LOSING APPETITE FOR MISSION:

R&I POLICY INITIATIVES BEYOND HEALTH AND NATIONAL DEFENSE

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George Washington University

Austrian EU Council Presidency Conference
"Impact of Research and Innovation Policy at the Crossroads of Policy Design, Implementation and Evaluation"
6 November, 2018

IDEAS FOR FUTURE NSF INVESTMENT

- NSF INCLUDES: Enhancing Science and Engineering through Diversity *
- Understanding the Rules of Life: Predicting Phenotype
- Work at the Human-Technology Frontier: Shaping the Future *
- Mid-scale Research Infrastructure
- Windows on the Universe: The Era of Multi-messenger Astrophysics
- Navigating the New Arctic
- Harnessing Data for 21st Century Science and Engineering *
- The Quantum Leap: Leading the Next Quantum Revolution
- Growing Convergent Research at NSF *

Public Procurement for Innovation

'This is a very timely book! Public procurement for innovation has become a prominent tool of demand side innovation policy in recent years. A better understanding of the underlying assumptions and intentions, as well as the opportunities of this bundle of instruments and their limitations, is highly relevant for both innovation policy analysts, students and practitioners. The book presents the latest knowledge and insights of world-leading experts in the field of public procurement for innovation.'

– Stefan Kuhlmann, University of Twente, the Netherlands, President of the European Forum for Studies of Policies for Research and Innovation

Public procurement for innovation (PPI) is a demand side innovation policy instrument. It occurs when a public organisation places an order for the fulfillment of certain functions or needs, which cannot be met at that moment or within a reasonable period of time through a new or improved product.

Providing evidence of the benefits to public and private actors from selective use of this policy instrument, this book illustrates the requirements and constraints for its operationalization. It significantly improves our knowledge of the key determinants of effective public procurement aiming to promote innovative capabilities in the supplying sectors and beyond. It also provides case studies and conceptual contributions that help extend the frontier of our understanding in areas where there are still significant knowledge gaps.

Scholars interested in the study of innovation policies and practitioners involved in the design, implementation and evaluation of PPI will benefit from this state-of-the-art exploration.

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www.e-elgar.com www.elgaronline.com

ISBN 978-1-78347-188-1

9 781783 471881

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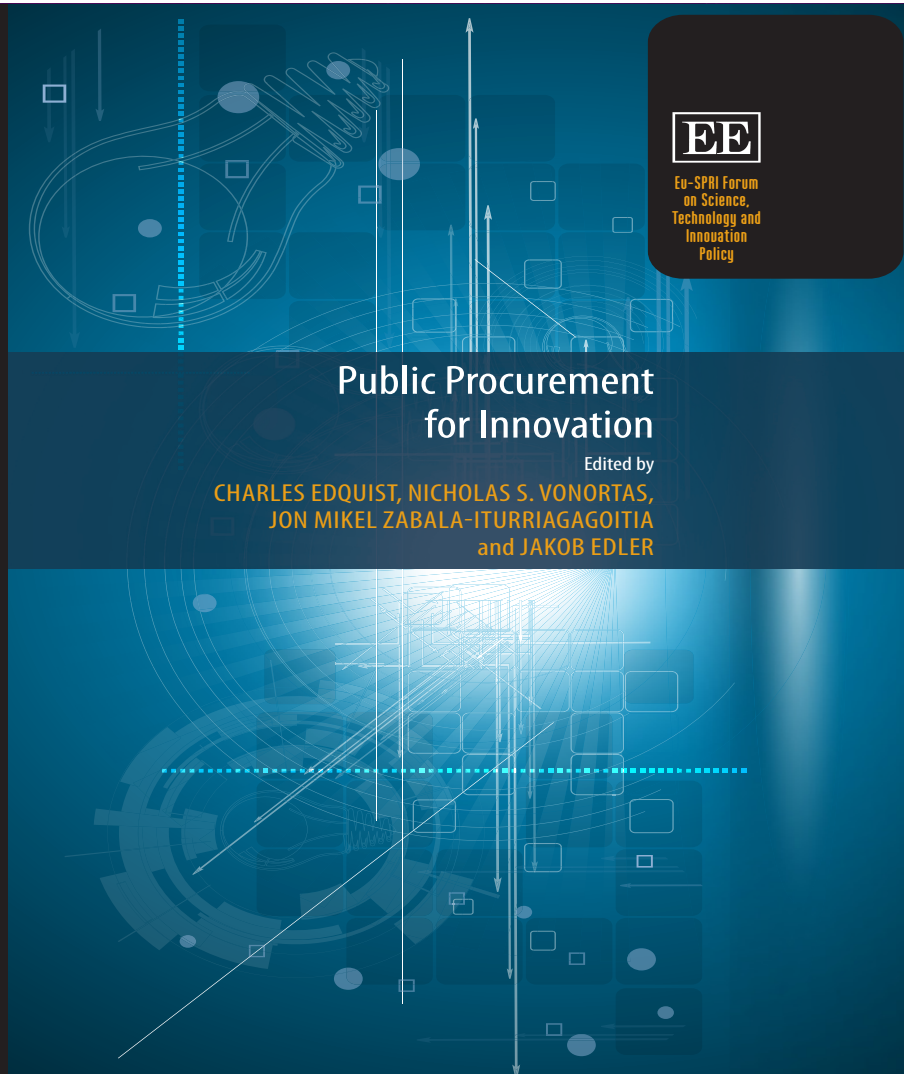

