



Federal Research: Neuroscience and the BRAIN Initiative

Lewis-Burke Associates, LLC
June 1, 2017

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About Lewis-Burke

- Twenty-eight policy experts with range of expertise/backgrounds allow multi-layered issue teams with deep expertise in agencies and scientific/education areas
- Support federal relations activities to develop and implement federal strategies to pursue, shape, and create new sources of funding to increase and diversify research portfolio
- Able to engage on multiple levels:
 - Individual faculty (including early career faculty)
 - Teams of faculty
 - Associate Deans for Research
 - Deans and Center Directors
 - University leadership and campus-wide priorities

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BRAIN Initiative

- Introduced by President Obama in April 2013 to accelerate the development of **new tools** to understand human brain structure at the level of cells and circuits and the development of new technologies for recording and modulating large-scale neuronal networks
- Since initial funding of \$100 million in FY 2014, spending across all involved agencies was around \$300 million in FY 2016
- \$1.5 billion over 10 years (21st Century Cures)
- Increase investments in tools/technologies for human brain imaging; data informatics—standards, archives, integration; neuro-ethics
- Shifting to applications and discovery possible from tools

BRAIN Initiative

- Since initial funding of \$100 million in FY 2014, spending across all involved agencies was around \$300 million in FY 2016
- *21st Century Cures*: signed into law December 2016
 - Innovation Projects: Precision Medicine Initiative, **BRAIN Initiative (\$10 m)**, Cancer Moonshot, Regenerative Medicine
- FY 2017 omnibus increased funding by \$110M for BRAIN (NIH only)

Federal Support for Neuroscience Research

- **NIH:** investment continues to grow
 - hiring full-time director for the BRAIN Initiative and embedded program managers across the agency
- \$400 m increase for Alzheimer's research to \$1.4 billion
 - funding to detect the earliest brain changes in AD, identify genetic influences contributing to risk, clinical trials test preventive and therapeutic interventions, and better support for caregivers
- \$87 m increase for NINDS in FY 2017
- \$53 m increase for NIMH in FY 2017
- **NSF:** agency committed \$172 million to UtB (of which ~\$70 m is for BRAIN) in FY 2016
 - the current NSF plan for BRAIN will be phased out in FY 2018 with UtB continuing until FY 2020 and agency is engaged in next planning stages
 - has identified the human-technology frontier as an area of priority investment for the future

Federal Support for Neuroscience Research

- **DOE:** collaborations with NIH to leverage DOE resources, facilities, and expertise to help address biomedical research questions using high-performance computing, nano-fabrication, and modeling
- **DARPA:** Biological Technologies Office (BTO) supports 10 programs that sponsor BRAIN-related research
 - Agency intends to invest \$118 million in FY 2017
 - Emphasis on neuro-technology as one of three main thrusts
 - Brain Machine Interface
 - Imaging
 - More than just rehabilitative technologies
- Additional funding through CDMRP program
 - \$30 m Spinal Cord research
 - \$15 m Alzheimer's

Social and Behavioral Sciences (SBS)

- SBS likely continued to be targeted by Congress for federal funding cuts and have placed increased pressure on research agencies to show value/results for using taxpayer dollars
- Partnerships across disciplines are increasingly important (e.g. NSF Big Idea: Human-Technology Frontier)
- Federal agencies and the National Academies are emphasizing the role of SBS in defense and national security
 - DOD MINERVA annual solicitation – Mar 21 was due date for initial white papers
 - National Academies decadal survey: Social and Behavioral Sciences for National Security – first committee meeting was March 23-24, 2017
 - DARPA 2016 - Next Generation Social Science continues
- Some continuity and support will continue at the civil service level at NIH – OBSSR Director will continue to implement FY 2016-2020 Strategic Plan; new OBSSR deputy director a clinical psychologist
- Lewis-Burke updates a social and behavioral sciences grants overview each October

DOD Snapshot: Medical

- DOD Health Research Priorities: approximately \$1-1.5 billion invested
 - **Hemorrhage** – blood products (storage, transportation, in theater transfusions); extend blood platelet shelf life; improved pre-hospital treatments for critical patients; alternatives to using anti-biotics for post wound care.
 - **Traumatic Brain Injury (TBI)** – classification of TBIs that can inform future technology and treatment strategies; Biomarkers to replace CAT scans (affordability)
 - **Mental Health** – suicide prevention; substance abuse, rural healthcare/telemedicine
 - **Pain Management** – Burn care, Opioid use
 - **Infectious Disease** – prevention, diagnostics, therapeutics; surveillance; warfighter v. civilian health
 - **Health IT**
- Work executed through U.S. Army Medical Research and Materiel Command (MRMC) & Defense-wide Congressionally Directed Medical Research Programs (CDMRP), as well as DOD basic research offices with some medically-oriented programs
 - CDMRP solicitations rolling out now.
- Also involved with multi-agency priorities, including:
 - Global Health Security Agenda (biosurveillance, antimicrobial resistance, and Ebola/infectious disease research and response)
 - Precision Medicine
 - Big Data: data sharing standards, software tools, enhanced training, centers of excellence
 - BRAIN: targeted investment to accelerate development of neurotechnologies
 - Alzheimer's and aging: new investments in research and care to address growing number of patients and increased costs

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