

Original Publication

OPEN ACCESS

Preparing for an Academic Career: The Significance of Mentoring

Gezzer Ortega, MD, Connor Smith, Margaret S. Pichardo, Alexander Ramirez, Maria Soto-Greene, MD, John P. Sánchez, MD*

*Corresponding author: jps304@njms.rutgers.edu

Citation: Ortega G, Smith C, Pichardo MS, Ramirez A, Soto-Greene M, Sánchez JP. Preparing for an academic career: the significance of mentoring. *MedEdPORTAL*. 2018;14:10690. https://doi.org/10.15766/mep_2374-8265.10690

Copyright: © 2018 Ortega et al. This is an open-access publication distributed under the terms of the Creative Commons Attribution-NonCommercial-Share Alike license.

Abstract

Introduction: Mentorship is essential for students considering a future in academic medicine. Mentorship is recognized as one of the most important factors in determining career success through enhancing trainees' goals and productivity. An effective mentoring relationship can drive trainees' goals to fruition by providing support so that opportunistic risk can be taken and failures can be reevaluated into learning experiences. Mentorship has such importance that it was deemed mandatory in education by the Liaison Committee on Medical Education and the Accreditation Council for Graduate Medical Education.

Moreover, mentoring can play a significant role in helping to diversify the academic medicine workforce.

Methods: This 60-minute workshop utilizes a didactic PowerPoint presentation and small-group role-play exercise to introduce participants to the importance of mentoring in the development of academic medicine careers and to provide instruction on establishing effective meetings with prospective mentors. Faculty facilitated the workshop at nine regional academic medicine conferences held across the country.

Results: Eighty-seven diverse participants completed an evaluation form. In comparing pre- and postworkshop responses, there was a statistically significant increase in confidence to "Find a mentor for a career in academic medicine" (2.29 vs. 3.26, $p < .001$) and "Have a successful relationship with an academic medicine mentor" (2.52 vs. 3.38, $p < .001$). Moreover, more than 85% agreed or strongly agreed that the workshop's learning objectives were met. **Discussion:** Trainees from diverse backgrounds gained crucial insight into the importance of mentorship and techniques on how to establish and maintain mentors while pursuing an academic medicine career.

Keywords

Mentoring, Career Development, Academic Medicine Career

Appendices

- A. Mentoring PPT.pptx
- B. Mentoring Facilitator Guide.docx
- C. Mentoring Handouts.docx
- D. Mentoring Train the Trainer Video.mp4
- E. Mentoring Evaluation.docx

All appendices are peer reviewed as integral parts of the Original Publication.

Educational Objectives

By the end of this session, learners will be able to:

1. Describe the role of mentors in developing the next generation of academic physicians.
2. Describe current research on mentorship among underrepresented populations in academic medicine.
3. Apply skills on effective communication needed in the development of successful mentorship relationships.

Introduction

Succeeding in academic medicine can be challenging to someone who is unfamiliar with the usual benchmarks. Having a mentor who can help navigate these challenges is imperative for a trainee's consideration of and successful matriculation into academia. Unfortunately, for some trainees, the lack of a mentor stems from never considering one, lacking information on how to find one, not knowing the benefits of a mentor, or not communicating effectively with one.¹ Furthermore, developing an effective mentoring relationship requires an additional set of skills.

The concept of a mentor can be traced as far back as Homer's *Odyssey*, in which young Telemachus is given an advisor named Mentor.² Since then, the definition of *mentor* as an experienced and trusted

advisor has been adopted. Mentorship has evolved significantly and is now recognized as one of the most important factors in determining career success, especially in relation to career selection, advancement, and productivity.³⁻⁷ Because academic physicians are expected to undertake research, teaching, patient care, and/or service,⁸ mentors are critical to helping trainees select and build foundational knowledge and skills for future academic success. An effective mentoring relationship facilitates the formulation and “realization of a person’s own dream”⁹ through an evolution of personal growth and development.¹⁰ In addition, it can help mentees push their goals beyond what they thought possible by encouraging them to take risks, learn from mistakes, and reevaluate failures as learning experiences. Mentoring research has shown that building effective mentoring relationships has benefited residents regarding research aptitude^{11,12}; however, little information exists on effective mentoring to heighten academic career selection or advancement.

