STEM Faculty Development Research Projects

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Activity	Time	Participant Engagement
Overview	5 min	Participants will consider the potential benefits they may gain from developing a STEM FD research project
Specifics of Research Agenda	20 min	Participants will be challenged to understand the various parts of the research agenda
Q & A	5 min	Participants will be given the opportunity to ask for specific information about the agenda components
Guided Research Program Development	40 min	Participants will be challenged to think through the many considerations underlying a complete research project as well as network with other session attendees to form potential collaborations
Report out	15 min	Participants will share with the other attendees the research they framed as well as pose and answer specific questions regarding their plan
Wrap-Up	5 min	Participants will complete an exit survey

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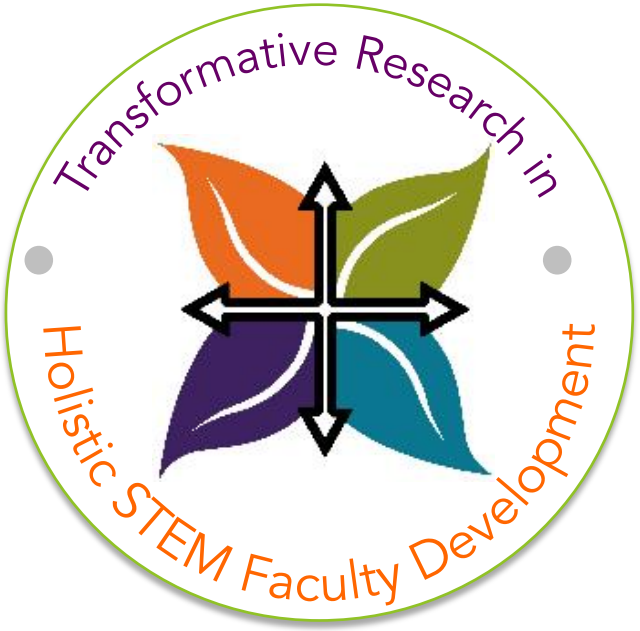
Holistic STEM FD
four areas of teaching, research, service, and leadership



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teaching *research* *service* *leadership*

How Many Hats Do You Wear:

Building Research Capacity for STEM Faculty Development Workshop

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February 17–18, 2017
Clemson University

NSF

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Research & Workshop Team

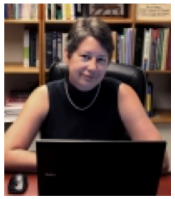
Karen High

Cindy Lee

Sandy Linder

Shannon Stefl

Faiza Jamil



Cindy Roper

Dennis Lee

Kimbell Dobbins

Teri Garrett

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The STEM Faculty Development Collaboratory (SFDC)

- The STEM Faculty Development Collaboratory (SFDC) at Clemson University was established in 2015 to provide transformative research and service in the holistic areas of teaching, research, service, and leadership

- The SFDC focuses on transformative research and service to advance holistic faculty development focused on the STEM disciplines
  - **Please fill out the Affiliate Recruitment cards if you are interested in joining the collaboratory or contributing to the further development of the research agenda**

