




UMB News

“MPowering” Collaboration and Innovation

December 15, 2021 | By [Mary Therese Phelan and Becky Ceraul](#)

[University of Maryland Strategic Partnership: MPowering the State](#)  (MPower) announced the appointment of eight professors from the [University of Maryland, Baltimore](#) and the University of Maryland, College Park, recognizing the value of collaboration between the two universities, recognizing the value of collaboration between the two institutions.



From top left, clockwise: Bruce Yu, Rao Gullapalli, Deanna Kelly, Luana Colloca

The MPower Professorship recognizes, incentivizes, and fosters collaborations between faculty who are working together on the most pressing issues of our time.

To be considered for the MPower Professorship, faculty must demonstrate collaboration on strategic research that would be unattainable or difficult to achieve by UMB or UMCP acting independently of one another, and must embrace the mission of MPower – to collaboratively strengthen and serve the state of Maryland and its citizens.

Each professor will receive \$150,000, allocated over three years, to apply to their salary or to support supplemental research activities. These funds recognize, enable, and support strong collaborations between faculty in the joint research enterprise between UMB and UMCP.

“With this investment, we are accelerating the pace of our research and the pace of our impact on the lives of Marylanders,” said UMB President **Bruce E. Jarrell, MD, FACS**. “By supporting these MPower Professors, we are recognizing the commitment and drive

they’ve already shown, and we are opening up new possibilities for their work, giving them the freedom to think big, tackle new problems, and achieve results much quicker than ever before.”

Research areas will focus on pain modulation, quality control of vaccines and the study of ways in which symptoms of schizophrenia can be detected, according to UMB’s newly announced MPower Professors, Bruce Yu, PhD, a professor of pharmaceutical sciences at the [University of Maryland School of Pharmacy \(UMSOP\)](#) and director of the School’s [Bio- and Nano-Technology Center](#); **Deanna L. Kelly, PharmD, BCPP**, professor in the Department of Psychiatry at the [University of Maryland School of Medicine \(UMSOM\)](#) and an affiliate professor at UMSOP; **Luana Colloca, MD, PhD, MS**, professor, Department of Pain and Translational Symptom Science at the [University of Maryland School of Nursing \(UMSON\)](#) and adjunct professor, Department of Anesthesiology, UMSOM; and **Rao P. Gullapalli, PhD, MBA, MS**, professor and vice chair for research in the Department of Diagnostic Radiology and Nuclear Medicine at UMSOM as well as the administrative director of the Center for Advanced Imaging Research within the department.

“As the first joint appointment between UMB and UMCP in 2007, I’m thrilled to receive the honor and recognition bestowed by the inaugural MPower Professorship,” Yu said. “Our current work on biomanufacturing technologies can contribute to interactions between the two universities and to the economy and pandemic readiness in Maryland and beyond.”

Yu's lab at the University System of Maryland's joint Institute for Bioscience and Biotechnology Research advances the development of analytical technologies for characterizing complex drugs and vaccines. He has worked on protein biophysics, imaging agents, and biomaterials engineering. Most recently, his group pioneered a noninvasive analytical technology, termed wNMR, which has generated wide interest in the pharma/biotech industry and instrument makers. Current research in his lab focuses on applying wNMR to biologics manufacturing and quality control, including detecting counterfeit and substandard vaccines and drugs. (*See video below.*)

"We think this work is important because it can fill in data gaps that currently exist in the quality control and quality assurance for biologics," he said. "Such a level of quality control can reduce quality-related adverse reactions among patients and improve people's confidence in vaccines. I think we can help to fight vaccine hesitancy to improve the success of vaccination programs."

Deanna L. Kelly, PharmD, BCPP, said she was surprised to receive a phone call from Jarrell telling her the exciting news of being named an MPower Professor.

"I wasn't quite sure why he was calling me," she said, noting it is unusual for her to receive a phone call from the University president. "I had no idea. I was really honored to have received this award because I knew there's probably a lot of people that are deserving and I was just shocked and really excited."

Kelly, who has led and been involved in numerous clinical trials involving schizophrenia and severe mental illness and has been active in psychopharmacology research for the past 24 years, said she is still deciding how to distribute the funds received with the professorship.

Some of the monies will be used to expand two projects already in the works, said Kelly, who is also the director and chief of the Treatment Research Program at the Maryland Psychiatric Research Center.

