The IMPACT Mentoring Program: Exploring the Benefits of Mentoring for Emeriti Faculty

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Abstract

This evidence-based holistic single-case study reports on the benefits mentors derived from participating in the Increasing Minority Presence within Academia through Continuous Training (IMPACT) mentoring program. The IMPACT program was sponsored by the National Science Foundation (15-7680) Office for Broadening Participation in Engineering. In this program, emeriti faculty were matched with underrepresented minority faculty in the engineering professoriate for career-focused mentorship. The conceptual framework of the Benefits of Being a Mentor grounded this study. Findings indicate mentors appreciate the opportunity to give back and remain engaged in the field, to relive past academic career experiences, and to support the next generation of engineering professors while adjusting to retirement. These findings aligned with the conceptual framework on three factors: rewarding experience, improved job performance, and generativity. Implications for administrators and faculty, as well as additional research areas, are discussed.

The IMPACT Mentoring Program: Exploring the Benefits of Mentoring for Emeriti Faculty

Multiple emotions can arise when a professor who has put his/her heart and soul into the world of academia decides to retire. With the benefits of job satisfaction and tenure, it is no surprise professors are retiring later in life compared to their counterparts just 20 years ago (Campbell, 2016). However, in a profession that employs individuals who have dedicated their lives to their work, mediating the options for retiring professors is beneficial so they can continue to meaningfully contribute to their field without enforcing a finite end. This evidence-based, holistic single-case study reports on the benefits mentors articulated about having the opportunity to share their wealth of experience and knowledge with the upcoming generation using the conceptual framework of the Benefits of Being a Mentor (Ragins & Scandura, 1999). Sponsored by the National Science Foundation (NSF; 15-7680) Office for Broadening Participation in Engineering, the Increasing Minority Presence within Academia through Continuous Training (IMPACT) mentoring program matched emeriti faculty with underrepresented minority (URM) faculty in the engineering professoriate. The relationship proved to not only benefit the URM mentees, but the mentors as well.

The IMPACT Mentoring Program

The NSF IMPACT mentoring program began in Fall 2015 with the intent of serving as an innovative strategy to complement prevailing approaches that support career mentorship opportunities of URM engineering faculty, while enhancing the career engagement of emeriti faculty who served as mentors to the URM faculty. The primary goal was to match emeriti faculty with URM faculty in order to support the mentees as they navigated university promotion and tenure processes and established a wider professional presence in their competitive fields via a new mentoring and advocacy-networking paradigm. The paradigm was developed through an

extensive review of the literature across disciplines, with a targeted focus on diverse mentoring relationships in science, technology, engineering, and mathematics (STEM) fields (Johnson, 2015; Kram, 1985; Lechuga, 2014; Zellers, Howard, & Barcic, 2008). Distinct from other mentoring models, this program moves beyond advisory mentoring to include professional networking and advocacy by emeriti faculty who are uniquely positioned to provide these resources to URM faculty. Three domains of mentorship are included in the mentoring and advocacy-networking paradigm:

1. Career development: emeriti faculty provide assistance in the retention, tenure, and promotion of URM faculty;

2. Sponsorship: emeriti faculty create opportunities for networking, exposure, and visibility with potential research collaborators and grant program officers; and

3. Coaching: emeriti faculty share their wisdom about the discipline and provide professional and personal advice in successfully navigating academic careers.

Under the mentoring and advocacy-networking paradigm, URM faculty benefited from participating in activities designed to further their socialization process into the engineering academic profession though access to the vast insights, greater discretionary time, and networks of accomplished emeriti faculty. For example, mentors were charged with creating opportunities for URM faculty to gain the visibility necessary to network and to collaborate with new academic and industry counterparts. Incentives for emeriti faculty to participate in the IMPACT program were the formalized opportunity to continue to engage in the discipline by providing professional expertise and to contribute to a more diversified next generation of engineering faculty.

