

Gene x Environment x Development Interactions (GEDI) NIDA Strategic Planning Workgroup

May 26, 2015

Workgroup Meeting 3 of 5

Co-Chairs:

Naimah Weinberg, M.D. (NIDA)

Jonathan Pollock, Ph.D. (NIDA)

GEDI Work Group Members

NAME	AFFILIATION
WORKGROUP CHAIRS	
Naimah Weinberg, MD	NIDA
Jonathan Pollock, PhD	NIDA
EXTRAMURAL WORKGROUP MEMBERS	
Danielle Dick, PhD	Virginia Commonwealth University
Margaret Daniele Fallin, PhD	Johns Hopkins Bloomberg School of Public Health
Hugh Garavan, PhD	The University of Vermont
John Rice, PhD	Washington University School of Medicine
E. Jane Costello, PhD	Duke University Center of Developmental Epidemiology
William G Iacono, PhD	University of Minnesota
Kenneth Kendler, MD	Virginia Commonwealth University
Eric Johnson, PhD	RTI International
Gustavo Turecki, MD, PhD	McGill University
NIDA STAFF	
Maureen Boyle, PhD	NIDA
Hal Gordon, PhD	NIDA
Raul Mandler, MD	NIDA
Michele Rankin, PhD	NIDA
Joni Rutter, PhD	NIDA
John Satterlee, PhD	NIDA

Agenda

- Introductions/Identification of participants
- May 12 meeting summary - approval
- Continuation of discussion of GxExD research scientific challenges and priorities
- Action Items:
 - Processes for finalizing research priorities – assigning WG members to edit GEDI proposal
 - Plans for addressing questions about benchmarks, training, leveraging other fields
 - Establish timeline for proposal review and completion
- 5 Minute Public Comment Period
- Adjourn

Summary of Last Meeting

May 12, 2015

- In-depth discussions were begun on items 1 and 2 of the five consensus research priorities identified by work group members:
 1. Improved phenotyping
 2. Improved methods for gene identification
 3. Epigenetic approaches
 4. Deeper characterization of the environment
 5. Integration of animal and human studies
- Initial thoughts were presented for proposal development (Due June 26, 2015) – a draft document is being generated by NIDA for workgroup comments, edits
- Cross-cutting priorities (training, statistical methods, etc.) will be addressed at future meetings

Slide 5

Scientific challenges and priorities for GxExD research - topics for discussion

- **Consensus priorities:**

- *Improved phenotyping – discussed May 12*
- *Improved methods for gene identification – discussed May 12*
- Epigenetic approaches
- Deeper characterization of the environment
- Integration of animal and human studies

- **For each of these, address:**

- Why is this important?
- How can this be accomplished? (FOAs? Supplements?)
- What resources are needed to accomplish this?
- Pros and Cons

Slide 6 Scientific challenges and priorities for GxExD research – **Epigenetics**

- **Integration of animal and human epigenetic studies**
 - eQTLs in animal and human
 - Genome-wide comparison of epigenetics in brain tissue between those addicted to drugs and non-using controls
 - Different epigenetic mechanisms, investigate temporal dimensions and avenues for intervention (i.e, epigenetic mark modification)
 - Epigenetics of brain development
- **Address:**
 - Why is this important?
 - How can this be accomplished? (FOAs? Supplements?)
 - What resources are needed to accomplish this?
 - Pros and Cons
 - Slide 9 topics

Slide 7

Scientific challenges and priorities for GxExD research – **Environment Characterization**

- Deeper characterization of the environment with enhanced harmonization across studies to improve power
- **Address:**
 - Why is this important?
 - How can this be accomplished? (FOAs? Supplements?)
 - What resources are needed to accomplish this?
 - Pros and Cons

Slide 8

Scientific challenges and priorities for GxExD research – **Animal <-> Human Studies**

- Integration and cross-fertilization between animal and human studies
- **Address:**
 - Why is this important?
 - How can this be accomplished? (FOAs? Supplements?)
 - What resources are needed to accomplish this?
 - Pros and Cons

Scientific challenges and priorities for GxExD research – **Data Issues**

- Data generated by GxExD research needs to be
 - Shared
 - Integrated
 - harmonized
- **Address:**
 - Why is this important?
 - How can this be accomplished? (FOAs? Supplements?)
 - What resources are needed to accomplish this?
 - Pros and Cons

Slide 10

Scientific challenges and priorities for GxExD research – **Statistical Methods**

- More robust statistical methods need to be applied
- **Address:**
 - Why is this important?
 - How can this be accomplished? (FOAs? Supplements?)
 - What resources are needed to accomplish this?
 - Pros and Cons

Reminder: Workgroup Charge

- Develop strategic priorities for increasing our understanding of gene x environment x development interactions in substance use research.
 - Identify measurable objectives for each priority
 - Specify benchmarks for gauging progress toward each objective
- Deliverable: 3-5 page summary of recommendations for NIDA on GEDI research for the next 5 years
- Completion date: by Friday June 26th

Cross-cutting Themes to Consider During Strategic Planning

- The workgroup should also consider these cross cutting themes as appropriate
 - Training needs (training of clinicians common theme in RFI comments)
 - Addressing sex and gender issues
 - How to leverage technology advances
 - Leveraging innovations from other fields

Meeting Wrap-up

- Action items for next meeting:
 - Initial summaries of research priorities will be drafted by **COB May 29, 2015** as follows:
 - Epigenetics – John/Jonathan
 - Environment – Naimah
 - Animal-Human – Jonathan
 - Identify external WG members to review/edit proposal sections; edits due by **COB June 3, 2015** – email to NIDAOSPCPlanning@mail.nih.gov or upload to Dropbox
 - NIDA staff will collate external member feedback and distribute to all by **COB June 5, 2015**
- Public comment period – 5 minutes
- Adjourn

***Next Meeting – 3:00-4:00 pm EDT,
Tuesday, June 9, 2015**