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Eu-SPRI Forum on Science, Technology and Innovation Policy

Public Procurement for Innovation

Edited by

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US PUBLIC PROCUREMENT

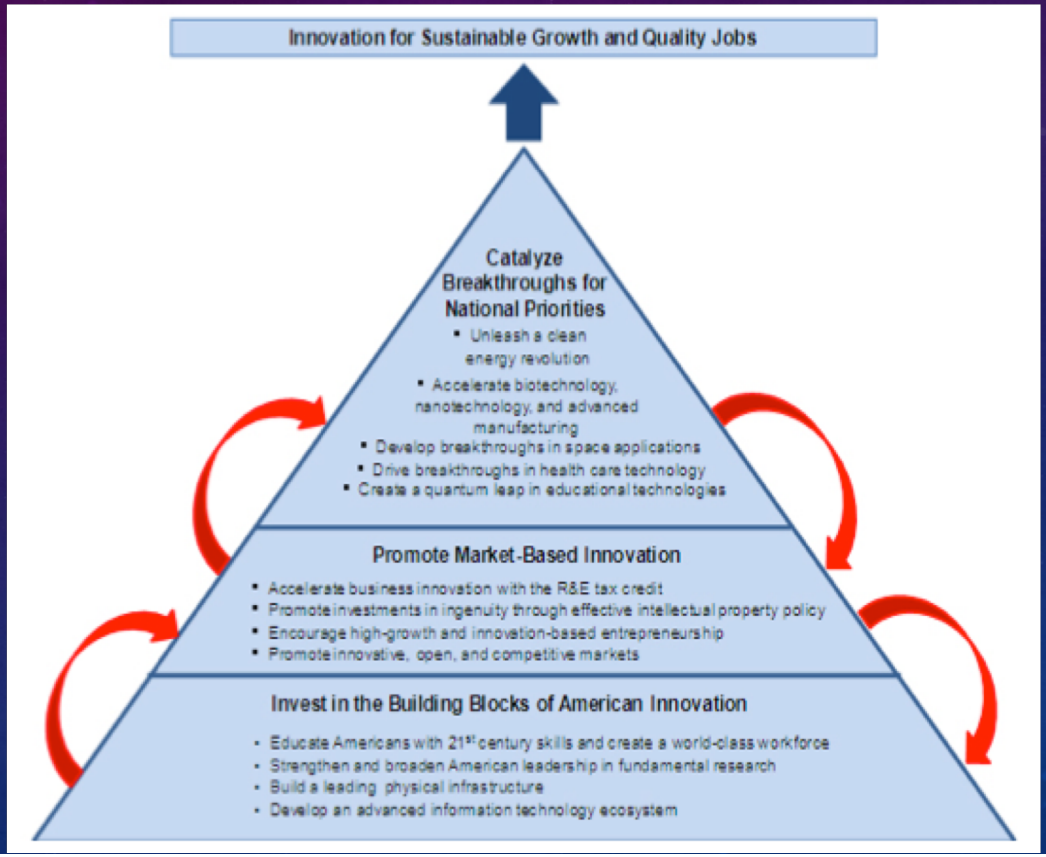
- Most of the 'strategic' procurement in US beyond defense/security is geared towards achieving a social purpose such as environmental protection, energy conservation, assisting disadvantaged groups in the population, and the like.