Mentees were primarily recruited through the Academic and Research Leadership Network (ARLN), a database of minority STEM faculty; mentors were recruited from one institution which is regularly noted in the top 10 for awarding the most engineering degrees to URMs. Synergistic pairings of seven emeriti engineering faculty with 11 early- through mid-career URM engineering faculty from a variety of institutions were created based upon shared technical expertise such as aerospace, biomedical, chemical, industrial systems, and mechanical engineering. All mentors were retired from one Research 1 university and all were White males; the mentees were from various types of institutions. The inclusion of only mentors who were retired and external to the mentees' institutions alleviated many of the common challenges found in mentoring, which include mentors lacking the time to devote to the relationship and the complex role of internal, senior faculty simultaneously mentoring and evaluating early- and mid-career faculty (Hobson, Castanheira, Doyle, Csigás, & Clutterbuck, 2016; McIntyre & Hobson, 2016). The mentoring relationships were sustained primarily through phone calls and e-mails, as the majority of participants lived in different parts of the country.

The Need for and Benefits of Mentoring

Senior faculty serving as mentors is considered key to developing systematic and sustainable means of improving the recruitment, retention, tenure, and promotion rates of URM faculty in academia (Cawyer, Simonds, & Davis, 2002; Jackson, 2004; Johnson-Bailey & Cervero, 2004; Stanley, 2006; Stanley & Lincoln, 2005; Thomas & Hollenshead, 2001; Tillman, 2001; Turner, Myers, & Creswell, 1999). This is of particular concern in STEM fields, as colleges and universities face a growing disproportionality of URM faculty across the professoriate. Only 6.3% of engineering faculty identify as URM and most are concentrated in the early-career ranks, although they account for 32% of the American population (National

Action Council for Minorities in Engineering [NACME], 2014). Effective mentoring programs focus on senior professors guiding URM faculty through institutional norms, values, and politics to disrupt the systemic and historic inequities of URMs in the academic pipeline (Hansman, 2002; Hyers, Syphan, Cochran, & Brown, 2012; Johnson-Bailey & Cervero, 2004; Mullen & Hutinger, 2008; Stanley, 2006; Stanley & Lincoln, 2005; Thomas, 2001; Thomas & Hollenshead, 2001; Tillman, 2001; Turner, 2003).

Balancing the teaching, research, and service responsibilities of the professoriate has been found to be particularly complex for URM faculty, as often they are asked to participate in considerably more service activities than non-URM faculty as a means to demonstrate an institution's commitment to diversity and inclusion (Baez, 1999; Rockquemore & Laszloffy, 2008). Mentors, therefore, can assist URM faculty in pursuing synergy in their efforts by mentoring in culturally appropriate ways that foster mentee autonomy and independence in STEM fields (Lechuga, 2014). While senior faculty provide an invaluable service by mentoring URM professors, Nyquist (2002) and Johnson and Lucero (2003) noted a lack of incentives for these individuals to serve as mentors, which results in widespread challenges to URM tenure and promotion.

Despite the fact that mentoring has profound benefits for both the mentor and mentee, most of the literature focuses on the benefits for mentees (Allen, 2007). Yet, researchers have begun to turn their attention to the mentors and have found that mentoring increases senior and emeriti faculty productivity, stability, and feelings of usefulness (Bean, Lucas, & Hyers, 2014; Haines & Popovich, 2014; Skeff, Stratos, & Mount, 2007). In Dorfman's (2009) study on professors working after age 70, senior and retired faculty demonstrated a high desire to continue to contribute to their institutions through their enthusiasm and longing to serve. In mentoring,

these faculty expressed that their early-career counterparts sought their advice and considered them to be a valuable resource as they navigated the tenure and promotion process. Bean et al. (2014) found similar results in the West Chester Faculty Mentoring Program, as these individuals shared an increased sense of value and engagement as compared to their non-mentoring counterparts. They experienced a great deal of personal satisfaction in supporting early-career faculty in developing their professional career goals and spoke with pride when discussing mentees' success in furthering their research agenda and in publishing. Understanding these tangible benefits to senior and emeriti faculty serving as mentors may provide the needed incentives for more institutions to invest in formal mentoring programs with these individuals in mind.

