

# A Conceptual Model for Faculty Development in Academic Medicine: The Underrepresented Minority Faculty Experience

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In May 2010, the Association of American Medical Colleges reported that nonwhite professors have a lower promotion rate than white professors. A cohort of 30 underrepresented minority (URM) junior faculty who participated in a structured faculty development program at a public, research-intensive, academic medical center were followed in a 10-year longitudinal study. This paper reports on the career status of 12 of the 30 URM faculty who were eligible for promotion during this period. Ninety-two percent (11/12) of URM faculty eligible for promotion were promoted to associate professor. When asked what factors contributed to their success, these URM faculty identified access and support of senior faculty mentors, peer networking, professional skill development, and knowledge of institutional culture. A faculty development program that addresses these components can promote the success of URM faculty in academic medicine.

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## INTRODUCTION

**U**nderrepresented minority (URM) faculty face unique obstacles that can impede their success in academic medicine. According to Cohen,

isolation, disproportionate obligation to serve in time-consuming committees, commitment to mentor students with complicated nonacademic problems, and participation in community service, along with a “complex tangle of obstacles...[that is] many subtle, largely unconscious social conventions, falling short of overt discrimination,” may explain the disparity that exists between URM and non-URM faculty in the attainment of senior faculty rank.<sup>1</sup> According to Merchant and Omary, “...promoting the success and retention of junior URM faculty, enhancing the support of senior URM faculty to serve as needed mentors, and building a pool of URM and non-URM mentors for URM trainees” are necessary for ensuring that URMs are represented in academic medicine.<sup>2</sup>

In 1998, in order to increase the academic success rate of all junior faculty, the University of California, San Diego School of Medicine developed the National Center of Leadership in Academic Medicine (NCLAM). The NCLAM faculty development program was established with support from the Office of Women’s Health (OWH) of the US Department of Health and Human Services, the Health Resources and Services Administration Division of Health Professions Diversity Hispanic Center of Excellence, and the Office of the Vice Chancellor of Health Sciences of the University of California, San Diego. NCLAM is a structured junior faculty career development program designed to foster gender equity and diversity, increase retention and promotion of junior faculty, and develop young faculty for successful careers in academic medicine. NCLAM supports junior faculty participation in the program by partially funding release time from clinical, teaching and other duties. The University of California, San Diego NCLAM was 1 of 4 OWH-funded programs chosen to serve as examples of innovative programs that facilitate the career advancement of faculty in academic medicine.<sup>3</sup> After OWH funding ended, the Office of the Vice Chancellor of Health Sciences of the University of California, San Diego provided funding to sustain the program. The program is now institutionalized, supported by the Office of the Vice Chancellor of Health Sciences of the University of California, San Diego (annual program cost is \$10000

per junior faculty member), with additional funding for URM career development activities (eg, Association of American Medical Colleges (AAMC) Minority Faculty Development Program, National Medical Association Annual Convention, National Hispanic Medical Association Annual Meeting) provided by the University of California, San Diego Comprehensive Research Center in Health Disparities.<sup>4</sup> The NCLAM program has been shown to be cost effective.<sup>5</sup>

As previously described in detail by Daley, Wingard and Reznik in 2006, the NCLAM curriculum requires each junior faculty to: (1) attend 12 half-day faculty development workshops on goal setting and preparing an academic portfolio, principles of teaching and learning, leadership styles, negotiation skills, stress management, University of California, San Diego academic resources, University of California, San Diego grant resources, grant writing, conflict resolution, curriculum development, performance evaluation, and effective presentation skills; (2) participate in a structured 7-month, one-on-one instrumental mentoring program; (3) attend a 2-hour academic performance counseling session; and (4) complete a professional development project.<sup>6</sup>

Between 1999 and 2009, a total of 30 URM faculty completed the NCLAM program and were followed longitudinally for a period of 10 years. A cohort of 12 of the 30 URM faculty were eligible for promotion during this period. This paper reports on the career status of this cohort of 12 URM faculty and presents objective indicators of their success and the factors that they identified contributed to their success.

