

Mentorship and the socialization of underrepresented minorities into the professoriate: examining varied influences

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This study examines the mentoring component of the Committee on Institutional Cooperation's (CIC) Summer Research Opportunity Program (SROP). The national initiative, implemented on various campuses throughout the United States, seeks to establish a diverse faculty by encouraging the enrollment and completion rates of minority doctoral candidates. Results from interviews with former and current undergraduate student participants suggest that mentorship influences the individual, interpersonal, extra-programmatic, and to a lesser extent, collective realms of protégé experiences. Study results emphasize the importance of faculty-directed mentorship in preparing students of color for both graduate education and entrance into the professoriate.

Keywords: mentorship; socialization; racial minorities; professoriate; academe

The paucity of racial minorities in the professoriate generally results from a lack of preparation for and participation in graduate training. Prospective minority graduate and professional students often attend community colleges, minority-serving institutions or less selective undergraduate colleges and universities rather than prestigious institutions, which tend to be primary feeders of graduate and professional school programs. Not only are minority students in short supply at selective research institutions but also the overall number of students of color falls short in relation to the representation of this group in society. Of those enrolled in American graduate and professional schools, respectively, in 2000, 8.5% and 7.7% were African American, 5.2% and 5.0% were Hispanic, and 0.6% and 0.8% were Native American (National Center for Education Statistics, 2003).

Serious discussion of the mentorship, representation, retention, and educational attainment of underrepresented students would be remiss without consideration of the presence of these groups in academic professions. Social and intellectual benefits of diversity accrue not only via a diverse student body but also through the existence of a diverse faculty. African Americans only comprise approximately 5% of all faculty in the United States (all faculty includes untenured positions such as instructors and lecturers), while Hispanics represent 2.8% and Native Americans, 0.4% (National Center for Education Statistics, 2003).

Homogeneity amongst the nation's faculty has implications at institutional, social and personal levels. Related consequences manifest at the institutional level as faculty reluctance or struggle with student and public demands for a more diverse curricula and professoriate. Consequences emerge at the social level via students' limited exposure to ways of knowing that an underrepresented faculty member may be more adept at conveying. Finally, personal

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ramifications emerge for underrepresented students who: (1) may experience limited interaction with faculty and White or international peers (Altbach, Lomotey, & Rivers, 2002); (2) perceive a lack of belonging within the college environment, and (3) subsequently become at risk of dropping out of postsecondary programs.

Research by Allen, Epps, Guillory, Suh, Bonous-Hammarth and Stassen (2002) suggests that minority faculty presence is a significant predictor of African American educational and professional attainment. Hence, a nexus exists between the recruitment and retention of faculty and students in that 'institutions that are successful in recruiting and retaining Black faculty do a far better job of recruiting, enrolling, and graduating Black students than those with few or no Black faculty members' (Allen et al., 2002, p. 191). Allen and his colleagues' work implies that the mere presence of African American professors is a source of validation for Black students and influences the successful transition into and completion of college. Marginalized students must be assured that they can succeed at the postsecondary level; that their ideas, as well as opinions are valued; and that they are worthy of attention and respect from the campus community. Such validation facilitates minority students 'access[ing] the networks, resources, and experiences necessary for academic success' (Allen et al., 2002, p. 192; Bonner & Evans, 2004; Farmer-Hinton, 2006) and ultimately qualifying for positions at the top of academe's hierarchy.

Academic acculturation refers to the idea that, in addition to being capable or talented, new faculty or graduate students must be socialized into the profession (Davis, 2008; Hill, Bahnuik, & Dobos, 1989) through various networks and resources. Albrecht and Bach (1997) explain that 'during the socialization process an individual comes to appreciate the values, expected behaviors, and social knowledge essential for assuming a role in the organization and for participating as an organizational member' (pp. 196–197). Mentorship has traditionally served as a tool in the socialization of newcomers and, as this article illustrates, plays a key role in the successful socialization of underrepresented students during their academic training and beyond.

This writing features the Summer Research Opportunity Program (SROP), a national-level mentoring program in the United States devoted to increasing minority populations within academe. Focusing on the mentorship component of the SROP, I sought to understand further the individual, interpersonal, collective, and extra-programmatic influences of mentoring relationships, as well as its subsequent effects on racial minority students.

The Committee on Institutional Cooperation's Summer Research Opportunity Program

The Committee on Institutional Cooperation (CIC) consists of a consortium of major research universities that convened in 1958 and established the Summer Research Opportunity Program (SROP) in 1986. Over 7,000 students have participated in the initiative since its inception (CIC, 2004). The program provides 8- to 10-week mentoring and undergraduate research experiences for racial groups traditionally underrepresented in academia. Its overarching goal lies in increasing the numbers and completion rates of minority doctoral candidates so that they pursue academic careers. This discussion features results from interviews conducted in nine of the then 15 SROP sites by the author and other research team members in 2002.

