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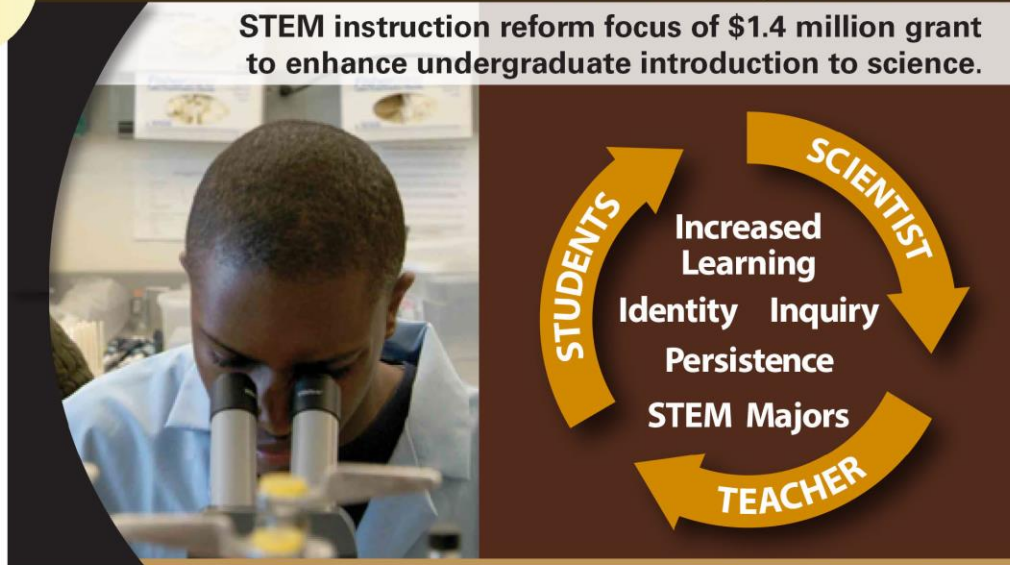


College of Arts and Sciences

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E-News Issue 14: June 2014

STEM instruction reform focus of \$1.4 million grant to enhance undergraduate introduction to science.



CAS News

STEM instruction reform focus of \$1.4 million Howard Hughes Medical Institute grant
WMU wins 2014 Climate Leadership Award from Second Nature

Faculty Feature

Dr. Christine Byrd-Jacobs named Graduate College associate dean
Multiple System Atrophy research by Dr. Charles Ide leads to repeat gift

Alumni Profiles

Matt Bahleda '11, political science and philosophy graduate, starts legal career in California
Jacqui Volkmann '08, organizational communication alumna, talks business and bracelets
WIDR's first station manager, David Gorski '76, manages multimedia services

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Update your
information



STEM instruction reform focus of \$1.4 million Hughes Medical grant

by Cheryl Roland

May 29, 2014 | WMU News



WMU secured one of only 37 awards made by HHMI this year.

KALAMAZOO, Mich.—A **\$1.4 million grant** from the [Howard Hughes Medical Institute](#) to Western Michigan University will be **used to enhance undergraduate introduction to science**, with the goal of attracting and retaining more students in the STEM disciplines—science, technology, engineering and mathematics.

The five-year research and development effort, announced May 29 by HHMI, will be centered on WMU's introductory courses in biological sciences. The grant is one of just 37 awards made by HHMI this year to American research universities invited to compete in the institute's 2014 funding round. A total of 203 universities were invited to apply, and the eventual winners were selected after three rounds of peer review.

Objective of the funded project

"Developing Scientists as Teachers; Developing Students as Scientists: A Dual Approach to Transforming the Culture of Undergraduate Biology Education" is the title of the WMU effort. The extensive work will focus on both reforming the curriculum and enhancing the professional development of the faculty members and teaching assistants who introduce undergraduates to the scientific experience.

The aim of the work is to combat the dramatic loss of prospective scientists that occurs in the first months of American students' college careers, says **Dr. Renee Schwartz**, associate professor of biological sciences, who will direct the research along with her colleagues **Dr. John R. Geiser**, also an associate professor of biological sciences; and **Dr. Susan R. Stapleton**, dean of the Graduate College, a longtime science and science education researcher, and a previous HHMI grant recipient.

