Program Models as a Tool for Scaling up NSF INCLUDES Projects

Multi-Scale Evaluation in STEM Education

Inclusion across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science (NSF INCLUDES)

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MEET YOUR MODERATOR

Louis J. Gross, PhD

Founding Director, NIMBioS

Professor of Ecology and Evolutionary Biology and Mathematics, University of Tennessee, Knoxville
WHO IS THIS PRESENTATION FOR?

- Principal Investigators of NSF INCLUDES Pilot Projects
- STEM Educators planning to submit INCLUDES Alliance Proposals
- STEM Educators interested in learning more about scaling up their broadening participation projects
HOW TO INTERACT TODAY
MEET YOUR PRESENTERS

Pam Bishop, PhD
**Director**, National Institute for STEM Evaluation and Research (NISER)

Associate Director for STEM Evaluation, National Institute for Mathematical and Biological Synthesis (NIMBioS)

Sondra LoRe, EdS
**Evaluation Associate**, National Institute for STEM Evaluation and Research (NISER)
TODAY’S PRESENTATION

- What is NSF INCLUDES?
- What is a program model?
- A method for modeling your program
- Using program models to set a common agenda
- Modeling collaborative communication
- Questions and comments
- How to learn more
WHAT IS NSF INCLUDES?

- Inclusion across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science
- Three essential components:
  - Design and Development Launch Pilots (DDLPs)
  - National Network Coordination Hub
  - Alliances
KEY ELEMENTS OF COLLABORATIVE INFRASTRUCTURE

- Vision
- Partnerships
- Goals & Metrics
- Leadership & Communication
- Potential for Impact Expansion & Scale
Things to Keep in Mind

• Visually modelling programs and ideas when scaling up can surface perspectives

• Models and maps are excellent ways to start and continue conversations about how scaling up will work

• Alliances are “living systems” that evolve progressively in the roles and responsibilities of partners

• Models and maps should be revisited frequently to reflect the evolving nature of the alliance
Mapping your project

Logic Model

**Situation:**
Problem you are solving

**Inputs:**
What you invest

**Activities:**
What you do

**Participants:**
Who you involve

**Outputs:**

**Intermediate:**
Learning: Knowledge, skill, behaviors...

**Long-Term**
Actions: behavior, practice, policy.

**Goals**

**Intermediate-Term**
Conditions for long term goals

**Long-Term**
Broad, general statement about what the project intends to accomplish

March 8, 2018
Situation: Women are underrepresented in engineering

Inputs:
- Faculty time
- Staff time
- Industry partner time
- Student time
- Grant $

Activities:
- Training faculty students, and staff on implicit bias
- Summer programs on leadership and teamwork
- Living Learning Community
- Role modeling
- Support groups
- Mentored research
- Learning strategies

Participants:
- Faculty
- Staff
- Industry partners
- Engineering students
- Students of other disciplines
- Department heads

Outputs:

Intermediate:
- Raise awareness/intervention in implicit bias
- Give students skills to create community
- Students understand that women are successful engineers

Long-Term:
- Increase ability to change social patterns of bias
- Increase connections and sense of belonging in engineering
- Students are better prepared for academic challenges in engineering

Goals:

Intermediate-term
- Overall decrease in implicit bias
- Females see themselves as belonging in engineering
- Increase academic preparedness

Long-term
- Increase recruitment/retention of women in engineering
Setting a common Agenda

University

Non-profit 1

Non-profit 2

Industry

Local school district

Vision

Increase interest, recruitment, and retention of females in engineering

Specific goals

Awareness of traditional obstacles to engineering careers

Sense of belonging in engineering

 Academically prepared for rigor of engineering major

Innovative Strategies

Implicit bias training

Student-led research

PBL Summer camps

Meet an engineer day

Academically prepared for rigor of engineering major
Collaborative Communication

Elements to consider when scaling up

• **Logistics:** How will communication happen? What media will be used? Who will be involved? What will be shared and when?

• **Data:** What types of data are currently collected by partners? Who is collecting it? How is it analyzed? How is it shared? Where are the overlaps? What new data need to be collected? What types of research will the alliance produce? Who will be responsible for sharing what information?

• **Leadership:** How will leadership be shared? How do you ensure all voices are equally heard? Who will represent each partner? What areas need to be represented for each partner?

• **Expansion:** How will communication about expansion be managed? How do you collectively decide if a new partner becomes part of the alliance? How will they be integrated into the overall program?
Key Take-Aways

• Visually modelling program and ideas when scaling up can surface perspectives of various partners and stakeholders

• Models and maps are excellent ways to start and continue conversations about how scaling up will work

• Alliances are “living systems” that evolve progressively in the roles and responsibilities of partners

• Models and maps should be revisited frequently to reflect the evolving nature of the alliance
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ATTEND OUR FUTURE WEBINARS! :  www.nimbios.org/IncludesConf

April 5 Engaging Diverse Populations in Evaluations of NSF INCLUDES Projects
May 3 Qualitative Data in Culturally Rich Evaluations of NSF INCLUDES Projects
June 7 Strategies for Measuring the Broader Impacts of NSF INCLUDES Projects

NISER Resources

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Contact us!
pbaird@utk.edu
sondra@utk.edu
Thank you!

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