Since 1999, more than 1000 faculty members have attended the NSF-funded Workshop for Early Career Geoscience Faculty. This annual, multi-day workshop is offered through the National Association of Geoscience Teachers (NAGT) on the Cutting Edge professional development program. The workshop takes a “whole faculty” approach to professional development by supporting faculty as they learn to navigate and balance the multiple facets of their professional lives. Drawing upon key principles from Situated Learning Theory (Lave & Wenger, 1991), the specific workshop goals are for participants to:

1. Learn about setting course goals, strategies for active learning, and methods for assessment.
2. Share ideas and approaches for teaching one or more courses.
3. Consider successful strategies for maintaining an active research program and advising/supervising undergraduate and/or graduate research students.
4. Discuss life as an early-career faculty member and explore ways to balance teaching, research, and service responsibilities.
5. Learn with examples of assignments and activities for various courses, strategies for balancing competing demands, a support network of other early-career faculty, and a plan for managing their early career as an academic.

Workshop leaders address these goals through a variety of interactive workshop sessions including gallery walks, jigsaw activities, small group activities, peer review opportunities, lunch discussions, and poster sessions.

Introduction

Method

To evaluate the efficacy of the workshop in achieving its goals, we have taken an iterative, multi-method approach that triangulates data collected from:

- the 2016 National Geoscience Faculty Survey (n = 3405);
- end-of-workshop surveys from 2011-2018 workshop alumni (n = 502);
- interviews with On the Cutting Edge workshop alumni (n = 34).

Evidence from the National Geoscience Faculty Survey

Univariate analyses of covariance (ANCOVAs) were used to compare the responses of faculty who participated in the Workshop for Early Career Geoscience Faculty with faculty who did not participate. Analyses included length of time teaching, degree level, and institution type as covariates.

- Workshop alumni reported spending a greater proportion of class time on student activities, questions, and discussions, in both introductory and major courses, F(1, 380) = 3.80, p < .05 (Figure 2).

- Workshop alumni were more likely to report feeling part of a geoscience community that shares their goals, philosophy, and values for geoscience education, F(1, 380) = 10.05, p = .01, and more likely to report that interactions with this community help them to become better educators, F(1, 380) = 15.69, p < .001 (Figure 2).

Evidence from End-of-Workshop Surveys and Interviews

- Participants felt that all five goals of the workshop were met. The highest means emerged for Goal 1 (mean = 3.95) and Goal 2 (mean = 3.27) which, together, focused on faculty learning how to improve their teaching through workshop sessions and interactions with workshop leaders and their peers.

- Open-ended survey and interview responses provided additional support that, through both formal and informal interactions with workshop leaders and with each other, workshop participants learn new approaches to teaching and develop specific, immediate plans to make substantive changes to their courses to better promote student learning (Figure 3).

Results

Figure 1. Faculty members’ self-reported percentage of class time spent on student activities, questions, and discussion.

Figure 2. Faculty members’ self-reported perceptions of being part of a community of practice (1 = not at all; 4 = to a great extent).

Figure 3. Sample end-of-workshop survey and interview responses.

“...I know right from the get go that I don’t want to have a traditional classroom focused on traditional topics where students learned in a traditional lecture, navigated the way, ‘but I don’t know how to do that.’ (The workshop) have kind of opened the doors and said ‘there are six people to talk to... they are the consultants to make...’ (2003 workshop alumni, interview study, 2000).

“...it plan to be more diligent about thoroughly considering all facets of an assignment (that) I bring into the classroom. What is the motivation? How much time will it take? What are the learning goals? How will students be assessed? Such a simple framework to build from, but one that I too often neglect. There are so many valuable teaching practices and anecdotes shared. I am eager to get to work applying the lessons learned as a prequel for my fall courses!” (2015 workshop alumni, end-of-workshop survey).

Conclusions

Data collected from the 2016 National Geoscience Faculty Survey (Manduca et al., 2005; Manduca et al., 2017), from end-of-workshop surveys, and from interviews with workshop alumni provide converging, compelling evidence that participation in the Workshop for Early Career Faculty positively influences faculty teaching practices and promotes feelings of belongingness to a community of practice. Efforts are currently underway to bolster evidence for the “whole faculty” approach to faculty development by examining additional outcomes and by using new methodological approaches including:

- retrospective interviews with early career workshop participants who vary in participation year, appointment, and institution type
- a census survey of workshop attendees from 1999 to 2019

Together, these efforts will be important in understanding the processes by which a “whole faculty” approach to faculty development might best meet the needs of individual faculty and the institutions and organizations to which they contribute.

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Works Cited

