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November and December 2017 archived news items

Researchers' work puts WMU at center of national STEM network

CONTACT: CHERYL ROLAND
NOVEMBER 1, 2017 | WMU NEWS



Beach

KALAMAZOO, Mich.—Western Michigan University researchers have parlayed a series of federal and foundation grants and connections with some of the nation's leading higher education organizations into an effort that positions WMU at the central hub of a network of national educators working to build systemic change that will boost undergraduate academic achievement.

WMU's Center for Research on Instructional Change in Post-Secondary Education is led by **Drs. Andrea Beach** and **Charles Henderson**. They have just received a new \$905,141 award from the National Science Foundation to support a national network—the **Accelerating Systemic Change Network**, or ASCN—that builds on what they and other national researchers have learned about improving instruction in the disciplines known as STEM—science, technology, engineering and mathematics. The network's focus will be on using those lessons learned to create systemic change and build learning environments that will improve student achievement.

"Knowing what needs to be done does not equal knowing how to move an institution or department toward that goal," says Beach.

Because change processes are complex and research-based STEM discipline change practices are relatively new, she says, there is currently no organization that coordinates new initiatives and findings. This is why ASCN was created.

"People interested in changing the undergraduate STEM experience are all over the place, geographically, and people in different disciplines have difficulty connecting with each other," Beach says. "Because of that, change is slower than it should be. The ASCN steering committee consists of 20 administrators, evaluators, faculty members, economists and representatives of as many varied disciplines as possible to focus on both the creation and management of knowledge. We're looking at the big issues that must be addressed to create the systemic change needed."

FOCUSING ON 'THE BIG QUESTIONS'



Henderson

Beach and Henderson say ASCN will be a bridge between explicit academic knowledge about change in the STEM disciplines and the on-the-ground knowledge of active teachers and change agents. The researchers will be carefully looking at the intersection of theory and change strategies as they consider what they already know will work to improve student achievement. Their focus will be on framing the network around big questions, such as:

- How to use theory.
- How to evaluate and measure costs.
- Determine the kind of leadership necessary for systemic change.

- How to measure effectiveness.
- How to incentivize organizations to change.
- How to ensure equity and inclusion as change takes place.

The new NSF award was preceded, in 2016, by a \$794,612 grant from the Leona M. and Harry B. Helmsley Charitable Trust, as well smaller scale support from AAU—the Association of American Universities—the Alfred P. Sloan Foundation, and the Howard Hughes Medical Institute.

The 2016 funding allowed ASCN to begin its work. In June, ASCN partnered with the Association of Public and Land-grant Universities to bring 40 higher education institutions together for a workshop on diversity and inclusion in undergraduate STEM education. In August, the network launched a Change Agent Institute for Scaling and Sustaining Institutional Change, a yearlong team-based professional development experience to support systemic change. That effort began with a 2.5-day kickoff event for seven institutional teams in Portland, Oregon.

NEW NSF FUNDING WILL LAUNCH CHANGE NETWORK

The new NSF funding will support a five-year network development initiative that will officially begin in **January 2018**. In addition to WMU's Beach and Henderson, the work will be led by **Dr. Linda Slakey** of AAU and the Association of American Colleges and Universities and **Dr. Maura Borrego** of the University of Texas Austin. Slakey is the former director of the NSF Division of Undergraduate Education and Dean of the College of Natural Sciences and Mathematics at the University of Massachusetts Amherst. Borrego is a longtime NSF-funded researcher at the University of Texas Austin who has focused on undergraduate engineering education.

Henderson notes the ASCN will be centered at WMU and reflect WMU's commitment to STEM education.

"WMU is heavily involved nationally as a leader in STEM education change," he notes. Our research center here has 11 projects currently underway, and 10 of them are STEM projects. Right now, we have \$6.7 million in active grants. With this ASCN effort, our goal is to establish a community of change agents and researchers who will be actively involved in producing knowledge about how change happens in STEM."

In addition to their research roles, both Beach and Henderson are veteran faculty members at WMU. Beach is a professor of educational leadership, research and technology. Henderson is a professor of physics and director of the Mallinson Institute for Science Education.

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Two WMU faculty engineers garner MEDC funding for early-stage work

CONTACT: CHERYL ROLAND
NOVEMBER 21, 2017 | WMU NEWS



Atashbar

LANSING, Mich.—A football helmet capable of assessing concussive-strength impact and 3-D printing of complex machined parts are the focus of work by two members of Western Michigan University's engineering faculty who are among five innovators around the state to win new funding from the Michigan Economic Development Corp. to develop early-stage technology projects.

Dr. Massood Atashbar, professor of electrical and computer engineering, and **Dr. Pavel Ikononov**, associate professor of engineering design, manufacturing and management systems, were announced **Nov. 8** as winners of support from the MEDC's ADVANCE Proof of Concept Grant Fund in its first round of funding of nearly \$335,000 to five early-stage technology projects within universities across the state of Michigan.

