



The Significance of Mentorship

7

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Personal Story – Gezzer Ortega

Mentorship has and continues to be paramount to my journey in academic medicine. Growing up in Brooklyn, NY as a first-generation Latino to Dominican parents has provided a sense of doing more with less throughout my life. The biggest challenge early on was getting exposure and access to physicians. After graduating from Brooklyn Technical High School as a Computer Science major, I pursued the pre-med track at Syracuse University. Despite following a predetermined track to medicine, I was unsure how to approach applying and matriculating into medical school. Support programs like the Collegiate Science and Technology Entry Program (CSTEP) and summer programs like New York University's Summer Undergraduate Research Program and Weill Cornell Medicine Medical College Travelers Summer Research Fellowship Program, were my first sources of mentorship and guidance to the medical school application process and my first exposure to physicians.

As a college student, I did not know what academic medicine was. All I knew was that I loved the idea of seeing patients, doing research, and teaching. Since then, I have been committed to a career as a physician-scientist, despite the obstacles and challenges I faced as a young, Latino male from a low-income family. In spite of having the support of staff and faculty at my college and summer programs, I knew I lacked mentorship from an academic physician. This did not deter me from applying to medical school. Because of my perseverance, I was accepted and enrolled at Howard University College of Medicine (HUCM).

It was during my third year of medical school that I met academic physicians who would invest in my career and change the trajectory towards an academic journey. It was after my surgery rotation, I approached my mentor. He is the first physician in his

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family and from a UIM group. He assigned me a research project, on which I learned to conduct clinical research. After several meetings, I asked him formally to serve as my mentor and he was excited to do so. I would meet another mentor through a research collaboration that came out of that first project. I was interested in pediatric surgery and had little exposure at my institution. I was able to meet a surgeon at Johns Hopkins who was a friend of the collaborator I worked with. These mentors taught me the research process and, as a third year medical student, I achieved my first publication in a peer-reviewed journal. That year, I also pursued a funded research fellowship through the support of both of these mentors, in which I obtained my Master of Public Health at the Johns Hopkins Bloomberg School of Public Health. Together, these experiences solidified my foundation for a career in academia. I would go on to pursue general surgery residency at HUCM, conduct various research fellowships, and align myself with excellent mentors along my journey. During this time, I published over fifty peer-reviewed original manuscripts, collaborated with experts in health disparities and health services research, obtained funding, and mentored students through their journey in medical school.

Now, as a faculty member at the Center for Surgery and Public Health at Brigham and Women's Hospital/ Harvard Medical School, mentorship continues to be my principal drive, as I strive for a successful and meaningful career in academia. Currently, my mentors provide guidance on early career development awards, help me make decisions on future opportunities, connect me with research collaborators, experts, and leaders in diverse fields, and above all, are present through my failures and successes.

Personal Story – Margaret Pichardo

I fell in love with medicine when I was in my junior year of high school at Manhattan Center for Science and Mathematics and undertook an internship at NYC's Mount Sinai Hospital's morgue. I shadowed physicians as they cut into people's bodies and carefully, one at a time, retrieve organs I had only seen in textbook pictures. Since then, I knew my calling was in medicine, I was just not sure what type of doctor I would be, until after graduating from college. The first summer after becoming a recent college graduate, I worked as an intern under an Epidemiologist at Albert Einstein College of Medicine. My experiences during that summer were critical to my development as a physician-scientist. I met and eventually worked with over the course of 4 years, with one of the greatest mentors I've had. Through this mentor, I learned to marry my passion for the study of people through a humanities lens with the study of people in the gross anatomy lab. I discovered the field of public health/epidemiology and realized that my calling in medicine was to fight diseases that affect people of color in underserved communities, like the one I grew up in. My mentor taught me about the research process including how to collect data, critically assess academic literature, and write a literature review (the review was my first publication!). Most importantly, like my mentor, I ended that summer determined I would also become an epidemiologist. This newly found goal, coupled with my interest in medicine, motivated me to pursue the physician-scientist career track.

Later, as a medical student at Howard University College of Medicine, I actively sought mentors, one of whom was a resident at the time (the next phase of my career) and who would provide precise academic coaching and help me avoid pitfalls through medical school.

