joslin, Katherine
Center for the Humanities
Open Doors Kalamazoo
\$2,100

Kayani, Asghar
Physics
Argonne National Laboratory
\$30,000

Kayani, Asghar
Physics
Hemlock Semiconductor
\$4,050

Kehew, Alan
Geosciences
U.S. Geological Survey
\$70,484

Kim, Dae Shik
Blindness and Low Vision Studies
U.S. Department of Health
and Human Services
\$421,125

Kim, Dae Shik
Blindness and Low Vision Studies
U.S. Department of Education
\$99,941

Kim, Dae Shik
Blindness and Low Vision Studies
Nissan Technical Center North
America
\$51,165

Kendrick, Joel
Auxiliary Enterprises
Various Industries
\$718,145

Kendrick, Joel
Auxiliary Enterprises
Various Industries
\$225,069

Kendrick, Joel
Auxiliary Enterprises
Various Industries
\$44,102

Kohler, Paula D.
Vice President for Research
University of North Carolina
\$531,641

Kohler, Paula D.
Vice President for Research
California State
University-Northridge
\$79,095

Kujawski, Daniel
Mechanical and Aerospace
Engineering
Office of Naval Research
\$30,000

Kujawski, Daniel
Mechanical and Aerospace
Engineering
Western Michigan University
Research Foundation
\$12,401

Kujawski, Daniel
Mechanical and Aerospace
Engineering
Office of Naval Research
\$27

Kwigizile, Valerian
Civil and Construction
Engineering
Michigan Department of Trans-
portation
\$295,582

Kwigizile, Valerian
Civil and Construction
Engineering
Michigan Department of
State Police
\$73,496

Lawie, Tracey
Miller Auditorium
Arts Midwest
\$3,400

Lee, Helen
Blindness and Low Vision Studies
U.S. Department of Education
\$99,941

Leja, James A.
Blindness and Low Vision Studies
Marquette-Alger Regional
Educational Service Agency
\$126,774

Leja, James A.
Blindness and Low Vision Studies
Marquette-Alger Regional
Educational Service Agency
\$36,500

Lemberg, David
Geography
Michigan Department of
Environmental Quality
\$17,805

Lemmer, Kristina
Mechanical and Aerospace
Engineering
Michigan Space Grant
Consortium
\$5,000

List, Daniel J.
Physical Plant
Michigan Department of
Environmental Quality
\$757,214

Litvinova, Elena
Physics
Michigan State University
\$20,857

Litvinova, Elena
Physics
National Science Foundation
\$18,033

Long, Richard G.
Washington, Earlie M.
College of Health and
Human Services
Wayne State University
\$102,300

Long, Richard G.
College of Health and Human
Services
Wayne State University
\$45,409

Lu, Yan
Biological Sciences
National Science Foundation
\$522,747

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

Magura, Stephen
The Evaluation Center
Kent Intermediate School
District (KISD)
\$34,551

Mallak, Larry A.
Industrial and Manufacturing
Engineering
Stryker Instruments
\$19,921

Mallak, Larry A.
Industrial and Manufacturing
Engineering
Stryker Instruments
\$18,867

Mallak, Larry A.
Industrial and Manufacturing
Engineering
Stryker Instruments
\$3,700

Malott, Richard W.
Psychology
Kalamazoo Regional Educational
Service Agency
\$125,568

Malott, Richard W.
Psychology
Kalamazoo Regional Educational
Service Agency
\$3,000

Manley, Robert Adam
Family and Consumer Sciences
Michigan Department of
Education
\$13,330

Mansberger, Nancy B.
Educational Leadership, Research
and Technology
U.S. Department of Education
\$927,274

McCloud Sr, Donald G.
Haenicke Institute for
International Studies
Confucius Institute
Headquarters
\$167,058

McGee, Heather M.
Psychology
Allegan Area Educational
Service Agency
\$70,401

McGrew, Timothy
Philosophy
University of Oxford
\$779,072

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

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

Meade, David J.
Manufacturing Engineering
Landscape Forms, Inc.
\$10,000

Meade, David J.
Manufacturing Engineering
Bold Companies, Inc.
\$6,500

Meade, David J.
Manufacturing Engineering
Dart Container Corporation
\$5,500

Meade, David J.
Manufacturing Engineering
Denso International America
\$5,000

Meade, David J.
Manufacturing Engineering
Poly-Wood, Inc.
\$5,000

Meade, David J.
Manufacturing Engineering
Michigan Department of
Environmental Quality
\$1,550

