

Grand Challenges in Neuroscience

From Molecules to Mind

Thinking Outside the Box



Seeing Things Differently



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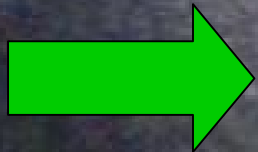
June 25, 2008

NSF Workshops

- World Technology Evaluation Center: Brain Computer Interface (BCI) International Benchmarking Study (series of workshops since Dec 2005)
- Mind and Brain: Strategies and Directions for Future Research (July, 2006)
- Brain Science as a Mutual Opportunity for the Physical and Mathematical Sciences, Computer Science, and Engineering (August, 2006)
- Brain Science at the Interface of Biological, Physical and Mathematical Sciences, Computer Science, and Engineering: Analysis of New Opportunities (March, 2007)
- NeuroMath: Identifying Gaps to Bridge (May, 2007)

Strategic Planning Produces Results!

Neuromath workshop:



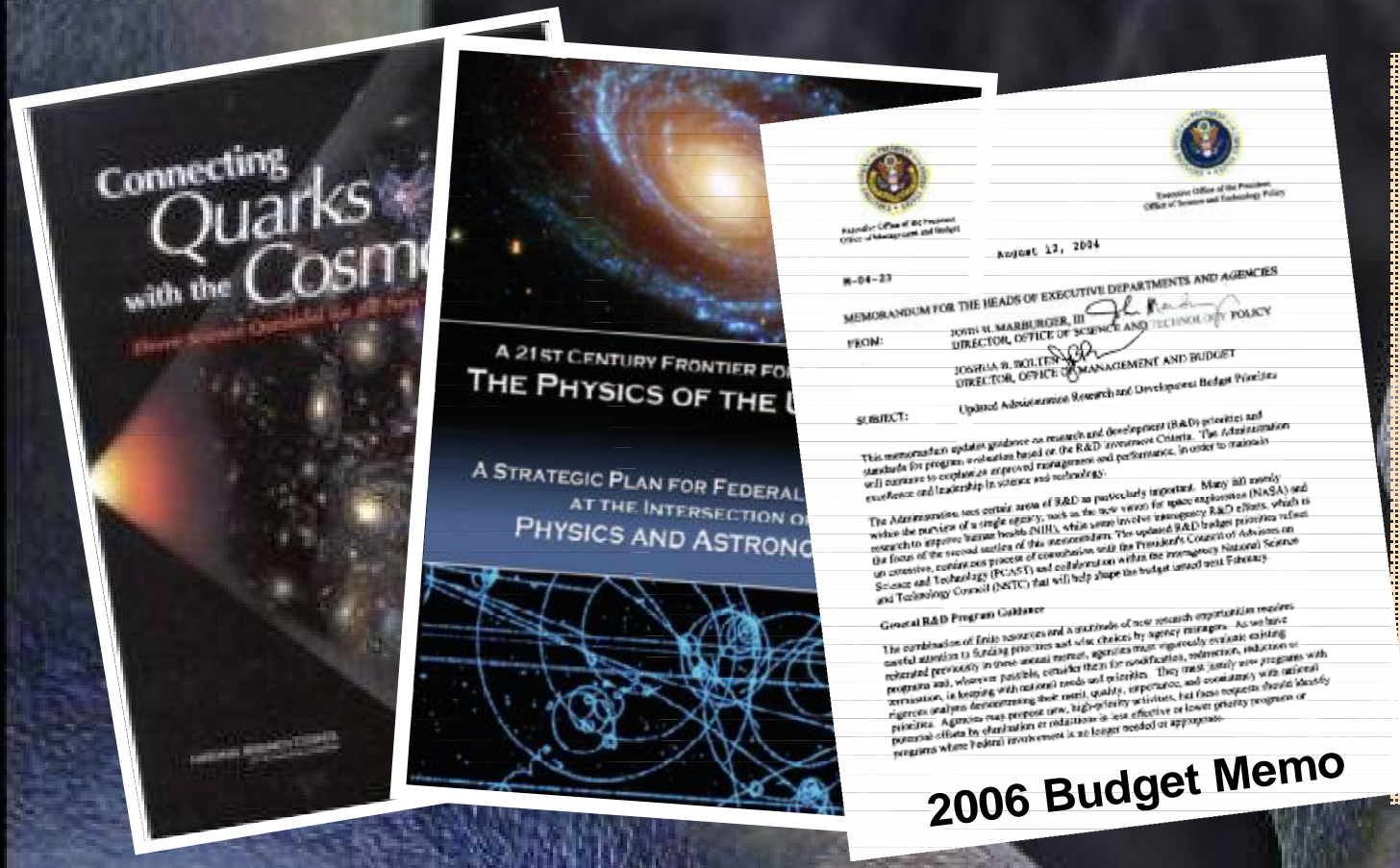
Solicitation: Research and Evaluation on Education in Science and Engineering
Neural basis for learning mathematics

Series of Workshops:



FY 2009 Budget Request: Adaptive Systems Technology
Applying transformational neuroscience to develop engineered systems, especially at the human-machine interface

Physics Approach to Prioritization



The Physics Community Pioneered a new way of doing business. Grand Challenges for the new Century in Research & Technology

To realize many of these discoveries, it will be necessary to bring together the science of the very large – astronomy – with the science of the very small - particle physics. No longer can one view the study of particle physics and deep space astronomy as separate and distinct. Their futures and goals are now strongly intertwined.

How Do We Get There?

- Where are we today; where do we want to go; How do we get there?
- What are the
 - Next steps?
 - Barriers?
 - Opportunities?
- What new tools/capabilities do we need?
 - Which are on the horizon?
- Where are the gaps and how do we fill them?
- Who is at the table and who do we need?
 - How do we get them on board?
- Where do the interests of multiple communities overlap?
- **What's next to frame a grand challenges agenda?**



“The only way to discover the limits of the possible is to go beyond them into the impossible.”

Arthur C. Clarke

