

Life Sciences & Engineering and NSF

May 3, 2006

ENG AdCom

Bruce Hamilton

Division Director, Bioengineering and Environmental Systems

All 7 NSF ENG “Divisions” Support Biology-Oriented Awards

BES: All aspects of biology and engineering

CMS: Biomechanical Eng (e.g., bone biomaterials)

CTS: Biotransport Eng, Biocatalysis

DMI: Engineering Health Care Delivery

**ECS: Many aspects of biology and engineering
(e.g., biomedical imaging)**

EEC: Centers, Dept. Reform: biology and engineering

OII: Biotech small businesses

Example Emerging New Area for Engineering/Life Sciences

Neuroengineering

- **Funded 1st and 2nd International Conferences on Neuroengineering**
- **Participating in the NSF/NIH joint solicitation: “Collaborative Research in Computational Neuroscience (CRCNS)”**
- **Leading the ongoing interagency WTEC study on the “Brain-Computer Interface (BCI)”**
 - Example research goal: a fully functional prosthetic hand under direct and full control of the human brain

Current Pervasiveness of Biology in Engineering

“Pillars” Model for the Foundations of Engineering Education:

Older Pillars Model

- Mathematics
- Physics
- Chemistry

Newer Pillars Model

- Mathematics
- Physics
- Chemistry
- **Biology**