The Liaison Committee on Medical Education (LCME) and the Accreditation Council for Graduate Medical Education (ACGME) have mandates that support mentorship as a requirement for accredited medical and resident training programs.^{13,14} LCME Standard 11, which focuses on medical student academic support, career advising, and educational records, highlights the importance of effective academic support and career advising in helping medical students achieve their career goals. The ACGME requires that training programs provide individualized learning plans annually and assist in this process by providing faculty mentorship to help residents create learning goals. Systems must also be in place to track and monitor progress towards completion of the individualized learning plan.¹⁵

While there are numerous mentorship programs in place in medical education, mentoring of groups underrepresented in academic medicine (e.g., women; underrepresented racial and ethnic minorities [URMs]; lesbian, gay, bisexual, and transgender [LGBT] individuals; etc.) deserves additional attention. Mentoring can play a significant role in addressing the lack of diverse faculty and trainees at academic health care institutions as it provides “an avenue for interaction and camaraderie” amongst underrepresented students, faculty, and staff.¹⁴ Notable challenges of underrepresented trainees include difficulty in finding racial/ethnic/gender-concordant mentors or mentors familiar with their perspective or lived experiences.¹⁶

Several *MedEdPORTAL* publications focus on establishing effective mentoring networks,¹⁷ mentoring to enhance the research acumen of residents,^{11,12} and mentoring faculty.^{18,19} The current curriculum fills a gap in the literature by focusing on the mentee-mentor relationship, especially in promoting the consideration of academic medicine careers by trainees, and skills for future success.²⁰ Uniquely, the workshop introduces a practical tool, the effective meeting checklist, to assist medical students and residents in their interactions with potential mentors.

In the winter of 2015, the Building the Next Generation of Academic Physicians (BNGAP) Initiative developed a workshop entitled “Preparing for an Academic Career: The Significance of Mentoring” for trainees. The workshop was designed to enhance medical students’ and residents’ awareness of the importance of mentoring for an academic career and how to establish initial effective meetings with prospective mentors. We six coauthors were involved in the development and/or revision of the workshop. A BNGAP curriculum committee comprising 25 diverse trainees and educational leaders further commented on the workshop.

We coauthors applied the six-step Kern model as a framework for the design, implementation, and evaluation of the workshop.²¹ Step 1: Problem Identification and General Needs Assessment included conducting a literature review and gathering input from the BNGAP curriculum committee on the significance of mentoring in establishing a career in academic medicine and on best practices for enhancing the success of groups underrepresented in academic medicine. Step 2: Targeted Needs Assessment involved the undertaking of several mixed-methods studies to assess diverse trainees’ perceptions of academic medicine careers and the role of mentoring in succeeding in academia. Based

on the aforementioned steps, for Step 3: Goals and Objectives, we determined our learning objectives to be the following: (1) Describe the role of mentors in developing the next generation of academic physicians, (2) describe current research on mentorship among underrepresented populations in academic medicine, and (3) apply skills on effective communication needed in the development of successful mentorship relationships. In terms of Step 4: Educational Strategies, the workshop consisted of two primary components: an interactive PowerPoint (PPT) presentation and a role-play activity. For Step 5: Implementation, the 1-hour workshop was implemented during an academic medicine career development conference for medical students and residents. Participants and speakers were from the hosting medical school or from nearby academic health centers. The venue chosen afforded students opportunities for career-specific learning, skill development, positive learning environments, and networking with individuals beyond their own academic health center. Step 6: Evaluation and Feedback consisted of a survey, with closed and open-ended questions, to assess participants' self-efficacy in identifying and building a successful initial relationship with a prospective mentor, as well as participants' satisfaction with the workshop.

Methods

This workshop can be implemented among medical students, residents, or fellows, or even junior faculty.