## METHODS

A longitudinal cohort design was selected and included all 30 URM faculty who participated in the NCLAM program between 1999 and 2009. These 30 URM faculty were first-time assistant professors at the time of entry into the program, and they self-reported as Hispanic, African American, Native American, or Pacific Islander. Twelve of these 30 URM junior faculty were eligible for promotion during the 10-year period of this study, while the remaining 18 were not employed long enough to be eligible for promotion. This study was conducted on the subset of 12 URM faculty who were eligible for promotion to the next rank by 2009; 50% (6/12) of these URM faculty were women. Specialty areas represented by these faculty include the departments of: family and preventive medicine, internal medicine, psychiatry, emergency medicine, pediatrics, and surgery. Due to the small size of this cohort, specific ethnic and other identifying information is not provided in order to protect the anonymity of the 12 individuals. The University of California, San Diego Human Research Protection Program (institutional review board) reviewed and approved the study.

To demonstrate academic advancement the authors used 2 measures: promotion from assistant professor to

associate level and academic productivity defined by the number of publications, and number and dollar amount of grants received. Ten out of 12 faculty responded to a brief survey designed to identify the factors that contributed to their career success.

Promotion data were obtained from the Academic Affairs database. A literature search was conducted on PubMed to obtain total number of journal publications by faculty since year of participation in NCLAM.<sup>7</sup> The number and dollar amount of grant awards received from federal, state, foundation, and industry sources since participation in NCLAM was calculated for each faculty using information obtained from the RePORTER database for National Institutes of Health federal grants, and University of California, San Diego's DataLink Web site for all other grants.<sup>8,9</sup>

In 2010, this cohort of 12 URM junior faculty received a brief survey that asked them to: (1) identify and describe the top 3 factors they attributed to their career success (open ended), (2) describe the role of mentoring in their career success (open ended), and (3) select the top 3 NCLAM components that have most impacted their career trajectory (forced choice). Survey responses were anonymous and collected using Survey Monkey (SurveyMonkey.com LLC, Palo Alto, California).<sup>10</sup> Evaluation staff coded group responses to open-ended questions to categorize and group self-reported factors that played a role in their successful career trajectory using NVivo8 (QSR International Pty Ltd, Doncaster, Victoria, Australia). Reliability was established by multiple blind codings with 6 coders. The most frequently assigned code was accepted for each response. These coded responses were analyzed and assigned to 1 or more than 1 of NCLAM's core areas of emphasis: instrumental mentoring, networking, navigating institutional culture, and professional skill development (Figure).

*Instrumental mentoring* is a formal, time-limited mentoring activity that is an integral part of the 7-month faculty development program. A junior faculty participant is assigned a senior mentor who is not a member of the junior faculty's home department. The senior mentor is responsible for facilitating the acquisition of specific skills (eg, administrative skills, teaching skills, research skills) or the achievement of objectives (eg, completion of a grant application) that is identified in the junior faculty's professional development project.

NCLAM promotes *networking* by creating a supportive environment among colleagues, providing formal and informal opportunities to meet, and encouraging collegial, collaborative relationships. Opportunities for networking occur during the one-on-one mentoring program for senior and junior faculty and during workshops, small-group activities, and program events for junior faculty participants and NCLAM alumni. Junior faculty were also encouraged by their mentors to participate in local, national, and international professional networks.

NCLAM emphasizes the importance of *navigating*

and understanding institutional culture through workshops designed to describe the values, culture, and administrative procedures in the University of California system and at the University of California, San Diego campus. Junior faculty attend workshops that describe the past and present history of the university system and the organizational structure of the academic medical center, introduce the policies and procedures that govern academic advancement, describe the level of productivity that is required for promotion, identify potential internal and external resources, and outline the strategies that can be used to meet the expectations of the academic environment.

Professional skills are enhanced in workshops that use self-assessment tools and teach grant writing, research development, conflict resolution, and negotiation skills. These skills, as well as aspects of the other 3 program areas (navigating and understanding institutional culture, networking, and instrumental mentoring) are further reinforced as NCLAM participants design and complete a professional development project during the 7-month program.

