

# Focus

## UNIVERSITY RESEARCH

# When research gets a helping hand

Through endowed professorships, donors help sustain — and grow — the academy

By **TIMOTHY MAGAW**

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**E**arlier this year, the title on Alexis Abramson's business card got quite a bit longer.

The Milton and Tamar Maltz Professor of Energy Innovation at Case Western Reserve University might be a bit of a mouthful, but it's a designation that comes with quite a bit of prestige and, perhaps more importantly, latitude. If it weren't for this endowed position, she wouldn't have the resources to fund a student who's developing a program using Microsoft's virtual reality HoloLens technology to demonstrate how a power plant works — something that could dramatically alter how her students learn about energy sources.

"At a research university, we're expected to bring in grant money to do the majority of our work. It takes hundreds of thousands of dollars to run our labs," said Abramson, also the director of the Great Lakes Energy Institute. "What's difficult is when we have an exploratory project like this in mind."

Endowed professorships and chairs aren't a new phenomenon in higher education. The first endowed chair in North America reportedly dates back to 1721, with the Hollis Professorship of Divinity at Harvard. However, they are becoming an increasingly valuable, self-sustaining tool as the competition for premiere academic talent escalates and traditional public funding sources erode. Interest income from these endowed funds, for instance, can be used to cover a professor's salary and provide a number of other ancillary benefits like research support. Endowed positions can also be useful for retaining a university's rising stars.

On the local front, CWRU, John Carroll University, Oberlin College and, just recently, Kent State University have all made raising funds for endowed positions a priority in their latest fundraising campaigns. Notably, CWRU raised funds for a staggering 88 endowed positions during its recent \$1.5 billion fundraising push.

"I don't know whether lay people understand that for faculty members at large research institutions having a

title like this emphasizes their excellence in a field," said Suzanne Rivera, CWRU's vice president for research. "When they hear 'professor,' they might assume all professors are created equal."

### Raising the bar

Kent State for years has been trying to elevate its research enterprise, and upon the arrival of Beverly Warren as its president, she hired Paul DiCorleto, a veteran researcher from the Cleveland Clinic's Lerner Research Institute, to lead that renewed charge. A key prong of DiCorleto's plan to strengthen Kent State's research muscle is to secure more funding for endowed positions. Endowing a position a Kent State can cost anywhere between \$500,000 and \$2.5 million, DiCorleto said.

After all, a university's research enterprise is only as good as its faculty, and when you have an endowed position, DiCorleto said, "The quality of applicants goes way up." *The Chronicle of Higher Education* last year characterized endowed chairs as "the foolproof recruiting tool."

"If we really want to grow the research effort here and be competitive, we need endowed funds for chairs or professorships," said DiCorleto, Kent State's vice president for research and sponsored programs. "When you're recruiting, to be able to put that in a description for the job can make a big difference."

During DiCorleto's 13 years at the Clinic, DiCorleto said the institution secured 15 new endowed chairs for research. At current, Kent State boasts 13 endowed positions — funders including Bridgestone and the John S. Knight Foundation.

Even smaller institutions without a doctoral program like John Carroll are making endowed positions a piece of their fundraising efforts. John Carroll recently finished off its Forever Carroll campaign, which brought in more than \$100 million. In that campaign, the university secured \$6.1 million for four endowed positions. So, why does a liberal arts university with an undergraduate emphasis need a high-profile researcher?

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## Endowed professors at a glance



### Alexis Abramson

The Milton and Tamar Maltz Professor of Energy Innovation  
Case Western Reserve University

**What she does:** Abramson's research included the study of the design and synthesis of unique nanomaterials for use in alternative energy applications. She's also director of the Great Lakes Energy Institute.



### Antonie van den Bogert

Parker Hannifin Endowed Chair in Human Motion and Control  
Cleveland State University

**What he does:** The objective of his research is to improve advanced prosthetics and orthotics in their ability to replicate the movement of healthy human limbs. Van den Bogert is an internationally renowned researcher in biomechanics.



### Robert Giacalone

Raymond and Eleanor Smiley Chair in Business Ethics  
John Carroll University

**What he does:** Giacalone will focus on business ethics at the undergraduate and graduate levels and organize conferences and symposia to assist business leaders, students and faculty with insight into the challenges of ethical and moral leadership in today's business world.



