

# Health Professions and Academia

How to Begin Your Career

John Paul (J.P.) Sánchez  
Nicholas N. Brutus  
*Editors*

 Springer

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## Foreword

My life work and passion for creating K-20 education pipeline programs and opportunities for youth from underrepresented backgrounds allow a distinctive perspective as I write this foreword as does being a first-generation college student, family practice doctor, and Hispana leader across an academic health center.

*Health Professions and Academia: How to Begin Your Career.* This is a beautiful inspirational book comprised of expertise, creativity, and authenticity in providing resources to prepare you as the next generation of diverse health professionals and faculty—health providers who will make a difference in the health, healthcare, and social justice fabric of the nation and communities across the globe that each of you will impact—person-to-person, community by community.

There is no doubt in my mind that this is an amazingly informative, interactive, and engaging guide, which alone is reason enough to read and learn from this. What is even more compelling is that when you finish reading this book, you leave with a sense of community from the co-authors and BNGAP members who have invested their time, stories, experiences, knowledge, humility, vulnerability, and skills to bring you this unique and valuable resource.

As I reflect on how I came to be in medicine, a faculty member, and a senior Hispana/Latina leader for an academic health center, and I reflect on this book you are about to read, experience, and treasure, two things come to mind:

1. I truly wish there had been a book like this to have helped guide me, a first-generation college student, Native New Mexican Hispana, on my journey to a health career and ultimately to a career in academia as Professor of Family and Community Medicine at the University of New Mexico School of Medicine.

My path to medicine was certainly not intentional in the sense that I knew nothing of what is being shared with you in this book. I have a passion and commitment to improve the health and well-being of our communities that arose from the values of my childhood and my cultural heritage. My life has been a testament to what my mom and dad instilled in me and my siblings from an early age. They instilled in us the values of hard work, education, being good to each other and others, and doing our best at whatever we tried. I know that these are many of the same values that you share as well. These core values are important on our journeys into health professions and academia as is the wealth of

information that you will find in these pages—information that will make your journey smoother and well-planned.

2. A unique and compelling aspect of this book that deeply resonated with me, and I hope that you will find inspiring, is the stories of the co-authors personal journeys found in each chapter. Storytelling has always been a vital part of many of our cultures, traditions, and communities. It reveals our values and allows us to connect in different ways. And this book most certainly brings about a sense of connection and empowerment as you meet these special people through their eloquent narratives and learn how to prepare to be a competitive applicant for health professions and academia.

I believe that part of what we all bring is the power of our stories. We are changing education by our experiences, by bringing community knowledge to these institutions. As a doctor, I work to bring the community story to medicine—the wisdom and knowledge that will begin challenging and improving a system that serves the people of New Mexico. I know that our institutions and work environments can be strengthened by bringing our community stories, our voices, perspectives, and experiences. And, your voice, your presence as a diverse health provider, as a future faculty member preparing the next generation, is imperative for a just and equitable health system for all.

You, our learners, are a precious resource that we are profoundly committed to supporting. This book is an expression of our regard and dedication in supporting you in achieving your dreams. We see in you the hope for a better future. You are a diverse group of future health professionals, faculty, and leaders bringing your experiences, perspectives, cultures, and identities into the health professions education and into health systems so we can improve and bring cultural and linguistic competence into these systems.

Con Cariño,

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# Introduction

# 1

Rosa Lee

*Health Professions and Academia: How to Begin Your Career* was written by health professions' students, trainees, and faculty members of BNGAP – Building the Next Generation of Academic Physicians. BNGAP is an organization whose mission is to help diverse learners become aware of academia as a career option and to provide them with resources to further explore and potentially embark on an academic career. BNGAP's first book, *Succeeding in Academic Medicine: A Roadmap for Diverse Medical Students and Residents* (2020), provided core information and inspiring stories for graduate trainees, particularly from groups underrepresented in medicine (UIM) to consider careers in academic medicine. This second book is aimed at college and post-baccalaureate learners who are considering careers in academic health professions. This book is a testament to BNGAP's recognition that (1) the key to recruiting diverse faculty in academic health professions is to inform and inspire students early, and (2) while BNGAP's work was initially focused on trainees in the field of medicine, its curriculum and resources for pre-faculty development can be effectively applied to promote the development of diverse faculty across academic healthcare disciplines such as nursing, medicine, pharmacy, and dentistry. We not only want readers to be on Pre-Nursing, Pre-Med, Pre-Pharm, or Pre-Dental career tracks, but we also want diverse learners to become Pre-Faculty or PREFAC. Pre-Faculty development is defined as providing trainees with foundational self-efficacy, knowledge, skills, and experiences to be successfully appointed, and eventually promoted and tenured within an academic institution. (Sánchez J.P. and Williams V., 2019).

Being PREFAC is inclusive of all healthcare disciplines and can apply to students who wish to pursue a career in academia, like Pre-Nursing applies to students pursuing a nursing career. Like its predecessor, this book serves as a guide to inspire students from diverse backgrounds to pursue careers in academic healthcare. However, this book focuses on college and post-bac learners. First, the book

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presents an overview to possible career pathways in academic health professions so that early (college, pre-graduate) learners can recognize opportunities for themselves in these fields. Second, the book addresses the core domains (community service, leadership, educational scholarship, and research) from which students can develop themselves as competitive applicants to graduate school, but also as a foundation from which they can establish successful careers in academic healthcare.