**RESULTS**

**Promotion of Underrepresented Minority Faculty**

Successful faculty were defined as faculty who were promoted to the next rank by 2009. Eleven of the 12 (92%) junior faculty were promoted to associate

professor by 2009 and remained at University of California, San Diego. The URM faculty member who left the University of California, San Diego is a member of the faculty at another academic institution and was promoted in 2010. Average time to promotion of the 11 faculty who were promoted to the next rank by 2009 and remained at the University of California, San Diego was 5.3 years.

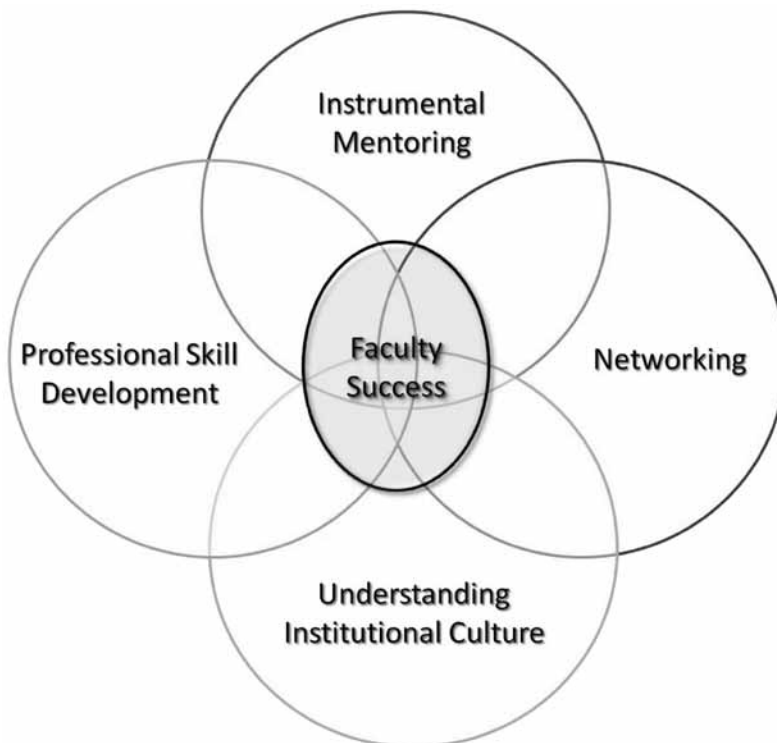
**Junior Faculty Academic Productivity**

This cohort of 12 URM junior faculty produced a total of 196 peer reviewed articles and published papers since their participation in NCLAM. Ten of 12 obtained independent extramural funding of more than \$12.6 million for projects in which they were the principal investigator. Extramural funding obtained by this cohort of URM junior faculty is presented in Table 1. Of the 37 federally funded grants awarded to this cohort, for which they were either principal investigators or coprincipal investigators, 22% were ROIs.

**Survey Responses**

Ten of the 12 (83%) URM faculty responded to the survey. Faculty responses to open-ended questions about the factors associated with career success reflect the goals of the NCLAM faculty development program. Themes were identified in relation to NCLAM’s core areas. Faculty reported that having mentors, having goals well aligned with the university, having opportunities for personal and

**Figure.** National Center of Leadership in Academic Medicine Faculty Development Model



**Table 1.** Total Grants Received Between 1999 and 2009 by 12 University of California, San Diego Underrepresented Minority Faculty National Center of Leadership in Academic Medicine Participants

Type of Source	Principal Investigator <sup>a</sup>		All Grants <sup>b</sup>	
	No. of Grants	Amount, US \$	No. of Grants	Amount, US \$
Federal	18	8 446 075	37	49 431 653
State	4	4 255 92	7	2 133 307
Foundation	5	2 670 377	7	4 605 688
Industry	9	1 146 063	5	2 268 540
TOTAL	36	12 688 107	56	58 439 188

<sup>a</sup> Grants in which underrepresented minority faculty were the principal investigator.

<sup>b</sup> Grants in which underrepresented minority faculty were listed as either principal investigator or coprincipal investigator.

professional skill development, and networking were major, overlapping factors that contributed to their success. Coded themes and sample responses are tabulated below.

