Musical creativity has existed since the earliest days of human civilization. Until recently, how the brain actually produces musical ideas was poorly understood. Recent advances in brain imaging allow us to address questions of artistic significance that were previously felt to be inaccessible to scientific inquiry. Improvisation—the spontaneous generation of musical material—provides an inspiring tool to study the multiple creative processes that take place in music. This presentation will highlight several functional neuroimaging studies that examine the process of musical improvisation by expert jazz and hip hop musicians, as a window into the complex neural processes that give rise to creativity.

Dr. Charles Limb is the Francis A. Sooy Professor of Otolaryngology-Head and Neck Surgery and Chief of the Division of Otology, Neurotology and Skull Base Surgery at UC San Francisco. He is also Director of the Douglas Grant Cochlear Implant Center at UCSF and holds a joint appointment in the Department of Neurosurgery.

Most people naturally wake up, get hungry throughout the day and fall asleep at generally consistent times. Indeed, coordination of circadian clocks underlies the daily rhythms in physiology, metabolism, behavior and sleep. Now, science is uncovering the links between our circadian rhythm and overall health. While the neural clock is considered the master driver of circadian rhythms, emerging evidence indicates that circadian rhythms in metabolic organs also play a role in sleep and arousal. When we consume a consistent daily caloric intake within a consistent window of 8-12 hours, there is an unexpected improvement in sleep. This observation is bringing new understanding that "when you eat" plays a role in whether or not you get a good night’s sleep.

Dr. Satchin Panda is author of The Circadian Code and a professor at The Salk Institute in San Diego, where he focuses on circadian rhythms.
Unlocking Human Potential: Inside The BrainHealth Project

Our brain health hasn’t kept up with our heart health, which has doubled the lifespan thanks to the fitness revolution. Our bodies are now outliving our brains by an average of 20 years, but neuroscience has revealed that the brain’s decline is not inevitable. Come Inside The BrainHealth Project and learn about the roadmap to empower people to become “citizen scientists” and unlock their own brain’s potential. See how far and fast you can make your brain a more athletic and fit version of itself. Become part of the BrainHealth revolution by joining the The BrainHealth Project to achieve your best brain health and performance.

Dr. Sandi Chapman is Founder and Chief Director of the Center for BrainHealth at The University of Texas at Dallas, where she is the Dee Wyly Distinguished University Professor. A cognitive neuroscientist with more than 50 funded research grants and 200+ publications, she applies novel approaches to advance higher-order reasoning and strategic memory, strengthen resilience and adaptability, and expand innovative thinking throughout life.

Dr. Ian Robertson is Co-Director of the Global Brain Health Institute (gbhi.org) and was Founding Director of Trinity College Institute of Neuroscience. He also is the T. Boone Pickens Distinguished Scientist at UT Dallas’ Center for BrainHealth. Dr. Robertson is known for his translational research into human attention, brain plasticity and rehabilitation.

Dr. Geoff Ling is a world-renowned neurologist and visionary who is a Professor at Johns Hopkins and the Uniformed Services University of the Health Sciences. He is also Acting Vice Chair for Research at Inova, a not-for-profit healthcare system based in Northern Virginia. In 2014, he championed the development of responsive, brain-controlled artificial limbs and served as the founding director of the DARPA Biological Technologies Office at the Department of Defense.

Mr. Tom Leppert has a distinguished record of accomplishment that includes high-profile leadership positions in the private and public sectors. Under his leadership as Mayor of Dallas (2007-2011), Dallas emerged as one of the focal points in the nation in public safety, economic development, education and the environment.

Recent advances in neurobiology are providing an improved basis for understanding the potential therapeutic role of cannabis and various natural and synthetic cannabinoids. In this presentation, the evidence for the therapeutic efficacy of cannabis will be reviewed to better understand the facts. This presentation will review the evidence for therapeutic efficacy of cannabis to better understand the facts.

Dr. Igor Grant is Distinguished Professor and Director of the HIV Neurobehavioral Research Program and the Center for Medicinal Cannabis Research at the University of California San Diego (UCSD). Dr. Grant served as Chair of the UCSD Department of Psychiatry from 2014 to 2019. Since 2000, Dr. Grant has been Director of the State of California-funded Center for Medicinal Cannabis Research (CMCR).