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## Author's Perspective

As I reflect on the content of this book, I wish that an organization such as BNGAP had been available to me when I was a college student and an early trainee in medicine. As I look at my own career, I realize that my own path to academic medicine came through what I can only describe as moments of *serendipity* and *blind leaps of faith* in which I followed opportunities that let me develop my interest in teaching and medical education. I was drawn to academic medicine based on my personal encounters with physicians and faculty members whom I deeply admired. Yet I had never had the courage early in my training and career to formally ask for mentorship or help in identifying clear steps to advance my career in academic medicine. While I could identify role models in medical school and residency whom I admired for their outstanding clinical acumen, empathy, and passion for teaching, I still felt lost in those years of training. It was only later in my career as an attending physician, when I heard a speaker describe the concept coined by Bill George at Harvard Business School as “finding one’s true north,” that I recognized the impact and importance of identifying my personal mission and developing a career trajectory that was intentional and guided by that mission. I realized that my personal mission was to make medical education equitable – to empower students from all backgrounds to succeed in becoming physicians.

Additionally, as an Asian-identified person in academic medicine, I have looked to my identity as a rich source of pride and support. Finding connections with other Asian-American colleagues has been inspiring, and while I may not have encountered many Asian-identified faculty in positions of leadership at my academic institutions when I was a college or medical student, I take great pride in seeing myself and my peers taking on leadership positions in academic medicine now. At the same time, I am appreciative of how heterogeneous our Asian-American community is and how important it is to acknowledge the varied life experiences of Asian-American trainees and faculty. While Asian-Americans are often referred to as a “not-underrepresented” minority group in medicine?, this term belies the diversity of the Asian-American community and the very real disparities and opportunity gaps in education that exist among different origin groups in the Asian-American population. This is something that can only be addressed and ultimately mitigated through a deeper and more nuanced understanding of diversity.

In my current role as a curriculum dean at CUNY School of Medicine, a seven-year BS/MD program, I encounter students who have committed to a career in medicine early on. While they have already entered into a medical program as college

students, they too ask questions and seek guidance on ways to thrive academically and develop themselves professionally for a rewarding career in medicine that allows them opportunities and choices while staying authentic to their personal values. During a recent conversation with first-year college students in my program, I was asked to give advice to those who might be unsure of how or where to start to develop research interests or professional development opportunities. Their questions reminded me of the value that this book holds for students who wish to pursue the health professions, and my response to my students' questions was informed very much by the premise of this book - it is to start with yourself. It is your identity, values, and experiences that you bring as diverse learners to the health professions and ultimately to the care of patients that matters tremendously. To recognize and align these values and experiences to the health professions is to identify your vocation, and this alignment can set you on a career path that will inspire you throughout your professional life.

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## Book Outline

The fields of academic healthcare and its entry points through graduate health professions schools are admittedly competitive. With the many hurdles that stand before applicants to enter health professions schools, including standardized tests and large applicant pools for limited slots in schools, it is understandable to feel overwhelmed at times, and perhaps even doubt in one's ability to enter and succeed in these fields. For everyone who may have ever felt this way, I wish to say that this book was written for you. This book has been written in recognition of the challenges of applying to and matriculating into health professions schools, particularly as they may be accentuated for applicants from under-represented backgrounds in health professions, including those underrepresented in medicine (UIM) groups, members of the LGBTQ+ community, and first-generation college students. It serves to encourage and guide students particularly from diverse backgrounds in preparing for and applying to health professions graduate schools and considering future career opportunities such as academic positions.

This book is meant to be interactive and to engage with you directly as a reader. Each of the nine chapters in the book begin with reflections from students and health professionals on their personal journeys to careers in academic healthcare. All but one of the chapters' co-authors identify with groups underrepresented in the academic health professions - women, sexual and gender minoritized individuals, and racial and ethnic minoritized individuals. Their diverse voices and honest accounts of the challenges and rewards of their career paths may resonate with your own life experiences. Their stories are here to inspire you as well as to help you see a little bit of yourself on these paths. Each chapter also contains exercises and activities which will also help you apply the principles from the chapter to your own career path. Case examples offer additional exercises to help the reader recognize opportunities and challenges. I encourage you to use these stories and activities as a springboard to further your own reflections and clarify your own goals and plans.

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## **Chapter 2: What Is Academia All About? Academic Career Roles and Responsibilities**

If considering a career in academic healthcare, it is important to recognize common career roles and opportunities. This chapter describes the structure and leadership roles within academic healthcare fields as well as common career tracks for faculty in academic healthcare. The core pillars upon which academic careers are developed – scholarly teaching, research, and service – are introduced. The chapter concludes with exercises to help you envision the steps along your own academic career journey.

## **Chapter 3: Leveraging the Value of Diversity in the Academic Workforce**

After defining diversity and intersectionality as important concepts that shape healthcare delivery, this chapter highlights the ways that diversity not only adds value, but drives excellence in academia and healthcare. This chapter presents data on the current state of diversity in academic healthcare workforces, and reinforces the urgent need to diversify the healthcare workforce to meet the needs of our diverse society. This chapter concludes with concrete suggestions on how applicants from diverse backgrounds can leverage their experiences, values, and personal mission to enter the academic workforce.

## **Chapter 4: Integrating Community Service into Your Career Success**

This chapter provides instruction on how applicants can harness their passion and engagement in community service into scholarly activities that can facilitate their professional development as applicants to health professionals schools. Community service, community engagement, and service learning are defined. Exercises are included to help readers align their personal values and mission to community service projects. Advice is provided on how to gain institutional support for community-focused projects. The chapter concludes by presenting the Kern model for curriculum development as a framework by which you can turn education-related community-focused projects into scholarly activities.

## **Chapter 5: Realizing Your Leadership Potential**

This chapter recognizes leadership as an essential quality for those in academic health careers and as a quality that can be cultivated and developed within every individual. The chapter introduces readers to several examples of leadership theories as well as core traits, values, and work ethics that mark leadership roles across

generations. This chapter contains several exercises that will help you clarify the core traits of leadership as well as the skills that you may already possess and wish to develop to become an effective leader. Case studies are included to highlight opportunities for you to develop leadership skills through typical activities in your undergraduate experience.