## DISCUSSION

Thirty URM faculty were followed longitudinally for 10 years after completing the NCLAM faculty development program. This paper reports on the career status of 12 of the 30 URM faculty who were eligible for promotion during this period. Ninety-two percent (11/12) of URM faculty eligible for promotion were promoted to associate professor by 2009.

### Promotion

The AAMC, in May 2010, reported that nonwhite professors have a lower promotion rate than white professors.<sup>11</sup> This AAMC finding is consistent with prior studies which found that minority faculty were promoted at lower rates and were less likely than nonminority faculty to hold senior academic rank.<sup>12,13</sup> In the May 2010 AAMC report, the 10-year promotion statistics for all full-time US medical school faculty first-time assistant professors appointed in the academic year 1967-1976 cohort, 1977-1986 cohort, and 1987-1996 cohort showed that the average number of years to promotion for these respective cohorts was 5.2 years, 5.8 years, and 6.2 years.<sup>11</sup> The 11 University of California, San Diego URM junior faculty who were first-time assistant professors and eligible for promotion during the 10-year period of this study were promoted in 5.3 years. The average number of years to promotion for University of California, San Diego URM first-time assistant professors is comparable to the national average, as reported by the AAMC for all faculty.<sup>11</sup>

### Academic Productivity

Academic productivity is widely used by research universities as a major criterion in tenure review and promotion. Numbers of peer reviewed and published papers, collaborations, grants, as well as advancement, have all been used to measure faculty productivity.<sup>14-17</sup> In a study of academic productivity in Australian higher education, Ramsden found that membership in an academic unit

that is cooperatively managed, together with a sense of satisfaction rather than alienation from the work environment, is likely to result in a higher level of individual research activity and to a correspondingly high level of individual productivity. The role of both personal (intrinsic interest in the subject) and structural (management and leadership of academic department) factors that influence the ability of faculty to successfully collaborate with mentors and colleagues has been shown to impact faculty productivity.<sup>16</sup> In the NCLAM program, junior faculty establish “exceptional and long-term relationships” with senior faculty and colleagues, both within and outside of their home department or specialty. They also develop an understanding of the management, leadership and organization of the university, the academic medical center, and the academic department.

### Self-reported Contributors to Success

URM junior faculty eligible for promotion were asked to identify factors that contributed to their success. They cited the presence of role models and mentors, peer networking and support, knowledge of institutional culture, and professional skill development as factors that contributed to their success in academic medicine (Table 2). Prior authors have also identified mentoring, networking, skill development, and institutional culture as factors affecting faculty career progress.<sup>13,18</sup>

As described in the methodology, the NCLAM structured curriculum addresses the overlapping needs for instrumental mentoring, peer and professional networking, understanding institutional culture, and professional skill development.

Consistent with previous findings, URM faculty in this study reported that *mentors* supported their interests in an academic career and facilitated career advancement.<sup>19</sup> In the present study, mentors were identified as role models, as helping to navigate between useful and futile projects, helping to decipher the idiosyncrasies of one’s home department, and as a source of honest and constructive feedback. Positive relationships with mentors and peers allowed junior faculty to have a safe venue to share their frustrations, barriers, dreams, and goals.



**Table 2.** University of California, San Diego Faculty 2010 Survey Responses Regarding National Center of Leadership in Academic Medicine Core Areas

NCLAM Core Areas	% of Faculty Who Cited Component	Specific Components Reported by Faculty
Instrumental mentoring	60	<ul style="list-style-type: none"> <li>• Role models</li> <li>• Academic counseling</li> <li>• Support and encouragement</li> </ul>
Networking	60	<ul style="list-style-type: none"> <li>• Peer networking</li> <li>• Peer support</li> </ul>
Understanding institutional culture	50	<ul style="list-style-type: none"> <li>• Navigating institution</li> <li>• Understanding culture of academia</li> </ul>
Professional skill development	40	<ul style="list-style-type: none"> <li>• Increased self-efficacy</li> <li>• Research development</li> <li>• Publications</li> </ul>

Mentors were also instrumental in informing junior faculty about training, funding, and networking opportunities. As one faculty member commented:

*Mentoring provided a clearer definition of expectations I needed to meet, resources to address those requirements, role models I could emulate, and removed the fear of what I might have perceived as daunting tasks.*