Student participant population

SROP participants consist of Black, non-Hispanics (54.5%), Hispanic Americans (29%), Asian Americans (5.3%), Native Americans (1.9%), and 4% that identify their race as

'other'. The majority of students (93.95%) are US citizens, while 6.05% are naturalized citizens. Although the SROP focuses on the socialization of underrepresented minority students, a small White population (4.4%) takes part in this initiative. White participation may be explained by the structure of one SROP site, which meshes its McNair Program (a federally funded initiative) with the SROP. Students participate in the McNair Program as a preliminary research experience and are invited back for a second year of research through SROP. The existence of a small White population may also be explained by the decision of some sites to serve low-income majority students to avoid lawsuits. Although the White population exists, my article highlights the experiences of the program's racial minority students.

Trends in the literature: mentorship and minority students

In their study of Black students participating in a summer research program, Frierson, Hargrove, and Lewis (1994) found that individuals with Black or female mentors had more positive attitudes and perceptions toward research and academic environments than those with White male mentors. Those with Black mentors considered their mentoring interactions more positive than their peers with White mentors. This success may lead some to accept the mentoring myth that students of color (defined here as African, Hispanic, or Native-Americans) should only be mentored by another from an underrepresented periperalized group (Brown, Davis, & McClendon, 1999). However, the importance of the promotion of cross-race mentoring, or that between Whites and persons of color, resides in the numbers. The ratio of underrepresented faculty to racial minority students is 1:58 (Brown et al., 1999). Since there are far less faculty of color than students of color, it is unlikely that minority faculty can mentor all minority students. Consequently, Whites must be open to and prepared for mentoring students from various backgrounds. Likewise, minority students should welcome mentoring from all faculty, regardless of racial background. Epps (as cited in Brown et al., 1999) holds that 'the extent to which all faculty, rather than [just faculty of color], are committed to the task of recruiting and nurturing [talented students of color] is an indication of an institution's commitment to equality' (p. 2). Such a commitment to equality must be an integral component of institutional and departmental praxis to ensure retention and attainment of marginalized student populations.

Another myth of mentorship that negatively impacts students is the belief that one should only mentor someone who is similar (Brown et al., 1999; Mullen, 2005). This belief is exemplified by faculty members choosing not to mentor students who are different due to their interest in reproducing themselves (Brown et al., 1999; Mullen, 2005), as well as individuals' lack of cultural awareness and competence in addressing the needs of minority students (Davidson & Foster-Johnson, 2001). These issues negatively affect racial minorities, who often have less traditional research interests, which seek to provide voice to underrepresented groups. Critical methodologies, such as critical race theory and Black feminism, exemplify some of the unique frameworks minority scholars employ in their academic contributions.

In their review of the literature, Davidson and Foster-Johnson (2001) identify five realities that affect the mentorship of minority persons in graduate schools: graduate preparation's focus on assimilation rather cultural inclusion; mentors' assumptions of similarities in occupational experiences between themselves and their protégés; graduate schools' avoidance of culture, race, and ethnicity in course work; the impact of cultural differences on student outcomes; and how race is addressed in cross-race mentoring relationships. Acknowledgement of these issues is pertinent to further understanding and ameliorating the

lack of mentorship and sponsorship experienced by underrepresented graduate students. Many studies on the socialization of graduate students fail to provide information on racial demographics. These studies are valuable for understanding issues related to academic socialization, yet only provide a surface view of mentorship as it regards race. Nevertheless, some works place race at the center of research or acknowledge racial and socioeconomic differences in graduate student experiences.

Limited data indicating best practices for the recruitment and retention of minority doctoral students exist (Woodrow Wilson Foundation, 2005). This discussion thus contributes to the field by highlighting the formal mentoring component of racial minority student participants of the SROP, while illustrating the professional socialization of students through faculty mentorship. Specifically, in my role as an external evaluator of the SROP, I explain how the experience influenced participants individually, interpersonally, collectively and extra-programmatically.

Qualitative research methods

Semi-structured interviews were conducted in summer 2002 at 15 CIC sites throughout the Midwest in the United States, with individuals, as well as male, female, and mixed-gender focus groups of current (undergraduates at the time of study) and former (alumni of the program who during the interview were graduate students) participants. Focus groups ranged in size, averaging 10 students. Each interview and focus group lasted for approximately one hour. Participants were informed that responses would be held in confidence and signed consent forms. Data reported on herein highlight individual interviews with six current and five former participants, for a total of 11 interviews. As for focus groups, two were female, one was male and four were mixed with both men and women, yielding a grand total of 18 interviews. Each individual and group was interviewed once. Because no new patterns emerged after a third focus group, the seven focus groups, coupled with the 11 individual interviews, provide a sufficient sample size for this study. Pseudonyms are used to protect the identities of individuals and institutions.