## **Chapter 6: Building Your Social Capital Through Mentorship**

This chapter explores the power and impact of mentoring in helping individuals pursue their careers in academic healthcare. The roles and responsibilities for both mentors and mentees are described. This chapter then outlines the keys to establishing and maintaining a successful mentor–mentee relationship.

## **Chapter 7: The Scholarly Educator**

This chapter outlines the steps that students can currently undertake to strengthen their foundation as an educator and in completing educational scholarship. The typical activities of an educator in health professions as defined by the Association of American Medical Colleges (AAMC) are presented to help readers understand the scope of opportunities as an educator in academic healthcare. The chapter then defines educational scholarship and instructs readers on how they may turn their current activities as educators into scholarship activities that can further advance their applications to graduate school as well as their careers in academic healthcare.

## **Chapter 8: Advancing Change Through Discovery**

With research previously described as a core tenet for careers in academia, this chapter delves into providing an overview into the types of research that one can engage in within academic healthcare: basic science, clinical, health services, community-based participatory research, and educational research. Educational research and scholarship is further addressed in Chap. 6. The different research methods, including quantitative and qualitative research, are highlighted. Finally, the chapter guides the reader through steps needed to succeed as well as describing the skills that one will develop while performing research.

## **Chapter 9: Telling Your Story: Resume, CV, and Applications**

In this chapter, “Telling Your Story” refers to the professional attributes and experiences that individuals present to make themselves attractive candidates to institutions. This is formally presented in academia through CVs, resumes, and graduate school applications. This chapter distinguishes features among these three



documents and identifies concrete strategies to help students create their strongest CVs and applications. This chapter also describes ways that you can utilize networking strategies alongside submission of your applications to achieve visibility and success. Additionally, this chapter identifies ways that you can document your current activities to position yourself for future career advancement.

## **Chapter 10: The Profile of a Competitive Applicant**

This final chapter highlights core elements that can make an applicant attractive to health professions graduate schools and can also launch a junior trainee's academic health career. Extra-curricular and professional development activities help applicants demonstrate commitment and can offer pivotal leadership opportunities simultaneously. Understanding the process and timelines for applying to graduate schools is critical to success as well, and this chapter reviews key components of the application process. This chapter also presents the AAMC's "Experiences-Attributes-Metrics" model for holistic review of individual candidates to medical school. Drawing from this model, readers will identify ways that they can establish themselves as unique and competitive candidates for health professions graduate schools. The chapter also presents examples of resources that students may find both within and outside of their institutions to help them with personal and professional development. A final word on career trajectories reminds us that while the strategies presented in this book can help each applicant develop a strong foundation for professional success, the pathway does not have to be same for each applicant, and divergences – both intended and unintended – can ultimately still help applicants reach their goals.

In summary, as you read through each of the chapters in this book, you will find a recurrent theme, which is about recognizing your own values and then considering how they may align with careers in academic healthcare. At its core, this book is a guide to help you turn your interests, values, and talents into a personal mission that can guide your career as a leader in academic healthcare. It has been written to help you find your own "true north." Enjoy the journey and know that we want you to become a faculty member or senior administrator!



# What Is Academia All About? Academic Career Roles and Responsibilities

# 2

John G. Biebighauser Jr, Douglass L. Jackson,  
and Raymond Lucas

Emma is a 19-year-old student who just finished her first year of college. She performed well in her introductory biology and chemistry courses and is eager to achieve her goal of attending medical school. Long-term, Emma is particularly interested in returning to her hometown and working as a family physician for vulnerable populations in her community. During her first year, Emma developed a strong mentoring relationship with her biology professor and advisor, Dr. Alicia Brown. Dr. Brown's primary faculty role is as a researcher, but she also contributes to teaching, mentoring pre-health professions students, and leading monthly public health-based volunteer trips into the community. She is known for making the seemingly mundane lectures incredibly fun and interesting. Emma has been certain in her desire to become a physician since she was in high school. After watching Dr. Brown's profound impact on the university community and in the lives of her students, Emma wonders if she would enjoy having a similar career. Emma shared these feelings with Dr. Brown, who suggested that Emma consider pursuing an academic career. Emma has many questions, most importantly...

...what is it like being an Academic Health Professional?

Emma is not alone in asking this question. Ask yourself, as a college student, how much do (or did) you know about academia as a career path? Academia can be incredibly confusing, particularly for students without prior exposure to the field.

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Chapter 1 identified the dire need for increased diversity in the academic workforce. The first step toward accomplishing this goal is to ensure students have a clear understanding of academia’s structure. Even many students in health professions schools (e.g., nursing, dental, medical), despite an interest in academia, lack clarity on the possible career options and an understanding of what is required and expected to have a successful career as a faculty member [1]. This chapter focuses on explaining the structure of academics, including common administrative roles and career tracks. Next, this chapter will discuss the three most fundamental pillars on which academic careers are grounded – teaching, research, and scholarly service – as a foundation for subsequent chapters on academic promotion and scholarship. Finally, we will present an opportunity to reflect on your personal and professional goals and values to help guide you on your path to academics.

### Academic Structure and Administrative Roles

Although the structure of a large academic healthcare institution can seem overwhelming at first, many of the faculty and administrative roles are equivalent to those at your own undergraduate institution. This section will discuss the different positions in healthcare academics, while referencing analogous roles in a typical undergraduate institution. Refer to Fig. 2.1 as a tool to guide your reading.

