

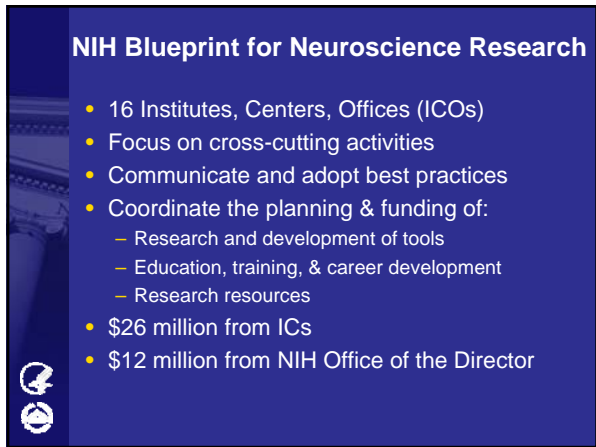


NIH Blueprint
for Neuroscience Research

16 NIH Institutes coming together to advance research.


Walter Koroshetz, M.D.
NINDS

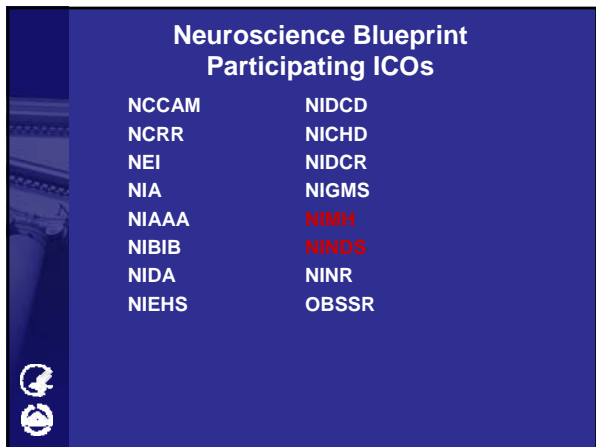


NIH Blueprint for Neuroscience Research



- 16 Institutes, Centers, Offices (ICOs)
- Focus on cross-cutting activities
- Communicate and adopt best practices
- Coordinate the planning & funding of:
 - Research and development of tools
 - Education, training, & career development
 - Research resources
- \$26 million from ICs
- \$12 million from NIH Office of the Director



**Neuroscience Blueprint
Participating ICOs**

NCCAM	NIDCD
NCRR	NICHD
NEI	NIDCR
NIA	NIGMS
NIAAA	NIMH
NIBIB	NINDS
NIDA	NINR
NIEHS	OBSSR

Nervous System Disorders

- Account for 6 of the top 10 causes of death*
- Affect 1 in 3 Americans
- Cost over \$500 billion per year**
- Major impact on "survival" in the modern world:
 - workplace productivity
 - social functioning
 - quality of life



Sources: *CDC, **SIN Fact Page



Challenges of Assaying Nervous System Disorders

- Many disorders of the nervous system are characterized by behavioral symptoms that are difficult to quantify and depend upon environmental variables.
- Many diseases of the nervous system are very slowly progressive, compounding the difficulties of their diagnosis and treatment.



Nerve cells and their fibers in the brain



Assessing Nervous System Function

- **Good News:**
 - The brain is a great reporter organ.
 - We have learned how to manipulate inputs how to measure specific readouts.
- **Bad news:**
 - The output is complex and linked to constant interaction with a "uncontrolled" environment.
 - We are often forced to limit assessments to contrived testing situations and to very narrow bandwidth outputs.



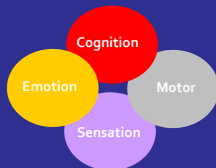
Assessing Nervous System Function

Urgent need for:

- Better means to assess nervous system function.
 - In "real life"
 - Repeatedly over time
 - At low expense
 - To match the richness offered by "biomarkers"
 - neuroimaging and the "omics" (genomics, proteomics, metabolomics, transcriptomics, etc.)
 - In large numbers of persons
- Can advances in technology save the day?
 - Data storage, data transmission, sensors of the environment, sensors of motor and language.



NIH Toolbox for Assessment of Neurological and Behavioral Function



- Valid and reliable
- Multidimensional
- Versatile but brief
- Diverse
- State-of-the-art
- Dynamic



NIH Toolbox Project Team

- NCCAM – Kate Stoney
- NEI – Susan Vitale
- NIA – Molly Wagster, Dallas Anderson, Jon King
- NIAAA – Ellen Witt
- NICHD – Sarah Knox
- NIDA – Kevin Conway
- NIDCD – Howard Hoffman
- NIEHS – Kimberly Gray
- NIMH – Pim Brouwers
- NINDS – Emmeline Edwards, Claudia Moy
- OBSSR – Deb Olster





NIH Blueprint
for Neuroscience Research

For more Information
Visit the Neuroscience Blueprint Website at:
<http://www.neuroscienceblueprint.nih.gov/>