T206: Developing Large-Scale, Collaborative Grants

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Who are we?

JULIE BENSON

- Program Administrator for Alaska INBRE
- Problem-Solver – I like to fix things!
- Completer not a competer
- Mother, Singer, Volunteer addict
Pips Veazey
Alaska NSF EPSCoR
Oceanographer
Sailor, skier
Mother
Researcher
Who Are You?

1. Pull out your phone.
2. Using your web browser, visit www.kahoot.it
3. Enter the Game Pin on the Screen
Learning Objectives

• Learning Objective 1: Define team science, collaboration, and interdisciplinary research.

• Learning Objective 2: Understand large applications and your role in them.

• Learning Objective 3: Understand the increased emphasis on team science in funding agencies.
What is a large-scale, competitive grant?

Characterized by integrated and strategic research team visions that leverage collaborative partnerships.

Examples: NIH U- & P- awards, NSF EPSCoR, STC, ERC, etc.
TICTOC for Large Proposal Management

- Team
- Institutional Support
- Communication & Competencies
- Time
- Organization
- Collaboration Agreement
WHAT IS TEAM SCIENCE?

A collaborative effort to address a scientific challenge that leverages the strengths and expertise of professionals trained in different fields.

WHY TEAM SCIENCE?

“...society’s problems do not fit neatly into the University’s departmental grid, nor are they rapidly divisible into subproblems...interdisciplinary research teams can readily respond to multi-discipline, problem-oriented research and public service opportunities.”

COLLABORATIVE SCIENCE IS INCREASING

TRENDS IN AUTHORSHIP

WHY SHOULD WE EMBRACE TEAM SCIENCE?
Demands more than just complementarity

- Team members combine or juxtapose concepts and methods from different disciplines
- Overarching goal is systematic integration of information, data, techniques, tools, perspectives, concepts, and/or theories from two or more disciplines or bodies of specialized knowledge

**GOAL:** to advance fundamental understanding or to solve problems whose solutions are beyond the scope of a single discipline or field of research practice.
YOU SHOULD BE SCARED

“...the most [significant] barrier to successful translational research: the inability to create and sustain dynamic and innovative interdisciplinary research teams.”

### Features of Team Complexity

<table>
<thead>
<tr>
<th>KEY FEATURES</th>
<th>LOW COMPLEXITY</th>
<th>HIGH COMPLEXITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td>Small (2)</td>
<td>Mega (1000s)</td>
</tr>
<tr>
<td>Task Interdependence</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>Boundaries</td>
<td>Stable</td>
<td>Fluid</td>
</tr>
<tr>
<td>Goal Alignment</td>
<td>Aligned</td>
<td>Divergent or Misaligned</td>
</tr>
<tr>
<td>Integration</td>
<td>Unidisciplinary</td>
<td>Transdisciplinary</td>
</tr>
<tr>
<td>Diversity</td>
<td>Homogeneous</td>
<td>Heterogeneous</td>
</tr>
<tr>
<td>Proximity</td>
<td>Co-located</td>
<td>Geographically Distributed</td>
</tr>
</tbody>
</table>

1. Project Management
   A. Knowing
   B. Doing
2. Shared Leadership
   A. Organizational Management
   B. Organizational Empowerment
3. Personal Competence
   A. Team Management
   B. Self-management
   C. Self-awareness
4. Social Competence
   A. Relationship Management
   B. Social Awareness
5. Communication
   A. Internal to team
   B. External to team

http://search.proquest.com/openview/4077d8f594272097f4611dfa9dd479b8/1?pq-origsite=gscholar&cbl=18750&diss=y
CAPITALIZING ON TEAM SCIENCE RESEARCH

• How do we minimize the risks involved with team science?
• What can we do to set expectations?
• Who is responsible for supporting collaboration?
• What does authorship look like on our team?
• Is my team prepared to share data?
TICTOC for Large Proposal Management

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TEAM

1. Scientific Expertise
2. Budget
3. All the other stuff (letters of support, biosketch/CV, research environment, human subjects components, etc)
Institutional Support
Communication & Competencies

Communication
• Internal
• External

Competencies
• Social awareness
• Personal awareness
TIME
Sample Timeline for Large Applications

- Month 1 – Review the announcement, conduct a limited solicitation call and determine the PI. Consider team members to support the application submission. Utilize experts when available and appropriate.