Triangulation may be distinguished by data source (people, location), time, researcher, method, theory (Denzin, 1978), and data type (e.g. recordings versus quantitative data) (Miles & Huberman, 1994). Sources with differing strengths or biases assess whether results are valid or invalid based on reoccurrence (Miles & Huberman, 1994). In other words, regularities in the data indicate reoccurrence, which strengthens the validity of the work (McMillan & Schumacher, 1997). Triangulation took place via a variety of the aforementioned types. For instance, both present and former program participants during the time of study were hosted by various Midwestern institutions, which allowed for the comparison of experiences and triangulation across time and place. Triangulation also occurred through the utilization of multiple researchers in the collection of data. However, analysis of this article's data was conducted solely by the author. Interview questions consisted of the following:

Do you think having a mentor is important?

If so, why?

What kind of relationship do you have with your mentor?

What did you learn from your mentor?

Have you had other mentors in your life?

How does the SROP experience compare with those mentoring relationships?

Data analysis

Focus group and individual interview responses were grouped based on their applicability to the major themes of personal, interpersonal, collective and extra-programmatic forms of influence. The results were then further sorted and compared by the definitions of the four influences of mentorship. Credibility was established by offering member checks to participants to ensure that interviews fully reflected their personal experiences. Approximately half of the individuals responded. The research team's review of one another's notes and data prompted peer accountability. Both participant and peer feedback was included in the final analysis of the data.

Results of the study

Faculty mentorship plays a key role in fostering the academic socialization processes of future minority scholars. This holds particularly as it pertains to mentorship's influence upon the individual, interpersonal, group, and extra-programmatic realms of participants' lives.

Individual influence of mentorship

The individual influence of mentorship refers to the impact of experts' mentoring in promoting self-assessment, personal development or acquisition of skills for novices. A mentorship's individual influence may also affect one's aspirations or values. Results of this study indicate that the individual influence of mentorship positively affected the educational aspirations of novices of the SROP. For instance, the mentorship provided by one female student's chemistry professor prompted her interest in working beyond the bachelors degree. Awareness of increased opportunities with a doctorate prompted the student's pursuit of graduate education. Mentorship from her professor led to participation in the SROP and subsequent application to graduate programs:

I know for a fact that if it wasn't [for] him there is no way I would be here pursuing this PhD. It is not because I don't have the ability – it's because I didn't know about the opportunity. I think that is a real problem with minority students. A lot of times we don't recognize that we have the potential and even if we do have the potential we don't recognize the opportunities ... out there for us. He would always tell me get your education and once you have that, there is nothing nobody can [do to take it away]. Once you have that PhD there are so many things that you can do with [the degree]. You can teach or you can go to industry. Just go out there and get it. It is not easy, but just look at it as a means to get where you need to be. He has really been encouraging. That is the kind of person that I want to be. Basically that is why I am pursuing [my PhD.], so I can be a mentor.

The student's discussion of academic potential reveals self-assessment of her competencies, a component of mentorship's individual influence. Mentorship not only influenced the student's aspirations, but also inspired interest in modeling the mentorship experience as a future faculty member. Other SROP participants echoed this desire to mentor, which clearly exemplifies mentorship's fostering of personal values.

The individual influence of mentorship may also impact the direction of an individual's occupation. One African American male student shared the impact of positive mentorship from a senior Black male and the subsequent effect on his educational values and motivation:

Me working with another African American male ... [is] something that I'm not used to ... I mean, growing up, I've probably only had one African American male teacher. So me seeing an African American male in an academy, this is like a role model to me. This was not something in my community that we talked about. The academy ... higher education, period... The whole research process is just phenomenal to me. I mean, going through literature reading the sources, the principles, and theories of other scholars ... it's like: 'Wow!' Someday somebody is gonna' be citing me. You know what I'm saying? Somebody's grandchildren is gonna be reading my book!

This student demonstrated his value of academe as a profession through his interest in the research process, scholarship, and ultimately making a name for himself in the professoriate. The statement provides an example of how mentorship within the individual realm encouraged the participant's aspirations for doctoral study and prompted occupational self-assessment. Though the mentorship experience of the aforementioned students clearly influenced them interpersonally through interaction with their mentors, the following data analysis more clearly illustrates the impact of this type of mentoring upon student participants.