Two key educational strategies were featured in the workshop: (1) an interactive PPT presentation to introduce participants to mentoring-related definitions and best practices, especially as related to the consideration of an academic medicine career, and (2) a small-group role-play exercise for participants to learn how to prepare for a meeting with a prospective mentor. The role-play exercise was meant to provide a realistic context and emphasize how to maximize mentor-mentee engagement, thus transforming the relationship into one that was productive and impactful. Hence, mentee role-play description should be modified to reflect the learner. Capacity was set at no more than 40 medical students and residents per session to create a safe space for discussion of their personal perspectives, professional desires, and challenges in respect to their future careers as academicians.

Before this workshop begins, facilitators should review all session materials, which include the following:

Appendix A: Mentoring PPT: This 28-slide presentation provides the flow and content of the workshop. Slides 1-17 outline mentoring definitions, institutional accreditation standards related to mentoring trainees, and unique considerations and mentoring models for groups underrepresented in academic medicine. This portion of the PPT takes 20 minutes to deliver. Slides 18-22 outline a role-play exercise entitled MentorAid and takes 15 minutes to implement; and slides 23-28 describe advancements in mentoring due to technology and takes 15 minutes to deliver. Three minutes can be used to complete the preworkshop questionnaires (prior to the workshop) and 7 minutes should be allotted to complete the postworkshop questionnaire and allow for a question-and-answer segment.

Appendix B: Mentoring Facilitator Guide: This gives step-by-step instructions for conducting the workshop, along with an explanation of how to discuss each slide in the PPT.

Appendix C: Mentoring Handouts: This provides the case scenarios to be used during the MentorAid exercise for learners to become more skilled at using an effective meeting checklist. This checklist includes essential components of an effective mentee-mentor interaction: location, clear aim or agenda set, history and physical, definition of roles, personalization, goals and expectations, setting of dates, documentation, time and tracking, and reminders to summarize the meeting.²²

Appendix D: Mentoring Train the Trainer Video: This is an adjunct to the PPT and facilitator guide for learners who prefer to see and hear how the workshop can be implemented. The video is led by Dr. Gezzer Ortega, workshop coauthor, and is 17 minutes in length.

Appendix E: Mentoring Evaluation: This includes the pre- and postworkshop evaluation forms consisting of Likert-scale questions used to assess changes in participants' self-efficacy in finding a mentor, building a successful relationship, and gauging their agreement with the fulfillment of the objectives. Additionally, the evaluation form includes two open-ended questions to assess what participants liked about the workshop and suggestions for improvement.

Review of the materials should take 1-2 hours, and we highly recommend that the facilitator(s) conduct a practice session. The preferred facilitator would be a faculty member with an MD or DO degree who is engaged in mentoring trainees in completing scholarship. One or two facilitators can implement the workshop. If more than one facilitator does, we recommend a phone conversation and brief face-to-face meeting before the session to discuss and assign roles and sections. The optimal timing for this workshop is 60 minutes; however, it can be lengthened to allow the facilitator to meet with participants at the end and discuss their challenges in identifying and contacting mentors.

Materials

- Pens.
- AV equipment to show the PPT presentation.
- Chairs and tables to support groups of three individuals.
- Printed copies of the handouts and evaluation form.

Results

This workshop was implemented at nine regional conferences between June 2016 and March 2017, and facilitated by a total of 12 presenters (six single presenters and three pairs of cofacilitators) at various levels in their careers: one resident, eight assistant professors, and three associate professors.

The 87 respondents were a diverse sample: Forty-one (47.4%) identified as female; 17 (19.5%) as lesbian, gay, or bisexual; 19 (21.8%) as Hispanic/Latino; 23 (26.4%) as white; 27 (31.0%) as African-American/black; 20 (23.0%) as Asian; and one (1.1%) as American Indian. There were 71 medical students and 16 resident respondents who were training in 21 different states and Washington, DC.

In comparing pre- and postworkshop responses of learners, there was a statistically significant increase in confidence to the items "Find a mentor for a career in academic medicine" (2.29 vs. 3.26, $p < .001$) and "Have a successful relationship with an academic medicine mentor" (2.52 vs. 3.38, $p < .001$).