As you could tell from our stories, having different and/or multiple mentors through different stages of our career trajectories enabled us to get involved with research, to navigate the medical school and residency application system, to find funding opportunities like grants and fellowships, to publish in peer-reviewed journals, and to identify job opportunities at your best fit institutions. Our mentors have been instrumental in helping us find our research niche and coupling that to clinical medicine.

Introduction

The concept of a mentor can be traced as far back as Homer's *Odyssey*, where young Telemachus was given an adviser named Mentor [1]. From that, the definition of mentor as an experienced and trusted advisor developed. Mentorship has evolved significantly and is now recognized as one of the most important factors in determining career success; mentoring relationships have been cited as important in career selection, advancement, and productivity [2–4]. Training in medicine has been rooted in the apprenticeship model. The adage of “See One, Do One, Teach One” demonstrates the role of senior faculty/staff in training their medical students and residents. As the field of medicine evolved into an evidence-based practice, the traditional mentor's role as a teacher has broadened to serve as a facilitator of information. The mentor provides intellectual capital to help develop your scholarly productivity, clinical expertise, and vision.

For some trainees, the lack of a mentor may stem 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]. There are specific reasons why mentors are critical to your professional development. Mentors are often the key to opportunities like leadership positions, full-time jobs, research collaborations and networking, helping you publish, and writing letters of support. Mentors, specifically those who are physicians, can guide you to choosing a medical specialty or subspecialty and help focus your research to be clinically relevant.

Mentors and mentees have the flexibility to communicate via various forms of media to exchange information, advice, and guidance. If you leverage today's communication tools, your pool of potential mentors is no longer limited by geography or proximity. With tools like video conference calls and social media, you can establish and maintain a successful mentor-mentee relationship and enhance your chances of finding a mentor with similar identities. In various medical fields, the sharing of scientific information and literature is encouraged through platforms like Twitter and Facebook. Following and engaging in discussion through these platforms with physicians and researchers in your area of interest can be one way to identify a potential mentor. For example, medical professional meetings and conferences often have a hashtag. Even when you are not able to attend the meeting, following the hashtag enables you to interact with academicians at the meeting. This is a unique opportunity to engage in dialogue about the workshops or articles they shared on social media and potentially spark a new collaboration.

Not all mentors are created equal. Mentors who are at least one step ahead of you in the medical track can provide insights, from personal experience, to the next phase of your career to help you avoid pitfalls. Sponsors differ from mentors in that these individuals may be several steps ahead of you in the medical career trajectory and can leverage their position to leap frog or promote you (i.e. recommend you for promotion or a leadership role). Coaches or advisors play a role in maximizing performance and focusing on the granular details to enhance efficiency, productivity, and output. A coach or advisor may assist you with figuring

out a career timeline, advise you on coursework and extracurricular activities, help you organize your academic schedule, and assess your academic performance along the way. Coaches may also be research advisors who help you hone your writing and analytical skills. They may be part of or lead writing accountability groups to facilitate focused manuscript writing and increase scholarly productivity. Some individuals may serve more than one role for you (i.e. someone who is a coach and a mentor) or your relationship with someone may evolve from one role to another (i.e. a long time mentor who eventually becomes a sponsor). Regardless of how you structure your mentor network, make sure all your bases are covered.

We recommend forming a mentorship team, where each mentor fills a need. Not only does this allow you to obtain tailored advice, it mitigates shortcomings in any one of the relationships. For example, one individual may serve as an excellent clinical mentor but have little experience with research grant writing. In this case, we would suggest that you find a second mentor who has a track record of obtaining grants and can help you identify appropriate funding opportunities, provide feedback as you draft your grant, and help you navigate the submission, revision and, if you are not funded on the first attempt, could offer guidance when you reapply. In this regard, it is essential that you have a clear idea of the specific areas in your career that need development and for which a mentor, with that expertise, may serve a critical purpose.

