

Assessing Intervention Commonalities of the Preparing Future Faculty Program Initiatives

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Problem Statement

Preparing Future Faculty (PFF) Programs were established in 1993, in partnership with the Council of Graduate Schools (CGS) and the Association of American Colleges and Universities (AAC&U) with the basic premise that participation in program initiatives would produce assistant professors who are better prepared for their faculty roles than their non-participatory counterparts. To date, numerous assessments and evaluations have been used to establish good practices in the operations of PFF programming and the value PFF alumni place on program participation. However, there is a paucity of literature that summarizes the impact and learned outcomes of PFF programs geared toward engineering disciplines, or documents the impact PFF initiatives have had on the ascension of women and URM into the professorate. The goal of this work is to begin to address this gap in the literature, by performing a review that synthesizes existing documentation of PFF Program initiatives to better understand the efficacy of individual program interventions.

Research Questions

- ❖ What are the characteristics and components of PFF intervention programs?
- ❖ What are the commonalities and differences of PFF intervention programs?

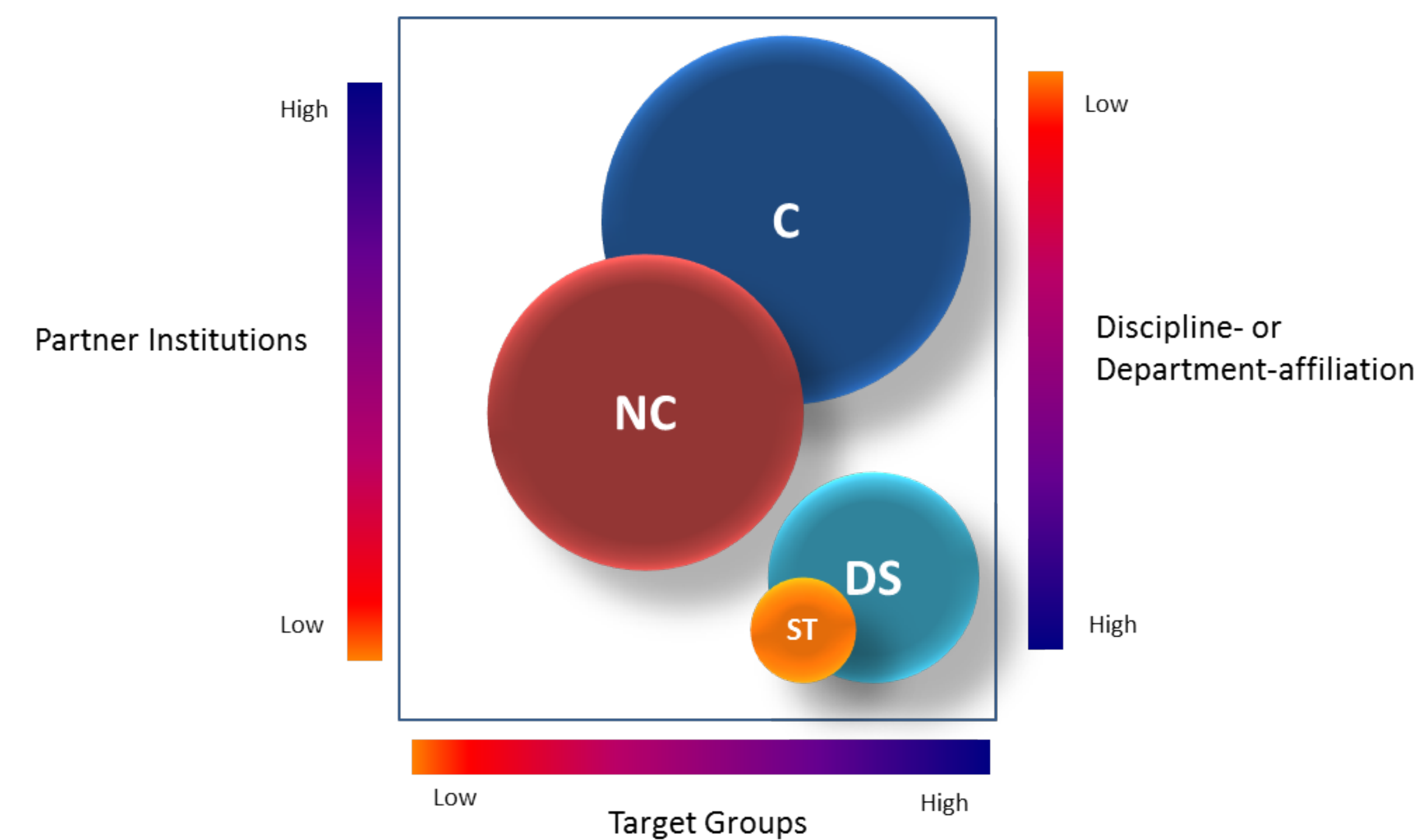


Figure 1. Overview of program characteristics for four program types: cluster (C), non-cluster (NC), department-specific (DS), and short-term (ST); with regard to program duration (circle size), target groups (Low-High; includes PhD students, postdocs, or others), department- or discipline-specificity (Low-High), and exposure of participants to teaching and mentoring at other institutions via partnerships (High-Low).

