

Do Mentoring Needs Differ between Early- and Mid-Career Faculty? Exploring the Engineering Professoriate



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Discussion Question

In what ways have you seen mentoring needs differ between early- (pre-tenure) and mid-career (post-tenure) faculty?

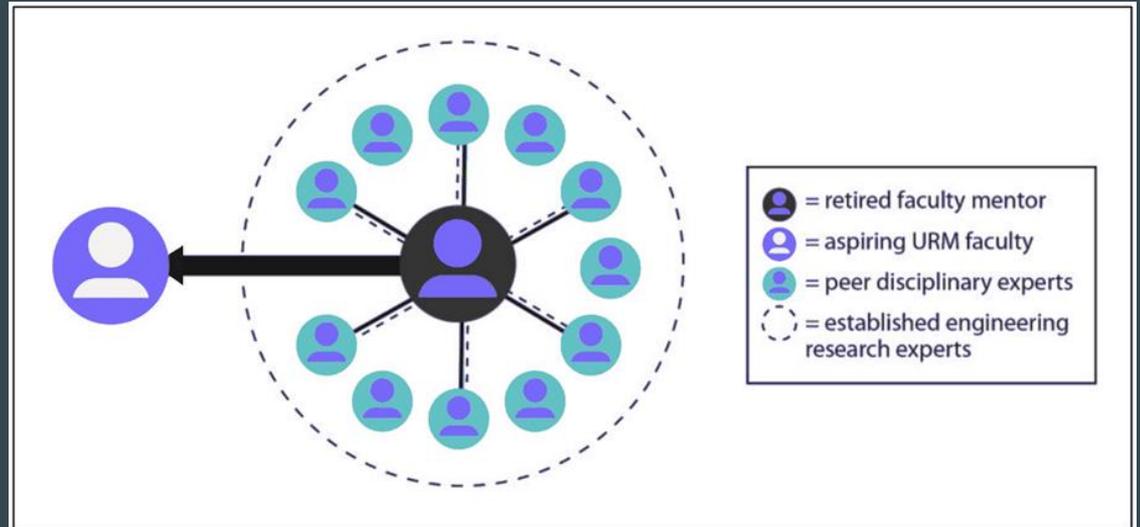
Why Mentoring?

- Faculty of color are underrepresented among engineering faculty: 6.3% faculty vs. $\sim 1/3$ population
- Mentorship and advocacy facilitate success in academia
- Little research has examined the differences in mentoring needs across the professoriate ranks

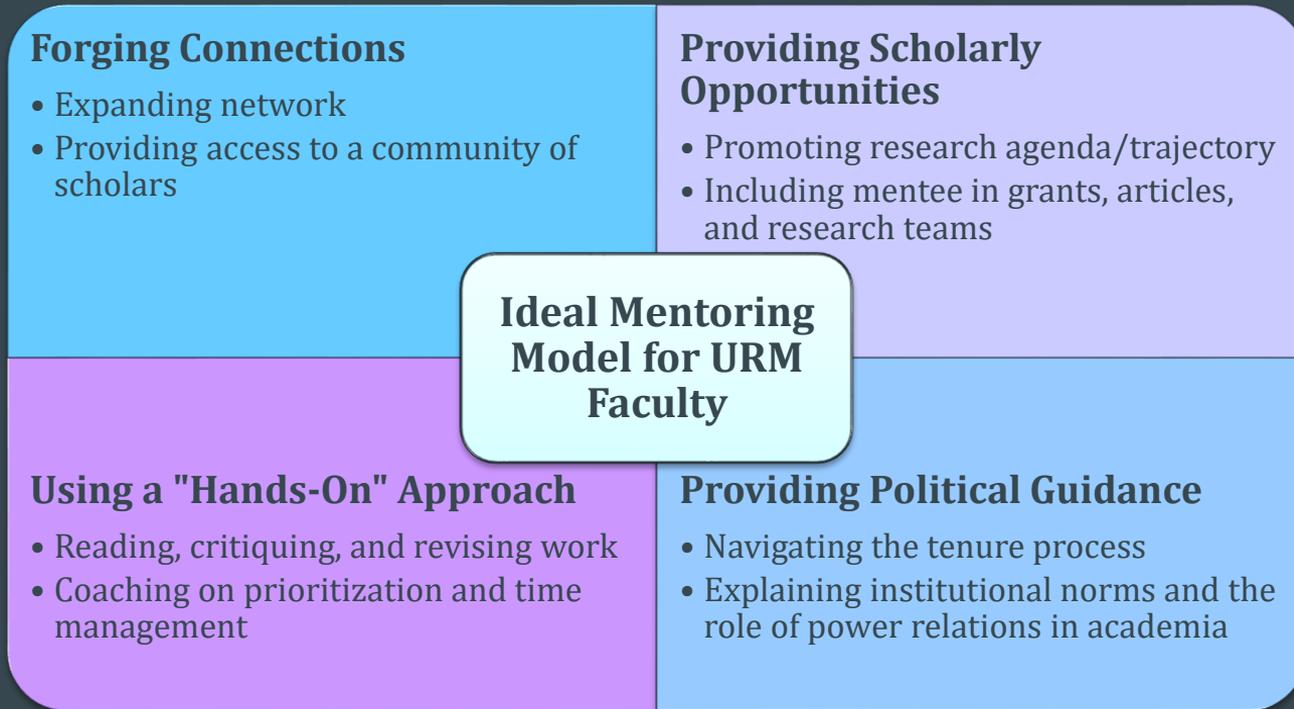
Study Context – IMPACT Mentoring Program

