

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)

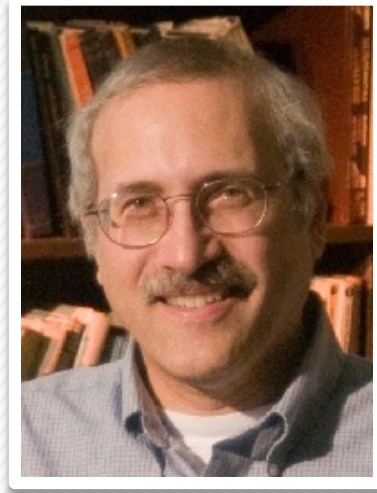


NIMBioS
National Institute for Mathematical
and Biological Synthesis



NISER
NATIONAL INSTITUTE FOR STEM
EVALUATION AND RESEARCH

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



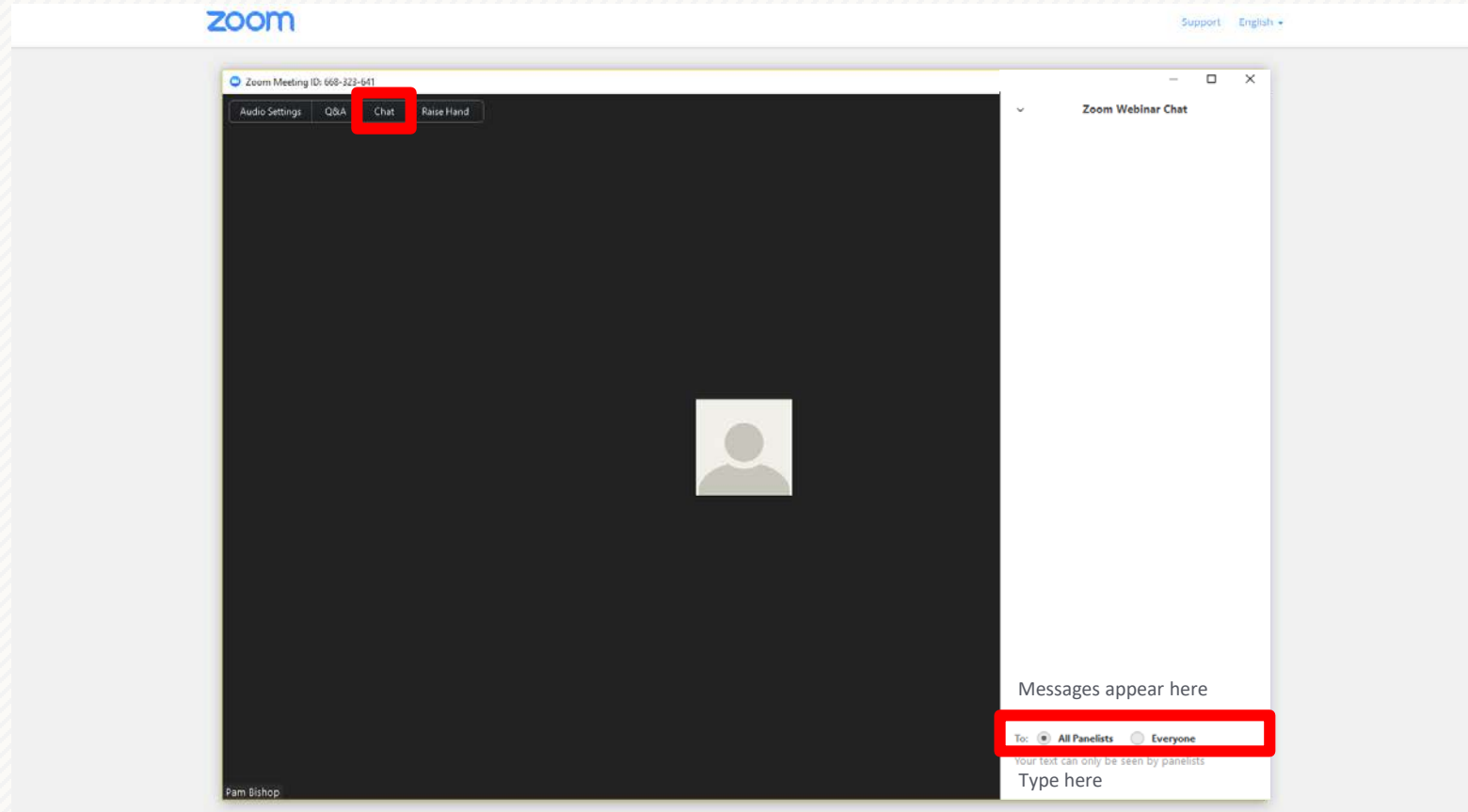
STEM Educators
planning to submit
INCLUDES Alliance
Proposals