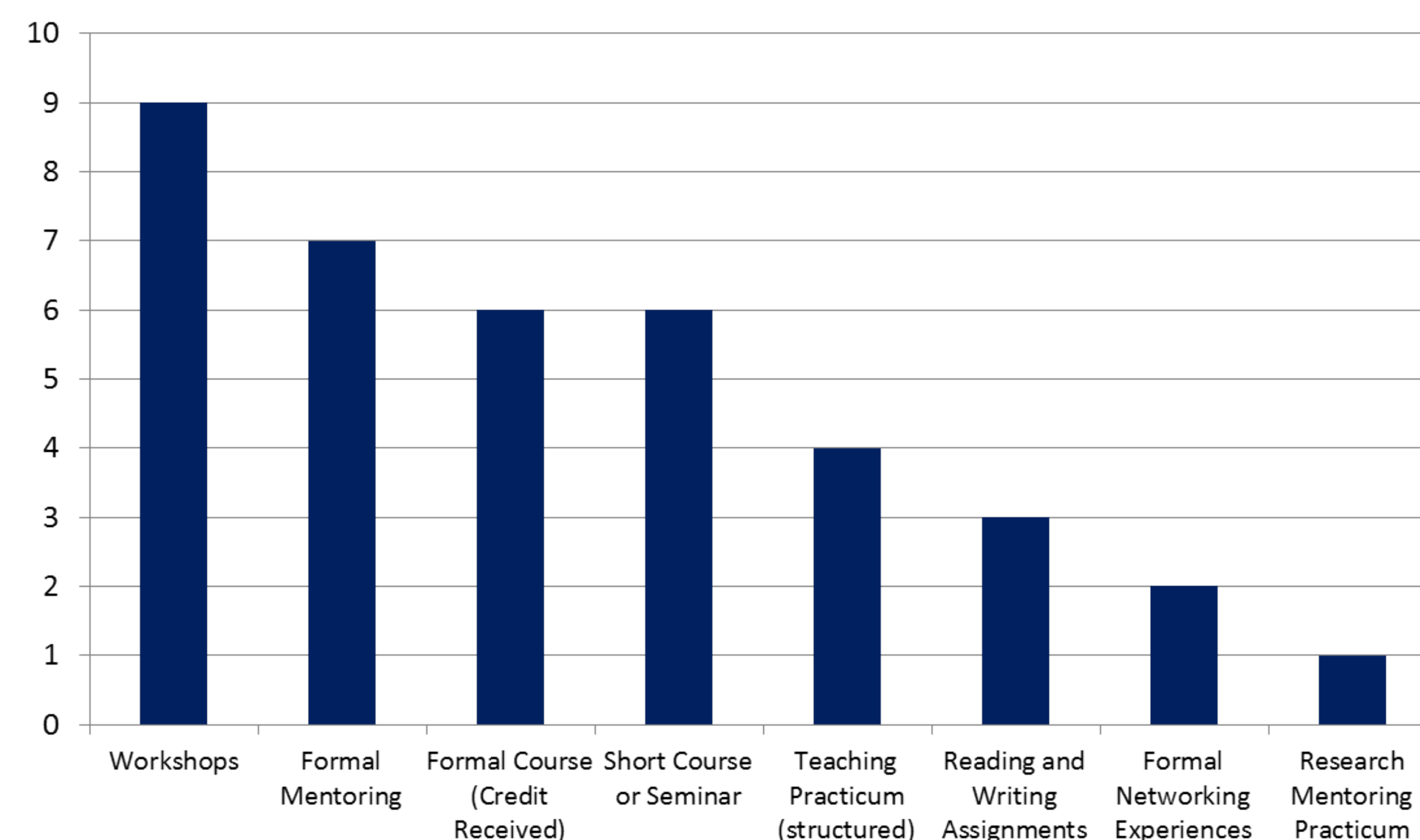


Figure 2. Frequency of PFF Program Interventions. Data is based on the review of n=18 programs; median number of interventions: 2 (mean=2.09; mode =1)

Methods

- ❖ Searched all relevant literature about PFF programs, beginning with the implementation of the first PFF Program initiatives as sponsored by the AAC&U and CGS.
- ❖ Consulted four databases (ISI Web of Science, Engineering Index, ERIC—Education Resources Information Center, and Academic Search Complete) using a combination of search terms, including “preparing future faculty,” “engineering,” “faculty development,” “teacher education,” “faculty,” and “program effectiveness” for publications appearing from 1993 to present.
- ❖ Considered searches using Google and Google Scholar for those publications not included in our search engines or not submitted for peer review.
- ❖ Reviewed reference lists of work initially identified by our search. We included publications to broadly assess PFF programs, and analyzed initiatives not limited to science or engineering, or focused on diversity and inclusion.

Findings

- ❖ There is no obvious preference of intervention type based on program type. However, *Workshops* appear to be the go-to intervention for short-term program formats.
- ❖ Intervention focus is relatively consistent across program type. Yet, short-term programs will more-heavily focus on the development of teaching portfolios, research statements, networking, and navigating the academic job search. Cluster programs (C) will take advantage of partner affiliations and offer interventions heavily focused on mentoring and highlight the differences in the expectations of faculty at various institution types.