Learners from the conferences responded to the question, "To what extent do you agree that the workshop learning objectives were met?" The percentages of participants indicating they agreed or strongly agreed that objectives 1, 2, and 3 had been met were 98%, 85%, and 94%, respectively. Their responses are summarized in the [Table](#).

Table. Learner Responses ($N = 87$) to the Question, "To What Extent Do You Agree That the Workshop Learning Objectives Were Met?"

Objective	No. (%)				
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1. Describe the role of mentors in developing the next generation of academic physicians.	54 (62.1)	31 (35.6)	2 (2.3)	0 (0)	0 (0)
2. Describe current research on mentorship among underrepresented populations in academic medicine.	45 (51.7)	29 (33.3)	10 (11.5)	0 (0)	0 (0)
3. Apply skills on effective communication needed in the development of successful mentorship relationships.	59 (67.8)	23 (26.4)	1 (1.1)	2 (2.3)	0 (0)

The following items, organized by learning objective, are a list of things participants liked about the workshop:

- Objective 1: Describe the role of mentors in developing the next generation of academic physicians.
 - “Explained what a mentor truly is and what to expect out of mentor-mentee relationship.”
 - “Good explanation on mentors roles.”
 - “Hearing from a mentor about what they expect from students/mentees.”
 - “Having discussions via the different viewpoints (i.e. mentor vs mentee) allows one to be exposed to that viewpoint + gain new knowledge/insight.”
 - “Outlined the importance of mentor for career advancement and gave the insight of field of interest. Described the process of approaching potential mentors.”
 - “This was an incredibly helpful session and something I wish I had earlier in my academic career. The info was relevant and practical and overall incredibly well done.”
 - “This was great considering I am looking for a mentor and this gave me a great insight as to how to better foster a successful mentorship relationship.”
 - “Very practical advice. Gives me more confidence in reaching out for mentoring relationships.”
- Objective 2: Describe current research on mentorship among underrepresented populations in academic medicine.
 - “I appreciated presenter’s insight into identifying what we want out of a mentor; is it necessarily someone of the same gender/race/sexual orientation or someone within the field or specialty.”
 - “The workshop provided helpful insight into what a good mentor-mentee relationship looks like and tips for establishing solid relationships.”
- Objective 3: Apply skills on effective communication needed in the development of successful mentorship relationships.
 - “Case studies with role-play involving approaching a potential mentor. This workshop addressed the topics of mentoring most don’t discuss.”
 - “Clear goals for mentor meetings to maximize efficiency and productivity in the relationship.”
 - “Gave us clear cut steps on how to have an effective mentor/mentee meeting.”
 - “I liked the interactive simulation and the fact that I left with a checklist to use in the future.”
 - “I liked the role play. It was very helpful. The checklist is great, I will use it.”
 - “Loved the case discussion, suggested books for further learning, specific questions to ask both one’s self prior to seeking a mentor and of the mentor during a meeting. The checklist is immediately applicable to us.”
 - “The interactive activity was quite illuminating, allowing contrast pre and post educational intervention. I thought this style was very effective.”

Participants made a number of suggestions on how the workshop could be improved:

- “Perhaps have speaker be the mentor during the skit because it would be great to see how an actual mentor behaves.”
- “For pair activity may be more useful to have specific prompts.”
- “It would be helpful to learn how to first approach a mentor (email, office visit, phone call).”
- “I liked the role-playing scenario but I wish that we had speaker play the position of mentor. I liked that they repeated the scenario after we had talked about the effective meeting checklist.”
- “Simulation was helpful, but in my experience not all mentorship meetings are as structured/formal as that. Maybe talk about variations.”

Per evaluation and feedback, this workshop accomplished its goals and objectives and was highly valued by the participants as evidenced by their agreement that the three objectives had been met. Based on the open-ended comments, participants considered the workshop “incredibly helpful,” “relevant,” and “practical” in finding and becoming significant mentors.

