

## **BOARD # 399: NSF BPE: Mentee and Mentor Satisfaction of the IMPACTS Inclusive Mentoring Hub**

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# **NSF BPE: Mentee and Mentor Satisfaction of the IMPACTS Inclusive Mentoring Hub**

## **Project Description**

The Increasing Minority Presence within Academia through Continuous Training at Scale (IMPACTS) inclusive mentoring hub brings together Georgia Institute of Technology, the University of Colorado Colorado Springs, the American Society for Engineering Education, and T-STEM Inc. to develop, implement, study, and evaluate an evolving mentoring model in engineering academia. The IMPACTS hub is sponsored by a National Science Foundation (NSF) Broadening Participation in Engineering (BPE) Track 3 award (#22-17745) and builds on the success of two prior NSF awards (BPE: #15-42524 and INCLUDES #17-44500). The program was initially intended to be an innovative strategy to complement prevailing approaches that support career mentorship opportunities for engineering faculty of color while boosting the career longevity of emeriti faculty who served as mentors; the current award includes white women as mentees.

The IMPACTS hub was developed through an extensive review of the literature with a targeted focus on diverse mentoring relationships in STEM academia (Kram, 1985; Lechuga, 2014; Zambrana et al., 2015). The primary goal is to strategically match mentors with mentees as they navigate the promotion and tenure process and establish a greater professional presence in their field. Distinct from other mentoring models, this program moves beyond career development to include professional networking and advocacy by renowned emeriti faculty positioned to provide these resources and who have the flexibility, time, and desire to mentor. This ASEE NSF Grantee Poster reports on the results of a satisfaction survey focused on the efficacy of the IMPACTS inclusive mentoring hub.

## **Brief Literature Review**

Engineering academia remains nearly 80% White males, with only 20.1% identifying as female, 2.5% as Black, 3.9% as Hispanic, and less than 1% as Indigenous (ASEE, 2024). Mentoring has been heralded as a mechanism to offset the field's demographic inertia because it offers faculty from underrepresented backgrounds the benefits of enhanced advancement opportunities, expanded professional networks, and a greater understanding of the power dynamics and expected performance metrics (Buzzanell et al., 2015; Garrett et al., 2023; Randel et al., 2021; Villanueva et al., 2019; Zambrana et al., 2015).

Mentoring also helps mentees navigate the complex workload of a professor that often differs for faculty of color and white women, particularly regarding the disproportionate diversity-based service requests they receive (O'Meara, 2016; Zambrana et al., 2017). Mentoring can also counteract feelings of isolation and marginalization and address racial/ethnic and gendered discriminatory experiences in the academy (Buzzanell et al., 2015; Kelly & Winkle-Wagner, 2017; Tran et al., 2020; Van Helden et al., 2023; Zambrana et al., 2015, 2017). Additionally, emerging research lines focus on how emeriti/retired faculty benefit from mentoring others. Benefits include pleasure in giving back to the academy and the next generation of scholars and

feelings of productivity, stability, and usefulness (Goldberg & Baldwin, 2018; Mendez et al., 2019; Schmidt & Faber, 2016).

## Methodology

A program evaluation logic model is utilized to evaluate the efficacy of the IMPACTS inclusive mentoring hub. This paper reports on one of the logic model's components, an anonymous formative annual satisfaction survey designed for the mentee-mentor matches to complete. The survey focuses on the perceived value of the mentoring relationship, the attainment of mentoring goals, and the program's impact on the mentees and mentors. All seven current mentor-mentee matches involved in the IMPACTS inclusive mentoring hub were invited to complete the survey. Four mentees and six mentors responded and completed the survey.

## Mentee Survey Results

All four mentees rated the IMPACTS mentoring program as “excellent.” In order to determine the features of excellence, the survey included questions regarding the mentoring experience (see Table 1). The only survey items mentees were not in complete “yes” agreement on were related to their mentor helping them improve their academic career planning, achievement, or goals and comfortableness talking with the mentor program coordinator about the mentoring experience (one indicated “somewhat” for each item).

