The Ideas Lab
A New Creative Environment

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The IDEAS Factory

- Begun by UK EPSRC (2004) to explore novel ways for generating innovative high risk research projects on selected topics
- Key element - the “Sandpit”
  - Intensive, interactive, 5-day experience in which an intellectually diverse group of 20-30 people develop innovative ideas and solutions
In 2009, NSF and EPSCR co-sponsored a sandpit in synthetic biology,

which became the basis for the NSF-BIO Ideas Lab
Ideas Lab Goal

1. Address an intractable question, usually in a research area with a sustained track record that is nonetheless stuck in repetitious and/or incremental efforts

2.Scoped for time and budget
Who is Involved?

- **Director and Mentors** - focus on topic
  - “Honest brokers” - Not eligible for funding
  - Provide real-time peer review
- **Facilitators** - focus on process
  - Help design the Ideas Lab experience
  - Facilitate interactions; develop creative environment
- **Participants (20-30)** - recruited from a variety of disciplines by an open call
- **Stakeholders** - provide knowledge of current policy, practices, and resources (government agencies, NGOs, non-profits, private sector, academia)
Selection Process

1. Director recruits **4-5 Mentors** (similar to an NSF review panel or site-visit team)
2. Open, widely-advertised, call for participants
3. **2-page application** (similar to a pre-proposal)
   - Knowledge and expertise
   - Personal attributes (communication skills, collaborative experience, creative activity)
4. **Occupational psychologist** reviews applications
   - **Diversity is key**: Variety of disciplines, diverse backgrounds and career levels, mix of personal attributes increases group’s willingness to take risks and encourages creativity
5. Participants are **selected by Mentors and Director** taking into consideration the recommendations of the occupational psychologist
Ideas Lab: What It Is

- Intensive and interactive
- Multidisciplinary
- Novel networking opportunities
- Employs real-time iterative peer review

Professional facilitator (Knowinnovation):
- Challenges risk-averse and collaboration-averse attitudes
- Promotes creative thinking
Ideas Lab: What It Is Not

- Typical Workshop or Committee Meeting
- Technical presentations
- Limited to a single discipline
- Incremental research support
- Disconnected from funding plans
What do the participants do?

• Define **scope**
• Agree on **common language and terminology**
• Share **understanding, expertise and experience**
• Participate in **iterative development of new ideas**
• Use **creative and innovative thinking techniques**
Real-Time Project Development and Peer Review

- Iterative approach to develop ideas & priorities
- Short presentations to the whole group (enforced time-limit)
- Anonymous feedback from the whole group (pros and cons; “sticky notes”)
- Regular feedback and advice from Director and Mentors
- Speedy decision about ideas selected for full proposals
What Happens After?

• Invited groups submit full proposals in ~ 3 months

• Full proposal review by Director and Mentors:
  - Consistent with selected project areas
  - Intellectual merit
  - Degree of novelty
  - Complementary to the other projects

• Types of awards (non-renewable):
  - Large collaborative consortia (3-5 yrs)
  - Individual or linked projects (3-5 yrs)
  - Smaller feasibility studies (1-2 yrs)
  - Research Collaboration Network (RCN)

• Director-Mentors-PIs meet ~ 18 months post award to evaluate collaboration & progress
BIO Ideas Labs

1. New Directions in Synthetic Biology (NSF and UK-EPSRC; April 2009)
2. Innovations in Biological Instrumentation and Visualization (NSF; May 2010)
3. Surpassing Evolution: Transformative Approaches to Enhance the Efficiency of Photosynthesis (NSF and UK-BBSRC; September 2010)
4. Assembling, Visualizing, and Analyzing the Tree of Life (NSF; August 2011)