Interpersonal influence of mentorship

Mentorship's interpersonal influence refers to its role in building professional relationships through face-to-face interaction between a mentor and protégé (Davis, 2005). Such interactions may take place in a professional, social, or academic context (Davis, 2005). Getting to know mentors beyond the lecture hall yields moral support, enhances training, and facilitates socialization, benefits not generally experienced in the traditional classroom setting. Interpersonal influence is evident through a shift in the type of information shared by the mentor. Acquiring information about a given field and introduction to key scholars contribute to the socialization process and increased satisfaction with the relationship for protégés.

Working closely with faculty mentors also helped to demystify academic life and build bonds between mentors and protégés. Activities in which the SROP faculty and students engaged ranged from tours of the host campus and informal recreational outings to dinner invitations. Participants recognized the mentors' interest in them, their success, and their admission to graduate school.

Mentorship provided through the SROP also demonstrated to participants the importance of forming professional relationships and continuing communication with mentors and peers following program participation. Regarding the benefits of mentorship, one former participant commented:

[Mentors] show you how to be... They pass on knowledge [and] advice. With both my mentors, I have always been able to pick up the phone and get to them, even now. Graduate school is one of the hardest things that you can do, and you need some help. You need assistance [from] people who have been through it, especially African Americans and people of color in general. They can give you that.

The student noted the merits of modeling from mentors of color and its significance in envisioning herself in graduate school. Modeling appeared to be an important aspect of professional socialization, proving that 'the journey can be made'.

For another participant, the mentor's sharing of both his time and work space facilitated the interpersonal influence of mentorship:

He was very generous with his time and had quite a few students, especially my second summer. He would take us out to eat and things like that, so he was very generous. I [asked to use] his computer the day before the paper was due. He [said]: 'Oh sure ... I'll be back in an hour.' When he found out I didn't have a computer, he offered to buy me a computer with some of his SROP money.

Despite a positive relationship, resources, and academic support, the student still questioned her work – she 'never knew if it was good'. This uncertainty resulted in the student's dismay regarding some aspects of the academic profession, particularly critique of her research from other scholars. The student further described the type of academic feedback given by her mentor, as well as what she learned from his guidance professionally and personally:

Dr Summer ... never seemed stressed ... in all the capacities I've ever seen him in ... and I've seen professors running around this building stressed. He didn't give a lot of direct instruction. He didn't ask to see a draft of anything... He'd want to see a draft right before you turned it in that last week. I learned from him that graduate school really is about you. It helps to have people in your corner, but the guts of graduate school [are] about personal, individual effort... I knew I wanted to have ... a professional relationship [with my advisor]. To be able to close the door, start whispering, and say: 'Okay, but let me tell you what I really think,' to shed ... that mask

Shedding the 'mask' speaks to how mentoring demystifies the doctoral process and the professoriate. Through the professional relationship established by her mentor, the participant understood the importance of independence throughout the graduate experience and as a scholar in academe. The undergraduate SROP experience prompted an interest in forming a strong mentorship relationship with her graduate advisor. Forming such a relationship during graduate school enhanced her training experience and facilitated the socialization process into the professoriate, as evidenced through her co-authored publications and grants with faculty.

Another former participant experienced continuous support both professionally and academically from his SROP mentor. This sustained relationship suggested a strong interpersonal bond. The student recognized the importance of continued contact and the benefits of affiliation with his mentor:

[I] met with [Dr Samuel] once or twice a week. [I] always get emails from him [and] ... go out to lunch with [him]... He's a really cool guy. He's been published and doing research for over 35 years. He's one of the top guys in his field. When I hand in recommendations from him, people [think I] must be doing something right.

As with the above participant, positive mentoring relationships commonly involve frequent contact between the mentor and protégé. Regular interaction facilitates positive interpersonal influence and models academic culture. An excellent example of academic modeling practiced by a mentor to benefit a protégé was described by this SROP participant:

For me and my mentor, it's a close relationship. I started meeting with him once a week, checking in. He allowed me to do this project that I brought to him... At the same time, he'll let me know what's going on with his [projects] ... and what he's doing. He actually gave me a copy of a paper that he's working on right now. He sent me a book review. [He's] like a mentor, but [he's] also ... like a coach.

By sharing book reviews and manuscripts with the protégé, the mentor not only modeled the type of work expected in the academic community but also demonstrated collegial information exchange common within the profession.

