Bryan Johnson Follow
Founder @KernelCo @OSFund & Braintree.
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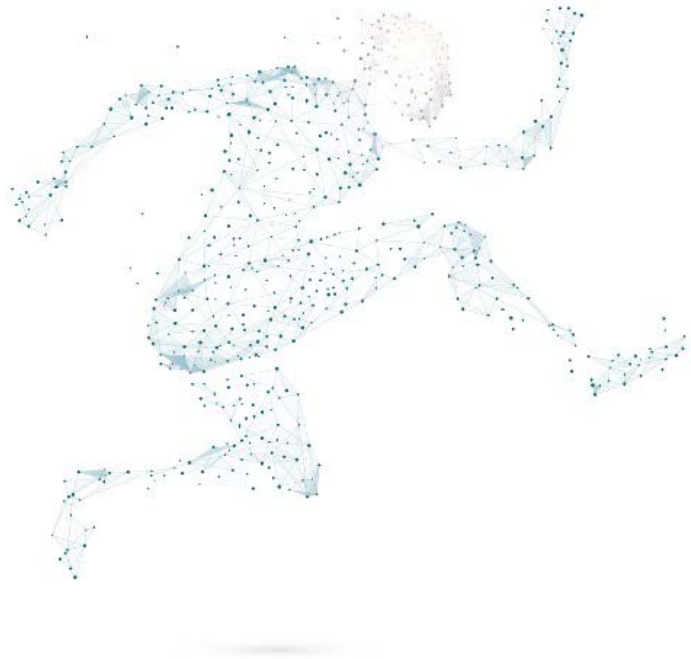
Kernel Acquires KRS to Build Next-Generation Neural Interfaces

Adds Adam Marblestone as Chief Strategy Officer and Ed Boyden as Senior Scientific Advisor

I'm excited to announce that Kernel has agreed to terms to acquire Kendall Research Systems' (KRS) clinical development program, led by Christian Wentz, and we're adding Adam Marblestone as Chief Strategy Officer and Ed Boyden as Senior Scientific Advisor.



Christian is one of the most talented neuroengineers in the world. In addition to KRS' public efforts developing neuroscience research tools to accelerate the discovery of solutions to help those suffering from debilitating neurological disorders, Christian and his team have been quietly developing advanced high bandwidth neural interface technologies for human use. Within Kernel, they will expand focus

and rapidly accelerate progress to clinical deployment. Adam Marblestone is a brilliant polymath. He is uniquely qualified to lead our efforts towards making key breakthroughs in acquiring more comprehensive neural data with less invasive approaches. Ed Boyden is one of the pioneers of neurotechnology, having co-invented optogenetics, a revolutionary method for stimulating specific cell types in the brain with light, and having founded the Synthetic Neurobiology Group at MIT, which has introduced a stream of path-breaking chemical, biological, hardware and nanotechnological innovations that are transforming many fields of neuroscience and biology.

Our acquisition of KRS, in addition to adding Adam Marblestone and Ed Boyden to the team, further establishes Kernel in its unique position to systematically advance neuroscience.

Collectively, we believe that in the next ten years, neuroscience will cross hurdles that have held it back for the last century. Much of this progress will be attributable to our ability to gain better access to neural data, which will inform potential treatments for disease and dysfunction, prospects for improvement of function, and new theoretical frameworks for understanding how intelligence, in all its diverse forms, arises in the brain.

Our first priority is building the next generation of interfaces which can capture substantially more data while being safe and effective for human clinical use. With these new data-generating systems, we hope to quicken the pace of clinical neurology, and become the platform for accelerated discovery for intractable neurological disease. To date, efforts to advance neurology have taken the form largely of independent shots, each testing a single clinical hypothesis, rather than more rapid and systematic, data-driven iteration, improvement and extension.

We are cautiously optimistic that such a platform would enable us to gain critical insight into:

- The management of neurodegenerative disease including Parkinson's, ALS and others
- Amelioration of neurological dysfunction, including major depression, stroke, traumatic brain injury, PTSD and others

- Enhanced solutions for the paralyzed and amputees
- Learning, memory, language, decision-making, motivation, imagination and other aspects that may ultimately be crucial to restoring and extending cognitive vibrancy

In acquiring KRS' clinical development program and their neural interface technologies, and bringing Adam and Ed on board, we will be able to rapidly evolve our understanding of and access to the brain. The human brain is still the world's greatest supercomputer, and we're increasingly learning the underlying mechanisms of our neural code. We've started to see what's possible with advancements in areas such as prosthetics and neuromodulation, but only begun imagining what might lie around the corner.

