

***Brain Research Through Advancing Innovative Neurotechnologies*[®] (BRAIN)
Multi-Council Working Group (MCWG) Meeting
August 20th, 2021**

On August 20, 2021, the National Institutes of Health (NIH) *Brain Research Through Advancing Innovative Neurotechnologies*[®] (BRAIN) Initiative [Multi-Council Working Group \(MCWG\)](#) and [Neuroethics Working Group \(NEWG\)](#) met virtually to discuss the current state of the Initiative, the virtual 7th Annual BRAIN Initiative Investigators meeting, and a new concept for funding.

[In opening remarks](#), John Ngai, PhD, Director of the NIH BRAIN Initiative and Chair of the MCWG, welcomed a new working group member, Bryan Roth, MD, PhD, (University of North Carolina) and thanked four members for their service. Next, he noted the \$100 million increase in Congressionally appropriated funds for fiscal year 2021, which helped launch three of the transformative projects outlined in the [BRAIN 2.0](#) report: 1) Organizing Resources for Brain Cell Type Access and Manipulation Across Species (cell type-specific armamentarium); 2) Phase III Brain Cell Census (parts list); and 3) Next-Generation Technologies for Brain Microconnectivity Analysis (wiring diagrams). Dr. Ngai updated the group on recent scientific advances in characterizing brain cell types, including a new combined viral and genetic tool designed to access specific cell types in the mouse brain. This technology shows promise in whole non-human primate brains and human brain tissue. Next, he highlighted Phase III of the BRAIN Initiative Cell Census Network ([BICCN](#)), a cooperative research network comprising over 200 investigators across 45 institutions, as an exemplar of team science. He emphasized recent BICCN efforts towards human brain cell census. Dr. Ngai also mentioned early progress in mapping whole brain microconnectivity, noting the [BRAIN Connectivity Workshops](#) held earlier this year and the in-depth [report](#) summarizing workshop discussions. Further, Dr. Ngai reminded everyone of the Plan for Enhancing Diverse Perspectives ([PEDP](#)) policy notice ([NOT-MH-21-310](#)) and BRAIN's interest in developing frameworks for PEDP communications, outreach, and evaluation. Lastly, he debriefed the group on recent events, including the BRAIN-to-bedside [circuit therapies workshop](#) and BRAIN Initiative Investigators meeting.

The meeting continued with a presentation on the impacts and outcomes of the [7th Annual BRAIN Initiative Investigators Meeting](#) by Samantha White, PhD, Chief of the NINDS Scientific and Public Engagement branch. The meeting took place virtually on June 15-17, 2021. Overall, an evaluation of meeting metrics showed that the event was a great success, hosting approximately 3400 attendees across scientific disciplines, job sectors, and career stages, worldwide. Dr. White first noted that in-person meetings require a much larger budget than virtual events (~\$650k estimated for 2020 in-person vs. ~\$300k for 2020 and ~\$350k for 2021 virtual). Then, she mentioned key challenges, such as the fact that virtual meeting attendance waned across the three days and that poster-specific chats and live videos were underutilized. Next, she summarized meeting demographics, noting that over half of registrants identified as scientists and about one third as trainees, there were more male-identifying (54%) than female-identifying (41%) registrants, and a majority (49%) of individuals identified as White/Caucasian. Post-meeting survey results suggested that attendees were satisfied with the meeting overall and highly valued the Diversity, Equity, and Inclusion (DEI) Dialogue [specialty session](#). MCWG members lauded the meeting and noted the importance of DEI programming, as well as the broad dissemination of recorded sessions after the event. The group recommended evaluating additional metrics, such as the geographic and institutional distribution of attendees and social media engagement. Dr. Ngai mentioned potentially 're-branding' the meeting to ensure that it is more clearly marketed for the broader neuroscience community, including both BRAIN- and non-BRAIN-funded investigators, trainees, and affiliates.

Henry (Hank) T. Greely, JD, Director of Law and Biosciences at Stanford University and co-chair of the NEWG, provided an update on NEWG activities. Dr. Greely started off by recapping [NEWG discussions from the day prior](#) which focused on compensation for research participants and ongoing efforts to diversify brain tissue collection. He also reminded the group of an upcoming virtual workshop scheduled for later 2021 on the ethics of post-trial responsibilities and the NEWG's ongoing efforts to assess data sharing practices. Lastly, he highlighted the success of the neuroethics engagement session at the BRAIN Initiative Investigators meeting and drew the group's attention to a reissued BRAIN neuroethics funding opportunity ([RFA-MH-19-400](#)).

Following the NEWG update, NIH BRAIN Initiative staff presented a concept for future funding. Holly Lisanby, PhD, Director of the Division of Translational Research at the National Institute of Mental Health (NIMH), introduced a concept focused on quantifying and synchronizing behavior and brain activity. Dr. Lisanby pointed out key gaps in this research area, including bulky equipment, limited long-term recording capability, and the lack of objective measures of internal states. She also highlighted current state-of-the-art recording and behavioral tracking technologies. The goals of this concept are to develop new high-resolution tools and data science approaches to precisely quantify behaviors and synchronize them with brain activity data, build new conceptual and computational frameworks of behavioral systems, and disseminate new tools to the research community. Dr. Lisanby overviewed long-term impacts, including the development of new behavioral paradigms, closed-loop therapeutic systems, and neuroethics frameworks. Lastly, she proposed a brain behavior quantification workshop and highlighted potential ways in which this concept synergizes with the current BRAIN portfolio. MCWG and NEWG members emphasized the importance of embedding neuroethics into research projects, especially in light of possible real-world applications. They noted data privacy, sharing, and ownership, and informed consent as key considerations. The group also discussed ways to encourage collaborations between human brain researchers (e.g., experts in engineering, artificial intelligence, and data science) and scientists who use animal models to study neural correlates of behavior. Lastly, the MCWG noted the importance of open-source tool development and dissemination, as well as optimizing public communication and engagement with emerging brain activity and behavior monitoring technologies.

The meeting proceeded with a closed session of the MCWG members and federal staff to discuss funding plans for several fiscal year 2021 awards. The next MCWG meeting will be held on January 25, 2022, and [videocast](#) will be available for live viewing and archived.