STEM Educators
interested in learning
more about scaling up
their broadening
participation projects



HOW TO INTERACT TODAY



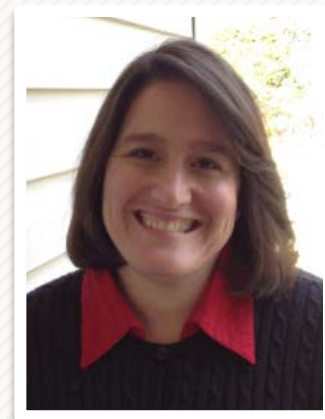
MEET YOUR PRESENTERS



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



THE EVALUATION PROCESS

FOR 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

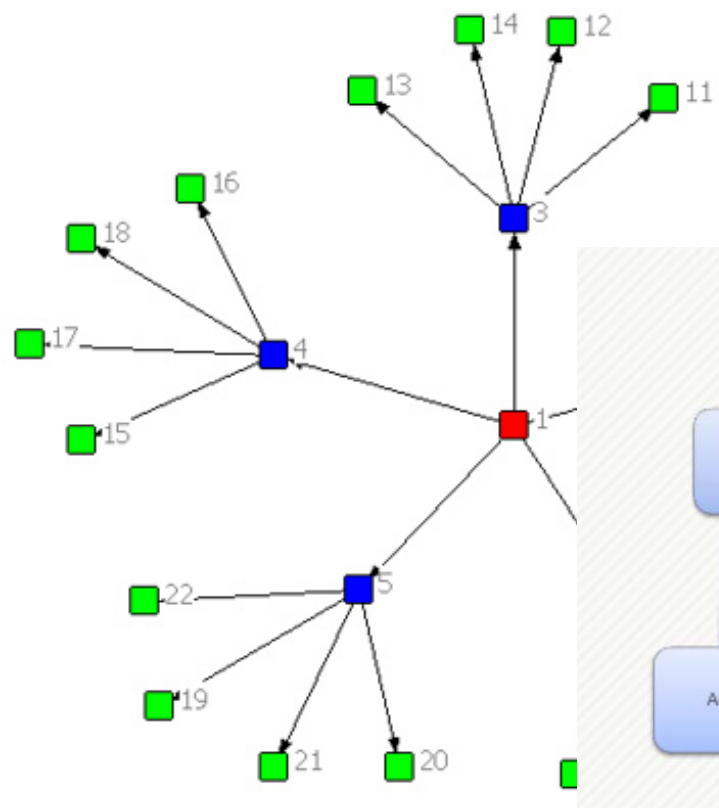
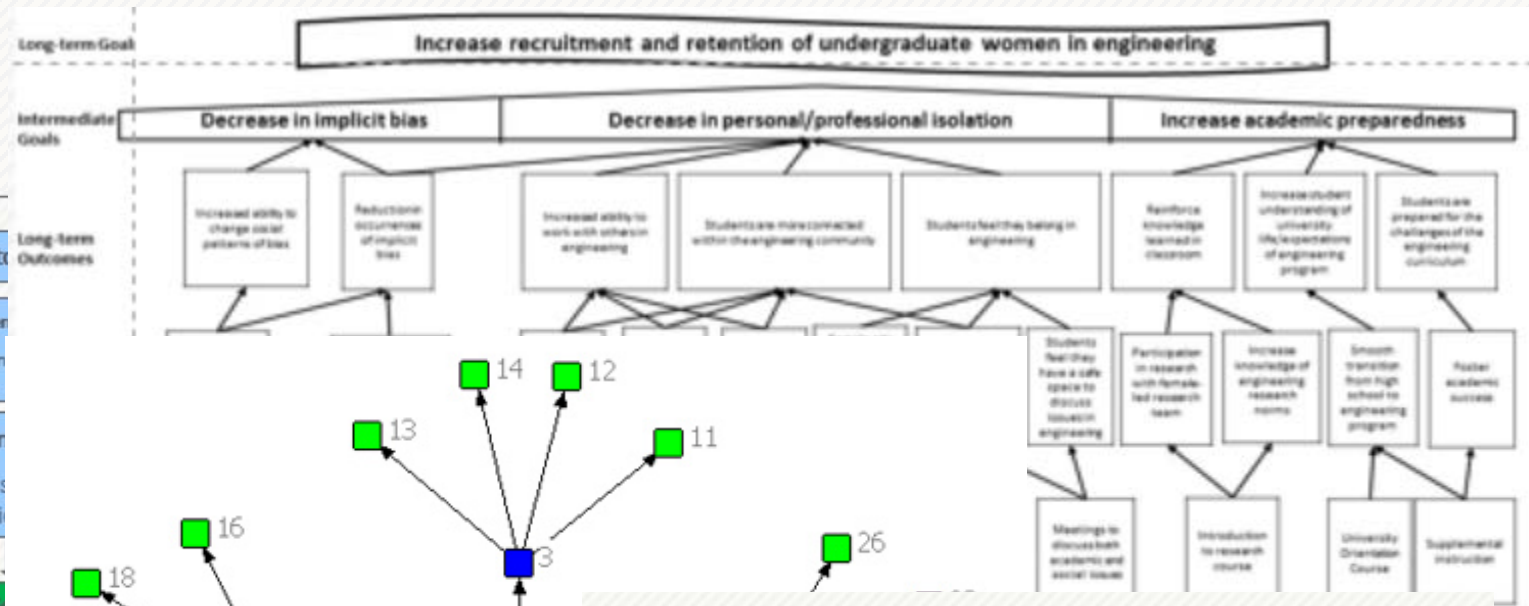
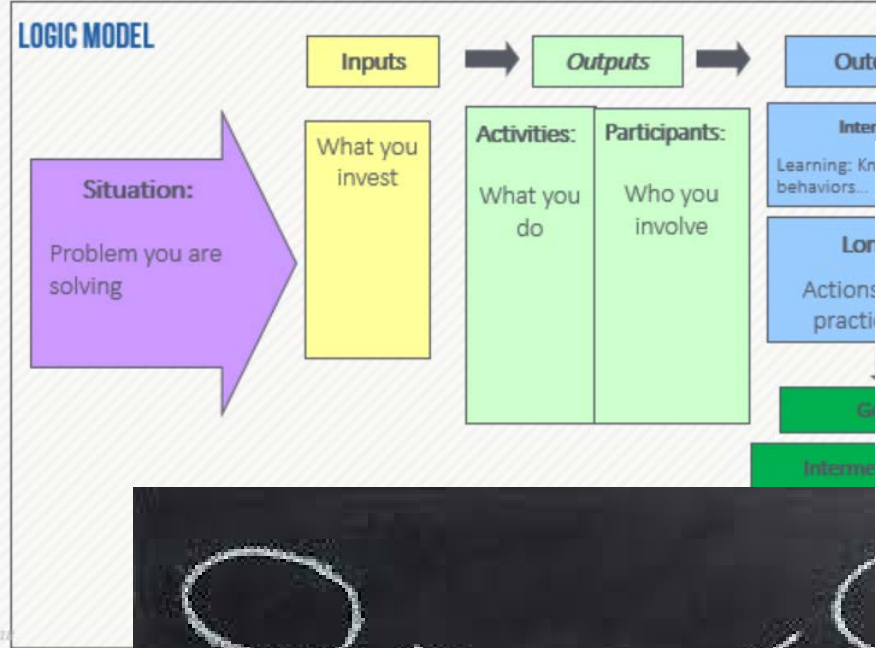
- ❖ Vision
- ❖ Partnerships
- ❖ Goals & Metrics
- ❖ Leadership & Communication
- ❖ Potential for Impact Expansion & Scale