According to Hughes Medical Institute, nearly 40 percent—about 1.2 million—of the 3 million students who annually enter college do so with the intent to major in a STEM discipline. Only 40 percent of those prospective science students go on to earn a bachelor's degree in that STEM discipline, with most switching majors during their first two years on campus. Among minority students, 80 percent of those who begin in the STEM disciplines turn away from science during their freshman year.

Schwartz says the planned curricular changes at WMU will include making sure that students have an authentic scientific experience in their first science classes on campus. A typical introductory course, she says, will see students spend about half of the semester actively engaged in a science project that requires them to work as a team to develop a research question, design a research effort to seek answers, and collect and analyze data to answer their research questions.

"Students really need to know about the nature of science and the nature of scientific inquiry," Schwartz says. "Those two qualities are far too often overlooked. Students need the opportunity to learn what science is and what scientists do. By allowing them to have an authentic science experience early and to think of themselves as scientists, we can retain them and attract others."

Other elements of the effort

- The use of peer leaders—students who have been engaged and successful in introductory classes who then work with the next incoming group as undergraduate lab assistants.
- Development of science learning communities for students, student peer leaders, teaching assistants and faculty members.
- Faculty professional development opportunities that include workshops for WMU instructors in all STEM disciplines as well as for STEM faculty from other colleges and universities in the region.

Schwartz says her department has a head start on the work, thanks to a two-year project just completed with funding from the National Science Foundation. That effort focused on reforming just one introductory biology course and its related labs. Although the project length was too short to measure changes in student retention, they were able to measure real improvement in student learning outcomes and the instructional ability of teaching assistants. The HHMI funding will leverage those findings to reform introductory courses in the department on a massive scale.

"We're really seeking to establish transformative programs that help students integrate their acquired knowledge into a bigger whole," Schwartz says. "That bigger whole is all about passion and commitment to the discipline of science."

Howard Hughes Medical Institute

Headquartered in Chevy Chase, Maryland, the Howard Hughes Medical Institute plays an influential role in advancing scientific research and education in the United States. Its scientists, located across the nation, have made important discoveries that advance fundamental understanding of biology and its relation to human disease. The institute also aims to transform science education into a creative interdisciplinary endeavor that reflects the excitement of real research. In fiscal year 2013, HHMI invested \$727 million in U.S. research and provided \$80 million in grants and other support for science education.

WMU's last HHMI award, directed by Stapleton and co-directed by Schwartz was a four-year, \$1 million grant received in 2010 to enhance the science training of prospective high school science teachers. That effort concludes in 2015.

WMU wins 2014 Climate Leadership Award from Second Nature

by Cheryl Roland
June 3, 2014 | WMU News



WMU's sustainability efforts date back decades.

KALAMAZOO, Mich.—**Western Michigan University has been selected to receive a 2014 Climate Leadership Award**, recognizing the campus for its innovation and leadership in sustainability.



Award winners were selected by the Second Nature board.

The award is from Second Nature, a national nonprofit organization that works to transform higher education to create a healthy, just and sustainable society. The awards are presented annually to signatory institutions that are part of the American College and University Presidents' Climate Commitment. The awards recognize institutions that "demonstrate innovative and advanced leadership in education for sustainability and climate mitigation and adaptation."

"The United States National Climate Assessment demonstrates that human-driven climate change is no longer a problem for the future--it has moved firmly into the present as campuses and communities across the country increasingly feel its impacts," says **David Hales**, president of Second Nature. "There is much more work to be done as we prepare to live in the climate of the future. More than ever, higher education has a critical role to play as this year's Climate Leadership Award winners demonstrate with their leadership and exemplary actions."

This year, the award program's fifth, drew the most competitive pool of nominations to date, according to Second Nature officials. The six winners were among 20 finalists chosen by Second Nature's board and representing the diversity of higher education institutions across the U.S. Earlier this spring, all 20 finalists participated in an online video competition featuring each campus' respective sustainability accomplishments. The WMU video was the top vote-getter in the video competition, garnering nearly 9,000 votes.

"This process has been extraordinarily gratifying," says WMU President **John M. Dunn**. "The competition allowed us an opportunity to reflect upon our many accomplishments, as well as have some fun and celebrate those achievements. Now, winning the award raises the bar and challenges us to tackle the next level of work."