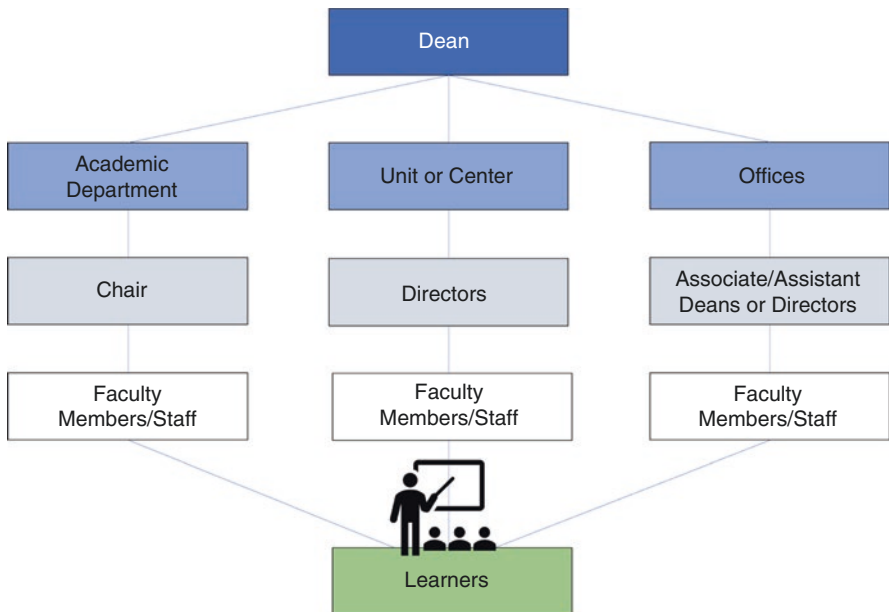


Fig. 2.1 Common leadership structure of health professions schools

## Faculty

When considering the structure of academia, it's easiest to start with the student. Emma, the student from the earlier story, is enrolled in an undergraduate university. During her first year, she took a biology course taught by a member of the faculty. Faculty members, by definition, are people who work in academic institutions and engage in educational, research, and scholarly service. In health professions schools, faculty often have the added responsibility of clinical care. Traditionally, faculty members whose career is a blend of teaching and research responsibilities as well as clinical care are frequently called a "triple threat." [2] Certain challenges, such as elevated teaching responsibilities, the increasingly competitive nature of securing research funding, and the added complexities and demands of clinical care make balancing all three areas rewarding, but difficult [3–5]. To accommodate this, faculty roles have become more specialized. Rather than expecting all faculty to participate equally in these areas, most health professions schools (e.g., dental, nursing, medical) now hire faculty into various career "tracks," which will be discussed later in this chapter.

## Department Chairs

Some of the faculty members who teach your courses also take on administrative roles and responsibilities. In your undergraduate major's department, whether that is Chemistry, Psychology, etc., you may have noticed certain faculty with the title of "Department Chair." Likewise, professional school departments, such as the Department of Pediatrics or the Department of Dental Surgery, also have chairs who guide the unit's teaching, research, and scholarly service operations. Additionally, department chairs serve important roles as mentors and have responsibility for the recruitment and career development of their departmental faculty. Chairs are often expected to have been successful in research and teaching, but their role is increasingly administrative [9]. Chairs act as liaisons between the central administration of the school (i.e., Dean, Associate and Assistant Deans) and their faculty. They help align their department with the school's mission, vision, and values. Chairs are often paid higher salaries and have the opportunity and autonomy to shape their units into being successful. Team building and interpersonal communication skills are a necessity for this position. With increased responsibility, however, comes increased oversight, and chairs are often evaluated based on departmental outcomes and metrics such as spending, patient satisfaction, teaching contributions, and research production of their faculty.

## Deans

Your major department resides within an academic college, for example the College of Science and Engineering or the College of Liberal Arts. A dean oversees this college and manages its internal and external affairs. In a professional school, the dean

provides overall leadership for the institution's missions of clinical care, teaching, research, diversity and inclusion, and scholarly service. Deans may also hold vice president titles in the university or large academic healthcare systems. Deans play a significant role in fundraising for the school and managing external and alumni relations. As this position can demand significant attention, deans most often have no teaching, clinical, or scholarly responsibilities outside of their administrative role.

## **Associate and Assistant Deans**

While a dean sits at the head of an undergraduate college or professional school, most professional schools have other senior leaders such as associate and assistant deans who lead the myriad of units that are core to the institution's mission [8]. At your undergraduate institution, many organizations, activities, and programs are led by associate or assistant deans. These are typically focused areas such as research, admissions, student services, faculty governance, finance, diversity and inclusion, and many others. There are many advantages to serving in these administrative roles. They allow you to positively influence an area of operation of the academic health center that you personally find important. Additionally, these roles often still allow time for a limited amount of clinical care and/or scholarship. Associate and assistant deans are often the face of the administration and more-frequently interact directly with students, faculty, and others. Assuming these roles too early in your career may hinder your time for scholarship required for academic promotion. Success in these roles may make you a candidate for a dean position later in your career.

Beyond the positions occupied by deans and department chairs, there are a variety of other mid-level leadership and administrative roles in different interest areas that allow you to still participate extensively in clinical care and research.

## **Administrative Roles and Diversity**

As healthcare organizations become more complex, there is an increasing demand for faculty members to assume these leadership roles [6]. Clinicians who become administrators typically have first-hand experiences and knowledge in the areas such as patient care, teaching, and, perhaps, research, thus providing them with credibility among their peers and an advantage into understanding how to best lead a diverse group of clinical faculty [7].

The advantages of administrative roles include the ability to have greater influence on the strategic direction and management of a professional school, department or programs within the school, or the academic health center. Administrative roles can be high stress and often involve tough decision-making related to finance, budgeting, and personnel. Successful administrators and leaders, however, play a large role in the success of professional schools, programs, and departments within them and academic health centers.

Although your primary focus as a college student may be the next step – admission into a health professions school – it is so important to begin thinking about what comes afterwards. The scarcity of diversity in health professions careers discussed in Chap. 1 is only exacerbated in administrative roles, underscoring the need for diverse individuals to advance into these positions.

