

Intracortical brain-computer interfaces to restore arm and hand function.

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Bidirectional brain-computer interfaces (BCIs) allow us to interpret information about movement intention from the brain to control devices such as computers or robotic arms. They can also convey sensory information using microstimulation of somatosensory cortex. In this talk, I will discuss the progress that we have made to restoring arm and hand function using a bidirectional BCI in terms of both motor control



and restoration of somatosensory feedback. We have demonstrated that participants with tetraplegia can use a BCI to control reach and grasp of a robotic arm and that tasks involving object transport are performed more quickly when somatosensory feedback is provided. Finally, I will talk about our efforts to move BCI technology out of the laboratory and into the home.

Friday, September 24, 2021 12:00 p.m. – 1:30 p.m.

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