

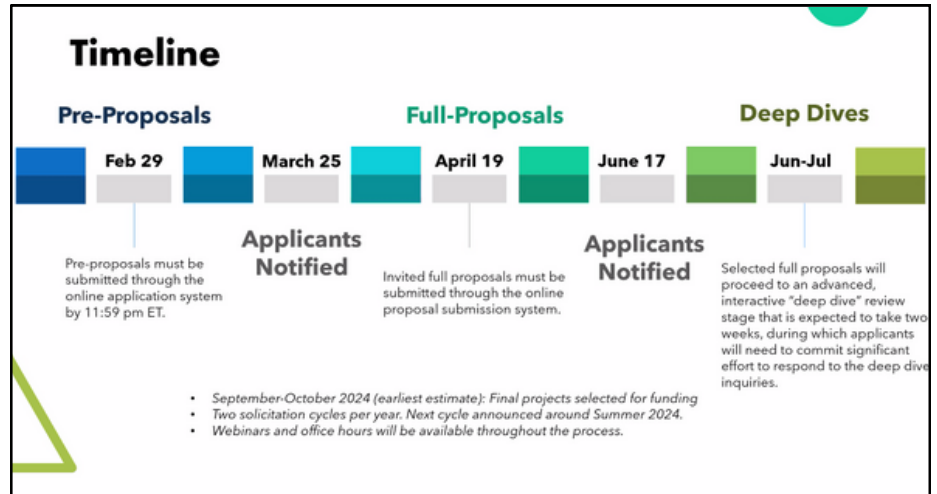
The NeuroTech Harbor Bulletin

Transforming the lives of those with neurological disorders, providing them with the care and support they need by prioritizing patient-centered approaches, early-stage interventions, and inclusive innovation.

NeuroTech Harbor Launches Cycle 4 Funding Solicitation

NeuroTech Harbor (NTH) and the [Center for Innovative NeuroTech Advancement \(CINTA\)](#), in partnership with the NIH-funded Blueprint Medtech Program, recently completed the solicitation period for their fourth cycle of neuromedical innovation funding.

More information can be found at: <https://blueprintneurotech.org/>



NTH and CINTA Host the First Annual NEXUS of NeuroTech Innovation Conference

In November 2023, NeuroTech Harbor and CINTA hosted the first annual NEXUS of Neurotech Innovation conference at the Johns Hopkins University Bloomberg Center in Washington, D.C. The conference brought together a diverse group of thought leaders, innovators, enthusiasts, and patient advocates in the field of neuromedicine, neurotechnology, and healthcare policy.

Participants included individuals from the NIH, Harvard University, Yale University, the JHU Applied Physics Lab, the Epilepsy Foundation, Johns Hopkins Medicine, CIMIT, CINTA, the Berman Institute, Johns Hopkins CBID, Maryland nonprofits, Upsurge Baltimore, Empath Ventures, Johns Hopkins Whiting School of Engineering, Eliza's Watch, Ayuda Medical, FireFly VR, Howard University, Neurovations, the Johns Hopkins School of Advanced International Studies, JHTV, and OTIPI NIDA.

See more photos from the NEXUS event here: <https://neurotechharbor.org/news-events/>

Blueprint MedTech Cycle 1 Optimizer Award Recipients

Icahn School of Medicine at Mount Sinai (relocated to University of California, Los Angeles); University of California, San Diego; and Johns Hopkins University

MonOs, a wearable, non-invasive biosensor that monitors the body for the presence of opioids - The data provided by the biosensor could support clinicians in treating adolescents and adults with opioid use disorder, as an alternative to daily lab-based collection of urine toxicology data.

NeuraStasis, Inc.

Development/Testing of BlueStem Dual Nerve Stimulation Device for Ischemic Stroke - A novel, non-invasive, electrical stimulation technology that complements current treatments as a bridge to care. The BlueStem system will expand the “golden hour,” offering more protection of the brain during an ischemic stroke and to reduce the likelihood of long-term disability.

Florida Atlantic University Charles E. Schmidt College of Medicine (relocated to University of Arizona, Tucson)

External focused ultrasound modulation of the dorsal root ganglia - A non-addictive treatment for neuropathic pain, using low intensity focused ultrasound. By using a higher intensity than imaging ultrasound, but not enough to damage tissue, this project aims to provide pain relief for up to a month after only three minutes of stimulus. The device is a combined imaging and therapeutic ultrasound device to target and immediately treat specific portions of the dorsal root ganglia involved in generating pain signals.

Endovascular Horizons and University of California San Francisco

Embodrain technology for chronic subdural hematomas - A fully endovascular technology for trans-vascular drainage of chronic subdural hematomas (blood collections over the brain surfaces) and for middle meningeal artery embolization. This product would replace the standard of care which is highly invasive and carries a risk of recurrence, substantially increasing the safety profile.

