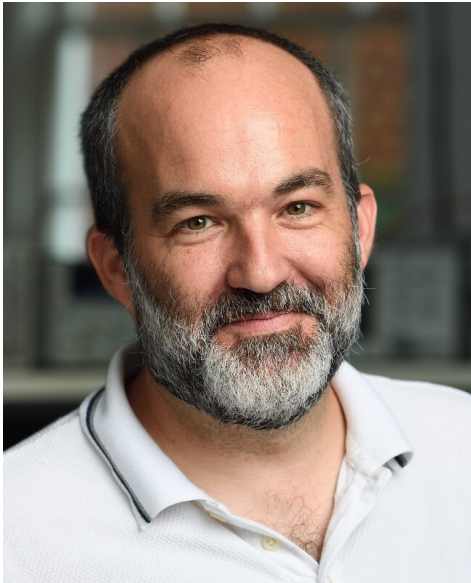


DARPA'S CURRENT PROGRAMS CREATING A BI-DIRECTIONAL LINK BETWEEN THE HUMAN BRAIN AND ARTIFICIAL INTELLIGENCE

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Combining light simulation and photo-pharmaceuticals — a category of drugs that are only active in the presence of certain types of light — to target specific brain circuits, DARPA's Alert WARfighter Enablement (AWARE) program aims to safely stimulate brain function. Simultaneously the CoasterChase program aims to develop a new approach to manage stress via non-invasive neuromodulation of the enteric nervous system, potentially revolutionizing how we deal with high-pressure situations and prevent long-term effects of trauma such as PTSD. Finally Firefox explores the use of light for non-invasive capture of brain activity, closing the loop with the two prior programs.

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Pedro Irazoqui, Ph.D., joined DARPA in January 2024 as a program manager in the Biological Technologies Office. His research seeks to address the need for a more capable fighting force in extreme environments. Prior to DARPA, Irazoqui served as a full professor in the departments of Electrical and Computer Engineering and Biomedical Engineering at the Johns Hopkins University, where his research focused on the development of wearable and implantable wireless medical devices for treating diverse neural pathologies with a particular focus on epilepsy. Irazoqui joined Johns Hopkins from Purdue University, where he was the Reilly Professor of Biomedical Engineering, as well as served as associate head for research in the Weldon School of Biomedical Engineering, and as interim head of the School of Electrical and Computer Engineering. While at Purdue, he founded their Center for Implantable Devices. He is a fellow of the American Institute for Medical and Biological Engineering, a senior member of the Institute of Electrical and Electronics Engineers (IEEE) and has served on numerous editorial boards. A dedicated mentor, he has supervised over 60 graduate students and 80 undergraduates. Irazoqui has received many honors, including the Purdue Excellence in Research Award, and was a finalist for the prestigious Institute of Engineering and Technology AF Harvey Research Prize.