While structured mentoring programs have the potential to make a positive impact on the representation and inclusion of URM faculty in the professoriate, additional research is needed on the benefits for senior and emeriti faculty to engage in mentoring. Little research exists in the higher education literature on the benefits of mentoring for mentors, yet mentoring outside of academia has proven to be beneficial in multiple ways. For example, business managers and executives who mentor experience higher compensation and rates of promotion, as well as increased job performance, job satisfaction, organizational commitment, and career success (Chun, Sosik, & Yun, 2012; Gentry & Sosik, 2010; Ghosh & Reio, 2013). While these benefits are instructive, the studies do not focus on benefits for retired individuals to engage in mentoring. Additionally, theoretical and conceptual frameworks related to the benefits for mentors are consistently cited as lacking, and calls for further research on this topic are replete in the literature (Allen, 2007; Chun et al., 2012; Ragins & Scandura, 1999). Therefore, this research

will add to the literature by sharing the tangible benefits experienced by emeriti faculty who served as mentors in the IMPACT program.

Conceptual Framework

The article, *Burden or Blessing? Expected Costs and Benefits of being a Mentor*, by Ragins and Scandura (1999) was utilized to form the conceptual framework for this study. Frameworks build upon a foundation of established knowledge, offer logical explanations for the relationships observed, and reveal new understandings of a phenomenon (Anfara & Mertz, 2015; Babbie, 2015)—the ways in which the emeriti faculty articulated the benefits of participating in the IMPACT program. The Benefits of Being a Mentor framework was developed from a cost and benefit mentoring survey of 275 corporate managers and executives. The factor analysis by Ragins and Scandura's (1999) of 24 Likert-scale benefit items yielded five factors that parsimoniously identified the benefits for mentors:

1. Rewarding experience: mentoring offers feelings of fulfillment and self-satisfaction;

2. Improved job performance: mentoring rejuvenates job performance;

3. Loyal base of support: mentoring produces trusted allies;

4. Recognition by others: mentoring provides status and positive recognition; and

5. Generativity: mentoring signifies concern for the future coupled with a desire to guide and contribute to the next generation. (Erickson, 1963)

Methods

Research Design

A holistic single-case study design grounded by the Benefits of Being a Mentor conceptual framework was utilized to explore the mentoring experiences of emeriti faculty participating in the IMPACT program (Yin, 2018). The theoretical propositions that mentoring

provides benefits to mentors underpinned the critical case approach of the study. As noted by

Yin (2018), theoretical propositions are important to place the set of circumstances in which a

phenomenon is to occur—in this case, the ways in which emeriti faculty articulated the benefits

of mentoring. Multiple one-on-one interviews throughout the mentoring program allowed for the

consideration of broad perspectives on the experiences of emeriti faculty over time (Stake, 1995;

Yin, 2018). The research questions for this study were:

1. How do emeriti faculty articulate the benefits of engaging in a mentoring program

   designed to support the career mentorship of URM faculty in enginnering?

2. How did serving as a mentor influence the ways in which emeriti faculty felt about

   their connection to the engineering professoriate in retirement?

Participants

All seven emeriti faculty involved in the IMPACT program were invited to participate in

three rounds of interviews in order to capture the holistic mentoring experience of the program

(Patton, 2015). All but one participated in each round of interviews, resulting in 20 completed

interviews (three from six emeriti faculty and two from one). All emeriti professors were White,

male, and retired from the same Research 1 university, representing various engineering

disciplines such as aerospace, biomedical, chemical, industrial systems, and mechanical. Mentors

were matched with their mentees based on their sub-disciplinary expertise (i.e., mechanical

engineering emeriti and URM faculty were matched). Five of the emeriti faculty were matched

with two mentees, resulting in 11 matches; none of the matches were from the same institution.

No differences were noted in the experience between mentors whether having one or two

mentees. The mentees were both female and male, with over half at the associate professor rank

and the others at the assistant professor rank. All were employed at various types of higher

education institutions across the United States. The variation among URM participants is

displayed in Table 1.