## Case Example

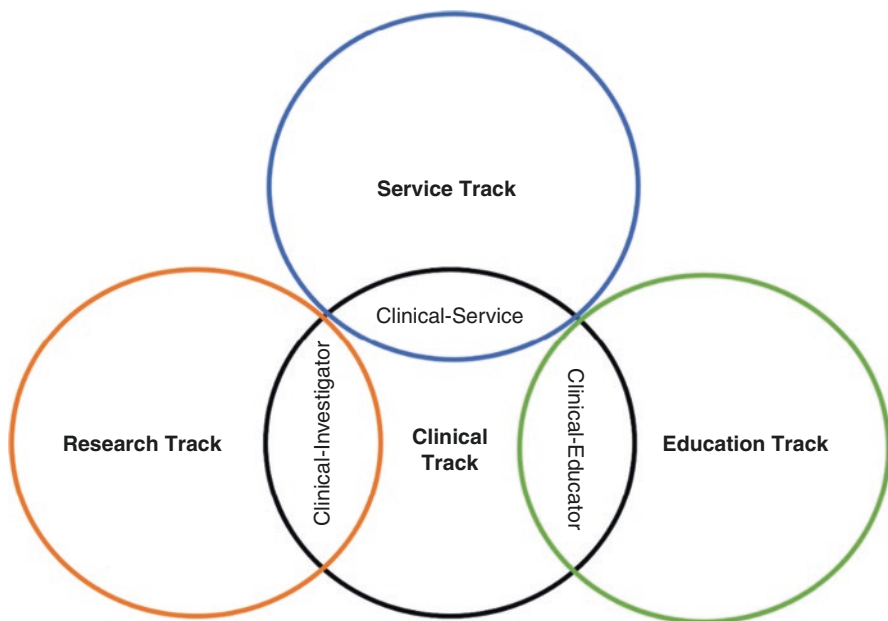
*Miguel is a senior at a public university about to graduate and take a gap year before he applies to medical school. After seeing family members battle with cancer, he has developed an aspiration to become a surgical oncologist. Particularly, Miguel has a passion for clinical care and desires to increase access to care in underserved, Spanish-speaking communities. Miguel is considering various gap-year opportunities and his academic advisor recommends he acquire some research experience. Although not enthusiastic about basic science research at first, he was able to work in one of his college professor's labs studying tumor markers. He actually found the work very interesting and soon became an integral part of the team, recruiting patients, collecting blood samples, and analyzing data. Miguel even got to attend a conference where he met physicians and other oncology researchers and was able to present a poster about his project. He enjoyed seeing the clinical applications of his research and is beginning to wonder if he might incorporate research into his clinical career. Can he do both? Can he maintain his clinical and surgical skills if he spends a lot of time in the lab? How will he fit in his desire to help underserved patients? Does he have what it takes to really be a successful researcher? Miguel is curious about what the job of a clinical faculty member really entails.*

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## Academic Currency – Scholarship, Teaching, and Service

Now that the overall structure of academics is more clear, we can begin to take a look at the responsibilities of faculty members serving in these roles. Academic life traditionally consists of three major components: scholarship (research), teaching, and service. You may already have some experience or excitement for these three areas. Faculty members are often hired into “career tracks” which prioritize these components in different capacities. These three tracks frequently overlap as illustrated in Fig. 2.2. Table 2.1 describes the work focus, advantages, and disadvantages of some of the more common faculty tracks found in professional schools.

Regardless of track, you will likely be expected to engage in all three to some extent, particularly if you are interested in advancement and promotion through the ranks as an academic health professional. Serving as a faculty member provides opportunities to stay up-to-date on cutting edge practices and treatments, surround yourself with learners of the next generation, and propose new research questions for ongoing or emerging health issues. In this next section, we will look at the



**Fig. 2.2** Area of emphasis for common faculty tracks in medical schools

different activities that fall under scholarship, teaching, and service to help you determine which career track in academic medicine might be personally interesting and rewarding.

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## Scholarship

Scholarship most commonly consists of research, publication, and scholarly writing. You may have participated in some form of scholarship in some of your advanced undergraduate coursework. Scholarship, however, takes many forms beyond just basic science research. It can look like biomedical research, translational or clinical research, community-based scholarship, healthcare policy, or public health research. Faculty scholars spend their time competing for research funding, writing academic papers, and presenting their work. Scholarship satisfies a passion for discovery, creativity, and innovation. Through scholarship and publication, you can witness your hard work transform into better overall care for patients.

It is important to realize that the engagement in teaching, research, and service work and completion of scholarship can serve a dual purpose. One, it increases your competitiveness as an applicant to a health-related graduate program and, two, enables you to start developing the foundation for an academic career. In numerous publications, engagement in teaching, research, and/or service work has been shown to increase applicants' competitiveness to dental, medical, pharmacy, and nursing schools and may positively influence acceptance into other health professions programs.

**Table 2.1** Description of common faculty tracks in nursing, dental, and medical schools

Faculty track	Scope of responsibilities	Attributes	Challenges/limitations
Clinical track	Emphasis on patient care, some clinical teaching, no expectation for research	Practicing in a stimulating academic environment, opportunities to teach students and residents in clinical settings	Fewer career advancement options in an academic environment. Focus on clinical care without autonomy associated with private practice
Clinician educator track	Significant amount of patient care and teaching students May lead programs and design curricula. Performs education research and scholarship	Many opportunities to teach and play key roles in an educational program Many opportunities for career advancement within the institution	Need to gain additional training in education pedagogy to optimize success, limited funding opportunities for education research
Clinician investigator track	Some patient care, most likely at least half time devoted purely to research which may be laboratory-, clinical-, or community-based	Highly valued faculty that bring in grant money and prestige to a school Opportunities to improve health and patient care through new discoveries Many opportunities for career advancement within the institution	Additional training, experience, or mentorship needed for success (e.g., postdoctoral fellowship) Requires significant effort to secure continuous funding for research
Research track	Nearly all focus is research. Often PhDs with or without a professional degree, and limited patient care. Emphasis in securing funding to support the research, publishing scholarly works that come from the research	Opportunity to focus on discoveries which improve health and patient care	Requires significant effort to find continuous funding for research

## Teaching

Quality teaching is fundamental to successful progression through both undergraduate and professional school. All clinicians, both in and out of academia, must commit themselves to lifelong learning and teaching even after graduation. Patient education is paramount to successful practice. Academic faculty members, in particular, also possess a desire to train the next generation of educators, scientists, and health professionals. Skills acquired from tutoring and mentoring in college can act as a sturdy foundation for future success as a faculty educator. Teaching does not have to look like traditional lectures. It can also take the form of small group facilitation, bedside teaching, and mentoring students and other trainees.