Psychosocial effects

The quality and duration of interpersonal communication often reflects the strength of a mentoring dyad. For instance, one student's campus committee involvement allowed her to develop a stronger relationship with her mentor outside of the classroom. She noted the importance of academic, social, and moral support, which contributed to her satisfaction with the experience. Getting to know her mentor personally, beyond the working relationship, enhanced her experience as a protégé. By interacting with her mentor regularly, she observed the positives and negatives of life as an academic, including the mentor's 'concerns, needs, and anxieties'.

Time spent with mentors engaging in social activities outside the academic environment involved such experiences as fishing and coffee breaks. These interactions exemplified the multifaceted roles of a mentor, in this case, that of sponsor and friend. Two mentors welcomed protégés into their homes and made novices a part of their extended families. Students observed the various social roles played by faculty mentors and noted the positive effect this had on the mentoring relationship.

Students commented on the various roles that mentors play. When answering, 'What do you think makes a good mentor?' one student stressed the importance of a senior scholar who met her emotional needs while maintaining the professionalism of the relationship, stating: 'I don't know how I would have done in a lab that was strictly business.' Similarly, another student noted the importance of the dual roles of mentors, as both teacher and friend, describing personal interactions with her mentor as 'strict ... but ... good at helping you conquer your [fears]'.

Assisting postsecondary students in conquering fears of failure or stereotype threat (refers to the perception of being viewed via the lens of a negative stereotype or fear of acting in a way that confirms that stereotype; Steele, 1997) is key for enhancing morale and promoting a climate suitable for the successful retention and attainment of underrepresented groups. Such fears may hinder the possibility of novices forming healthy professional relationships. For instance, as undergraduate students, three protégés experienced a degree of intimidation from their mentors' positions as faculty members. One student in particular doubted her abilities and experienced stereotype threat:

Some of the stuff he tries to teach me I should have a little background on, but I can't remember very well. Then I feel really pressured. I don't want anybody to think that [my minority-serving institution] is a really bad university or anything, so I get really embarrassed when I don't remember how to do a math problem or something.

Despite these concerns, the interpersonal influence of mentoring ameliorated the self-doubt experienced by the novice. Like previous students, she stressed the importance of a mentoring dyad that establishes rapport outside the academic environment. The participant expressed satisfaction with meeting her mentor socially and the contribution of these informal interactions to their professional relationship.

Another participant noted that becoming acquainted with the 'soft side' of her mentor provided emotional support to combat her fears. Mentoring afforded students a more holistic view of professors and academic life. A holistic view complemented the professional bond the student and mentor established through joint commitment to their field. Students

believed that similar characteristics and views assisted in establishing a rapport with mentors and minimized isolation at the host university. The benefits of a 'person-to-person match' resulted in some mentoring relationships lasting years beyond the program's 8- to 10-week duration. While possessing similar personalities strengthens the interpersonal influence of mentoring, regular communication was critical to establishing long-term professional partnerships. The quality of one female student's mentorship was demonstrated by weekly meetings and continued email correspondence following matriculation to graduate school. A male student also reported keeping close communication with his SROP mentor and returning to work with him a second summer:

I have the mentor I had last summer and he's stayed in contact with me ... all academic year. He made me take his thermodynamics class. He calls me up: 'How ya' doing? What are you doing? You're not partying too much? Your SROP is coming back around. You should sign up. Tell 'em I'll do it.'

Of importance in this example is the mentor's diligence in maintaining contact with the novice throughout the academic year. The mentor's communication indicated to the student others' interest in his success and welcomed him as a member of the academic community. Creating a sense of belonging is critical to academic socialization, which stems from the interpersonal influence of mentorship.

Multiple mentoring relationships

In addition to their assigned SROP mentors, participants experienced the benefit of mentoring during their undergraduate training. For one woman, being from a similar region assisted in creating a connection between her and a faculty member not affiliated with SROP. The geographical connection facilitated the interpersonal influence of mentorship by offering a common ground to build a professional relationship. The student appreciated that these two mentors played multiple roles as friends, role models and critics.

Student commentary mirrored the literature, which promotes the benefits of mentorship, whether the relationship be same race, cross race or cross-gendered. Of particular interest was a student's receipt of inside information from one of her mentors on the negative racial climate of the host department. The participant expressed her appreciation for this input and believed that it would prepare her for future challenges as a person of color at a predominantly White institution.

Some students not only established mentoring relationships in college but also during their high school years. Having a history of strong mentors secondary school played a key role in one participant's post-secondary interest and matriculation:

My sophomore year, I stepped into his trigonometry course. And in my high school, the trigonometry course was the senior course in math. [The teacher] said: 'What the hell are you doing [with] the guys you're hanging with? They're not going anywhere.' And he took me down to the University of Miami ... into a physics class there. He sat me down, and he's like: 'Look around.' And I'm like: 'What?' And he's like: 'Are there any Spanish kids here?' 'No.' 'You should be one of the Spanish kids here.' For the next three years in high school ... he was my friend. My senior year, he talked to my high school principal. He got me enrolled at the community college. I did most of my last year of high school at the community college...We looked at colleges together. I mean, I'm here [because of] him.