Discussion

The presentation has been tailored for an audience no greater than 40 individuals as this allows for robust discourse of the MentorAid activity and ensures a safe space for trainees to practice mentor-mentee case scenarios to better aid in future mentoring relationships. This is especially important for groups underrepresented in academic medicine because mentorship has been identified as one of the significant factors in addressing their lack of inclusion.¹⁴ One recent study found that LGBT individuals, URM individuals, and women, unlike their counterparts, expressed a desire for and perceived value in having access to concordant individuals to serve as mentors.¹⁶ While gender and ethnic similarities between the mentor and mentee are important factors, it has also been found that nonconcordant mentors “seem to understand and appreciate minority students’ perspective and have volunteered to serve as mentors for these students.”¹⁵

Based on the evaluations, we identified several limitations to the workshop. Although the MentorAid exercise was valued by many, two respondents would have liked the mentor role to be played by an actual faculty mentor (or the facilitator). One approach to address this would be to have the facilitator serve as the mentor for the second role-play in front of the entire group, or have the facilitator create a separate case to role-play after completion of the initial MentorAid exercise. Moreover, offering postworkshop one-on-one consultation time (15-20 minutes) with facilitators for interested participants may provide further practice in navigating through a mentee-mentor interaction. A separate concern of another participant was that not all mentee-mentor encounters are as formal as the role-play exercise. We modified the description of slide 22 in the facilitator guide to prompt facilitators to discuss this point with participants. Identifying diverse facilitators (i.e., faculty, residents) to execute the workshop may be a limitation at some institutions. Reaching out to nearby academic health centers may help widen the pool of potential facilitators. Lastly, this workshop is a brief intervention, and the significant effects noticed in the postworkshop evaluation should not be inferred to be long-lasting self-efficacy without further evaluation. Many participants did comment that they were grateful for being introduced to the effective meeting checklist and plan to use it in the future.

While there are numerous publications in *MedEdPORTAL* on mentorship, there is little focus placed on developing an effective mentoring relationship between a student mentee and faculty mentor, especially in the context of academic medicine career development. This is one of the first publications to highlight the distinct challenges facing diverse trainees in achieving effective mentoring relationships. Additionally, the PPT slides and MentorAid activity were effective in raising diverse trainees’ confidence in finding a mentor for a career in academic medicine and having a successful relationship with an academic medicine mentor.

Gezzer Ortega, MD: Resident, Surgery Department, Howard University College of Medicine

Connor Smith: Medical Student, Howard University College of Medicine

Margaret S. Pichardo: Medical Student, Howard University College of Medicine

Alexander Ramirez: Medical Student, Howard University College of Medicine

Maria Soto-Greene, MD: Vice Dean, Rutgers New Jersey Medical School; Professor of Medicine, Rutgers New Jersey Medical School

John P. Sánchez, MD: Associate Dean for Diversity and Inclusion, Rutgers New Jersey Medical School; Associate Professor of Emergency Medicine, Rutgers New Jersey Medical School

Disclosures

None to report.

Funding/Support

None to report.

Ethical Approval

Rutgers University Institutional Review Board approved this study.