Table 1

URM IMPACT Project 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

Note. HBCU = Historically Black College and University.

Data Collection

Upon obtaining Institutional Review Board approval, emeriti faculty were provided with

consent forms detailing the purpose of the study and the interview processes and procedures. The

interviews averaged 45 minutes in length, were digitally recorded, and were conducted through a

one-on-one process with one interviewer to ensure the data were gathered in a systematic manner

(Creswell & Poth, 2017). Three semi-structured interview protocols were developed to describe

the areas to be explored in each interview. The Benefits of Being a Mentor factors of rewarding

experience, improved job performance, loyal base of support, recognition by others, and generativity were embedded in the protocols in order to address the study's research questions. For example, the protocols consistently queried the tangible and intangible benefits mentors received from participating in the IMPACT program. Adherence to the interview protocol ensured questions were carefully worded and asked in a specific order, and probing questions were embedded to provide opportunities to seek clarification and meaning (Creswell & Poth, 2017).

Data Analysis

Researchers selected data analysis strategies established by Silverman (1993) and Stake (1995) to examine the interview data. Silverman's technique follows an inductive approach in order to search for themes and patterns related to the research questions—this method is referred to as thematic content analysis. Using this technique, researchers coded data in a comprehensive process to identify cross-references between the data and the evolving themes while memoing (journaling), which allowed for flexibility when approaching research patterns in inductive ways (Hayes, 1997; Silverman, 1993; Watt, 2007). In the organization of the thematic codes found in Silverman's technique, Stake's four-step deductive process was followed to report the themes, which included direct interpretation, categorical aggregation, pattern recognition, and naturalistic generalizations using the Benefits of Being a Mentor conceptual framework (Creswell & Poth, 2017; Stake, 1995). Thus, both inductive and deductive analyses were employed throughout the data collection and analysis process, with coding in cycles and frequent reflection as described in the following sections.

Cycle 1: Initial read-through with attribute coding. Silverman (1993) asserted superior qualitative research must draw interpretations and remain consistent with the data

collected. Therefore, an initial read-through of the transcripts was independently conducted using the basic deductive concepts of thematic content analysis to develop attribute codes. This process allowed for detection and identification of factors that potentially influenced any issues generated by the participants that aligned to the conceptual framework factors.

   Cycle 2: Provisional coding using propositions and macro-codes. In the second cycle, the flexibility of thematic content analysis aided in the use of both inductive and deductive methodologies to analyze the data (Hayes, 1997). Using a deductive approach in Cycle 1, researchers independently began with broader generalizations and moved to precise codes in Cycle 2 through the development of propositions and macro-codes. This process assisted with ensuring the themes were effectively linked to the data (Patton, 2015). The connectivity also aided in incorporating the literature review and conceptual framework into the overall themes gleaned from the interviews.

   Cycle 3: Deductive sub-coding. In Cycle 3, deductive sub-codes were developed. Again, researchers used thematic content analysis to group associated data, which were then coded to identify similar categories and to search for patterns and themes. During this cycle categories, as well as fuse (blended) codes, continued to be identified and revised, and new findings were amalgamated.

   Cycle 4: Deeper conceptual coding. An important step in thematic content analysis is the evaluation of the themes to ensure they represent the whole of the text (Silverman, 1993). Miles, Huberman, and Saldaña (2013) asserted validating themes are essential in the early and late stages of data analysis. In this final cycle of coding, the researchers continued to memo and focused on patterns, categorizations, and possible naturalistic generalizations with the use of the conceptual framework. At the end of this stage, the researchers were better informed of any

conflicting results with respect to theme development, and the final three themes of the study were solidified from the 38 codes extracted from the interviews (Miles et al., 2013; Watt, 2007).

