Nano in Neuroscience and Engineering

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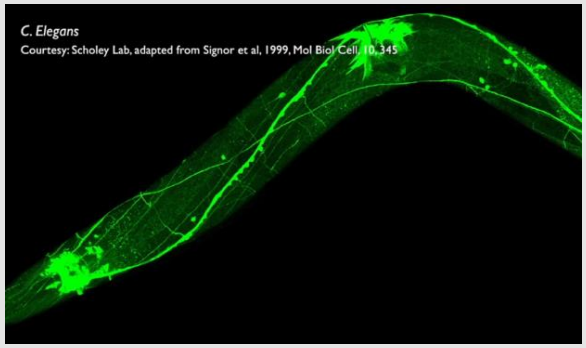
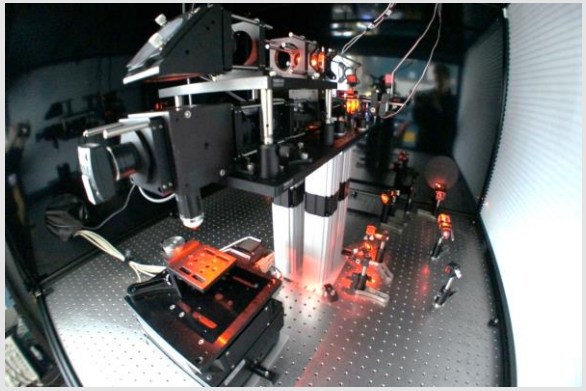
BRAIN Initiative

Multi-Directorate

- Biological Sciences
- Engineering
- Mathematical and Physical Sciences
- Social, Behavioral & Economic Sciences
- Computer and Information Science and Engineering
- Education and Human Resources





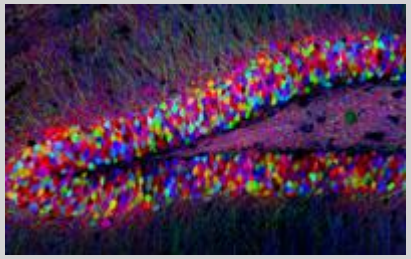
Multi-scale Integration of the Dynamic Structure and Activity of the Brain

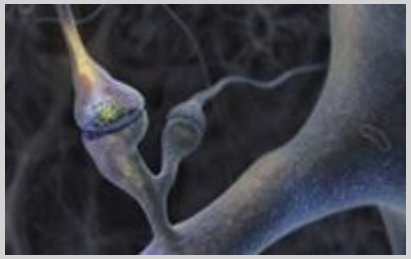
Neurotechnology and Research Infrastructure