### Matthew Becker

W. Gerald Austen Endowed Chair in Polymer Science and Polymer Engineering  
University of Akron

**What he does:** Becker's lab develops biodegradable polymers for medical applications. One application cited by the Knight Foundation, which funded the chair, has included a polymer tube designed to replace sections of arm and leg bones destroyed by injury.



### Mark Goodman

Knight Chair in Scholastic Journalism  
Kent State University

**What he does:** Goodman is an expert in media law and student free speech rights. Before joining Kent State as the first Knight chair, he served for 22 years as executive director of the Student Press Law Center.



## UNIVERSITY RESEARCH

## Five research projects to watch

Northeast Ohio is home to a bevy of incredible colleges and universities — all of which are conducting research that has the potential to save lives and transform our economy. And while much of this work is being done in conjunction with other researchers around the country and globe, there's no denying the intellectual capital housed in Northeast Ohio. Here is just a sampling of the novel research taking place.



**Jae-Won Choi**  
Associate professor  
University of Akron

**Details:** 3D printing has the potential to upend the manufacturing industry, and Choi, a mechanical engineering professor who joined the University of Akron in 2011, is developing technology that could expand the revolutionary process even further. Choi has developed a technique for 3D printing called "direct-print photopolymerization." The process extrudes polymer from a nozzle in layers and uses light to simultaneously cure it, as opposed to forming something from a vat of material. This's a complicated way of saying in more sensitive areas like medicine. Choi, meanwhile, did his post-doctoral research at W.M. Keck Center for 3D Innovation at the University of Texas at El Paso.



**Elena Manilich**  
Assistant professor  
John Carroll University

**Details:** In conjunction with the Cleveland Clinic, Manilich — a computer scientist by training — is leading a project that has the potential to save lives. Manilich's team has developed software that uses data-mining algorithms that can detect errors in blood tests before physicians even have the opportunity to see the results or enter them into a patient's electronic medical record. "If these errors aren't detected, the patient could potentially be harmed," said Manilich, who formerly worked at the Digestive Disease Institute at the Clinic. "Incorrect medications could be prescribed. There are some very serious implications." Using data science, Manilich said she and her team "can approach medical problems with a whole different perspective."



**Anant Madabhushi**  
Professor  
Case Western Reserve University

**Details:** The adage that a picture is worth a thousand words has taken on new meaning when it comes to research undertaken by Madabhushi that has the potential to lead to new frontiers in the world of personalized cancer diagnostics. Madabhushi's team, for instance, is developing algorithms that can quickly scan a pathology image — going beyond what the human eye can see — and determine the aggressiveness of a breast cancer diagnosis, allowing oncologists to make more appropriate treatment plans. That means a patient could avoid the damaging effects of chemotherapy. Last year, the National Cancer Institute funded a five-year, \$3.3 million grant for Madabhushi's research team that includes academics from around the country.



**Liya Yin and William Chilian**  
Associate professor; professor  
Northeast Ohio Medical University

**Details:** Cardiologists have long known about a life-saving vessel in the heart called a collateral that serves as a bridge for bloodflow between two major arteries. That said, many patients don't have enough of these collaterals or those collaterals are too small to carry blood when needed. Yin and Chilian are exploring ways, using stem cells, to make those vessels grow bigger and faster — something that could ultimately serve the same function as a bypass and re-route blood to area of the heart receiving insufficient blood because of a blockage, according to information provided by the university. This year, the pair received \$435,371 from the National Heart, Lung and Blood Institute of the National Institutes of Health to support the research's next stage.



**Katherine Judge**  
Associate professor  
Cleveland State University

**Details:** Psychological stresses like embarrassment, isolation and depression can ravage patients suffering from a traumatic brain injury as well as their caregivers. A research team involving Judge is moving into the fourth year of a project that is exploring ways to test non-pharmacological, psychosocial interventions for both the patients and their caregivers to treat these issues. "There is no way to fix any of these conditions," said Judge, whose research originally began with dementia patients. "There's no solution. For caregivers and individuals it can be overwhelming and isolating. I feel rewarded when these techniques help them lead high quality lives." Judge is partnering with the Veterans Health Administration on the research project.

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