References

1. Goodbar NH, Lewis KF. Finding and working with mentors. *Am J Health Syst Pharm*. 2015;72(11):921-922. <https://doi.org/10.2146/ajhp140289>
2. Donovan J. The concept and role of mentor. *Nurse Educ Today*. 1990;10(4):294-298. [https://doi.org/10.1016/0260-6917\(90\)90054-T](https://doi.org/10.1016/0260-6917(90)90054-T)
3. Gray J, Armstrong P. Academic health leadership: looking to the future. Proceedings of a workshop held at the Canadian Institute of Academic Medicine meeting Québec, Que., Canada, Apr. 25 and 26 2003. *Clin Invest Med*. 2003;26(6):315-326.
4. DeAngelis CD. Professors not professing. *JAMA*. 2004;292(9):1060-1061. <https://doi.org/10.1001/jama.292.9.1060>
5. Sambunjak D, Straus SE, Marušić A. Mentoring in academic medicine: a systematic review. *JAMA*. 2006;296(9):1103-1115. <https://doi.org/10.1001/jama.296.9.1103>
6. Morzinski JA, Diehr S, Bower DJ, Simpson DE. A descriptive, cross-sectional study of formal mentoring for faculty. *Fam Med*. 1996;28(6):434-438.
7. Pololi LH, Knight SM, Dennis K, Frankel RM. Helping medical school faculty realize their dreams: an innovative, collaborative mentoring program. *Acad Med*. 2002;77(5):377-384. <https://doi.org/10.1097/00001888-200205000-00005>
8. Kanter SL. What is academic medicine? *Acad Med*. 2008;83(3):205-206. <https://doi.org/10.1097/ACM.0b013e318168e828>
9. Levinson DJ, Darrow CN, Klein EB, Levinson MH, McKee B. *The Seasons of a Man's Life*. New York, NY: Knopf; 1978.
10. Pololi L, Knight S. Mentoring faculty in academic medicine. *J Gen Intern Med*. 2005;20(9):866-870. <https://doi.org/10.1111/j.1525-1497.2005.05007.x>
11. Fenton K, Kim J, Abramson E, Waggoner-Fountain L, Naifeh M, Li S-T. Mentoring resident scholarly activity: a toolkit and guide for program directors, research directors and faculty mentors. *MedEdPORTAL*. 2015;11:10103. https://doi.org/10.15766/mep_2374-8265.10103
12. Premkumar K, Wong A. Mentoring principles, processes, and strategies for facilitating mentoring relationships at a distance. *MedEdPORTAL*. 2010;6:3148. https://doi.org/10.15766/mep_2374-8265.3148
13. Standards, publications, & notification forms. Liaison Committee on Medical Education website. <http://lcme.org/publications/>. Updated 2018.
14. Kosoko-Lasaki O, Sonnino RE, Voytko ML. Mentoring for women and underrepresented minority faculty and students: experience at two institutions of higher education. *J Natl Med Assoc*. 2006;98(9):1449-1459.
15. Common Program Requirements. Accreditation Council for Graduate Medical Education website. <http://www.acgme.org/What-We-Do/Accreditation/Common-Program-Requirements/articleid/4703>. Updated 2018.
16. Yehia BR, Cronholm PF, Wilson N, et al. Mentorship and pursuit of academic medicine careers: a mixed methods study of residents from diverse backgrounds. *BMC Med Educ*. 2014;14:26. <https://doi.org/10.1186/1472-6920-14-26>
17. Christou H, Dookeran N, Haas A, et al. Establishing effective mentoring networks: rationale and strategies. *MedEdPORTAL*. 2017;13:10571. https://doi.org/10.15766/mep_2374-8265.10571
18. Pauly R, Lombard G, Lansang M, Poulton W, Thorndyke L. Becoming a skilled mentor: tools, tips, & training vignettes. *MedEdPORTAL*. 2014;10:9844. https://doi.org/10.15766/mep_2374-8265.9844
19. Dookeran N, Fuhlbrigge R, Gottlieb B, et al. Structuring the mentoring relationship: expectations and boundaries. *MedEdPORTAL*. 2015;11:10196. https://doi.org/10.15766/mep_2374-8265.10196
20. Ramanan RA, Phillips RS, Davis RB, Silen W, Reede JY. Mentoring in medicine: keys to satisfaction. *Am J Med*. 2002;112(4):336-341. [https://doi.org/10.1016/S0002-9343\(02\)01032-X](https://doi.org/10.1016/S0002-9343(02)01032-X)
21. Thomas PA, Kern DE, Hughes MT, Chen BY, eds. *Curriculum Development for Medical Education: A Six-Step Approach*. 3rd ed. Baltimore, MD: Johns Hopkins University Press; 2016.
22. O'Dea NA, de Chazal P, Saltman DC, Kidd MR. Running effective meetings: a primer for doctors. *Postgrad Med J*. 2006;82(969):454-461. <https://doi.org/10.1136/pgmj.2005.042424>

Received: September 17, 2017 | Accepted: February 1, 2018 | Published: March 5, 2018