Mentoring Individuals Underrepresented in Medicine

Mentoring may be a way to address the lack of diverse faculty and trainees at academic medical centers as it provides “an avenue for interaction and camaraderie” amongst students, faculty, and staff who are underrepresented in medicine (UIM; for example, people of color, women, and LGBTQ+). Mentorship, whether through a formalized pipeline program or unstructured relationships, could help fix the lack of representation in medical specialties [5]. Mentors are able to serve as brokers for UIMs when it comes to navigating academic clinical spaces. Like most medical students, UIM medical students face a demanding and challenging medical school curriculum. Unique for UIMs are the added challenges related to their marginalized identities (i.e. lower self-efficacy, imposter syndrome, lower social support) and the lack of role models with similar identities or lived experiences, both of which make it more challenging to navigate a career path in medicine [5–7].

Research suggests that UIMs, unlike their counterparts, have a desire for and perceive value in having access to identity concordant individuals to serve as mentors [5–7]. While identity concordance may offer unique benefits in a mentor-mentee relationship, it is not necessary for a successful and productive relationship. It is important, however, that both identity concordant and nonconcordant mentors receive appropriate training to develop UIM students. To give you a more personal example of successful nonconcordance mentorship, take Margaret’s various

mentors. Two are male (one identifies as Black and the other as European) and both have been instrumental in her career decisions and scholarly interests and productivity. Margaret, who identifies as Latina, has also received mentorship from various White females who have been instrumental in teaching her about navigating academia and being a woman scientist and an oncologist. Choosing a mentor of a similar identity as yourself is a personal decision. Not being able to find a mentor with similar identities as yourself, however, should not be a limitation to establishing strong and lasting mentorship relations.

Benefits of Mentorship

Academic medicine is challenging for someone without the familiarity with the usual benchmarks. Finding the appropriate mentorship to guide you through this path will contribute to your success. Because academic physicians are expected to undertake research, teaching, patient care, and/or service, mentors help you identify and build foundational knowledge and skills. An effective mentoring relationship facilitates the formulation and “realization of a person’s own dream” [8] through an evolution of personal growth and development [9]. In addition, mentors can help push your goals beyond what you thought possible by encouraging you to take risks, learn from mistakes, and re-evaluate failures as learning experiences.

Maximizing the Encounter

In academic medicine, time management is paramount to success. Both your mentor and you will have limited time. As such, you want to optimize your encounters to be productive and effective. Two important factors will help you maximize your mentorship encounters. First, we recommend that you adopt a goal-oriented perspective, set clear career goals and objectives for yourself and a specific timeline. In your first encounter, you should discuss your goals and timeline with your mentor to establish a baseline from which to work from. Second, leave your first encounter with an established regular meeting time (e.g. set a standing meeting). Through regular meetings, your mentor can continuously evaluate your progress, suggest prompt adjustments for milestones that may not be met on time, and allow you to be accountable on the objectives you have set for yourself. To accomplish the above items, we suggest that you develop the following checklist with each mentor and keep them in mind for every encounter (Table 7.1). First, have a clear understanding of the context of the meeting (i.e. what is the purpose of this meeting?). Next, develop a checklist that includes the meeting location, specific goals and objectives, define role in projects, personalization, expectations, regular meeting date/time, and documentation. After every encounter, it is important that you summarize what was discussed, including any feedback for changes or things to follow-up on and share this with your mentor via email [10, 11].

Table 7.1 Effective meeting checklist

Location	A mutually convenient place for the meeting to occur; where you meet and how formal or informal the meeting is, will set the tone for the meeting. As a result, choose a location wisely. Possible locations: mentor's office, coffee shop, available hospital/clinic spaces.
Goals and objectives	The goal for the meeting is the reason why the meeting will occur. Always set a goal so that your meetings are focused and efficient. Since goals are broad, setting objectives will help you highlight points of action that together help you achieve your goal.
History and physical	Do your homework on your mentor. Questions to ask yourself include: What is the area of focus and expertise? What have they published? Do they have current grants and what are the grants in? Have they mentored other students or residents?
Define roles	Alongside your mentor, clearly state what role each of you will have in accomplishing the objectives stated earlier.
Personalization	Share a past personal experience that will allow you and your mentor to connect on shared interests/experiences. (i.e. extracurricular activities in college, hobbies, etc.)
Expectations	Clearly outline common expectations moving forward with an understanding of your own professional and personal schedule.
Timeline	Create a schedule with upcoming deadlines for your predefined objectives as well as relevant conferences, abstract submissions, and grant and scholarship applications.
Summarize	Conclude each meeting with a summary of what was discussed and confirm next steps.
Documentation	Take notes during each encounter to document the discussions, agreed upon tasks, changes, feedback, and next steps. Keep a record for yourself and email to your mentor.