Means, Stephanie N.
The Evaluation Center
Literacy Center of
West Michigan
\$5,783

Means, Stephanie N.
The Evaluation Center
Literacy Center of
West Michigan
\$5,277

Means, Stephanie N.
The Evaluation Center
Literacy Center of
West Michigan
\$3,784

Meyer, Donald J.
Economics
The W.E. Upjohn Institute for
Employment Research
\$10,000

Mezei, Gellert
Chemistry
National Science Foundation
\$284,833

Miller, Michael G.
Human Performance and Health
Education
Allegan General Hospital
\$38,000

Miller, Michael G.
Human Performance and Health
Education
Bronson Orthopedic and Sports
Medicine
\$1,000

Miller, Michael G.
Human Performance and Health
Education
Allegan General Hospital
\$600

Mondala, Andro
Chemical and Paper Engineering
SmithBucklin Corporation
\$75,476

Mueller, John M.
Management
Charles Koch Foundation
\$7,000

Nelson, Nickola W.
Speech Pathology and Audiology
American Heart Association
\$26,000

Oh, Jun-Seok
Civil and Construction Engineering
U.S. Department of
Transportation
\$1,414,100

Oh, Jun-Seok
Civil and Construction Engineering
U.S. Department of
Transportation
\$1,402,200

Olsen, William C.
English
National Endowment for the Arts
\$10,000

Palan, Kay M.
Haworth College of Business
University of Michigan
\$35,000

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

Peterson, Stephanie M.
Psychology
Michigan Department of
Community Health
\$500,000

Peterson, Stephanie M.
Psychology
Kalamazoo Community Mental
Health Services
\$64,018

Peterson, Stephanie M.
Psychology
Residential Opportunities
Incorporated
\$47,925

Puckett, Scott A.
Enrollment Management
Western Michigan University
Research Foundation
\$10,000

Ramrattan, Sam N.
Industrial and Manufacturing
Engineering
Sintokogio, LTD
\$60,000

Ramrattan, Sam N.
Industrial and Manufacturing
Engineering
Pekarovic, Jan
Chemical and Paper Engineering
The American Foundry
Society, Inc.
\$10,000

Razi, Muhammad A.
Business Information Systems
Kellogg Company
\$15,000

Robertson, Kelly N.
The Evaluation Center
International Labor Organization
\$12,001

Rodriguez, Jorge
Industrial and Manufacturing
Engineering
Denso North America Foundation
\$50,000

Rossbach, Silvia
Biological Sciences
Oklahoma State University
\$9,921

Rossbach, Silvia
Biological Sciences
Enbridge Energy Partners, LP
\$3,750

Saeed, Fahad
Computer Science
Illinois Institute of Technology
\$40,000

Schroeter, Daniela
The Evaluation Center
U.S. Department of Agriculture
\$149,100

Schroeter, Daniela
The Evaluation Center
Integra Institute
\$23,968

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

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

Schroeter, Daniela
The Evaluation Center
Advantage Performance
Group, Inc.
\$2,000

Shao, Xiaoyun
Civil and Construction Engineering
Northeastern University
\$8,926

Sharer, Michael S.
Vice President for Research
Michigan Economic
Development Corp.
\$50,000

Shen, Jianping
Educational Leadership, Research
and Technology
U.S. Department of Education
\$722,492

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

Stapleton, Susan R.
Chemistry
National Science Foundation
\$20,000

Stapleton, Susan R.
The Graduate College
National Science Foundation
\$69,475

Stapleton, Susan R.
The Graduate College
National Science Foundation
\$46,000

Sultan, Mohamed
Geosciences
National Aeronautics and Space
Administration
\$100,724

Sultan, Mohamed
Geosciences
National Aeronautics and Space
Administration
\$97,744

Sultan, Mohamed
Geosciences
Saudi Geological Survey (SGS)
\$60,000

Sydlik, Mary Anne
SAMPI
National Science Foundation
\$172,804

Sydlik, Mary Anne
SAMPI
Wayne County Regional
Educational Services Agency
\$125,000

Sydlik, Mary Anne
SAMPI
Michigan Department of
Education
\$104,443

Sydlik, Mary Anne
SAMPI
National Science Foundation
\$75,000

Sydlik, Mary Anne
SAMPI
Michigan State University
\$31,057

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

Sydlik, Mary Anne
Jennness, Mark
SAMPI
EarthForce
\$15,940

Sydlik, Mary Anne
Ruhf, Robert J.
SAMPI
Saginaw Valley State University
Regional Math & Science Center
\$10,000