Trustworthiness

Multiple verification strategies ensured the findings of the study were credible, transferable, dependable, and confirmable (Anfara, Brown, & Mangione, 2002; Lincoln & Guba, 1985). In order to address credibility, researchers utilized cross-case synthesis throughout the analysis of each interview to examine whether the themes were cases of similar or different perspectives of emeriti faculty participants (Hayes, 1997). Miles et al. (2013) highlighted the flexibility of this approach when data collection occurs in a phased design. To ensure transferability, thick, rich descriptions were utilized and data saturation occurred prior to the completion of all 20 interviews (Patton, 2015). Dependability was addressed by evaluating the manner in which the themes represented the whole of the text through the data analysis technique employed (Silverman, 1993). Researchers ensured confirmability by validating themes in the early and late stages of the data analysis process (Miles et al., 2013). Dependability and confirmability were accomplished by involving outside independent researchers in evaluating and providing feedback on the identified themes, which enabled the comparison of multiple feedback loops. Application of these verification methods of establishing trustworthiness mediated the limitation of including participants who self-selected to be interviewed and who self-reported their views and experiences (Lincoln & Guba, 1985; Miles et al., 2013).

Findings: Benefits of Mentoring

Mentoring provided a bridge from retirement to the world of academia for the emeriti professors in this case study. Through the IMPACT mentoring program, the emeriti professors were able to continue to be engaged in research, teaching, and service to the engineering

discipline through their mentees. Three major themes emerged from the data as benefits for the

emeriti professors serving as mentors: giving back and remaining engaged in the profession,

reliving past academic career experiences, and supporting the next generation of leaders in the

field of engineering. These benefits connected with three of the five factors identified in the

Benefits of Being a Mentor conceptual framework: rewarding experience, improved job

performance, and generativity.

Giving Back and Remaining Engaged

All mentors stated the opportunity to give back to the discipline that had afforded so

much to them, as well as the ability to remain engaged during their retirement, were the main

reasons they agreed to participate in the IMPACT program. This sentiment is akin to Factor 2:

Improved Job Performance of the Benefits of Being a Mentor framework as these retired faculty

members felt invigorated about how they can continue to contribute to the engineering

professoriate through mentorship. In the words of one mentor, "[Mentoring] keeps me involved

in intellectual and professional activities and I think that is important when you retire. I just don't

see myself stopping something that I love to do and this is an opportunity to keep doing it, so I'm

grateful for that." The emeriti faculty discovered a sense of pride and satisfaction in assisting

mentees in honing their teaching craft, introducing them to potential research collaborators at

other higher education institutions and national research labs, and helping some consider

administrative pathways, all without the primary stressors of their prior academic days.

One mentor remarked:

[The IMPACT program] sounded like something I could possibly contribute to. One of

the things that, as an older faculty member I have is a lot of experience, and I think that

passing that on seems to be something I can certainly do fairly easily and that might

actually help somebody.

Another mentor reiterated this point by stating, "When you spend your entire life in one

line of work, it is in your blood." Therefore, mentoring allowed him to stay connected to the

profession and pass on his knowledge and experiences. The mentors believed it was their

responsibility as emeriti faculty to help develop and support their younger counterparts in the

field of engineering and to share their experiences in order to aid the new generation in

navigating the demands and realities of academia. Another mentor stated, "What motivated me

was the conviction that we just have to do a better job of diversifying our faculty and

universities." By providing opportunities for URM faculty to develop their careers and to learn

from his expertise, he was contributing to the diversification of the field, which he felt was an

excellent way to culminate his career. Another mentor shared that he found great satisfaction in

the opportunity to leverage his expertise and professional networks to broaden participation and

help diversify the engineering professoriate through mentoring.

While the mentors were motivated to participate in the IMPACT program in order to give

back and contribute to the diversification of the field, none had been previously involved in

formal mentoring relationships. As part of the program, they attended an orientation session with

their mentees that included workshops on ways to be a good steward of the relationship and

strategies to develop trust and appropriate expectations. The orientation provided the first

opportunity to meet in person and to begin to establish their relationship. Even during the first

meeting with their mentees, the mentors indicated they were already able to "give back" by

providing advice and coaching. One mentor added he was able to provide immediate guidance to

his mentee: "Sometimes just making a comment that's pretty clear to me, but wouldn't have been

real clear to me when I was their age, . . . can be very helpful and . . . be really, really useful." He

added that younger faculty members may not hear the advice they need from their peers, whereas

they "hear it" from someone with more expertise and experience.