For purposes of academic promotion, educators must often construct a “teaching portfolio” outlining their activities and achievements in teaching. The contents of this portfolio differ based on institution, but commonly include a list of all teaching experiences, student and learner evaluations of your teaching, teaching awards, and evidence of your contributions to educational curricula and research. While a strong teaching portfolio is a must for faculty on the “clinical educator” track, documentation of excellence in teaching can be useful even for faculty on other tracks. You can get started on your teaching portfolio right now, by seeking out opportunities to give talks, mentor, and teach your peers or other students in elementary, middle, and high school.

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## Service

Service is a familiar activity for many students entering the health professions. Many students make the decision to enter the healthcare field based on their experiences serving others in the community. As a faculty member, service can take on a variety of forms such as engaging in quality improvement projects for patient care or student education, developing service activities for one’s unit, participating in institutional governance, or by giving back to their institution.

This latter form of service, institutional service, is a common expectation for faculty members. Institutional service could look like serving on committees in the hospital or medical school to improve quality of care, education, or community outreach. This form of service often gives faculty the unique opportunity to engage and form interdisciplinary relationships with faculty across departments. In these roles, faculty can make improvements in the daily operations of the their graduate school (e.g., nursing, dental, pharmacy, medicine) and academic practice. If you are involved in student, government, or other collegiate organizations aimed at improving student experience, you are already engaging in institutional service.

Similarly, professional service allows you to engage with others in your health-care discipline outside of your institution. Examples of professional service would include serving as an officer or committee member for medical societies, involvement in medical licensing bodies, or serving as an editor or peer reviewer for a scientific journal. These experiences build your professional reputation in your field and allow you to address problems and make systemic changes on a local and regional level.

It is, however, important for underrepresented minorities (URM), women, and sexual and gender minorities (SGM) to be aware of the “minority tax” which can burden your service commitment [13, 14]. This is the extra burden placed on underrepresented faculty members in an effort to achieve diversity in an institution [15]. Sexual and gender minorities (SGM) and underrepresented racial / ethnic minorities (URM) faculty are often called to serve on committees and task forces to ensure representative diversity. While serving in these roles can take time away from scholarship or other activities required for academic promotion, many faculty find these positions incredibly rewarding as they have the opportunity to share their unique perspectives and create positive, institutional change. If you identify as a woman, URM, or SGM it

is important to be aware of the minority tax and keep career advancement opportunities in focus. You can also transform the “minority tax” into “minority capital.” This means taking advantage of your institutional and professional service experiences by publishing your efforts and highlighting your role in institutional improvement efforts.

## Values and Career Choice

Now that you have an understanding of the roles and responsibilities of an academic career, we encourage you to also reflect inward and identify your values to determine what career choice is right for you. One’s career decisions are heavily impacted by their personal values, motivations, and interests [10]. Of course, many factors such as research and teaching experiences, and the guidance of mentors are among the many things that influence the ultimate decision to pursue an academic career [10–12]. That said, who you are and what you care about right now is equally, if not more important.

Using the following questions and Table 2.2, identify the factors which stand out most.

- What are my current interests and involvements?
- What are my personal values?
- What aspects of a future working environment do I find important?
- What kind of lifestyle factors will I prioritize in a future career?

Clarifying your interests and values can then allow you to identify whether there is alignment with the previously described faculty and administrative roles. For

**Table 2.2** Personal values

Interests and involvements	Values	Job characteristics	Lifestyle factors
Tutoring	Autonomy (freedom to pursue your own interests, set your own schedule, “be your own boss”)	Intellectually stimulating	Predictable work schedule
Community service	Prestige	Technically or procedurally oriented	Time to spend with friends and family
Educational outreach	Management	Having authority or responsibility	Favorable work-life balance
Mentorship	Opportunities for community service and outreach	Job stress levels	Living in an urban or rural setting
Research	Social justice	Team-oriented work environment	Salary
Athletics (intercollegiate or intramural)	Opportunities to influence public policy	Opportunities for interprofessional collaboration	
Professional and leadership organizations	Opportunities for mentorship	Opportunities for career advancement	
Student government		Opportunities for research (basic science-, clinical-, community-based)	
		Focus on patient care	
		Opportunities to teach	

example, if you enjoy tutoring, volunteering, and serving vulnerable populations in your community, then an academic career on a clinical-educator track may be a perfect fit for you. If you enjoy teamwork and solving complex problems with creative solutions to help people, then you might be best suited for an academic career on the clinical investigator track.

After developing an awareness of potential academic careers and aligning your values with the available opportunities, there are still steps you can take to determine a specific career path toward academics. Ask your undergraduate faculty about their career paths. Find a mentor in an interest area. Shadow clinicians and scientists that work in a variety of settings: academic, rural, or private practice. Participate in career fairs. Talk to associate and assistant deans both inside and outside science and the health professions. These activities will assist you in matching your personal interests with a career that's right for you.