Sydlik, Mary Anne
SAMPI
Detroit Zoological Society
\$8,852

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
\$425,515

Tsang, Edmund
College of Engineering
and Applied Sciences
Kline, Andrew A.
Chemical and Paper Engineering
University of Michigan
\$102,400

Van Houten, Ron
Psychology
Michigan Department
of Transportation
\$218,513

Van Houten, Ron
Psychology
Battelle Memorial Institute
\$132,402

Vandiver, Beverly
Counselor Education and
Counseling Psychology
Pennsylvania State University
\$33,798

Wall Emerson, Robert
Shawn
Anderson, Dawn
Blindness and Low Vision Studies
U.S. Department of Education
\$299,227

Wall Emerson, Robert
Shawn
Blindness and Low Vision Studies
University of Oregon
\$133,044

Wang, Yuan-kang
Sociology
Chiang ching-Kuo Foundation
\$15,000

Way, Ineke F.
School of Social Work
Fordham University
\$9,002

Whitehurst, Geoffrey
Richard
College of Aviation
Texas A&M University
\$65,804

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
\$149,598

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
\$149,366

Wilson, Joseph A.
Extended University Programs
PNC Foundation
\$12,000

Wingate, Lori A.
Gullickson, Arlen R.
The Evaluation Center
National Science Foundation
\$543,868

Wingate, Lori A.
Gullickson, Arlen R.
The Evaluation Center
National Science Foundation
\$539,893

Wingate, Lori A.
Martens, Krystin S.
The Evaluation Center
Delaware State University
\$47,571

Wingate, Lori A.
The Evaluation Center
University Of Wisconsin-
Madison Institute for Research
on Poverty
\$16,938

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

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

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

Wuosmaa, Alan H.
Physics
U.S. Department of Energy
\$185,000

Young, Brian
Chemical and Paper Engineering
Western Michigan University
Research Foundation
\$19,000

Zhang, Jiabei
Human Performance and Health
Education
U.S. Department of Education
\$299,464

Zielinski, Ruth
School of Nursing
University of Michigan
\$3,011

RESEARCH AND CREATIVE ACTIVITIES POSTER DAY 2014 GRADUATE STUDENT PARTICIPANT WINNERS

First Place:
**WMU Graduate Brass
Quintet**
Ray Bazz, trumpet
Elizabeth Glasser, horn
Anibal Hernandez, trombone
Adam Phillips, trumpet
Chance Trotman-Huiet, tuba
School of Music,
College of Fine Arts
"A Morning with the Graduate
Brass Quintet: Selections from
David Sampson's Morning Music"
Sponsor:
Dr. Martha Councell-Vargas

Second Place:
Hongyan Cui
Educational Leadership, Research
and Technology,
College of Education and Human
Development
"A Monte Carlo Study of Optimal
Rank Order Relationships with
Criterion Scores"
Sponsor: Dr. Brooks Applegate

Third Place:
Tetiana Petrachkova
Biological Sciences,
College of Arts and Sciences
"Is Specter a Mutation in the Cell
Cycle Gene Cyclin B1?"
Sponsor: Dr. Don Kane

Saad H. Al-Otaibi
Chemistry,
College of Arts and Sciences
"Two-photon Absorption
Spectroscopy to Differentiate
Chromophore-DNA Binding
Interactions"
Sponsor: Dr. Ramakrishna Guda

Damir Museav
Biological Science,
College of Arts and Sciences
"Is a Mutation in the Cell Cycle
Gene CDC20 Causing the Zombie
Mutant Phenotype in Zebrafish?"
Sponsor: Dr. Don Kane

Emma Powell
School of Public Affairs and
Administration,
College of Arts and Sciences
"The Value of Networking:
Allocating Resources to
Participate"
Sponsor: Dr. Robert Peters

David Sellers
Chemistry,
College of Arts and Sciences
"Synthesis and Characterization
of Novel 1,10-phenanthroline
Derivatives as Sensors for Nerve
Agents"
Sponsor: Dr. Elke Schoffers

Viraj D. Thanthirige
Chemistry,
College of Arts and Sciences
"Optical Properties of Bi-icosa-
hedral Au25 and Au24 Clusters:
Influence of Central Gold Atom"
Sponsor: Dr. Ekkehard Sinn