A long history of sustainability efforts

WMU's sustainability efforts, which are part of its strategic plan, date back to 1971 when the University established Michigan's first environmental studies program. In 1980, the University launched a quasi-green revolving fund--the first in the nation--that is used to fund energy-saving projects. Energy savings from those efforts have been captured and reinvested in additional energy-saving initiatives over the years. A number of other higher education institutions have since adopted similar funding mechanisms. Additional work at WMU has focused on solar power, electric vehicles, food and gardening storm water management and interdisciplinary efforts to build sustainability into curricula and research. In 2010, WMU students became the first student body in Michigan to initiate and approve a fee that supports campus sustainability initiatives and provides funding for student research.

About Second Nature

Second Nature is the support organization of the American College and University Presidents' Climate Commitment. The ACUPCC is an active partnership among 684 colleges and universities to accelerate the education, research, and community engagement needed to slow and stop human-induced climate change while setting an example by eliminating net greenhouse gas emissions from their own operations. Learn more at secondnature.org and presidentsclimatecommitment.org.

Related articles

[WMU named finalist for national Climate Leadership Award](#) | April 1, 2014

[WMU video wins viewer support competition hosted by Planet Forward](#) | April 23, 2014

Faculty researcher, advisor named Graduate College associate dean

by Cheryl Roland

May 30, 2014 | WMU News



Byrd-Jacobs

KALAMAZOO, Mich.—**Dr. Christine Byrd-Jacobs**, professor of biological sciences, will become the associate dean of the Western Michigan University Graduate College **effective July 1**.

Byrd-Jacobs' appointment was made pending approval of the Board of Trustees. In her new role, she will provide leadership in graduate curriculum and program development,

assessment and review, and graduate student and graduate faculty success, among other areas.

Christine Byrd-Jacobs

Byrd-Jacobs, who came to WMU as an assistant professor in 1996, serves as her department's graduate advisor. She is an active researcher whose focus is regeneration of the adult brain after injury, utilizing the zebrafish olfactory system as a model. She has published 21 peer-reviewed research articles, secured nearly \$2 million in grant funding and served as sole investigator on four major grants from the National Institutes of Health. In 2008, her research accomplishments were recognized when she received the College of Arts and Sciences Faculty Achievement Award in Research.

Byrd-Jacobs has mentored nine master's-level students, three doctoral students and 71 undergraduate students, and she has served on the thesis committees for an additional 42 students. She teaches in the classroom at both the undergraduate and graduate level and has been involved in curriculum reform, including taking the lead to develop a professional development course for graduate students in biological sciences.

In addition to her role as graduate advisor for her department, Byrd-Jacobs serves as vice chair of the Graduate Studies Council, is a member of the Academic Program Review and Planning Project Management Team, the Institutional Animal Care and Use Committee, and the Association for Chemoreception Sciences Annual Meeting Program Committee. She also has served as reviewer for 20 journals and for national and international funding agencies.

Byrd-Jacobs earned a bachelor's degree in biology from Avila College and a doctoral degree in molecular and cellular biology from the University of Arizona. She did postdoctoral research in neuroscience at the University of Virginia.

Multiple System Atrophy Research Leads to Repeat Gift



Dr. Charles Ide, Western Michigan University Gwen Frostic Professor of Biological Sciences and Director of the Great Lakes Environmental and Molecular Sciences Center, has been researching a deadly and debilitating form of Parkinson's disease called Multiple System Atrophy. His interest in MSA was one that developed when he was recruited to do the first global gene expression study on MSA brain tissue. Ide was contacted because he was using new genomics based tools to define biochemical pathways explaining the exact molecular underpinnings of environmental based diseases. After his findings on MSA were published, he presented a talk at an MSA conference in Nashville, Tenn., and seeing the impact on the lives of both the patients

and caregivers increased his interest in MSA and set him on a mission to do more.