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## Wrapping It Up

You began your journey into higher education to attain the knowledge and skills to graduate and prepare you for a health professions school. Your first priority right now should be focusing on your studies and mastering the content at hand. That said, many of the extracurricular activities in which you participate may also help solidify if an academic career is a good fit for you. For example, designing and conducting a research project with a faculty member, presenting a poster at a college symposium, or assisting a faculty member to develop teaching materials are activities that could help you discover whether you have an interest in academic scholarship. As you progress through your undergraduate college experience, there may likely be opportunities for you to teach or mentor learners who are not as advanced as you as a teaching assistant, tutor, or a peer advisor. Or perhaps you explore opportunities to become involved in scholarly service by becoming an engaged participant in student organizations (including chapters of national organizations), becoming an ambassador for your undergraduate institution, getting involved in student government and advocacy. The truth is, there are no right answers, absolutes, or direct paths into a healthcare career, including those in academics. If you explore your interests with genuine curiosity and allow yourself to follow your authentic truths (i.e., not being overly influenced by others), there's a very good chance that these and similar experiences, will be enjoyable, teach you a lot, allow you to build a meaningful network of people, and make a difference in your community. Furthermore, they will set a strong foundation for a successful and rewarding career in the academic side of the healthcare profession you're pursuing.

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## Personal Story: John Biebighauser

*As a kid, I would have told you that I wanted to be three things when I grew up: An astronaut, a doctor, or the President of the United States. As I'm writing this, however, NASA regularly gets defunded and my political engagement involves*

*voting and advocating for positive policy changes, not running for office. Luckily, my love for learning and fascination with the intricacies of the human body, coupled with significant eye-opening clinical experiences in college, confirmed, without a doubt, that medicine was the perfect career path for me. As a neuroscience major, I loved learning about the brain and the biological basis of human behavior; yet some of my most formative educational experiences happened outside of the science classroom.*

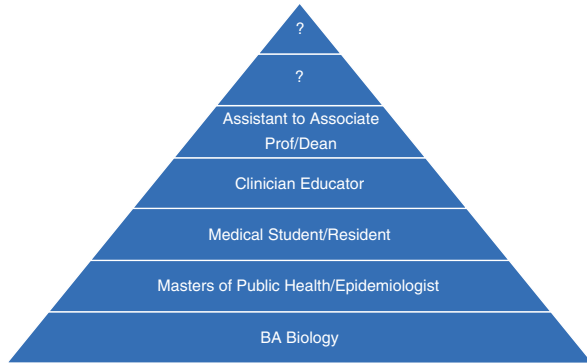
*I volunteered weekly as a Spanish reading buddy for two second grade girls, at first just to get more volunteer hours. It was challenging. Connecting with 7-year-old girls was like speaking a foreign language, not to mention the fact that I was also speaking a foreign language. Their perception of the world was vastly different than mine. While I grew up with full bookshelves and nightly bedtime stories, they did not even own books at home. On the surface, I was building their excitement for reading, but on a much deeper level, I became a confidant. They entrusted me with their dreams, and I listened and gave advice. This experience opened my eyes, allowing me to see my community differently. This began an educational journey into understanding disparities that exist within communities, not just in education. This set a foundation for my future interest in the social determinants of health and advocacy for vulnerable and underrepresented populations.*

*On campus, I found myself becoming heavily involved in student affairs, particularly in programming which targeted first-year students. I was a tour guide, worked in admissions, and led numerous orientation programs. I loved guiding students through their transition to collegiate life. This became even more pronounced when I became the student director for the orientation program. Watching my orientation staff adeptly implement the lessons I taught them to successfully welcome new students to our university was just as, if not more fulfilling than doing so myself. This experience grew my passion for teaching and mentorship, and I truly fell in love with higher education. My friends often joked that I was always on the verge of switching from a career in medicine to a career in higher education and student affairs. It was not until I was interviewing at my future medical school that I was informed that through academic medicine, I could pursue both of these interests.*

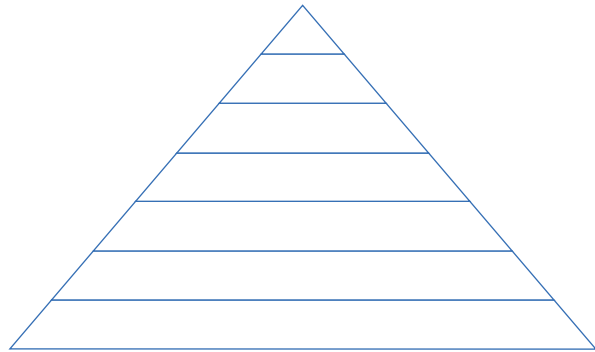
*Before entering medical school, I had no concept that academic medicine was even a possible career option. In fact, writing this chapter has elevated both my knowledge and interest in the field. While aspects of my own future journey through medicine are uncertain, I can see that many of my interests – mentorship, advocacy, service – fall perfectly in line with a career in academics.*

*If any part of this chapter or my story has resonated with you, I want to encourage you to consider thinking about a career in academics. Regardless of your upbringing, race, ethnicity, faith, gender, or sexual orientation, you have a space in academia. Academic medicine needs diverse perspectives and experiences to train a new generation of more compassionate and culturally competent physicians. Whether you are interested in scholarship and research, teaching, or service, academic medicine allows you to work on the forefront of innovation and shape the future of medicine (Figs. 2.3 and 2.4).*

**Fig. 2.3** Sample trajectory of an academic health professional



**Fig. 2.4** Create your own academic health professional journey



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# Leveraging the Value of Diversity in the Academic Workforce

# 3

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## Introduction

Since the onset of the COVID-19 pandemic in 2020, public health is featured daily in global headline news. The general public has received greater exposure to the various roles of health professionals – at the frontlines of patient care, as researchers, health care and public health leaders, and in advocacy. The pandemic has also exposed the preexisting ills of racism, ethnoracism, discrimination, and poor access to care. The disproportionate impact of COVID-19 rates of infection,

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hospitalization, and death has been the most devastating for African American/Black, Latina/o/x/e, Hispanic, or of Spanish Origin+ (+ denoting nationalities and other socio-cultural identities such as Mexican, Puerto Rican, Afro-Puerto Rican; acronym is LHS+), and American Indian and Alaska Native communities [1]. This was compounded by incidences of anti-Black violence [2], maltreatment of Hispanic/Latino/a children migrants at the border [3], attacks on transgender rights [4], anti-Asian violence [5], and the missing and murdered American Indian women [6]. The confluence of these US national crises have contributed to a reawakening of calls to action for social justice and health equity.