- Month 2- Discuss institutional support and ICR distribution. Work with institutional leadership to ensure strategic integration and program coordination.

- Month 3 - Identify core leaders and writing team. Conceptualize the application & identify partnerships. Outline overall project including cores/project areas with an identified naming convention and layout, solicit A&R requests if allowable. Begin budget discussions.

- Month 4 - Contact partners and draft letters of support. F/U with core leaders for core plan/outline. Select A&R application and ask for details. Provide a draft budget to the core leads.

- Month 5 - Each core will submit a rough outline to the team for review & edits. Identify a consultant if using and engage them in the process.

- Month 6 - Submit drafts of all sections to external reviewers for scientific relevance & impact. Continue to refine the application while waiting for reviewer comments.

- Month 7 - Finalize and integrate reviewer comments. Obtain final letters of support. Finalize budget. Review all components for consistency, errors, and other coordination elements.

- Month 8 - Provide copies to grants office (AOR), VPR/institutional leadership for final review/approval. Continue to review and refine.

- Month 9 - SUBMISSION!
Organization

“The way one starts largely determines how one will continue. Get it wrong here and it is likely that the project will go wrong.”

(Morris, 1994)
Collaboration Agreement
FACILITATING TEAM SCIENCE: DATA MANAGEMENT PLAN AS EXAMPLE

PROGRAM DATA

Amount of Data

Time (EPSCoR years)

Little  Lots  Insane amounts
EMOTIONAL STATE

PROGRAM DATA

Amount of Data

Time (EPSCoR years)

1 2 3 4 5

Little
Lots
Insane amounts
PROGRAM DATA

EMOTIONAL STATE

Amount of Data
- Little
- Lots
- Insane amounts

Time (EPSCoR years)

1 2 3 4 5

Graph showing increasing amounts of data over time.
PROGRAM DATA

Amount of Data

Little

Lots

Insane amounts

Time (EPSCoR years)

1

2

3

4

5

EMOTIONAL STATE

EMOTIONAL STATE
PROGRAM DATA

Amount of Data

1 2 3 4 5
Time (EPSCoR years)

Emotional State

Little Lots Insane amounts

EMOTIONAL STATE

[Icons representing emotional states from happy to distressed]
NIH Field Guide’s Scientific “Prenuptial Agreement”

• Begin to develop trust
• Lay the foundation for the continued relationship
• Explicitly and precisely state goals of the project
• Describe how each of the collaborators will contribute
• Delineate how to handle communications, data sharing, etc.
• Address administrative aspects of the collaboration
• Provide an opportunity to reflect on potential conflicts of interest
COLLABORATION PLAN

Detailed plan that describes multi level ways the group will plan for and support effective collaboration

EMERGING ROLES FOR TEAM SCIENCE

• FACILITATOR
• INTERDISCIPLINARY EXECUTIVE SCIENTIST
• INTEGRATION EXPERT
team members' overlapping mental representation of key elements of the team's task environment
WHAT’S NEXT?

• Data visualization for collaborative science to promote co-development of ideas and shared mental models
• Team spaces for data-driven dialogue around complex problems
• Expansion of integration and team science roles
• Science of Team Science 2020 – Duke University
• INSciTS www.inscits.org
Currently Team Science activities are focused on post-award project management

Most large projects are a constant drumbeat of implementation and delivery:
  - Planning: Strategic planning, Logic Models, Output Timelines
  - Evaluation: Reverse Site Visits, Site Visits, External evaluation

The time to plan for team science is when the proposal is being written:
  - Don’t wait until the award to figure out how things are going to work and who is going to do what
“Cooperative work is a social art and has to be practiced with patience.”
Questions? Want to talk?

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