



UMB News

MPOWER Funds 17 New Research Collaborations

March 2, 2022 | By [Rose Kendig](#)

The Joint Steering Council of the [University of Maryland Strategic Partnership: MPowering the State](#) (MPower) a formal collaboration of the [University of Maryland, Baltimore](#) (UMB) and the [University of Maryland, College Park](#) (UMCP), has awarded funding to 17 targeted collaborative research seed grants led jointly by UMB and UMCP researchers.

After a review and ranking of 52 submissions by faculty peers from both UMB and UMCP, the Steering Council awarded a total of \$3 million to invest in the future and kickstart new research in critical areas of paramount importance to the state and the nation. The funding of projects ranges from \$49,000 to \$250,000 per award, for durations of six to 24 months.



Gregory Ball, PhD

The selected teams capitalize on the research expertise of UMB and UMCP and showcase collaboration across multiple colleges and schools. Teams consist of researchers from 12 schools and colleges, including UMCP's A. James Clark School of Engineering, College of Agriculture and Natural Resources, College of Arts and Humanities, College of Behavioral and Social Sciences, Robert H. Smith School of Business, College of Computer, Mathematical, and Natural Sciences, and College of Education, and University of Maryland School of Medicine at UMB, and UMB's schools of pharmacy, dentistry law, and social work.

The six targeted research areas are: Artificial Intelligence (AI) and Medicine; Cybersecurity and Homeland Security; Neuroscience and Aging; Pandemic Readiness, Resilience and Mitigation; Racial and Social Justice; and Violence and Crime Reduction.

"These seed grant awards highlight the outstanding interdisciplinary and high-impact research faculty in Baltimore and College Park are conducting to address the most complex challenges society is facing," said Gregory F. Ball, PhD, vice president for research at UMB and UMCP. "My hope is that these grants strengthen current collaborations, promote new ones and lead to future funding opportunities to support innovative and transformative research."

A look at the winning projects:

Theme: Artificial Intelligence and Medicine

- "AI Discovery and Sensing for Biomarkers of Chronic Pain",

Robert Ernst, PhD, professor, University of Maryland School of Dentistry, UMB, and Pamela Abshire, PhD, professor, A. James Clark School of Engineering, UMCP

"Applying Natural Language Processing to Electronic Health Records to Prevent Infections with Highly Antibiotic-Resistant Bacteria", **Katherine Goodman, PhD, JD**, assistant professor, University of Maryland School of Medicine, UMB, and Phillip Resnik, PhD, professor, College of Arts and Humanities, UMCP

"AI to Determine Alterations of 4-Dimensional Erythrocyte Flow in the Retina", **Osamah Saeedi, MD**, associate professor, University of Maryland School of Medicine, UMB, and Yang Tao, PhD, professor, A. James Clark School of Engineering, UMCP

"Precision Therapy for Neonatal Opioid Withdrawal Syndrome (NOWS)", **Amber Beitelshes, PharmD, MPH**, associate professor, University of Maryland School of Medicine, UMB, and Ritu Agarwal, PhD, Distinguished University Professor, Robert H. Smith School of Business, UMCP

"Exploring the Hidden Links Between Cannabis and Cardiovascular Health Using Deep Learning", **Jean Jeudy, MD**, professor, and **Timm-Michael Dickfeld, MD**, professor, both from University of Maryland School of Medicine, UMB, and Eleonora Tubaldi, PhD, assistant professor, A. James Clark School of Engineering, UMCP

"Blended Reality Immersion for Geriatric Head Trauma: The BRIGHT Study", **Mira Ghneim, MD**, assistant professor, University of Maryland School of Medicine, UMB, and Donald Bolger, PhD, associate professor, College of Education, UMCP

Theme: Cybersecurity and Homeland Security

"Tackling Terror in the Homeland: An Empirical and Legal Analysis of the Debate Over a New Domestic Terrorism Law", **Michael Vesely, JD**, senior research associate, University of Maryland Francis King Carey School of Law, UMB, and Michael Jensen, PhD, senior researcher, National Consortium for the Study of Terrorism and Responses to Terrorism (START), UMCP