**Table 1**

### *IMPACTS Mentee Survey*

Question	No	Not Much	Somewhat	Yes
Did you enjoy being part of the IMPACTS mentoring program?	---	---	---	100%
Would you benefit from having a mentor in the future?	---	---	---	100%
Did you enjoy your experience with your mentor?	---	---	---	100%
Did you think meeting with a mentor was beneficial to learning developmental activities?	---	---	---	100%
Did having a mentor help you improve your academic career planning, achievement, or goals?	---	---	25%	75%
Did you gain new knowledge, relationships, or experiences that you gained from your engagement with your mentor?	---	---	---	100%
Do you feel comfortable talking with your mentor about things, either good or bad?	---	---	---	100%
Do you feel comfortable talking to your mentor program coordinator about your experiences, either good or bad?	---	---	25%	75%

The mentoring conversations mentees reported they had with their mentors included tenure and promotion progress, balancing their workload, grant proposal selection, building a lab and research program, teaching philosophies, course preparation, and determining work-life goals and priorities. The most tangible activities mentees shared partaking with their mentors were receiving extensive feedback on their teaching philosophy, connecting to tenure letter writers, learning about different student mentoring styles, the importance of branching out to adjacent and orthogonal fields, and adapting to changes in funding and research timelines. The most valuable aspects of the mentoring program noted were the personal, structured mentee-mentor meetings, preparing for tenure, and connecting with senior colleagues and well-established researchers.

## Mentor Survey Results

Five of the six mentors rated the IMPACTS mentoring program as “excellent” (one rated it as “very good”). All indicated their mentor responsibilities were clear, and five shared that no additional mentor training was needed. Additionally, all reported having a “very good” (highest rating) relationship with their mentee. To determine the positive features of the mentoring experience, the survey included additional questions (see Table 2). The only survey items mentees were not in complete “yes” agreement on were related to the mentor gaining new knowledge/experiences from the relationship (three indicated “somewhat”) and the accessibility of the mentor program coordinators (one indicated “no,” one indicated “somewhat”).

**Table 2**

### *IMPACTS Mentor Survey*

Question	No	Not Much	Somewhat	Yes
Do you think the time you spent with your mentee was sufficient?	---	---	---	100%
Do you think the time you spent with your mentee was helpful for your mentee?	---	---	---	100%
Did you gain new knowledge or experiences from this relationship?	---	---	50%	50%
Were your mentor program coordinators accessible and easy to talk to and seek advice when necessary?	17%	---	17%	67%

The mentors indicated that the IMPACTS mentoring program's most satisfying aspects included giving back and sharing their career experiences with their mentees, helping mentees prepare for tenure, and assisting mentees in becoming better mentors.

## Implications for the Near Future

As the IMPACTS mentoring program coordinating team reflects on the satisfaction survey results, they have several actions to undertake regarding the recommendations offered by the

mentees and mentors. For example, some mentors suggested that mentors gather to “discuss strategies” to support their mentees best. One also shared that it would be valuable for mentees to meet so they could engage in “cohort-building and collaboration” activities. One mentee echoed this suggestion and indicated that connecting the mentee-mentor matches with others in the hub would “improve the impact of the program... [and] could be tremendous for building a supportive community outside of the individual mentor-mentee relationship.” Based on these recommendations, the coordinating team is organizing opportunities for mentees and mentors to meet respectively and for the mentoring hub participants to gather as a whole.

## Conclusion

The satisfaction survey signals that the IMPACTS inclusive mentoring hub was successful this past year. Both mentees and mentors reported positive and productive mentoring relationships that had tangible and intangible benefits for the mentees’ careers and the mentors’ retirement lives. These benefits are well mirrored in the literature (Buzzanell et al., 2015; Goldberg & Baldwin, 2018; Mendez et al., 2019; Randel et al., 2021; Schmidt & Faber, 2016; Tran et al., 2020; Van Helden et al., 2023; Villanueva et al., 2019; Zambrana et al., 2015, 2017). The next step for the IMPACTS mentoring program coordinating team is to build on these successes by recruiting additional mentee-mentor matches and responding to the survey results by offering more purposeful connection points between all parties.

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