During the orientation, a mentor assured his mentees he was there to answer any

questions they felt uncomfortable in asking a more experienced professor at their own institution:

I think just talking to an older person with more experience can help settle things and

. . . there's no threat involved. The mentors don't hold anything over them, raises or

promotions or anything else. They can feel free to say whatever they want to and ask

whatever they want to, where they might not want to do that with either their department

heads or their colleagues who might be involved in promotion cases or something like

that so I think it's an ability to openly talk about things from a professional standpoint.

This assurance resonated with the mentees as well, as they described the value of a mentor

outside their own institution who could serve as a general sounding board and could answer

questions they may feel uncomfortable asking someone at their institution for fear of making a

negative impression or appearing naïve. Thus, having access to an external mentor minimized

mentees' apprehension of sharing personal challenges with departmental and/or institutional

policies and provided a safe platform for asking questions and receiving advice without

judgment.

Another mentor introduced his mentees to colleagues and collaborators at organizations

such as the National Institutes of Health and the National Science Foundation, as well as editors

at prestigious research journals. He commented:

[A mentee's university] has made it very clear that she would not be competitive for

promotion to full professor without having an NIHRO1 grant. I encouraged both of my

mentees to actually go to Washington, DC, and go meet program officers at both NIH

and NSF to establish a personal relationship with the program officers.

As this particular mentor is well known in his field of biomedical engineering, both mentees

were provided early entrance points with federal grant officers due to their association with him.

The mentor added this was an additional example of a way he could extend his personal career

by working with his mentees, giving back to the field, and providing the opportunity for

advancement to individuals who may experience difficulty in the progression of their career.

Reliving Past Academic Career Experiences

Another benefit of the program that emerged from the data was the mentors' enjoyment

when discussing and reliving past academic career experiences. This theme was analogous to

Factor 1: Rewarding Experience of the Benefits of Being a Mentor framework, as these emerti

faculty experienced a sense of gratification and pleasure in recounting with their mentees their

journey through academia. As part of the coaching domain of the IMPACT and advocacy-

networking paradigm, the mentors noted they were able to share how they had navigated the

academic field and overcome obstacles along the way. In the words of one mentor, "There's

nothing like talking to somebody that's done what you want to do and kind of learn how it

worked and what went right, what went wrong, and the ins and outs." Another mentor described

he was able to support his mentee by discussing past obstacles related to his personal

background. In his words:

> There is a race difference [between my mentee and I], but I kind of came from the
>
> wrong side of the tracks, so I understand, I won't say disadvantaged background, but
>
> certainly not the normal background you see a lot of the faculty coming from.

He was able to identify ways in which his background and experiences could relate to his

mentee, which not only provided a connection between them, but also the opportunity for the

mentee to learn from how he had overcome obstacles in order to be successful.

Mentors purposefully shared their career successes and pitfalls for the mentees to learn

from their experiences. The mentors worked to build up their mentees' confidence and to

alleviate frustrations by providing examples from their personal career struggles and by

encouraging them, as they had also required assistance throughout their careers. One mentor

placed great importance on the ability to share what he had learned from his own experiences, ,

since he had not benefitted from mentoring as a young professor:

> I never had [a mentor] when I was coming through . . . Mentoring is a new idea. It's not
>
> one we worried about. People sort of just did what they were going to do, and you
>
> know, we all probably made a lot of mistakes.

He saw mentoring as a valuable resource for younger faculty to learn from the choices, mistakes,

and successes he had made during his career. In addition, the mentors were able to provide

insights into the profession; practical information and strategies for achieving tenure, promotion,

and recognition; and advice on pathways for pursuing administrative and campus leadership

opportunities.