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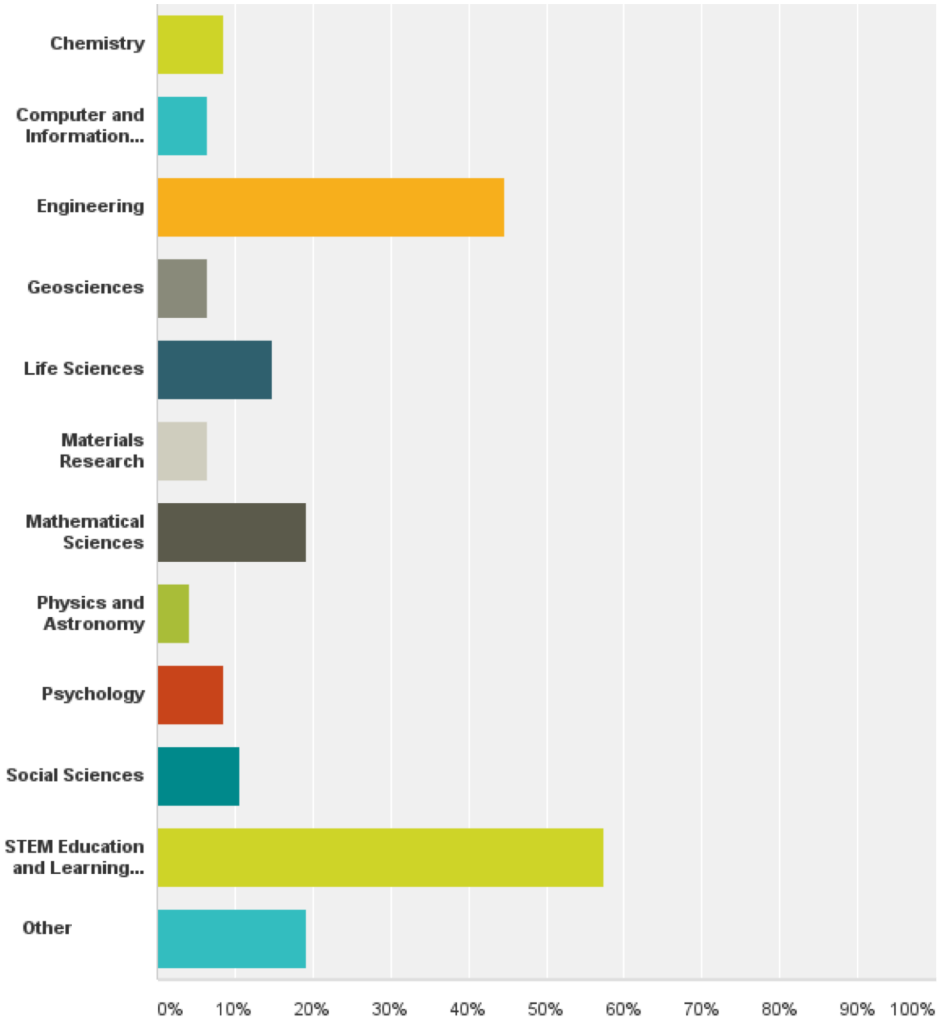
Workshop Participant's Areas of Expertise



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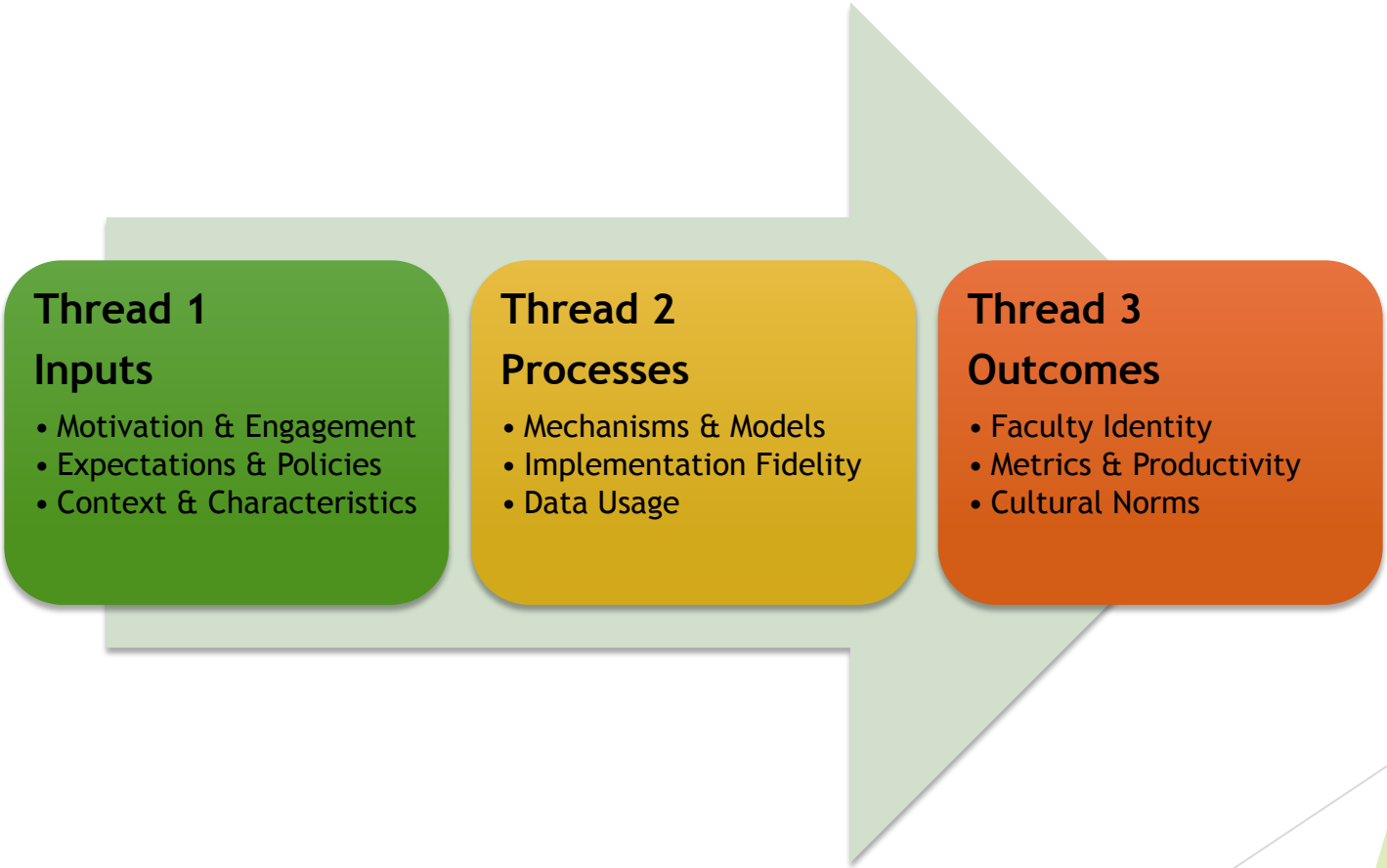
STEM Faculty Development Workshop Discussion Threads