The IMPACT program pairs URM and emeriti engineering faculty in a *new mentoring and advocacy-networking paradigm* which encompasses three domains:

- (a) Career development
- (b) Sponsorship
- (c) Coaching



Theoretical Framework



Ideal Mentoring Model for URM Faculty (Zambrana et al., 2015)

Methods

A phenomenological research design was utilized to explore and compare the mentoring needs of early- (pre-tenure) and mid-career (post-tenure) faculty in engineering. Multiple cross-sectional surveys and in-depth interviews were employed to investigate our research questions:

1. What mentoring needs do URM faculty members identify? Are there differences in mentoring needs between early- and mid-career faculty?
2. What mentoring activities do URM faculty members engage in with their mentors? Are there differences in mentoring activities engaged in between early- and mid-career faculty?

URM Participants

Participant Number	Gender	Career Stage	Institutional Type	Field of Engineering
1	Female	Associate Professor	Research 1	Civil
2	Female	Associate Professor	Ivy League/Research 1	Biomedical
3	Female	Associate Professor	Research 1	Polymer
4	Female	Associate Professor	HBCU/Baccalaureate	Computer Science
5	Female	Associate Professor	Comprehensive Research	Biomedical
6	Female	Assistant Professor	Comprehensive Research	Biomedical
7	Male	Associate Professor	HBCU/Comprehensive Research	Environmental
8	Male	Associate Professor	Comprehensive Research	Mechanical
9	Male	Assistant Professor	Comprehensive Research	Mechanical
10	Male	Assistant Professor	HBCU/Comprehensive Research	Biomedical
11	Male	Postdoctoral Fellow/ Assistant Professor	Research 1	Industrial and Operations

Data Collection

- Three electronic cross-sectional surveys were administered; Surveys consisted of 35-items of Likert-scale and open-ended questions
- Three semi-structured, one-on-one interview protocols were developed; Interviews averaged 45 minutes in length and were digitally recorded and transcribed for data analysis

Data Analysis

- Survey data was explored descriptively and disaggregated by faculty rank after data screening efforts were completed
- Silverman's (1993) inductive data analysis approach was utilized to search for patterns in the interview transcripts and Stake's (1995) four-step deductive process was followed to report the themes

Findings

Theme 1: Mentoring needs differed between early- and mid-career faculty

“What I hope to get out of this . . . is career advancement advising that will be frank and honest and really guide me toward tenure.”

“The rat race is a lot faster [for tenure] because you have strict metrics, whereas as an associate, it’s a little more of a blur in my opinion . . . I needed someone who was more senior, more advanced, and someone who’d been through academe, who could really provide some insight into what their experience was.”

Findings

Theme 2: Early-career faculty engaged in a wide variety of mentoring activities with their mentors, while mid-career faculty engaged in targeted activities based on their specific needs

“My mentor was able to provide some help in clarifying goals and providing key insights into what it takes to get tenure.”

“For me specifically, I would say I'm at a state in my career where the one big negative or hole in my CV or bio sketch is the lack of federal funding. If my mentor could give me tips on craftsmanship . . . that would be the greatest benefit.”

Findings

Theme 3: Early-career faculty were more satisfied with their mentoring experience than the mid-career faculty, mid-career faculty noted a need to possess a “constellation of mentors”

“Sometimes some of our conversations were like, ‘Oh gosh, I’m behind based on his standard.’ His encouragement of, ‘You can do this’ pushed me toward thinking bigger. That was always helpful.”

“Some people are really good on the grants, some people are really good when it comes to publications, some people are really good when it comes to just general advice, so you’re going to need more than one person to fill your gaps.”

Discussion

- Synergy existed between the *mentoring and advocacy-networking paradigm* domains of career development, sponsorship, and coaching and the Ideal Mentoring Model for URM Faculty
 - All mentees desired career development support but most engaged in coaching activities, mid-career faculty specifically desired sponsorship
 - The Ideal Mentoring Model provided insight and direction into specific areas of support and action mentors could plan for to ensure a beneficial and fulfilling mentoring relationship was fostered

Discussion

- Early-career faculty noted more satisfaction with their mentoring relationship than mid-career faculty
 - Early-career faculty desired and received encouragement and tenure support
 - Mid-career faculty sought advice and advocacy on a specific goal, mentees shared disappointment when this did not occur
- All mentees learned they would benefit from a “constellation of mentors”

Discussion Question

How can colleges and universities uniquely support mentoring needs across the professoriate rank?

Conclusion

- All mentees reported receiving tangible benefits from participating in the IMPACT program, such as making connections and strengthening their networks. They all shared an interest in continuing and expanding their mentoring circles to ensure a successful career in academia
- The shared desire for targeted mentorship to address specific mentee needs and goals will be realized in the subsequent NSF INCLUDES DDLP: IMPACT award (17-44500) which brings together an alliance of stakeholders invested in diversifying the engineering professoriate

Acknowledgements

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