Mentorship from a teacher resulted in the participant's engagement in activities that would render him more competitive for undergraduate admission. Enrolling in community

college courses during high school exposed the student to a university environment. Coupled with encouragement from his mentor, these experiences demonstrated to the protégé that he could succeed at the postsecondary level. Increased self efficacy exemplifies how multiple mentoring relationships throughout life yields cumulative success for the protégé (Davis, 2005).

Negative mentoring relationships

Not all of the SROP participants experienced positive mentoring relationships. A minority experienced negative relationships with their assigned mentors, decreasing their overall satisfaction with the program. Understanding how mentorship might best be used as a recruitment and retention strategy may be informed not only by healthy mentoring interactions but by poor relationships as well. Infrequent contact with his mentor resulted in this student's dissatisfaction with not knowing his mentor 'as a person':

[My experience was] more, 'This is what I did,' and 'I need your signature for this.' He helped somewhat, but...[he was] too busy writing grants. So, I mean, we met and we talked, but it wasn't as well as I would have liked it to be. I didn't know too much about him as a person, versus him as an instructor.

This lack of contact and psychosocial support rendered the interpersonal influence of mentoring ineffective. Such conditions lessened the likelihood of forming a healthy mentoring relationship.

Another student's relationship with her mentor was apparently hostile, which might have been fostered by the poor communication and social skills of the mentor. The situation grew worse with the participant's lack of knowledge in dealing with difficult people:

It's not been going well because...he just doesn't talk to me. I was just thrown in the lab. [It's] like: 'Okay, do this and this.' But I don't have any protocol. And every time I ask a question, he says something sarcastic. It's just like: 'Okay...I'm not going to ask another question again.' I can go off...but I'm not going to.

In addition to the mentor's lack of communication skills, some challenges stemmed from cultural barriers. One participant with a foreign-born mentor experienced stress due to language barriers and the mentor's lack of patience. Such conditions hampered the development of a positive relationship. Although the student reported that a challenging work environment in the lab had 'calmed down' after a rocky beginning, the relationship with his mentor had not improved. Like his peers, he spoke of the necessity of successful mentors playing dual or multiple roles. He suggested that his mentor neither had the time nor the desire to mentor him and that their interactions were like those of a 'bossemployee rather than a mentor-protégé'. The mentorship the student received reportedly came from graduate students and postdoctoral fellows in his lab who were not assigned to be his mentor.

In addition to mentors' personalities and ability, or lack thereof, to play multiple roles, differing work styles were also a concern. Such conflicts strained professional relationships and stifled mentorship's interpersonal influence. For example, one student noted:

I would suggest that they probably get to know the mentors and the supervisors. The grad students and my supervisor tend to not be as attentive to [safety] detail ... and so I go in the lab and I'll work a little bit slower than the other people in the lab because I've actually had a chemical burn. I've met other people that have been burned because of somebody

[else's] ... careless[ness]... So I'm very much attuned to exactly where everything is supposed to be. I think trying to match up a student with a mentor or at least a lab environment that would be a closer match would be better.

Differing work styles included not only ways of conducting work, but also norms of the given work site. For instance, one student's workplace relied heavily on graduate students to guide undergraduate protégés, a practice that counters the program's stated goals of faculty mentorship.

Based on the interview data, some students experienced collegial work settings, while others experienced less interaction with colleagues. Though many participants who endured the latter were in the sciences, differences in work styles and levels of interaction between novices and mentors may also be applicable to other fields. Such poor matches may pose similar problems in establishing healthy mentoring relationships.

Stereotype threat

Many students of color experienced stereotype threat or other socially induced emotional challenges that negatively affected interpersonal relationships and performance. One student shared her doubts about her own academic ability and how it affected the SROP experience:

I tried to articulate it to my [mentor] and she's like: 'Oh, you don't need to worry about it.' I'm like: 'How can I not worry about it when you're asking me to do these things and I'm scared to do them because I [might] mess up?' You're knowing this person's evaluating you and this is going to be important to your future. You want to get a good evaluation. You don't want to feel incompetent, but you feel incompetent. It's a great opportunity. I really like it, but I've just got those frustrations that make it really hard. I'd feel more comfortable if I had ... a ... counselor person I could go and talk to. [Then I could share what] I feel.

As this female student noted, a counselor external to the formal mentoring pair could help curtail self-doubts and combat stereotype threat.