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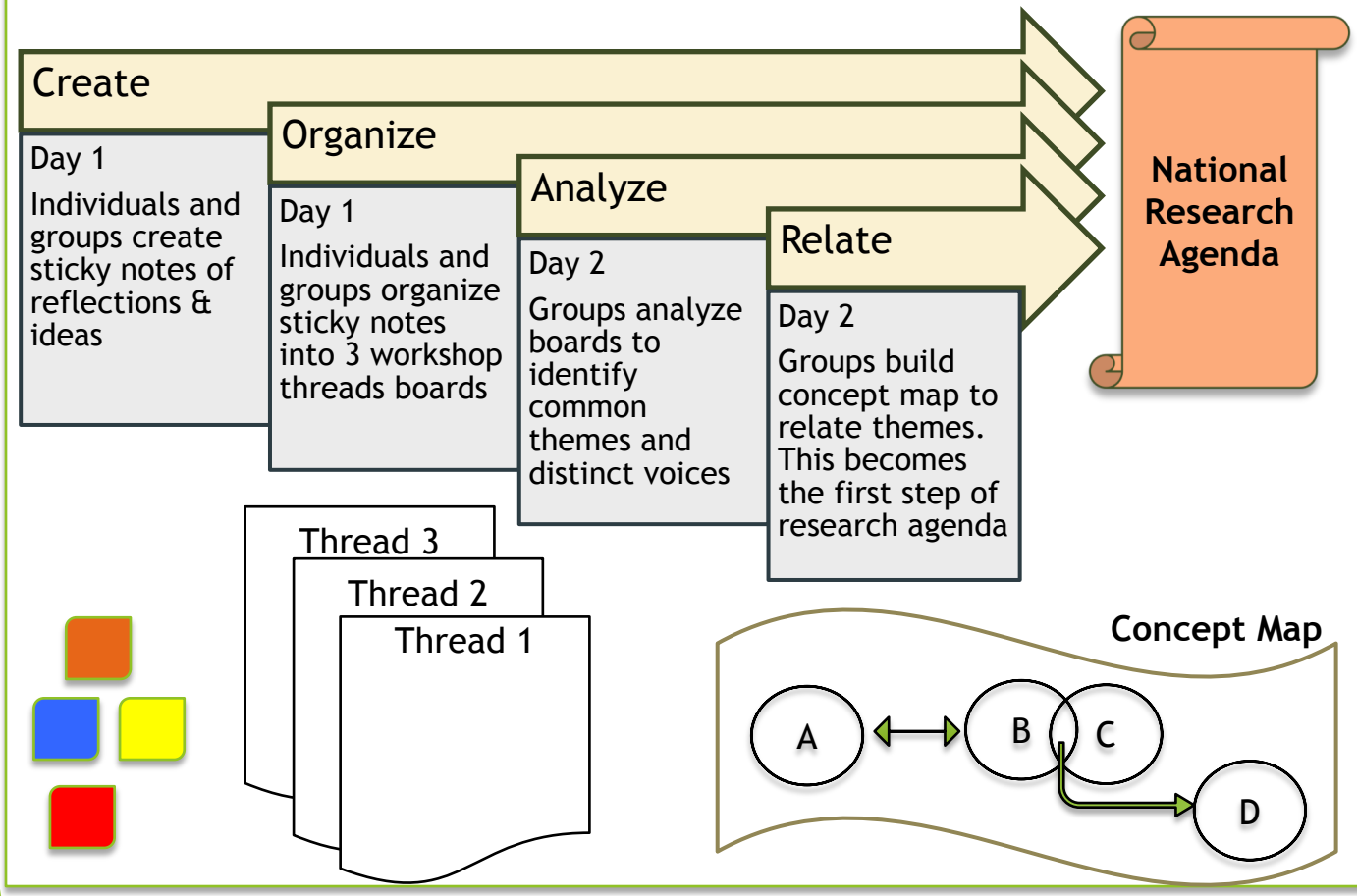
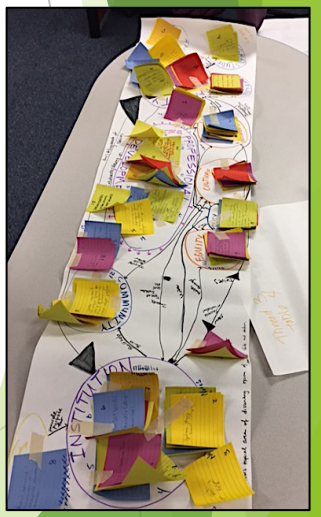
Slack.com Pre-workshop Engagement