Join us, in LA or Boston.

About Christian Wentz

> *Christian is the founder/CEO of Kendall Research Systems (KRS), a Cambridge, MA-based neurotechnology venture spun out of MIT to pursue advanced neural interfaces for research and clinical applications. Today, KRS serves the neuroscience research and clinical communities to drive discovery of solutions to help those suffering from debilitating neurological disorders.*

> *Christian pursued his PhD at MIT focused on novel bioinstrumentation for neurology applications, supported by the Hertz Foundation Myhrvold Family Fellowship. He previously co-founded Cerenova, Inc., an implantable neurological device spin-out from the Massachusetts General Hospital Department of Neurosurgery focused on stroke and Traumatic Brain Injury recovery, and acted as senior hardware engineer for Misfit Wearables (NASDAQ: FOSL). For his work in neurotechnology, Christian was named to the inaugural* Forbes *30 Under 30 list in Science & Innovation (2011). Christian holds an MEng in electrical engineering and computer science and the BS in electrical science and engineering, both from MIT. At Kernel, Christian will lead product development efforts towards treatment of intractable neurological disorders.*

About Adam Marblestone

> *Adam is known in the neuroscience community for his published work and extensive collaborations aimed at broadly accelerating progress in the field. As a PhD student, Hertz Foundation Fellow, and postdoctoral researcher with George Church at Harvard and Ed Boyden at MIT, he devised roadmaps for scalable brain mapping and for the integration of deep learning and neuroscience, helped initiate the fields of molecular recording and optical connectomics, designed novel optoelectronic neural recorders, patented a new approach for molecular readout from the brain, helped obtain tens of millions of dollars in research funding, and co-founded a company to improve reproducibility in biological experiments. Earlier, as a student at Yale, he studied theoretical quantum physics and co-authored software for DNA nanotechnology design. At Kernel, Adam will draw on these broad perspectives to accelerate human neuroscience.*

About Ed Boyden

> *Ed Boyden is a professor of Biological Engineering and Brain and Cognitive Sciences at the MIT Media Lab and the MIT McGovern Institute. He leads the Synthetic Neurobiology Group, which develops tools for analyzing and repairing complex biological systems such as the brain, and applies them systematically to reveal ground truth principles of biological function as well as to repair these systems. These technologies, created often in interdisciplinary collaborations, include expansion microscopy, which enables complex biological systems to be imaged with nanoscale precision, optogenetic tools, which enable the activation and silencing of neural activity with light, and optical, nanofabricated, and robotic interfaces that enable recording and control of neural dynamics. He has launched an award-winning series of classes at MIT that teach principles of neuroengineering, starting with basic principles of how to control and observe neural functions, and culminating with strategies for launching companies in the nascent neurotechnology space. He also co-directs the MIT Center for Neurobiological Engineering, which aims to develop new tools to accelerate neuroscience progress. Amongst other recognitions, he has received the Breakthrough Prize in Life Sciences (2016), the BBVA Foundation Frontiers of Knowledge Award (2015), the Society for Neuroscience Young Investigator Award (2015), the Carnegie Prize in Mind and Brain Sciences (2015), the Jacob Heskel Gabbay Award (2013), the Grete Lundbeck Brain Prize (2013), the NIH Director's Pioneer Award (2013), the NIH Director's Transformative Research Award (twice, 2012*

> *and 2013), and the Perl/UNC Neuroscience Prize (2011). He was also named to the World Economic Forum Young Scientist list (2013), the Technology Review World's "Top 35 Innovators under Age 35" list (2006), and his work was included in Nature Methods "Method of the Year" in 2010. Ed received his Ph.D. in neurosciences from Stanford University as a Hertz Fellow, where he discovered that the molecular mechanisms used to store a memory are determined by the content to be learned. Before that, he received three degrees in electrical engineering, computer science, and physics from MIT.*