Lack of contact with mentors was a common complaint among participants with negative experiences. In an extreme case, stereotype threat was experienced, coupled with the mentor's reluctance to associate with the student. This negative microclimate weakened validation and caused undue stress for the novice. Her expressed need to boost her spirits throughout the SROP experience suggested that unfriendly interactions with her assigned mentor took a psychological toll.

Mentorship, whether positive or negative, shaped student outcomes beyond the narrow confines of the mentor-protégé relationship. The camaraderie and networking promoted throughout the program resulted in mentorship's benefits moving past the strict borders of the mentor and novice as individuals, and toward influencing peers and other members of the academic community.

Mentorship's collective influence

Mentorship's collective influence refers to interaction within a group, such as that which occurs in a student's relationship with their SROP cohort, other CIC program participants, or peers (Davis, 2005). Student participants 'accepted responsibility for each other', providing a communal sense of accountability for individual program completion. Such a culture of accountability created a positive environment for the SROP and may have contributed to

its high completion rate. Encouraging continued contact with fellow participants promoted the practice of collaboration and nurturing social networks necessary for success in academe. Though the data do not offer clear evidence of other instances of mentorship's collective impact, this may well be a reflection of the questions asked rather than an absence of this type of influence.

Mentorship's extra-programmatic influence

Mentorship's impact on the extra-programmatic realm refers to influence occurring outside the immediate program environment – at the institutional, family, or societal level (Davis, 2005). Mentors' influence on participants' extra-programmatic experiences were reflected in modeled mentoring behavior, mentoring relationships' impact on nonparticipating faculty, and effects outside of the academic environment upon nonparticipating peers or family members.

Current participants expressed their interest in serving as models for newcomers to the field. This effect on the students' aspirations is a personal influence of mentorship, yet the focus on outreach to other minorities in their respective fields is extra-programmatic in nature. Two participants stated their interest in mentoring in the future and desire to introduce their fields to other persons of color. The first maintained:

You're either at the top or the bottom. I have to be at the top. Being in the position of going on to grad school and pursuing a PhD., I see it as ... a position to help other people ...'cause I'm able to open more doors for people that are trying to get in, and possibly become a mentor to those that are trying to follow the same path. I just want to be in a position that I can open a lot of doors ... I want to be at the top of the totem pole.

The second participant also expressed interest in working with future students; however, she stressed the importance of nonacademic community contacts, another example of the extra-programmatic influence of mentoring:

[At] a smaller institution ... I got a lot more private ... individual attention. That's when I was encouraged to go on. I think that a lot of people in my community didn't get that. I want to be a professor [and] do that in a way where I'm not separate from the students, where they're just dealing with my assistants. I want to actually ... work with students [and] in my community. I want to know who they are.

Modeling may manifest as either a participant's interest in mentoring others or in the types of relationships and opportunities sought by a novice. A former participant stated how the relationship with her SROP mentor mirrored the type of relationship she had with her graduate advisor. Her SROP mentorship experience provided a model that transcended the immediate program environment and yielded an extra-programmatic effect. This benefit resulted in a positive graduate experience; specifically, the mentorship helped her recognize the importance of a sense of community during the graduate training process.

Extra-programmatic influences also emerged indirectly through modeling by protégés' peers. Students pointed out that fellow participants served as role models to each other before, during, and after involvement in the program. This modeling exemplifies extra-programmatic influence. Modeling mentorship, including forming and maintaining professional relationships, demonstrates students' adoption of critical components of academic socialization.

Attitudes of nonparticipating faculty

Mentorship's extra-programmatic influence moved beyond the program to impact attitudes of non-affiliated faculty members. One student witnessed extra-programmatic influence via observations of departments at host institutions:

There [were] faculty telling the person that I worked with that [they were] taking a risk on having [me]... do a PhD. Now the same faculty have eaten their words, because now they are begging to have [SROP participants] placed in the program ... When I first started graduate [school]...I was one of three minority students coming in ... I have watched over the years that [former] doubtful [faculty] are the same people ... that are begging to have [SROP] students placed in their lab. I think this program has been very instrumental in getting minorities ... into the door. Once you get in, they have a new shoulder and they know you are just as good as other students.

This shift in faculty attitudes regarding the potential of racial minority students and subsequent interest in their recruitment illustrates the extra-programmatic influence of mentoring. Such an influence promises to assist in meeting the SROP goal of increasing the number of underrepresented persons in the academy.