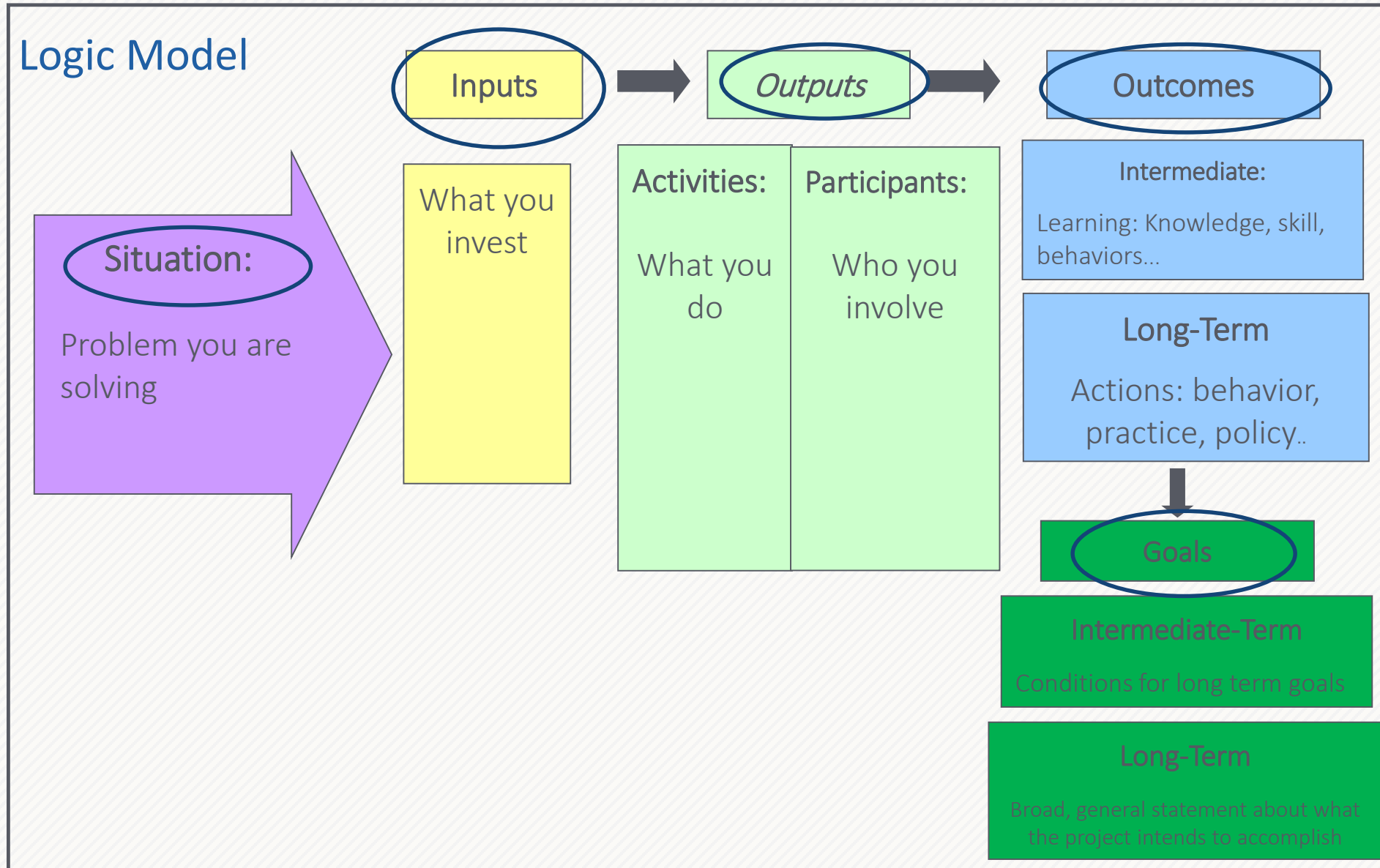
• Things to Keep in Mind

- 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

Program Models

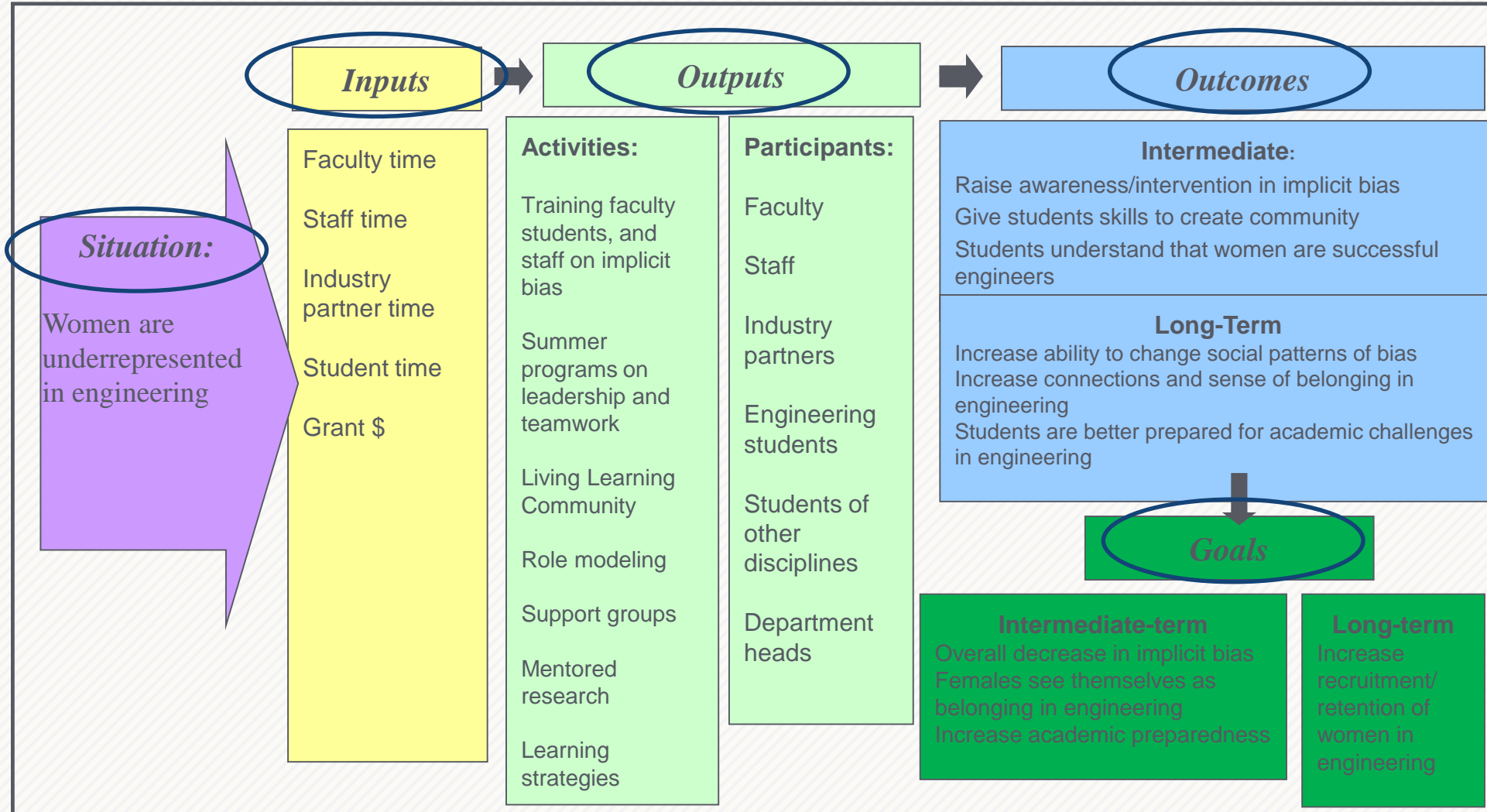


Mapping your project



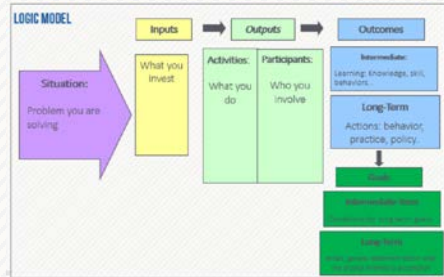
Mapping your project

Logic Models

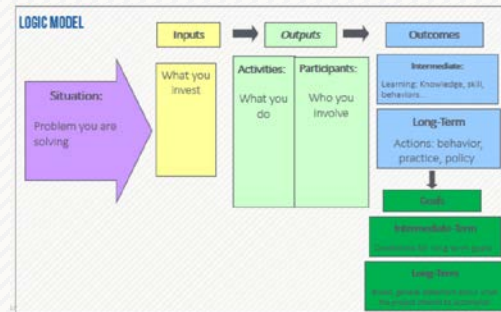


Setting a common Agenda