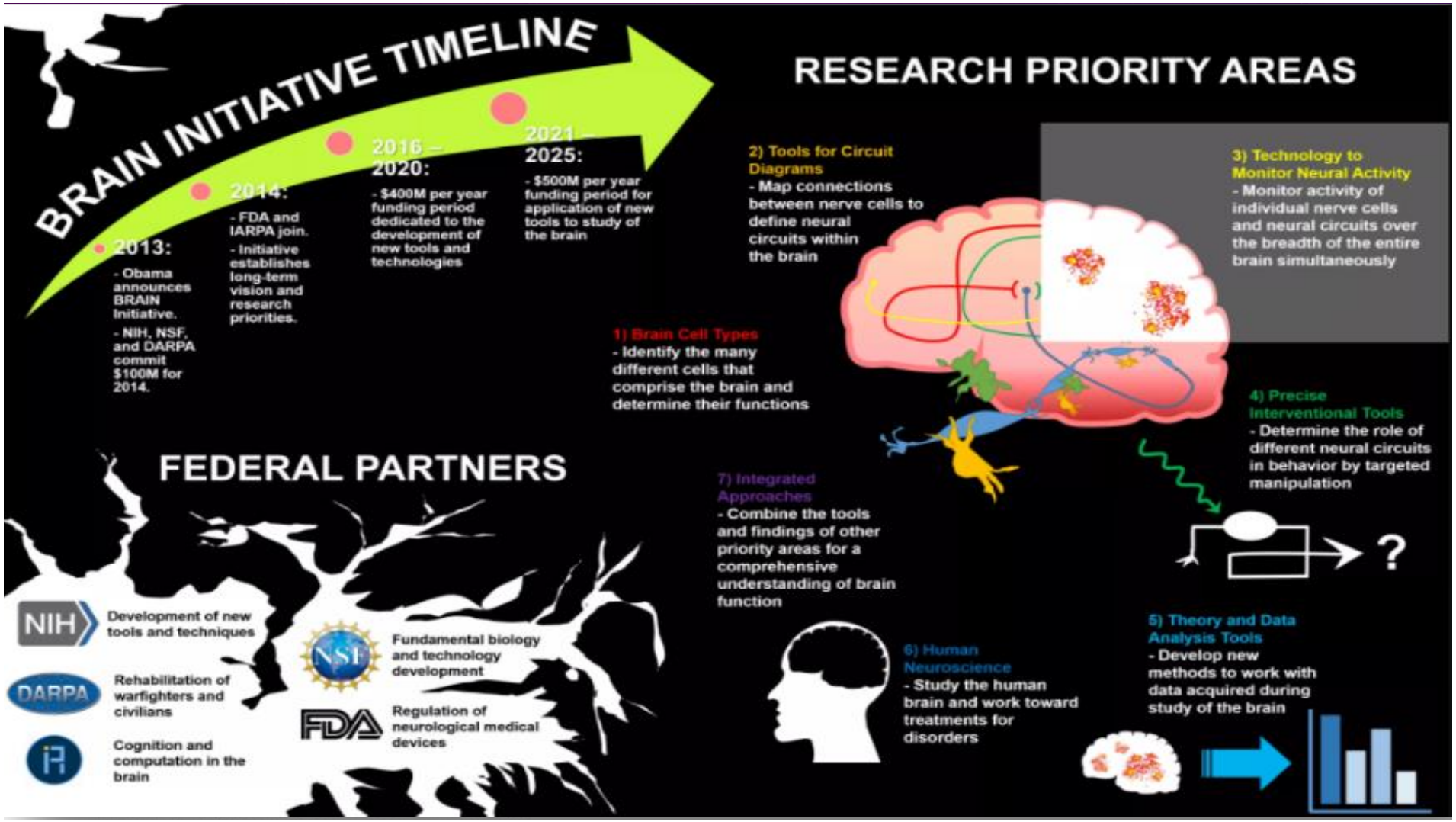
- Innovation may be the outcome of the quest for such results. Cost efficiency, a primary driver at least since the public procurement reform in early 1990s, may also occasionally result in innovation.