Boston University and Harvard University

reNeu propulsion rehabilitation platform for gait restoration after neurological disease - A wearable neuroprosthesis to diagnose, assist, and restore safe and efficient walking. The system is a wearable cuff that measures muscle activity in the leg and, using computational methods to generate an optimal pattern, stimulates further muscle activity to approach normal gait.

Northern Arizona University and Biomotum, Inc.

A wearable rehabilitation robot for children to use at home - A device to train children with cerebral palsy to walk with an efficient gait. This at-home system would provide significantly more rehabilitative capability than time-limited sessions with a physical therapist.

Openwater, Inc.

Wearable noninvasive, transcranial focused ultrasound neuromodulation with near-infrared optical neuromonitoring - This compact, non-invasive system provides high resolution observation of neural activity combined with delivery of a therapeutic stimulus to treat circuit disorders in the brain. The system is designed to support a wide range of diagnostics and treatments.

SecondWave Systems, Inc.

Treatment of Facial Pain using an Injectable Ultrasonically Powered Neurostimulator - A method to treat craniofacial pain with ultrasonic energy via a miniaturized neurostimulator. The stimulator can be implanted in the vicinity of the trigeminal nerve without invasive surgery and is powered by an external pad when pain relief is desired.

More information available at: <https://www.nibib.nih.gov/news-events/newsroom/nih-blueprint-medtech-spurs-innovation-diagnosing-and-treating-nervous-system-disorders>

Neurotechnology in the News

Neurotech Featured at JP Morgan Conference

In January 2024, JP Morgan hosted their annual healthcare conference. This year, the conversation focused on neurotechnology and neuromedicine. Notably, the conference highlighted growth in the neuromodulation segment; as Forbes reports, Boston Scientific purchased [Axonics' sacral nerve modulator](#) developed to treat incontinence for \$3.7 billion, [Medtronic's method of deep brain stimulation](#) for Parkinson's and epilepsy treatment received FDA approval, and [Nalu Medical](#) raised \$65 million to support their neurostimulation technologies. Additionally, a panel hosted by [Dr. Walter Greenleaf](#) of Stanford University discussed the possible uses of virtual reality in mental health.

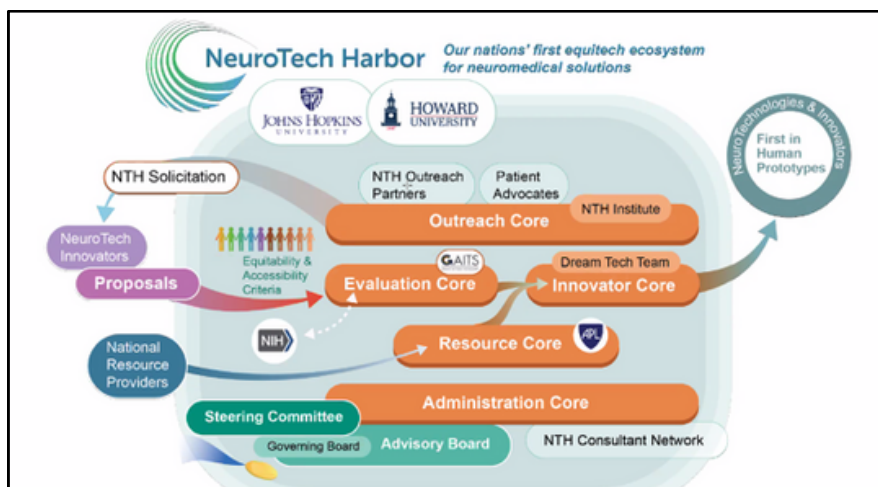
Traumatic Brain Injuries Trigger Formation of New Neural Pathways

Using novel imaging techniques, a team of researchers from the Tufts University School of Medicine have discovered that the brain develops new neural pathways in response to traumatic brain injuries (TBIs). The team tracked neural activity in mice for a period of three weeks post-TBI, discovering that while the mice were able to regain the ability to complete tasks such as utilizing an exercise wheel, brain activity during these tasks when performed post-TBI was completely different than brain activity pre-TBI.

About NeuroTech Harbor

NeuroTech Harbor (NTH), a partnership between Johns Hopkins University and Howard University, is the Nation's first Equitech ecosystem for neuromedical solutions. NTH was founded in 2022 as a technology accelerator partnering with diverse teams of top innovators from around the globe to supercharge

the development of medical devices that improve prevention, diagnosis, treatment, and management of neurological conditions. The Equitech approach supports inclusive medical technologies that are designed and developed to meet the diverse needs of all individuals regardless of their abilities, disabilities, or cultural backgrounds in an effort to promote equity, accessibility, and inclusivity in healthcare. Funded by a grant from the National Institutes of Health, NTH plans to spend \$30-\$50 million to launch 45 new neurological health innovation projects over the next five years while ensuring those technologies are accessible to all communities.



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For Press Inquiries, contact NTH Communications Coordinator Nicholas Mangano, MS (nmangan2@jhu.edu).