One of the projects will expand upon a recently received National Science Foundation (NSF) award helping to find ways to predict psychiatric symptom changes during office visits, she said, adding such research may help prevent people from relapsing or going into the hospital. Kelly and collaborators are working on building a large database where people can submit psychiatric symptom data, language data, social media data, and audio and visual data to find out what might be able to predict symptom changes.

"We have an NSF grant, but it's actually very limited funds that we have to set up the database so part of the MPower Professorship funds are going to be used for expanding that project," Kelly said.

Another area her team is working on focuses on researching oxidative stress measures in schizophrenia, she said. Oxidative stress is an imbalance between free radicals and antioxidants in one's body.

"We have applied for a patent with College Park where we're able to detect a global signature of oxidative stress in the blood and we've been doing pilot studies for several years now to validate the assay and use it to be able to detect differences between schizophrenia and healthy controls," Kelly said.

The value of collaboration between UMB and UMCP cannot be overstated, Kelly said.

On a personal level, "it's been a life changer in my career," she said, noting she has been on collaborative teams with College Park for more than a decade. "We've received several NIH grants based on this work that have taken us down different roads than we would have ever had before, so I couldn't have went about this alone, and they could not have went about it alone, but when we went together, right, we've gone further than we would have had we tried this alone."

Rao P. Gullapalli, PhD, MBA, MS, is the director of the University of Maryland Core for Translational Research in Imaging at Maryland, and the co-director of the Center for Metabolic Imaging and Therapeutics. He has expertise in developing novel magnetic resonance imaging techniques for clinical research and conducts research on developing new imaging biomarkers associated with traumatic brain injury.

His has been focused on developing new imaging biomarkers associated with traumatic brain injury and utilizing multi-parametric imaging for improving the sensitivity and specificity of injury detection. Recent developments of diffusion kurtosis imaging for the detection of microstructural changes and neuro-inflammation, and brain network changes using resting state and task related functional magnetic resonance (MR) are being translated to the clinic. He is also involved in the development of novel MR guided neuro-interventions and provide augmented reality solutions within the MR imaging environment.

Luana Colloca, MD, PhD, MS, is an internationally known researcher on the role of placebo mechanisms for optimal pain management and treatment of alcohol and drug use disorders.

"It has been a wonderful feeling," Colloca said on being named an MPower Professor. "I've been working with UMCP for three to four years now and we have done things that my lab alone or his lab alone might not have been able to do, so this collaboration has been very productive and enjoyable."


Monies from the professorship will be used to strengthen the collaboration between UMB and UMCP, Colloca said. "In particular, we want to focus on the next generation of scientists here at the University of Maryland School of Nursing. MPower Scholars (from College Park) can come here to continue work on their projects, not just in summer but in general, come to UMB to have an experience in science and research that they would not otherwise have unless they came to UMB."

Collaborating in the field of neuroscience and research of the science of pain can lead to a "real way to translate our knowledge to improve lives for people who suffer from chronic pain," Colloca said.

She learned of receiving the award after getting an email from Jarrell’s office inviting her to an urgent Zoom call. “I didn’t expect it at all. I was thrilled.”

Colloca said she will spend some time thinking of what she wants to do in the next three years and how the funds can be best used to expand collaboration between UMB and UMCP regarding research on placebos and pain modulation.

“We can do things that can make research on placebos and virtual reality even more tangible, so that students can get excited and we attract brilliant brains to work with us.”

The University of Maryland Strategic Partnership: *MPowering the State*  is a collaboration between the state of Maryland’s leading public research institutions, UMB and UMCP. It leverages the sizable strengths and complementary missions of both institutions to strengthen Maryland’s innovation economy, advance interdisciplinary research, create opportunities for students, and solve important problems for the people of Maryland and the nation. Working together, UMB and UMCP achieve innovation and impact through collaboration.

The University of Maryland Strategic Partnership Act of 2016 strengthened and formalized the structured relationship between UMB and UMCP, which began in 2012. The law deepened the alliance and enabled UMB and UMCP to pursue even greater transformative change and impact, far surpassing what each institution could do independent of the other.

SHARE THIS ARTICLE



The University of Maryland, Baltimore is the founding campus of the University System of Maryland.
620 W. Lexington St., Baltimore, MD 21201 | 410-706-3100
© 2021 University of Maryland, Baltimore. All rights reserved.