Due to their myriad of experiences, the mentors also offered practical advice on

balancing teaching, research, and service in the engineering professoriate. Each university placed

different demands on professors regarding these areas for promotion and tenure, thus the mentors

could tailor their advice to meet the specific needs of their mentees. One individual who

mentored two mentees seeking full professorships detailed the suggestions he had provided:

> I talked to both of them about what's necessary for promotion to full professor. And the
>
> sorts of things you need to do to get . . . the international reputation you need for a full
>
> professor. And things like becoming involved in societies, which would make you
>
> eligible for awards and those sorts of things.

These coaching opportunities provided the emeriti faculty with a sense of satisfaction and pleasure, as their personal experiences had the potential for helping younger faculty members balance the many demands they faced. As one mentor described, "The whole [mentoring] process of trying to be a sounding board, trying to encourage, trying to pat on the back, say good things, it's far more fun than I thought it would be." Furthermore, mentors provided clear guidance and appropriate actions in ways to spend more time teaching, advancing their research agendas, or fulfilling administrative and service work as they pursued their tenure and promotion goals.

Supporting the Next Generation of Leaders

The mentors found satisfaction in giving back and reliving their past academic career experiences in order to invest in the next generation of leaders in the profession. This theme was parallel to Factor 5: Generativity of the Benefits of Being a Mentor framework. Great importance was placed on their role in helping to guide a new generation of professors to be exemplar leaders. One mentor stated:

> We need to really encourage the creative young people. They're young, they're creative,
>
> they're energetic, and we can't just keep turning them off by saying don't be creative in
>
> teaching things, because you've got to publish a bunch of papers and get a bunch of
>
> grants to get tenure. The older faculty do not help. They want everybody to do exactly
>
> what they did. It's a very difficult system to change. It takes serious leadership to do so.

As the mentors reminisced on their careers and into retirement, they saw the need for more creative leaders in the field and desired to use their expertise and influence to support this new leadership. One individual remarked that, when building a mentoring relationship, you learn "what the other person has to offer" and help develop their talents and abilities.

Through mentoring, emeriti faculty encouraged younger faculty to channel their creativity and leadership potential in order to make an impact on the profession. One mentor described "knowing you're making an impact" on the next generation was one of the greatest benefits of mentoring. It is important to note the mentors reiterated the obligation of senior faculty to mentor not only younger URM faculty members, but also URM undergraduate and graduate students to ensure diversification and continuing leadership in the field. Another shared the importance of a faculty member's willingness "to create the environment for a young person to flourish." By promoting through mentorship the creativity and new ideas of these students, as well as new faculty, a positive change can occur in the leadership and trajectory of the profession.

Mentors also found it important to advance the stated career objectives of their mentees to ensure they were prepared to assume leadership roles in the engineering field. For example, one mentor indicated his goal for the relationship to cultivate his mentee to become an international researcher in her particular engineering field. He reverently spoke of her talent and felt his connections and her expertise eventually would result in her recognition as a leading researcher. He stated, "One of my mentees is in Polymer Science as I am myself, I think she will develop into someone with quite a reputation and so I think that could impact me and her as well." Seeking out research opportunities and collaboration with his mentee not only provided

the opportunity to cultivate a future leader, but also enabled him to extend his influence and engagement in retirement.

Mentors demonstrated a clear passion for developing a new generation of professors and saw mentoring as an opportunity to leave a legacy. In response to this idea and to support younger faculty, a mentor commented:

Let me say that I always enjoy mentoring young people. I think it's part of my responsibility as a senior person in the field. . . I think this program is an important one. I view it as an experiment. As an experiment, the more we learn how to foster long distance mentee-mentor relationships the better. There's all kinds of young faculty at institutions that are not major research institutions, which would probably benefit from some kind of mentor-mentee relationship. If we can figure out how to do this, I think it will be a contribution.

Because the IMPACT program connected emeriti faculty mentors with URM faculty across the United States, the mentors had an influence beyond their local institutions. By investing in younger faculty at a variety of universities, they ensured their role in promoting the next generation and in developing new leaders throughout the country.