Development of national research agenda during workshop





Martin, J.P., Stefl, S.K., Slaton, A. (2017). *Developing a National Research Agenda: A Data Collection and Community Engagement Model*. In Proceedings of the 2017 American Society for Engineering Education Annual Conference and Exhibition.

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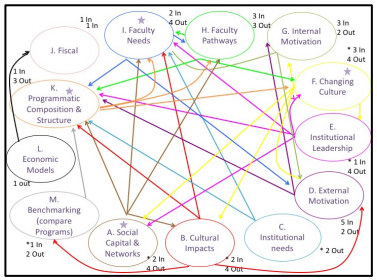
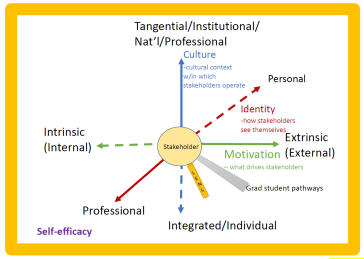
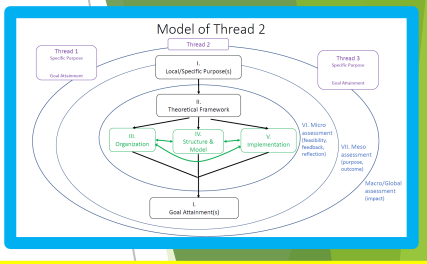
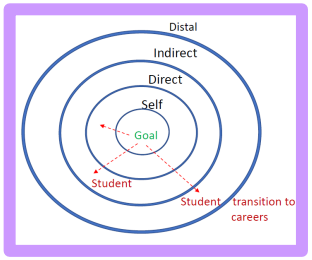
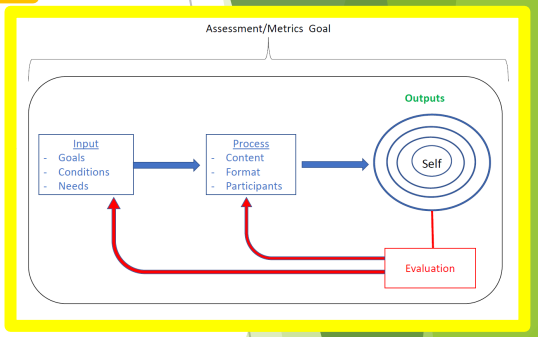
Current State of the Research Agenda











outcomes

Category 1

Category 2

Category 3

Category 4

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Category Description

Identified ***seven overarching outcomes*** for research in Holistic STEM FD.

(1) Metrics/Instrument Development for STEM FD
(2) Impact on Students,
(3) Generalizable Models of Holistic STEM FD
(4) Impact on Faculty
(5) Equity
(6) Cultural and Community Context, and
(7) Institutional Policy and Context

To move the needle on these outcomes, we identified ***four potential categories of research*** that make up an emergent agenda of research for holistic STEM FD.

Category	Themes
1. Cultural and Contextual considerations	• Importance of Context • Institutional Value • External Forces • Who's Responsible • Addressing bias
2. Processes of Conducting STEM FD	• Delivery • Innovation
3. Assessment of Models	• Formative Assessment (Micro- inform the model/feasibility) • Summative Assessment (Meso- results of the model) • Systematic Assessment (Macro/Global- overall change/sustainability) • Implementing Assessment
4. Who Are the Learners?	• Self-Regulatory Development • Motivation • Identity • Student Outcomes • Aligning Personal and Institutional Goals • Aligning Goals Across Academia

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Learning more about the research agenda and SFDC

- Research Agenda & SFDC Website: **www.clemson.edu/ese/stemfacdev**
  - Key items available:
    - Workshop info, ASEE paper, NARST paper, FIE paper, SFDC collaboratory members contact info, draft of agenda

- Email contact: **stemfacdev@clemson.edu**

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