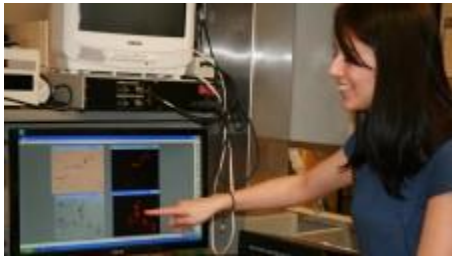
In 2010, Frank Cervone was diagnosed with MSA. During his search for treatments and the latest research, he discovered Ide. Cervone was impressed with Ide's research and a partnership was born. Interested in helping to advance Ide's research, Cervone made the decision to send all of the proceeds from the Dayton Barefoot Runners 5-mile run to benefit MSA research to WMU. Since 2012, the Dayton Barefoot Runners group has donated nearly \$30,000 to WMU to benefit the research taking place in Ide's lab. On May 9, 2014, Cervone, his wife Susan, and Dr. Doug Brandt, the creator of the Barefoot Runners campaign to increase MSA awareness, made the drive from Dayton, Ohio to Kalamazoo, Mich., to deliver a third donation to WMU from the most recent race. When presenting the gift to Ide, Cervone said, "We give here because we know 100% of it goes to research."

Dr. Ide's lab

The lab at WMU has shown that in MSA, similar to Parkinson's disease, problems with the part of the cell that creates energetic compounds cause a normal protein called alpha synuclein to misfold (fold into an incorrect structure). In Parkinson's the neurons that make the protein die. In MSA, the neurons eject the misfolded protein and nearby cells that provide insulation for the wire-like part of the neuron pick up the synuclein and then die. Through his research, Ide's gene expression data on MSA brain cells and studies on cell "death" inducing proteins in MSA, have in part defined the biochemical pathways that are involved. Once these cells start to die, there appears to be an autoimmune response against the deteriorating insulation. Ide and his team are following two tracks in their current research:

- Develop a tissue culture model of MSA for screening drugs and natural compounds that could help MSA patients.
- Continue studies on MSA brain tissue regarding the possible autoimmune component of MSA.

Contributors to MSA research at WMU



contributed laboratory and statistical expertise.

In addition to many Department of Biological Sciences faculty, both undergraduate and graduate students have contributed publication quality data to MSA research including Ashley Bostic, Paul Caccamo, Elizabeth Haworth-Hoepfner, Derrick Hilton, Junjie Hu, Karen Van Wagner, Jeff Walburn and Megan Welter, all of whom have graduated from WMU. Annamarie Valenti, a current graduate student, and Emelia Moore, a current undergraduate student, are working on the cell culture model. Dr. Bharti Katbamna, WMU professor of Speech Pathology and Audiology, has also

WMU Alumnus Starts Legal Career



O'Melveny & Myers LLP has a long history of practicing law and has earned a strong reputation in one of the largest economy and leading technology states—California. In November 2014, a Western Michigan University graduate hopes to add to that history as he creates a legacy of his own. Matt Bahleda '11 is a graduate of WMU's College of Arts and Sciences and the Lee Honors College. He graduated summa cum laude and studied political science and philosophy. Bahleda was initially interested in WMU because he wanted to follow in his brother's footsteps, but made the decision to attend because of the wonderful opportunity WMU offered. At WMU he knew he could pursue an education in a great environment with professors that would help him achieve his goals.

Bahleda was accepted to the University of Michigan Law School and received his Juris Doctor degree in May 2014. Throughout law school, he focused heavily on his education and earned a position as an intern for the Department of Justice in Southern California for the summer of 2012. After his positive experiences on the West Coast, he applied strictly to law firms in California and has found a home as an associate with O'Melveny & Myers.

Bahleda credits the faculty and staff of Western Michigan University with making his success a possibility and now, a reality. His professors throughout his time in the College of Arts and Sciences played a crucial role in providing him with the knowledge and skills necessary to succeed. When asked what he would like to share with students looking to follow a similar path, Bahleda

suggests getting involved. He advised that students "join the mock trial team and hone your trial and public speaking skills. Pledge a Greek organization and get involved with their many philanthropic outings. Focus on getting the best grades possible and develop strong relationships with your professors, many of whom have extremely helpful advice for how to succeed and want nothing more than to help you reach your goals." Bahleda also shared that when preparing for law school admissions "the LSAT is arguably the most important factor and it's a test that anyone can master with enough time and commitment so start early!" Bahleda recommends that students really enjoy their time at WMU "because there is no place like it and the times and experiences you have there will be a part of your life forever."

Dumela Beads

Posted on Thursday, May 22, 2014



College is a place where people come to learn as much as they can. For the most part, this happens in the classroom, but sometimes in the midst of all the classes and programs students come across something that sticks in a different way; on a more spiritual level. That is exactly what happened to Jacqui Volkmann (*BA '08, Organizational Communication*) when she first heard the word 'dumela.'

