HOLISTIC STEM FACULTY DEVELOPMENT: COLLABORATORY & RESEARCH AGENDA

Clemson University SFDC
STEM Faculty Development Collaboratory

High, Lee, and Linder recently established a ***STEM Faculty Development Collaboratory (SFDC)*** housed at Clemson University. The SFDC engages personnel from research, educational, government, industry, foundations and other areas in the work of STEM faculty development across the country and internationally. Members of the collaboratory participate in a variety of activities such as research projects, delivery of faculty development, engagement in collaborative work at universities, and a number of other projects. Most recently, the SFDC delivered an NSF CAREER proposal workshop for STEM graduate students and faculty.

If you are ***interested in contributing to the SFDC*** or getting more information, please check out our website or email our team at:

STEMFACDEV@clemson.edu
www.clemson.edu/ese/stemfacdev

Karen High
Engineering and Science Education

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Engineering and Science Education

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Transformative Research in Holistic STEM Faculty Development

RESEARCH AGENDA

Expectations for faculty members in the 21st century are high. Early career STEM faculty are expected to establish a sustainable research trajectory, a teaching practice, and a leadership role all while pursuing tenure success. Many colleges and universities have established faculty development programs, but there remains a deficiency in ***holistic*** professional support (for ***teaching, research, leadership, service***) that integrates these disparate professional activities and aligns them with desired individual and institutional goals, especially for faculty in STEM. The research agenda work is designed to bring together multiple stakeholders to begin to establish a research agenda for holistic STEM faculty development. ***See back for research agenda.***

If you are ***interested in contributing to the research agenda***, please email us at STEMFACDEV@clemson.edu

Recent presentations and conferences

FIE Special Session and Paper: Stefl, S.K., Martin, J.P., Linder, S.M., Lee, C.M., High, K.A. (2017). Special Session: STEM Faculty Development Research Agenda. *Let us know if you are attending and interested in collaborating.*
F2B 10:30 am - 12:00 pm, Friday October 20, Location: Sante Fe Room

ASEE Paper: Lee, D.M., Stefl, S.K., Linder, S.M., Lee, C.M., Jamil, F.M., High, K.A. (2017). How Many Hats Do You Wear: Building Research Capacity for STEM Faculty Development Workshop.

POD Network Conference: We will be there for informal discussions and connection. *Let us know if you are attending and interested in collaborating.*

This work is supported by the National Science Foundation under Grant No. EEC-1638888.

Current State of Research Agenda

The Holistic STEM Faculty Development Collaboratory formally gathered a working group of stakeholders from across the country (faculty and administration from 2 and 4 year institutions specializing in STEM, Education, or Research disciplines; representatives from business and industry, and representatives from higher education development centers or institutes) for a two-day conference in early 2017 to determine overall goals and pathways for achieving said goals for research in Holistic STEM FD. After the two day conference, ongoing communication through an online platform, follow-up meetings with subgroups from the working group, and member checks of findings, the Holistic STEM FD Collaboratory 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
7. Institutional Policy and Context

To move the needle on these outcomes, the STEM Collaboratory at Clemson University used data emerging from the two-day workshop, ongoing online platform, returning subgroups from the formal working group, and member checks to establish ***four potential categories of research*** that make up an emergent agenda of research for holistic STEM FD (see table)

Categories of Holistic STEM FD research agenda

Category	Themes
Cultural and Contextual considerations	• Importance of Context • Institutional Value • External Forces • Who's Responsible • Addressing bias
Processes of Conducting STEM FD	• Delivery • Innovation
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
Who Are the Learners?	• Self-Regulatory Development • Motivation • Identity • Student Outcomes • Aligning Personal and Institutional Goals • Aligning Goals Across Academia