QuBBD Program
Innovation Lab and FOA

NIH: Vinay Pai, Jennifer Couch, Gabriel Rosenfeld, and Michelle Dunn
NSF: Nandini Kannan

NIH/NSF QuBBD Program

- **Goal:** to nurture new interdisciplinary teams (biomed from NIH and math/stats/cs from NSF) to address data science roadblocks

- **Components:**
  - Series of Innovation Labs to build new teams
  - Follow up meetings to nurture new teams
  - Planning grants to support the collaborative research by new teams

- **Purpose of Today’s Presentation:**
  - Update on pilot within QuBBD program
  - Proposed next steps
Rationale for the QuBBD Program

• It can be challenging to develop interdisciplinary collaborations between biomedical and quantitative researchers, especially at early stage of career

• New teams can lead to innovative science that couldn’t be solved otherwise

• Innovation Labs can break through initial barriers, and subsequent seed funding can support the groundwork that can lead to initiation of a research program to successfully compete for continued funding
Innovation Lab

• One week, facilitated, interactive workshop
  – For generation of new interdisciplinary teams
  – For ideation of an innovative research program
  – Through nurturing from mentors who are experts in their respective fields

• New teams form of early-stage biomedical and quantitative researchers
  – Biomed come with problems (high-need, high-impact data science)
  – Quant brings methods and the desire to develop innovative solutions
FY15 Innovation Lab

• Addressed data science roadblocks in Precision Medicine
• Catalyzed new interdisciplinary teams
  – Teams formed around biomedical scientist with a partially-formulated problem
  – Data scientists brought knowledge of many tools, and the ability to adapt/extend
• Teams wrote applications for small planning grants
  – Applications received from Innovation lab teams and public
  – 10 applications funded after NSF review
  – NIH/BD2K and NSF partnered to fund these projects
Lessons Learned from FY15 Lab

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<tr>
<th>Observed Problem</th>
<th>Identified Cause</th>
<th>Potential Fix</th>
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<tr>
<td>Gaps in expertise</td>
<td>Diffuse focus and limited # participants</td>
<td>Scoping workshop to refine problem space</td>
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<td>Some teams had difficulty selecting problems</td>
<td>Participants not asked to bring identified problems</td>
<td>2-track process: biomed brings problems, quant brings tools</td>
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<td>Confusion about new teams</td>
<td>Definitions not given in “Dear Colleague Letter”</td>
<td>FOA will have clear definitions</td>
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SUMMARY: Innovation Lab Successful

Proposal:
Hold annual Innovation Labs in FY16-18, with the first Lab having an mHealth focus, and issue a multi-year FOA for planning grants
FOA Concept

• Joint NSF/NIH FOA/solicitation that provides a funding opportunity open to Innovation Lab participants and the general public

• Goal: To foster new interdisciplinary teams
  – Early stage investigators from biomedical science and data science
  – To address data science roadblocks that are impeding progress in a biomedical research problem

• Science: Projects to develop novel or significantly adapted computational and quantitative approaches, methods, or tools
Timeline of Key Steps

- Scoping workshop: February 2016
- FOA release: June 2016
- Innovation Lab: July 2016
- Receipt and Review: Oct 2016
- Funding: Feb 2017
Data Science at NIH

- [https://datascience.nih.gov/adds](https://datascience.nih.gov/adds)
- bd2k@nih.gov
- @NIH_BD2K
- #BD2K, #BigData