Dumela (pronounced doo-may-luh) is a greeting used primarily in South Africa. The word is translated directly to 'good day', but often comes with a different meaning; I affirm you, I believe in you, and I see the great potential in you.

"I was taught about dumela in the summer of 2004 by one of my favorite professors at WMU, Dr. Orbe," Volkmann said. "I was an Orientation Student Leader and Dr. Orbe was facilitating our diversity training."

Students of Dr. Mark Orbe, professor of Communication, know the word dumela

well, as he begins every class session with the greeting.

Volkmann graduated from WMU and moved to Atlanta where she decided to keep the idea behind dumela alive and strong by making beaded bracelets. People soon began to notice her bracelets and started asking for them as gifts. She knew she was on to something.

“There were several bead stores in my area so I figured, why not?” Volkmann said. “I can have fun and make myself some meaningful accessories. I do have a strong creative outlet and like to foster that in different ways.”

The bracelets began growing in popularity. When Volkmann was approached by a local boutique asking to sell her beads in their store, she knew it was time to go bigger; and Dumela Beads, her business, was born.

“The most important factor to me was that I wanted something to set these bracelets apart from the others,” Volkmann said. “I wanted to spread the Dumela love in a larger capacity and a uniquely different way. I wanted every recipient of the bracelet to know it was an affirmation.”

Dumela Beads has shipped bracelets throughout the U.S. and Canada, and just made their first trip overseas to Taiwan earlier this month. Volkmann said that her bracelets are a go-to gift, especially for people who are going through tough times. Each bracelet comes with a card stating the meaning of dumela, and Volkmann says it really drives home the message of love from family and friends.

“My vision for Dumela Beads has grown larger than I ever dreamed,” Volkmann said. “People are truly embracing the meaning of Dumela worldwide!”

Volkmann has since returned to WMU as a graduate student in the WMU School of Communication. To learn more about Dumela Beads, please visit dumelabeads.com.

Posted by Stan Sulewski



WIDR FM's First Station Manager

Posted on Tuesday, May 27, 2014

David Gorski (*BA '76, Communication Arts and Sciences*) is the Manager of Multimedia for the Marketing and Communications division at College of Dupage in Glen Ellyn, Illinois, but before joining this award-winning organization he got his start as WIDR's first station manager.

Gorski was a transfer student from St.

Clair County Community College and heard about a committee meeting to start a new student FM station at Western Michigan University. WIDR had been around since 1952, but did not become an FM station until 1975. The meeting was called to find management staff, so Gorski mentioned that he had experience as the station manager at WSGR-FM in Port Huron, Michigan. Before the evening was over he had been elected the first station manager of WIDR.

“Being the first station manager was an honor and a huge responsibility,” Gorski said. “The station’s programming was an immediate hit with the students and the community. We had a talented on-air staff and some really creative management. Within a very short time we were one of the top student stations in the state and the record companies took notice.”

Within the first year, Gorski and his WIDR team launched two major community events; an indoor winter music festival at a hotel ballroom in downtown Kalamazoo, and a springtime outdoor music festival called Kite-Flight. Both were largely successful, the former of the two being at full capacity.

Gorski also worked as a board operator and announcer at WMUK as well as a Television Services student aide. While working for Television Services, Gorski was involved in a project that required photographing the movement of vocal cords; something he credits as one of the stranger projects he was involved with.

Upon graduating, Gorski took on a position at a small college in northwest Illinois where he ran the television studio and taught Introduction to Mass Communication and Basic Television Production. In 1980, Gorski was hired by College of Dupage to work in Television Production Services. Two years later he took a break from the college to pursue other interests, including starting his own production and consulting business, and then returned to the college to join Audio, Radio and Television Services; now known as Multimedia Services. Gorski has since been employed with DuPage for 22 years.

While Gorski has seen much success since leaving WMU, he still fondly remembers his time as WIDR’s first FM station manager.

“As we were the first crew, it was wonderful to have such a creative staff, a very talented program director, a top-notch engineer, a creative music director, and dedicated on-air staff,” Gorski said. “Without them, the station would not be what it is today.”

Learn more about WIDR by visiting widrfm.org.

Posted by Stan Sulewski