Peer networks play an important role in enhancing faculty performance.<sup>20</sup> Besides one-on-one mentoring and support, peer groups can promote collegiality and a sense of belonging.<sup>18</sup> URM faculty, who feel isolated because of their few numbers, may not easily develop—as described by Cohen—“professional networks, lubricated by social familiarity” and subsequently acquire “knowledge of the academic culture—including the wily ways of promotion committees.”<sup>21</sup> URM junior faculty in this study agreed that peer networking and peer support played an important role in decreasing their sense of isolation. One URM faculty member in the study described their experience in the NCLAM faculty development program in the following way: “fostering exceptional and long-term relationships with colleagues and mentors who have my best interest at heart.” Other junior faculty members surveyed associated their success with: “being part of a large lab or unit with lots of opportunities for collaboration” and “support from colleagues outside of my specialty.”

Culture encompasses the shared beliefs, values, and practices by members of a group or organization. URM faculty surveyed in this study noted that understanding *institutional culture* was important to their successful career in academic medicine. Academic culture includes the often unspoken, taken-for-granted rules that govern academic medicine at institutions such as the University of California and University of California, San Diego. In a speech at the 2007 AAMC meeting, AAMC President Darrell Kirch called on medical schools and teaching hospitals to change the culture of academic medicine by emphasizing “collaboration, shared accountability, and team performance.” He

pointed out that “the prevailing autonomous nature of academic medicine must give way to a more collaborative, synergistic culture” and called on institutions to address and adapt to these changes.<sup>21</sup> His message echoes early literature on faculty development and organizational culture which suggested that “a strong relationship exists between the organizational behavior of an institution and the sense of identity, productivity, and continued career growth of its individual faculty members.”<sup>22</sup>

The NCLAM program not only facilitates the development of relationships with mentors and peers but also introduces junior faculty to the institutional culture in which they work and outlines strategies to help them succeed in this culture. Faculty described some of the keys to navigating the bureaucratic processes, which included:

- “learning the governance structure of University of California, San Diego” and “learning ‘the ropes’ about the university’s promotion requirements and structure.”
- “NCLAM had an early and profound impact in helping me learn about academic medicine. NCLAM provided me with important knowledge, tools, good connections, and the time to begin developing a professional path.”

According to some researchers, being comfortable and confident in the culture of academic medicine plays an important role in enabling faculty to reach and sustain their highest potential, and efforts have been made to implement comprehensive cultural change at medical institutions.<sup>23-26</sup> Academia can be a particularly complex world for junior faculty. Previous interviews of NCLAM faculty found that although URM faculty described themselves as working in a difficult environment, they were convinced that participation in the program improved their work performance and expressed satisfaction with their choice of an academic career.<sup>19</sup>

## Limitations

Beyond the limitations associated with self-reported data gathered with a brief instrument, the ability to generalize the findings in this study is limited, as this is a small, self-selected cohort. This select small group of URM junior faculty are specific to the University of California, San Diego, a public research university, and are likely unique in several unexplored aspects. Further, participation in NCLAM is voluntary. The self-selected sample of individuals who are motivated to participate in a career development program may share characteristics that affect career success, independent of their participation in a faculty development program. The study did not use an experimental design with a matched control group because of the small number of URM faculty at this institution.

## CONCLUSION

URM junior faculty (first-time assistant professors) who were followed longitudinally for 10 years after completing a structured faculty development program (NCLAM), successfully advanced in their careers in academic medicine and 11 of 12 remained at the University of California, San Diego. These 12 faculty who were eligible for promotion during this 10-year period demonstrated success in important objective measures required for advancement. This cohort produced a total of 196 peer reviewed articles and published papers, and 10 of 12 obtained independent extramural funding of more than \$12.6 million for projects in which they were the principal investigator. Ten of the 12 surveyed identified factors that contributed to success in their careers. These reported factors reflect NCLAM's core areas of emphasis: access to and support of senior faculty mentors; peer networking; professional skills development; and learning about institutional culture, including the "many subtle largely unconscious social conventions" that exist in the work environment. Responses to the survey indicate that all components of this faculty development program are necessary to ensure the success of URM faculty in academic medicine.

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