Neuroimaging

New Ways to Image Neural Activity

Neuroimaging technologies, such as EEG, MEG, and fMRI, allow us to observe brain functions. To date, however, the imaging techniques that are most commonly used to study neural activation during particular behaviors have been invasive (via the insertion of electrodes or the injection of radioactive tracers), constraining (such as the MRI chamber), or limited in their spatial and temporal resolution (for example, an EEG report is specific about time, but vague about location).

Six grants have been awarded to support the development of new ways to image the brain that are non-invasive, non-constraining, and can capture the rapid neural activation reflected in electrophysiological signals such as action potentials or local field potentials. These new imaging techniques will allow us to view neural activity simultaneously in space and time with high accuracy, making them valuable for measuring the neural underpinnings of behavior.

Neuroimaging Informatics Tools and Resources Clearinghouse (NITRC)

NITRC is an Internet-based clearinghouse that helps researchers find and compare neuroimaging resources for fMRI and related structural analyses. NITRC collects and points to standardized information about tools, making the task of finding and comparing them easier than before. Information is gathered and evaluated with respect to usage, interoperability, features, quality of documentation and support, and user satisfaction. Interaction between the user and the associated technology developers is encouraged via user forums. The site also encourages public comment to guide the development of tools and resources and to enhance their use by the neuroimaging research community. Supplemental grants are awarded to researchers for improving the interoperability and dissemination of informatics tools that are candidates for inclusion in the Clearinghouse.

Resources:

NITRC www.nitrc.org

Contact:

Yantian Zhang, Ph.D.
Program Director, Division of Applied Science and Technology
National Institute of Biomedical Imaging and Bioengineering (NIBIB)
yantian.zhang@nih.gov
(301) 402-1373

U.S. Department of Health
and Human Services
National Institutes of Health