"Predicting Clinical Features of Parkinson Disease Using Machine Learning Analysis of Mobility Data from a Wearable Sensor", **Rainer von Coelln, MD**, assistant professor, University of Maryland School of Medicine, UMB, and Michael P. Cummings, PhD, professor, College of Computer, Mathematical, and Natural Sciences, UMCP

"A Patient Data-Driven Approach to Improve Counseling and Hearing Health", **Ronna Hertzano, MD, PhD**, professor, University of Maryland School of Medicine, UMB, and Matthew Goupell, PhD, professor, College of Behavioral and Social Sciences, UMCP

"Ubiquitin-Proteasome System Mechanisms Underlying Abstinence-Dependent Methamphetamine Craving", **Marco Venniro, PhD**, assistant professor, University of Maryland School of Medicine, UMB and Xuan (Anna) Li, PhD, assistant professor, College of Behavioral and Social Sciences, UMCP

"Noradrenergic Dysfunction Impairs Olfaction-Mediated Social Interaction in Alzheimer's Models", **Joseph Kao, PhD**, professor, and **Adam Puche, PhD**, professor, both from University of Maryland School of Medicine, UMB, and Ricardo Araneda, PhD, professor, College of Computer, Mathematical, and Natural Sciences, UMCP

Theme: Neuroscience and Aging

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Theme: Pandemic Readiness, Resilience and Mitigation

"Development of Vaccines Against Emerging Avian Influenza Viruses for Use in Humans and Poultry: A One-Health Approach to Prevent Zoonotic Virus Spillover Events and Support Pandemic Preparedness", **Lynda Coughlan, PhD**, assistant professor, University of Maryland School of Medicine, UMB, and Andrew Broadbent, PhD, assistant professor, College of Agriculture and Natural Resources, UMCP

"Viral and Host Determinants of SARS-CoV-2 Variant Replication", **Matthew Frieman, PhD**, associate professor, University of Maryland School of Medicine, UMB, and Margaret Scull, PhD, assistant professor, College of Computer, Mathematical, and Natural Sciences, UMCP

"Scalable Manufacture of mRNA Vaccines for Agile Pandemic Response", **Peter Swaan, PhD**, professor, University of Maryland School of Pharmacy, UMB, and Don DeVoe, Professor, PhD, A. James Clark School of Engineering, UMCP

Theme: Racial and Social Justice

"Investigating Racial and Social Disparities in Health Outcomes Among Maryland Youth in Foster Care Exposed to Cross-State Air Pollution", **Roderick Rose, PhD**, assistant professor, University of Maryland School of Social Work, UMB, and James Archsmith, PhD, assistant professor, College of Agriculture and Natural Resources

"Disproportionality in Communication Impairments: Leveraging Technology to Provide Individualized Language Assessments of Bilingual Children", **Michael Woolley, PhD, MSW**, professor, University of Maryland School of Social Work, UMB, and Yi Ting Huang, PhD, associate professor, College of Behavioral and Social Sciences, UMCP

Theme: Violence and Crime Reduction

"Comparing Firearm Violence from Trauma Units and Police", **Kyla Liggett-Creel, PhD**, LCSW-C, Clinical Assistant professor University of Maryland School of Social Work, UMB, and Gary LaFree, PhD, professor, College of Behavioral and Social Sciences, UMCP

About the University of Maryland Strategic Partnership: *MPowering the State*

[The University of Maryland Strategic Partnership: *MPowering the State*](#) is a collaboration between the state of Maryland's two most powerful public research institutions: the University of Maryland, Baltimore (UMB) and the University of Maryland, College Park (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 deepens the alliance and enables UMB and UMCP to pursue even greater transformative change and impact, far surpassing what each institution could do independent of the other.

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