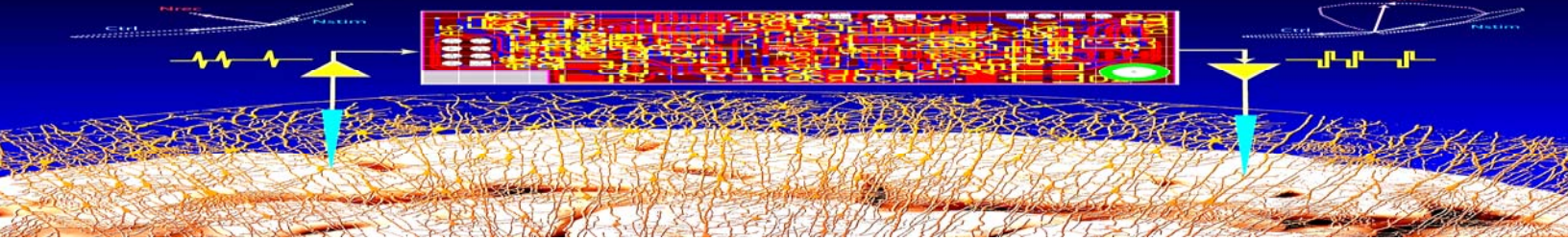


# mbi Public Lecture

## The adaptive self and brain-computer interfaces



The conscious volitional self in our brain perceives and interacts with the world through sensory, motor and cognitive systems that involve largely subconscious neural mechanisms. Experimental manipulations of these mechanisms reveal the brain's remarkable ability to adapt to changed conditions. The volitional self can also be extended through artificial devices, such as brain-machine interfaces, which exploit the brain's ability to incorporate prosthetic extensions. Accurate control of brain-machine interfaces depends on a combination of effective decoding algorithms and the brain's ability to adaptively modify its neural activity. Recently developed implantable recurrent brain-computer interfaces provide artificial feedback connections that the brain can learn to incorporate and that can also modify the brain's neural connections. This talk will explore these issues in light of current advances in neuroscience and neuroprosthetics.

## Tuesday, May 13th, 2008, 5:30pm

355 Jennings Hall (MBI Auditorium)

Lecture is free and open to the public

A reception with complimentary food and drink will follow



### **Eberhard Fetz, Ph.D.**

Professor of Physiology & Biophysics  
University of Washington

**Eberhard Fetz, Ph.D.**, is Professor of Physiology & Biophysics at the University of Washington, and a Core Staff member of the Washington National Primate Research Center. He received a B.S. in Physics from Rensselaer Polytechnic Institute (1961) and a Ph.D. in Physics from the Massachusetts Institute of Technology (1967). Since his postdoctoral work in 1968 he has remained at the University of Washington. His research interests concern the neural control of limb movement in primates. This includes studies of monkeys' ability to volitionally control the activity of brain cells, the functional organization of motor cortex cells controlling forearm muscles, the activity of spinal interneurons during hand movement, neural network modeling, and the development of implanted recurrent brain-computer interfaces.



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