Atashbar won support for his Impact Sensor and Rigid-flex Readout Electronic System. The project focuses on developing an electronics system that helmet manufacturers can offer that will automatically record and communicate the occurrence of potentially dangerous impacts.

Ikonomov won his funding for his 3-D Metal Device and Process. The technology allows customers to eliminate the steps and costs of machining parts on separate stations. The process enables the manufacture of 3-D printed parts with complex geometries without using support structures required with existing 3-D printing technologies.

The ADVANCE Proof of Concept Grant Fund opened last spring to provide funding opportunities with an incentive for researchers to engage with their university's technology transfer office to advance their technologies toward commercialization. Funds can be used to prove project concepts through a variety of opportunity development tasks, such as market studies, customer discovery efforts, detailed IP analysis and prototype development. Achievement of early milestones and market validation will also make projects more attractive for licensing and eligible for other statewide university commercialization programs.



Ikonomov

The fund is administered by Michigan State University with money from the MEDC's Entrepreneurship and Innovation initiative. Through this fund, the MEDC provides up to \$40,000, with matching contributions from the universities, to support, advance and encourage early-stage technologies to engage with their university's technology transfer teams and begin commercialization activities.

"As our state continues to implement key programs that focus on the commercialization of university projects, the ADVANCE Program is critical in that it supports researchers in the very

early stage of validating their technology and beginning the process of developing a commercialization path," says Denise Graves, MEDC university relations director.

Beside the two WMU researchers, awards in the first funding round of the ADVANCE Program also went to two MSU researchers and one from Ferris State University.

Additional information about the program, including the criteria, funding cycle details and application materials can be found at innovationcenter.msu.edu/advance.com.

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Rutgers vice president to take research reins at WMU

CONTACT: CHERYL ROLAND

DECEMBER 15, 2017 | WMU NEWS



Kinzy

KALAMAZOO, Mich.—Following a nationwide search, Western Michigan University has named **Dr. Terri Goss Kinzy** of Rutgers, The State University of New Jersey, as WMU's new **vice president for research**.

Kinzy, currently vice president for research at Rutgers, will take the reins of WMU's research enterprise, **effective Jan. 8**. Her appointment was announced by WMU President Edward Montgomery.

"We're extremely fortunate to find someone with Dr. Kinzy's particular background and experience," says Montgomery. "She has a deep appreciation already for this University's extensive research and creative strengths and a profound understanding of the benefits a discovery driven agenda can have for our students and the broader society we serve. This is a wonderful match."

In addition to leading Rutgers' campuswide research efforts, Kinzy is a professor of biochemistry and molecular biology and pediatrics. She joined Rutgers' Robert Wood Johnson Medical School faculty in 1995. Internationally known for her work in the area of gene expression, she has served as director of the RWJMS/Rutgers/Princeton University M.D./Ph.D. program, executive director of the medical school's DNA Core Facility and senior associate dean of its Graduate School of Biomedical Sciences and Research.

In her role as chief research administrator at Rutgers, Kinzy oversees the offices responsible for research and sponsored programs, corporate contracts, grant and contract accounting, facilitation of major research initiatives, and corporate engagement.

"I'm really excited about the opportunity to become part of the WMU community and to work with President Montgomery, " says Kinzy. "He's expressed a bold vision for WMU's future that includes a focus on research that will advance economic development. I'm eager to be part of that work."

Kinzy's own research in the areas of gene expression, protein synthesis and drug development has resulted in funding from the National Institutes of Health, the National Science Foundation and other agencies, and she has organized and chaired sessions for numerous international meetings and served on or chaired study sections for both the NIH and the NSF.

She has mentored numerous postdoctoral fellows, graduate students, undergraduates and high school students. Her mentoring of others has been recognized with the New Jersey Association for Biomedical Research Outstanding Mentor Award and the R. Walter Schlesinger Basic Science Mentoring Award. She was also named a fellow in the Hedwig van Ameringen Executive Leadership in Academic Medicine Program, and she has published in the areas of research training for medical students, peer mentoring of graduate students and graduate education.

"I'm looking forward to being able to leverage my background in medicine to build on strengths I've found at WMU and work in partnership with WMU's Homer Stryker M.D. School of Medicine," Kinzy says.

Active in a number of professional organizations, she is a fellow of the American Association for the Advancement of Science. She has served in multiple roles with the American Society for Biochemistry and Molecular Biology and now serves on that organization's political affairs advisory committee. In addition, she is a member of the Council on Research Executive Committee for the Association for Public and Land-grant Universities.

Kinzy has long-term Midwestern ties, having earned a bachelor's degree from the University of Akron and a doctoral degree from Case Western University before doing post-doctoral work at Carnegie Mellon University. She began her career in Warrensville, Ohio, with a two-year stint at BP America as a chemist and staff scientist for biofuel development.

In her new role at WMU, she will replace Dr. Daniel Litynski, who returned to the engineering faculty last summer after serving for seven years as vice president for research. Dr. Sherine Obare has been serving as interim vice president since his departure.

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