

**NIDA Strategic Planning – Big Data Workgroup**  
**Co-Chairs: Roger Little and Massoud Vahabzadeh**  
**SPB Coordinator: Ericka Boone**

**Workgroup Webinar**  
**Friday, April 10, 2015**  
**1:00 p.m.**

Attendees

Ericka Boone, Roger Little, Massoud Vahabzadeh, Vani Pariyadath, Arthur Toga, Maryann Martone, Michael Neale, Udi Ghitza, Steve Gust, Eric Nestler, Maureen Boyle, Tom Radman, Joni Rutter, Tisha Wiley, Steven Grant, Jeffrey Grethe

Welcome and Overview

Dr. Ericka Boone opened the meeting, thanked the group on behalf of Dr. Volkow for investing their time, and introduced the Co-Chairs, Dr. Roger Little and Dr. Massoud Vahabzadeh.

Dr. Boone provided a brief background on the initial planning stages of the NIDA Strategic Plan and explained how the Big Data Workgroup fits into the development stage. She explained that Dr. Volkow's idea for a comprehensive and transparent process included release of an RFI in December to solicit ideas from the field. The RFI outlined NIDA's strategic priorities at that time (basic neuroscience, clinical and translational science, public health, and science infrastructure) and asked for input on how to include these in the updated Strategic Plan.

The comment period closed on January 30, and feedback was synthesized for further review by the workgroups. Two other priority workgroups were formed: Complex Patients and Gene x Environment x Development Interactions (GEDI). Each group will work on its respective area and provide recommendations to NIDA on cross-cutting research priorities and related action items for the next 5 years. Each NIDA Division is also developing its own strategic plan, which will be considered, along with workgroup recommendations, in the development of the final plan.

Timeline

The next steps involve:

- Workgroup meetings from now until mid-June:
  - Multiple meetings of the workgroups to discuss relevant issues and formulate priority areas for NIDA research.
  - Draft Strategic Plan recommendations to be submitted by the workgroup by Summer 2015
- Draft Strategic Plan released for public comment – Summer 2015.
- Final Plan – Fall 2015.
- Bold Goals Challenge Grant:
  - NIDA will award up to \$10K for top ideas (winner selection by August).

### Workgroup Charge/Goals

Dr. Little said this workgroup is being asked to develop a 3–5-page recommendations document surrounding Big Data as a critical area for inclusion in NIDA’s updated Strategic Plan. He noted that many disparate fields are beginning to produce a substantial amount of data, including the substance abuse field, which represents a boost in researchers’ analytical power. Our workgroup will identify and suggest ways of leveraging this data to help improve on NIDA’s research portfolio and prioritize its research strategies.

### Big Data Issues, Challenges and Opportunities

Dr. Roger Little provided an overview of the challenges and opportunities relating to Big Data. The availability of such data brings up issues of data sharing and access policies, analysis, reproducibility, and negative results. The Big Data Workgroup should consider each of these issues when deciding on its recommendations for research priority areas for the Institute; however, it need not factor costs or implementation into its final recommendations.

Other issues to examine and prioritize in our discussions include data capture and curation, data dictionaries, common data elements, storage and file format, transfer and security, privacy, visualization, analysis tools, and machine learning.

Along with the challenges, Big Data offers researchers an opportunity to combine and analyze an expansive pool of data on different scales. Dr. Little cited the NIH Big Data to Knowledge (BD2K) as a potential source of data, and efforts to create common data elements in electronic medical records will help to increase opportunities for discovery and validation.

### Discussion

- Dr. Massoud Vahabzadeh added that as data increases and complexities in data expand, there will be a need for training in informatics science, as well as a need for onsite data scientists to analyze the data.
- Dr. Little talked about NIDA’s Division of Basic Neuroscience and Behavioral Research (DBNBR) concept of building out an Addictome to foster data analysis and future collaborations.
- Dr. Arthur Toga discussed separating out the issues of data sharing from the issues of big data components. He suggested the workgroup may want to distinguish between these three components: (1) big data that doesn’t move very well, (2) big data that is distributed and hard to aggregate, and (3) the computational expense associated with big data before identifying and addressing the specifics of data sharing.
- Dr. Little acknowledged that the workgroup would not be expected to remedy all the issues presented but should try to identify and prioritize the most relevant ones for NIDA’s purpose.
- Dr. Little and Dr. Maryanne Martone briefly discussed the need to identify “best data” and level of data for inclusion in the recommendations report, as well as data format and future portability.
- Dr. Vahabzadeh mentioned that the NIH Office of the Associate Director for Data Science will afford researchers with many resources over the next 5 years.
- Dr. Little and Dr. Tom Radman reviewed a subset of current projects funded by the BD2K initiative. NIDA will want its grantees to have access to these BD2K data.

### Public Comment Period

No comments were submitted to the group.

### Action Items

- The workgroup will review and reflect on the talking points from the presentation today and be prepared to share ideas on opportunities and barriers on the next call.
- Dr. Little will forward a template to workgroup members that they can use to record their feedback pertaining to each issue and offer suggestions, and the co-chairs will review all comments.
- A shared workspace will be created for uploading all relevant documents, including the completed templates.

### Next Meeting

The next webinar is scheduled for Wednesday, April 22 at 2 p.m.

## **Big Data Workgroup Members**

### **Extramural Workgroup Members**

Christopher Chute, M.D., Dr.PH., Johns Hopkins University  
Michael Neale, Ph.D., Virginia Commonwealth University  
Eric Nestler, M.D., Ph.D., The Mount Sinai Hospital  
Michael Milham, M.D., Ph.D., Child Mind Institute  
Arthur Toga, Ph.D., University of Southern California  
Maryanne Martone, Ph.D., University of California at San Diego

### **NIH Staff**

Philip Bourne, Ph.D., NIH Associate Director for Data Science  
Maureen Boyle, Ph.D., NIDA (SPB Coordinator)  
Ericka Boone, Ph.D., NIDA (SPB Coordinator)  
Udi Ghitza, Ph.D., NIDA  
Steve Gust, Ph.D., NIDA  
Roger Little, Ph.D., NIDA (Co-Chair)  
Vani Pariyadath, Ph.D., NIDA  
Tom Radman, Ph.D., NIDA  
Joni Rutter, Ph.D., NIDA  
Massoud Vahabzadeh, Ph.D., NIDA (Co-Chair)  
Tisha Wiley, Ph.D., NIDA