Quantitative Theory and Modeling of Brain Function

Brain-inspired Concepts and Design

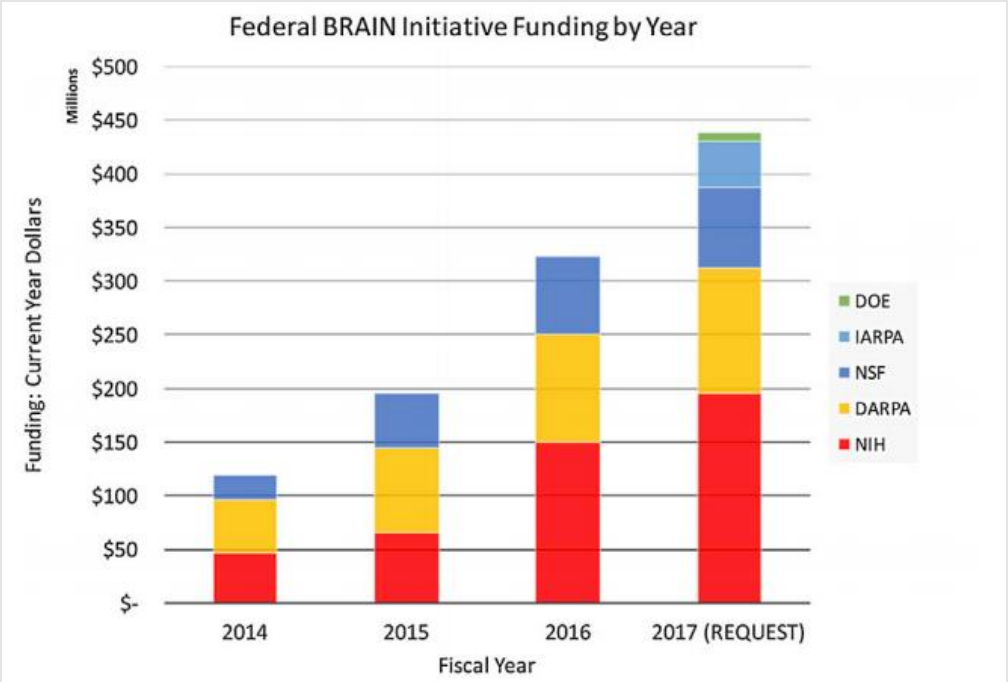
BRAIN Workforce Development

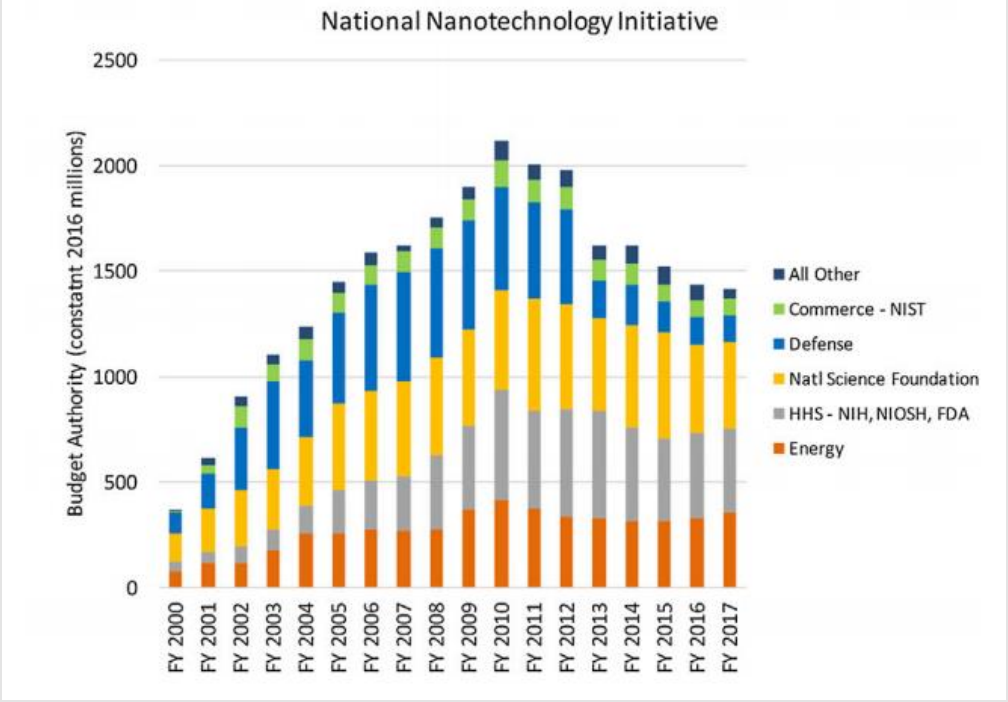




Brain Initiative Investments Compared to NNI

Martin and Chun
Neuron 92(3):570



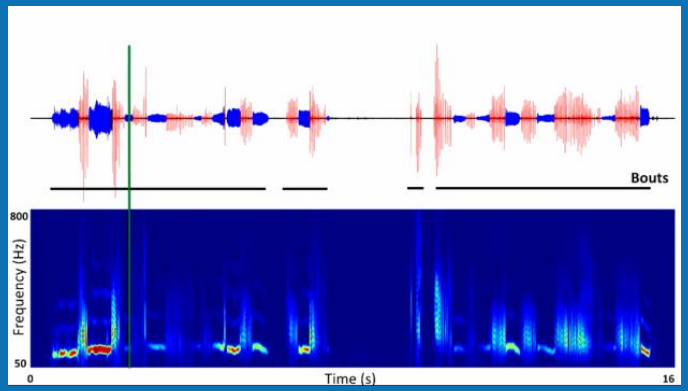


Speakers

Nick Melosh – Brain Machine Interfaces

Michel Maharbiz – Neural Dust/Bioelectronics

Michal Lipson – Next-generation Optogenetics



Discussion Topics

Mechanical vs Biochemical Interfaces

Transition from non-living to living nanostructures

Quantum Phenomena at sub- and multicellular Levels

Transition from non-living to living materials-what is threshold of size and complexity of this transition?

What is relationship between Disciplines? (Physics and Chemistry to Biology and Behavior)