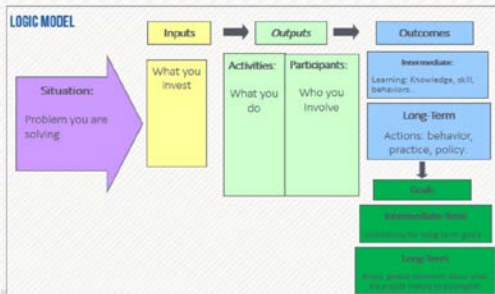
University



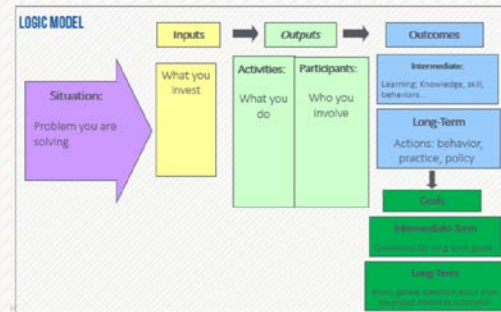
Industry



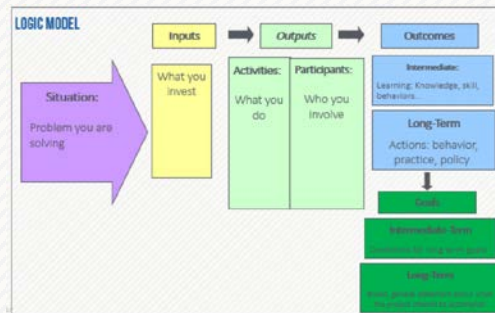
Non-profit 1



Local school district



Non-profit 2



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

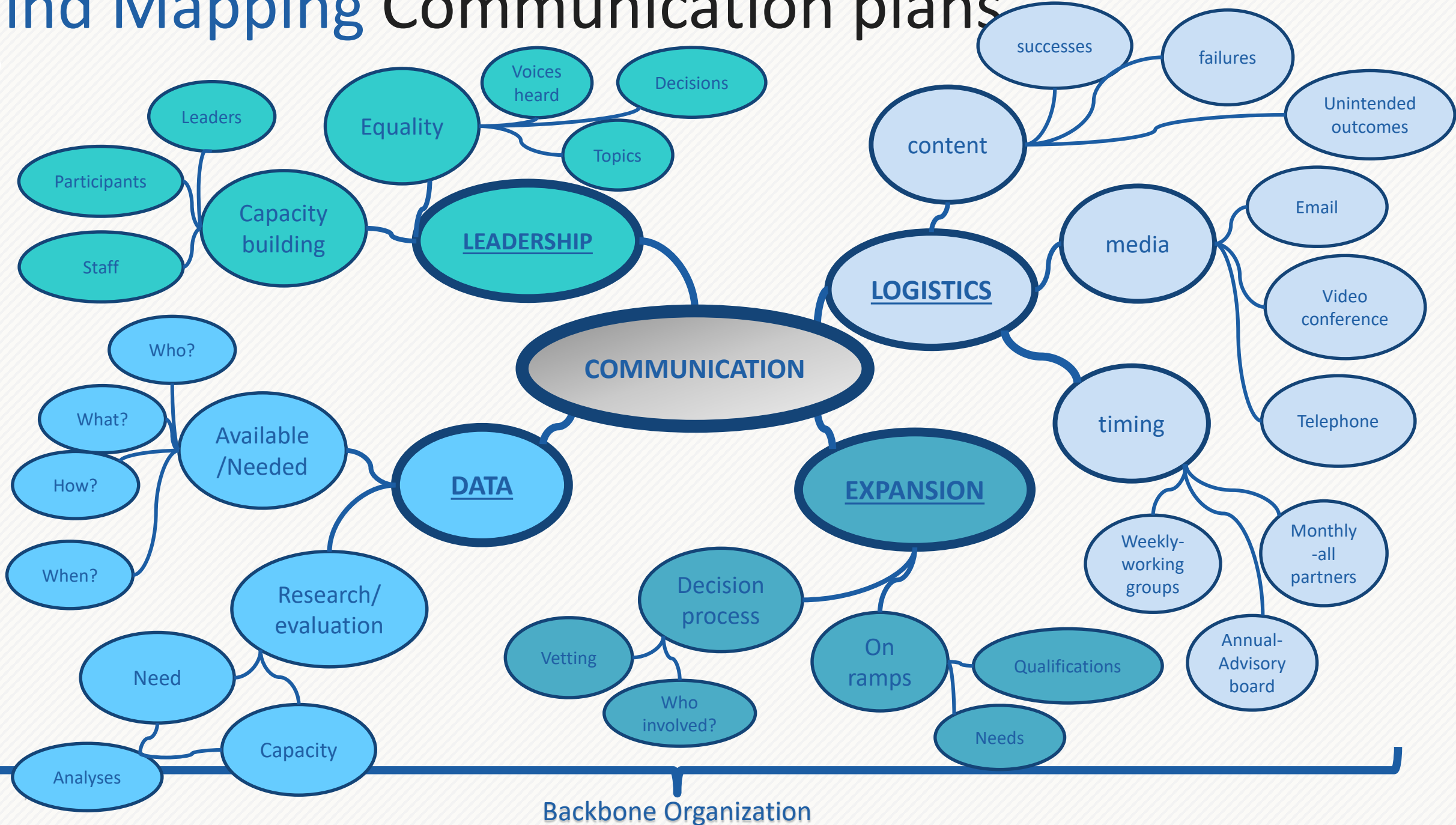


Collaborative Communication

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?

Mind Mapping Communication plans



• 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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THE EVALUATION PROCESS

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HOW TO LEARN MORE

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
Evaluation

June 7 Strategies for Measuring the Broader Impacts of NSF INCLUDES Projects

NISER Resources



stemeval.org



Facebook.com/NISERevaluation

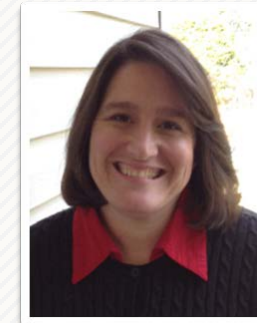


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#NISEReval

Contact us!



pbaird@utk.edu



sondra@utk.edu



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