No regulation or established procedure in the US provides guidance on innovation-promoting public procurement.

- *FAR and its adaptations provide procedural rules that have standardized procurement processes across agencies. The substantive policies are mostly left to the discretion of each acquiring agency (or even bureau within the agency) which is responsible for defining specifications and the evaluating criteria per procurement.*

STRATEGY FOR AMERICAN INNOVATION 2011




BRAIN INITIATIVE TIMELINE
2013:
- Obama announces BRAIN Initiative.
- NIH, NSF, and DARPA commit $100M for 2014.
2014:
- FDA and IARPA join.
- Initiative establishes long-term vision and research priorities.
2016 – 2020:
- $400M per year funding period dedicated to the development of new tools and technologies
2021 – 2025:
- $500M per year funding period for application of new tools to study of the brain
RESEARCH PRIORITY AREAS
1) Brain Cell Types
- Identify the many different cells that comprise the brain and determine their functions
2) Tools for Circuit Diagrams
- Map connections between nerve cells to define neural circuits within the brain
3) Technology to Monitor Neural Activity
- Monitor activity of individual nerve cells and neural circuits over the breadth of the entire brain simultaneously
4) Precise Interventional Tools
- Determine the role of different neural circuits in behavior by targeted manipulation
?
5) Theory and Data Analysis Tools
- Develop new methods to work with data acquired during study of the brain
6) Human Neuroscience
- Study the human brain and work toward treatments for disorders
7) Integrated Approaches
- Combine the tools and findings of other priority areas for a comprehensive understanding of brain function
FEDERAL PARTNERS
NIH
Development of new tools and techniques
NSF
Fundamental biology and technology development
DARPA
Rehabilitation of warfighters and civilians
FDA
Regulation of neurological medical devices
Cognition and computation in the brain

FROM WAR ON CANCER TO CANCER MOONSHOT

- Thematic area: Health
- Mission: (1) Eradicate cancer as a major cause of death by increased research to improve the understanding of cancer biology and the development of mode effective cancer treatments such targeted drug therapies. (2) Accelerate cancer research, improve access to therapies for more patients and increase the ability to prevent and detect cancer early.
- Owner: (1) NIH-National Cancer Institute. (2) NIH/NCI and Biden Foundation
- Timeline: (1) 1971-2016. (2) (2016-2023.
- Budget: (1) $118b (public budget for NCI). (2) $1.8b. For 7 years (public budget for Biden Cancer Initiative)
- Main difference: (1) supply-side (technology push) v. demand-side (technology pull). (2) public initiative v. initiative with strong private sector participation.

PRIVATE SECTOR INITIATIVES: COMPUTING CANCER

- Microsoft Research Lab in Cambridge, UK.

Mission: cure cancer by using cooperation between computing, engineering, biology etc.

Objectives: not well defined. Milestones: neither.

Timeline: 2016-2026

Owner: initiative is initiated by researchers (bottom up approach). The initiative is taken by the top of Microsoft, which can make it top down.

Citizen involvement: none

PRIVATE SECTOR INITIATIVES: MISSION TO MARS

- Elon Musk

Objective: To place a man on Mars

Timeline: …….

Owner: Elon Musk

Citizen involvement: None directly

LESSONS

- **The US has lost its appetite for major mission-oriented R&I initiatives outside the area of national defense/security and probably health**. Various reasons:
  - Difficulty to maintain budgets
  - Inability to promote the broad set of policies needed for accomplishing mission (e.g., industrial, education)
  - Citizens' suspicion of the real intentions of the government; disbelief in public sector ability to carry out the mission
  - Policy system fragmentation among several "zealous" mission-oriented public agencies (with old-style, supply-side mission definition); lose coordination

- In contrast, rising attention to:
  1. Hybrid public-private efforts (e.g., Cancer Moonshot)
  2. Philanthropic foundations trying to fill gap in certain areas (e.g., health/Gates)
  3. Private sector initiatives on the rise in certain areas (e.g., space/Musk/Bezos).

THANK YOU!!!!

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