Discussion

The opportunity to mentor early- and mid-career faculty provided emeriti professors with several benefits in their retirement. They were given the opportunity to continue to contribute to their field by investing in younger URM faculty through sharing their experiences, connections, and expertise. All emeriti faculty shared an enthusiasm concerning their participation in the IMPACT program. Not only did they believe they met their commitment to provide mentorship around career development, sponsorship, and coaching, but each noted tangible benefits received

from their involvement in the program. They appreciated the opportunity to give back and

remain engaged in the engineering field, to relive their academic careers and impart their

wisdom, and to support the next generation of engineering leaders in academia. These findings

coincide with the sparse literature on the benefits of mentoring for senior and emeriti faculty,

which emphasizes enthusiasm to mentor and increased feelings of usefulness (Bean et al., 2014;

Dorfman, 2009; Haines & Popovich, 2014; Skeff et al., 2007).

The Benefits of Being a Mentor conceptual framework (Ragins & Scandura, 1999)

proved to be a useful tool for organizing and communicating ideas about the benefits mentors

shared on participating in the IMPACT program. The themes connected well with three of the

factors included in the conceptual framework: rewarding experience, improved job performance,

and generativity. All of the mentors experienced the advantage of engaging in a rewarding

experience, which provided a sense of fulfillment in retirement, as well as an opportunity to

influence the next generation of engineering professors. Improved job experience was captured

in the ways in which the emeriti professors were able to stay connected with the profession

through their mentees. Yet, the factors of loyal base of support and recognition by others were

not relevant features in how the emeriti faculty believed they benefited from the relationship.

This may be a function of these individuals being retired rather than senior faculty; thus, they

would not profit from loyalty and recognition because they no longer hold full-time positions in

their academic departments or colleges. Additional research and conceptual/theoretical

frameworks on the rewards of mentoring for retired individuals are clearly warranted in the

literature (Allen, 2007; Chun et al., 2012; Ragins & Scandura, 1999).

The themes suggest engaging in formalized mentoring programs may provide an

effective transition for retired faculty who hold the skillset and desire to continue to be "active"

in the profession—which can serve as a strategy for higher education administrators and faculty interested in smoothing the retirement transition and supporting their continued engagement at their institution. It is interesting to note that one emeriti professor emphasized the importance of becoming a mentor within the first year or two of retirement, in his words, "when your professional contacts are still active." While he had reaped the benefits of serving as a mentor, he had been retired for ten years and had fewer professional contacts due to his absence from academia. Therefore, providing recently retired professors with mentoring opportunities may be an advantage, as they potentially would have additional contacts and networking options due to their recent involvement in academia. The IMPACT program also can serve as an example for ways in which emeriti and other retired faculty can assist, support, and help develop a new generation of rising professors, particularly those who come from marginalized groups. These findings correlate with and extend the sparse research related to the benefits received by mentors when involved in a mentoring relationship (Bean et al., 2014; Haines & Popovich, 2014).

Last, it is important to note that neither mentors nor mentees believed the racial/ethnic difference in the pairings hampered their relationship. Many noted their shared technical expertise mitigated any potential gaps that could arise in the cross-cultural mentoring matches. Although it is plausible to believe potential cultural gaps may occur, despite probing during the interviews, the participants disagreed because the URM faculty felt the mentors in this program would aid in "gatekeeper" rather than emotional support activities (Lechuga, 2014). Additionally, each of the mentors possessed experience mentoring URM students, which they believed translated well to the IMPACT program.

Conclusion

From this point forward, the mentors in the IMPACT program will continue to have the opportunity to give back and remain engaged in the field, to relive past academic career experiences, and to support the next generation of engineering professors while adjusting to retirement. In this particular phase of the program, only seven emeriti faculty were recruited to mentor 11 URM faculty. However, the program had a positive impact on the mentees while also benefiting the mentors as it served as a bridge between the world of academia and retirement. Thus, the IMPACT program will be extended in a subsequent NSF INCLUDES (Inclusion across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science) DDLP award (17-4458). This award brings together an alliance of stakeholders invested in diversifying the engineering professoriate and bolstering the engagement of emeriti faculty through mentorship, which will have far-reaching benefits to higher education institutions.

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