Impact outside the academic environment

As mentioned previously, some student participants expressed interest in mentoring and working in their communities. This type of outreach promises to recruit and retain populations that may be overlooked by well-meaning advocates of diversity in academe. Because outreach resides outside the confines of the program, it, too, is an example of the extra-programmatic influence of mentoring. One student noted: '[As] far as giving back ... I always go home ... and talk to people. There are kids that have no idea you can get money to fund your undergraduate career or you can go on to graduate school.' The skills and knowledge acquired during mentorship also impacted the lives of families. Participants' sharing of information about graduate education and academia as a career epitomizes extra-programmatic influence. By increasing the likelihood of academic attainment of participating students' family members, mentorship may indirectly derail the cycle of intergenerational poverty, which disproportionately affects people of color.

Discussion and implications

The four influences of mentorship go beyond the academic outcomes of novices and expand the strict confines of the mentor-protégé relationship. This article contributes to the field by revealing additional impacts of mentorship, specifically upon the collective realm (i.e. mutual benefits of mentoring amongst group members) and extra-programmatic realm (i.e. how modeling of positive mentorship influences interactions with family members). Assessing the degree to which mentorship affects life outcomes for individuals, as well as its role or lack thereof in extra-programmatic experiences, may prove instructive for policy and program development in recruitment and retention programs for new graduate students and faculty. The results of this work might also aid in understanding how to improve similar undergraduate mentoring programs for minorities.

In addition, the information shared by undergraduate protégés of the SROP may offer advice to future graduate students by providing models of positive and negative mentoring relationships. Likewise, mentors might read this work with a greater understanding of the needs or concerns of minorities and the attributes required for mentoring them effectively.

Highlighting the experiences of underrepresented students provides additional insight into measures for increasing the academic achievement of minority groups. Incorporation of such measures is critical to establishing effective programs centered on promoting institutional diversity.

The study also points to the need for organizational commitment to such programs via resources. SROP funding is contingent upon host institutions' commitment to diversity and university success in establishing a critical mass of underrepresented students and faculty. A decrease in funding for the SROP and similar programs may negatively affect the presence of underrepresented students and professors in American institutions of higher education for years to come.

Race and class dynamics play key roles in mentoring and networking processes for underrepresented group members. Research on the negative mentoring of racial minorities reveals that low expectations threaten to stifle goals of educational attainment (Wilson, 1997), as well as professional growth (Davis, 2005). For instance, differentials between the educational rewards of Blacks and Whites exemplify continued discrepancies between the majority and racial minorities that instrumental benefits of mentorship might address. Oliver and Shapiro (1995) note that Blacks earn merely 55% of Whites' income over a lifetime regardless of profession. Wealth differentials between Blacks and Whites with similar credentials and achievements result in a continued social gap, isolating minorities and rendering them less likely to acquire mentorship that fosters entrance into occupations, such as the professoriate, in which marginalized groups are traditionally underrepresented.

The divide also decreases the likelihood that a minority novice receives information and guidance that would counter economic exploitation. In academe, this might include guidance for racial minorities in negotiating hiring packages as well as earning tenure and promotion. Disparities among academics across race suggest the continued need for programs geared toward promoting the development of faculty of color, not only for the retention of these members of the professoriate but also the subsequent recruitment and retention of students of color.

Creating parity in fields in which minorities are underrepresented requires the promotion of equality in educational access and outcomes. The positive correlation between an institution having a critical mass of faculty of color and the recruitment and retention of underrepresented students suggests the importance of establishing a diverse faculty and addressing barriers throughout the academic pipeline. Parity is particularly challenging, as racial minorities are widespread among the nation's poor and, as a result, are subject to fewer educational resources and networks. These factors, as well as the formation of mentoring relationships across race and class, restrict the entrance of underrepresented racial groups into academe.

The low numbers of White academics with experience working with underrepresented minority groups compounds this problem. The scarcity of graduate mentorship for underrepresented students increases their 'risk of (a) not receiving sufficient training in research and specialized content areas; (b) not completing their degree programs; and (c) not being well-positioned to readily succeed in their postdoctoral careers' (Davidson & Foster-Johnson, 2001, p. 550).

The majority of relationships in the SROP reflects what Mullen (2005) describes as crossrace, formal, and technical mentoring or pre-assigned matching of dyads where the mentor transmits knowledge to the novice. However, many of the SROP participants experienced alternative mentoring as well, which involves mutual 'learning, inquiry, and power across status, racial, gender, and other differences, with a vision of empowerment and equality' (Mullen, 2005, p. 8). Focusing on empowerment and equality is critical to successful advocacy and provides a critical lens in the study of academic and professional outcomes for underrepresented protégés in educational settings. Future work would complement the results herein by offering strategies to address the revolving door of underrepresented students and faculty at predominantly White institutions.

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