Bridget Dooley
English,
College of Arts and Sciences
"They are All Turning to Sand"
Sponsor: Dr. Thisbe Nissen

**WMU Graduate Wind
Quintet**
School of Music,
College of Fine Arts
Lucas Florin, oboe
Jeremy Larson, horn
Whitney Miller, bassoon
Carmen Ritchie, flute
Elisabeth Waldburger, clarinet
"Roaring Fork: Eric Ewazen's
Tribute to the Landscapes of the
American West"
Sponsor:
Dr. Martha Councell-Vargas

Walters, J.L
Harvey, Eric
Zimmerman, Zach J.
Psychology,
College of Arts and Sciences
"The Neurobehavioral
Consequences of Chronic
Atrazine Exposure During Early
Development in Male and Female
Sprague-Dawley Rats"
Sponsor: Dr. Lisa E. Baker

TECHNOLOGY DEVELOPMENT FUND 2014 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 awarded three proposals for 2014.

Brown, Lori
Aviation Flight Science
Next Gen Information Systems for Pilots:
Low Cost Mobile Training Solutions
\$18,531

Kujawski, Daniel
Mechanical and Aerospace Engineering
An Interactive Online Fatigue Expert Design Tool
\$12,401

Puckett, Scott
Sisk, Michael
Enrollment Management
Mobile Counselor
\$10,000

Young, Brian
Chemical and Paper Engineering
Composite Matrix Material Development for
Low Cost, Disposable, Reagent Free, Resistance-Based
Multiplex, Point-of-Use immunodiagnostic Biosensor
Platform Technology
\$19,000

FACULTY RESEARCH AND CREATIVE ACTIVITIES AWARD 2014 RECIPIENTS

Baker, Lisa

Psychology
Impact of Stress on Abuse
Liability of Illicit Drug Mixtures

\$10,000

Beane, Wendy Scott

Biological Sciences
Identifying Calcium Pathways
that Control Regeneration
of Shape

\$10,000

Burns, Clement

Physics
Studies of Iridates with Strong
Spin-Orbit Coupling Effects

\$10,000

Crotchett, Cat

Frostic School of Art
Giving Pattern Dimension:
A Study In Encaustic Painting

\$8,370

Cure Vellojin, Laila

*Industrial and Manufacturing
Engineering*
Systems Simulation Analysis of a
Hospital Rapid Response System

\$9,846

Daftary, Dolly

School of Social Work
The Impact of Market-Driven
Development on Dryland Com-
munities in India

\$10,000

Essani, Karim

Biological Sciences
Oncolytic Tanapoxvirus and
Ovarian Cancer

\$10,000

Harkness, Edward

Frostic School of Art
15 New Sculptures Inspired by
50,000 Year-Old Aboriginal Art

\$10,000

Linn, Cindy

Biological Sciences
Oncolytic Potential of
Tanapoxvirus for Retinoblastoma

\$10,000

Obare, Sherine

Chemistry
Catalyst Design and Evaluation
for the Production of High Value
Chemicals From Biorenewable
Resources

\$10,000

Ohanna, Natalio

Spanish
The Captives of Algiers, Lope de
Vega and the Moriscos

\$10,000

Pekarovicova,

Alexandra
Chemical and Paper Engineering
Biomass Based Food Packaging
Films

\$10,000

Rudge, David

Biological Sciences
Using History to Improve the
Learning of Science

\$6,318

Shao , Xiaoyun

*Civil and Construction
Engineering*
Smart Real-Time Hybrid
Simulation to Advance
Earthquake Engineering
Experimental Methods

\$9,935

Solomon, Paul

Frostic School of Art
Boundaries of Eden

\$9,918

Veeck, Ann

Marketing
Food Choice Influences of Urban
Chinese Teenagers

\$9,836

Wardrop, Daneen

English
Persona Poems: Feral

\$3,700

Yun, Zee-Sun

Family and Consumer Sciences
Motivating Sustainable
Consumption and Disposal
of Clothing

\$2,028

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
Transportation Research Center for Livable Communities

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 for Academic Affairs

Center for Research on Instructional Change in Postsecondary Education
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
National Secondary Transition Technical Assistance Center

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Vice President for Research*

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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.

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diana.hearit@wmich.edu

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[MLIVE.COM /Landov](http://MLIVE.COM/Landov)



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