Intervention	Participating Programs
Formal Mentoring	American Institute of Chemical Engineers (AIChE), University of Cincinnati, College of Engineering and Applied Science (CEAS), University of Cincinnati, Graduate School (GS), Duke University, The Ohio State University, University of South Carolina, James Madison University
Formal Networking Experiences	AIChE, Duke University
Formal Course (Credit received)	University of Cincinnati, Arizona State University, University of Kentucky, Auburn University, Florida State University, Purdue University
Short Course or Seminar	University of Maryland, Clark School of Engineering, University of Michigan, Center for Research on Learning and Teaching in Engineering (CRLT), Arizona State University, Auburn University, University of California Berkeley, Florida State University
Workshops	University of Michigan, College of Engineering (NextProf Engin), University of Michigan, Literature Arts and Sciences (NextProf Science), University of Buffalo, State University of New York, University of Delaware, Department of Chemical and Biomolecular Engineering, Duke University, Arizona State University, Rensselaer Polytechnic Institute, University of California Merced, Florida State University
Reading and Writing Assignments (Group participation including reflection submissions)	Duke University, University of Michigan, CRLT, University of South Carolina
Teaching Practicum (structured teaching experience)	University of Maryland, Clark School of Engineering, University of Cincinnati, CEAS, Rensselaer Polytechnic Institute
Research Mentoring Practicum	University of Maryland