

UMD, UMB research collaboration aims to demystify brain trauma

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Op-ed: UMD, UMB research collaboration aims to demystify brain trauma, presidents say.

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More than 2.5 million emergency room visits, hospitalizations and deaths each year are associated with traumatic brain injury (TBI). Such trauma is one of today's most important medical issues — and one of the most enigmatic. These injuries can cause depression, brain atrophy and cognitive decline, damaging victims' memory and ability to reason or communicate. And scientists know that there's still much more to learn about preventing brain trauma and reversing damage once an injury has occurred.

Today, the **University of Maryland, College Park** and the **University of Maryland, Baltimore** will unveil a bold vision for Cole Field House in College Park that holds significant promise for victims of brain trauma who struggle with recovery. Cole Field House will be home to the Center for Sports Medicine, Health and Human Performance, which will integrate research, innovation and athletics and bring together leading researchers in neuroscience, genomics, biomechanics and other fields engaged in the advanced study of the brain and nervous system.

Co-directed by University of Maryland biology professor Elizabeth Quinlan and Dr. Alan Faden, David S. Brown Professor in Trauma at the University of Maryland School of Medicine in Baltimore, the center will join the research and clinical expertise of our two institutions to answer critical questions about brain injuries: What are the mechanisms that lead to cell death or cell dysfunction after brain injury? Why do people recover differently? What can be done to promote recovery and response?

Leading the search for answers, researchers at Cole Field House will develop better diagnostic tools and use "big data" computing capabilities to map the brain's network of metabolic pathways and membranes. They will explore how humans can reactivate flexibility in the brain following trauma, thereby limiting the consequences of brain injury and speeding recovery.

We have seeded the center with \$3 million in research funding from the state, and our goal is that the research we conduct include faculty from both universities and that it be undertaken with an eye toward practical application. Cole Field House will also be home to an orthopedic clinic, bringing leading-edge medical facilities to College Park and allowing for the rapid translation of research into practice for the benefit of the entire community.

The Center for Sports Medicine, Health and Human Performance builds on existing strengths. In College Park, for example, experts are already studying how mild brain injuries affect the brain's mechanical properties, and they're assessing the impact of TBI on children's cognitive-linguistic abilities. In Baltimore, researchers have made significant breakthroughs regarding the cause of chronic brain damage and neuropsychiatric problems after trauma, showing that long-term inflammation is a key culprit behind many of the symptoms linked with TBI.

This center is just the latest example of the innovative thinking that characterizes the partnership of our two universities. For nearly five years, our universities have collaborated on an unprecedented scale, leveraging our considerable strengths to advance interdisciplinary research, create new opportunities for students and address critical problems of health and science for the people of Maryland and the nation. The University of Maryland Strategic Partnership, which took effect this month, builds on this MPowering the State alliance and will have an even greater impact on the next generation of innovators and, more importantly, on the people they serve.

With traumatic brain injury contributing to about 30 percent of all injury deaths in the U.S. each year, and with the estimated annual cost of TBI at more than \$76 billion, this is a vital area for our collaboration. Together we'll achieve a fuller understanding of the human brain and help survivors of brain injury lead more productive and more fulfilling lives.

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