Mentorship Institutional Requirements

The role of a medical training institution is to prepare you for a future in one of the most dynamic and challenging occupations. The field of medicine is continuously changing as new research and technologies revolutionize how we care for patients. For this reason, the Liaison Committee on Medical Education (LCME) and the Accreditation Council for Graduate Medical Education (ACGME) both work to address this as a means to maximize the effectiveness of medical education [12, 13]. However, they have recognized that there are many critical aspects to being a physician that cannot be taught in textbooks, one of which is mentorship. The LCME has 12 standards for which medical schools must operate to maintain accreditation. Of these, the 11th focuses on Medical Student Academic Support, Career Advising, and Educational Records. This standard essentially stresses the important role that effective academic support and career advising plays in helping medical students achieve their career goals. Additionally, such services should be part of each school's medical education program objectives so that all medical students have the same rights and receive comparable services. Furthermore, the ACGME requires that training programs provide individualized learning plans annually and the programs must assist in this process by providing faculty mentorship to help residents create

learning goals. These guidelines work to ensure that beneficial mentorships are being formed between students and faculty so that students have the highest possibility of success in their field of interest.

Challenges of Mentorship

The task of finding and developing beneficial mentorships presents numerous challenges depending on various circumstances. While there are numerous mentorship programs in place in medical education, mentoring groups underrepresented in academic medicine have their challenges both in establishing mentorship and in maintaining it. It is important that these issues are confronted because mentoring can play a significant role in addressing the lack of UIM faculty and trainees at academic medical centers as it provides “an avenue for interaction and camaraderie” amongst underrepresented students, faculty, and staff [7]. A 2010 review by Nivet and colleagues explored the role of mentors of color. The review found that while “mentored residents were nearly twice as likely to describe excellent career preparation; residents [of color] were less likely to establish a mentoring relationship compared to their White peers.” While mentoring plays an important role in how mentored residents perceived their career readiness, the study also exposed the difficulty that students of color face in developing mentor-mentee relationships [7].

Mentoring relationships may be challenged by increased clinical, research, and administrative demands on mentors. Thus, it is important to keep in mind the obligations and responsibilities of your potential mentors. Establish a regular standing meeting (i.e. monthly or twice per month), depending on the level of relationship, to secure a dedicated time for you. Lastly, leverage all the communication tools available to you during each encounter. Meetings can occur over the phone, video conference call, and/or in person. Your mentorship relationships may fail due to time constraints and work priorities. If this occurs, have an honest conversation with your mentor if lack of time begins to hinder the relationship and your productivity. Be flexible and optimize your encounter by keeping a clear set of objectives for each meeting (refer to the Effective Meeting Checklist).

All mentor-mentee relationships will evolve over time and challenges that might not have been identified initially may arise. It is important to reassess your goals and timeline. If a goal has changed, a reassessment can help you focus efforts on a new goal. Addressing challenges like these as soon as they become an issue will help you maintain an effective mentoring relationship.

Mentoring Cycle

Ultimately, we would like your mentoring experience to be a beneficial one so that, in turn, you can invest your time mentoring a future student. The expectation is not for you to be as good as your mentor. We want you to take from your experiences and supersede your mentors. By being both a mentee and a mentor, you will know

the true value of the role of a mentor and can support a budding academic physician on their career trajectory as you were once supported. By becoming a mentor and training the next generation of underrepresented in medicine academic physicians, you contribute to diversifying the academic workforce and advancing the field of medicine.

In summary, mentorship is imperative to a successful career in academic medicine. Through this chapter, the tenets of identifying a mentor, building a mentorship team, and fostering an effective mentoring relationship will provide a foundation that will yield a large return on investment. As you work with your mentors to set your career goals, continue the cycle of mentorship and diversify the academic physician workforce.

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