At the same time, health professions schools and programs are experiencing a significantly higher rate of applications compared to prior years. For example, nursing and medicine application rates have increased by 5–18% [7]. In response to current challenges, there is greater recognition of the need to increase diversity and address issues of equity and “-isms” (e.g., racism, ethnoracism, sexism, classism) and “-phobias” (e.g., transphobia, homophobia, xenophobia) in the health professions [8–10]. At the forefront are questions about what is needed to advance health equity: (1) education and training in culturally responsive care; (2) workforce diversity; and (3) addressing “-isms” and “-phobias.”

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## How Does This Relate to You?

If you are reading this book, you have realized that college is an important stepping stone to a health profession degree. Our goal is to support your journey and to expose you to a range of possibilities. When considering health professions careers, most individuals envision patient care and maybe research. These focal areas only represent some of the roles occupied by health care professionals. Rarely discussed is the opportunity to serve as a faculty member, also referred to as an academic health professional. This will enable you to teach the next generation of healthcare providers, engage in cutting-edge research, or serve as an academic health center leader to drive institutional equity. Moreover, Jeffé et al. have shown that racial and ethnic minority medical students on starting medical school are less likely than their majority peers to consider academia [11], further emphasizing the need to highlight this career opportunity among pre-health learners. In this chapter, we will focus on the importance of diversity, inclusion, equity, and anti-racism/anti-ethnoracism, while sharing some insights on how to leverage your unique strengths to succeed in your health professions journey and exploration of an academic health professions career.

To get us started, we share Dr. Mancias’ personal story:

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### Personal Story: Pedro Mancias

*I was born in South Texas in the Rio Grande Valley, very close to the Rio Bravo. Like my older brother, I was delivered by a midwife. We were a close-knit family of five kids. My first childhood memories, when I was three years old, were when we moved*



*to Southern California in search of work. My father was an auto mechanic and only had a fifth grade education. My mother was a homemaker and had gone to school until the 11th grade.*

*In general, we were a happy family but limited in what we had access to due to financial restrictions. Our parents emphasized education; the same education they did not have the opportunity to fully realize. This had a profound impact in my life. We witnessed how hard our parents worked, barely able to pay the bills.*

*Then I started school. I enjoyed reading and learning. I became an avid reader. Books filled in what others were experiencing, as we did not have the resources for such endeavors. I recall one specific teacher in the third grade, Mrs. Coates. She saw something in me. She spent extra time with me in school. I developed great confidence and strength from her. I knew my calling would be in education.*

*We moved back to Texas when I was 9 years old, leaving behind the earthquakes and smog only to be met by profound poverty and high unemployment in the Rio Grande Valley. We worked in the fields picking onions and working part time in an auto shop. We also were “migrant” workers in the summer hoeing cotton in Itasca, Texas. This was brutal work not meant for anybody, much less an 11-year old boy. Little did I realize that our family was becoming resilient and could roll with the punches.*

*One summer, I started working as the Ginner in a cotton gin due to my uncle’s injury. Working 18 hour shifts finally took a toll on me. I had a lapse in judgment. I failed to take safety precautions to make sure the saws had disengaged while clearing a cotton seed that had become lodged in the machine. As I brought my hand out of the machine, I realized I had cut the tip of my left middle finger in half! After sutures and treatment for a secondary infection, I thought medicine would be a career I should look into. I recall asking the young Hispanic physician who treated me if he would allow me to shadow him. He said “no” stating that it would take him away from other things he could do or be with his family.*

*I was dumbfounded and numb. I chose to challenge the notion that I was just wasting someone’s time. I attended the local university as I had scholarships and financial aid at Pan American University and became a tutor. I joined the premedical club and toured Texas for a place that would accept me for who I was and what I represented. I found UT Houston Medical School (now McGovern Medical School) as the right place for me.*

*I fell in love with the study of the Nervous system and later Child Neurology. I served as one of the Chief Residents in Neurology at UT Houston. After a short stint in Little Rock Arkansas, I returned to Houston, met my wife from Mexico City, and have been at McGovern since.*

*I have been privileged to meet and work with prominent clinicians and researchers. I climbed the academic ladder and made it to a Distinguished Teaching Professor in the UT System. I am so fortunate to have had mentors that have helped along the way. Most were not underrepresented racial and ethnic minorities, but they were my (our) allies. It was quite obvious that underrepresented racial and ethnic minorities in medicine did not have enough mentors that one could fully identify with.*

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*I am so fortunate to be in a position to help train future doctors and allow them to see that Hispanics can contribute to the well-being not only for other Hispanics but for all of society. I smile every time I am in the clinic and I am addressed as Dr. Mancias. I have dedicated myself to help others realize their potential. It is important that we not forget our roots, struggles, dreams, and aspirations. Through all of this, my parents, sisters, and brothers have supplied unwavering support. Only they know the hardships and sacrifices we have all endured. Thank you to Mrs. Coates for seeing something in me!*

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## **“Roots, Struggles, Dreams”: Diversity in the Health Professions**

Dr. Mancias’ message, “it is important that we not forget our roots, struggles, dreams and aspirations” reminds us that we each have a unique story to share about our journey to college or about what influenced our decisions to pursue a particular career path. Dr. Mancias’ career journey may or may not resonate with your personal experiences. However, there are some universal themes that we will underscore that may help you in your journey to a health profession:

- The value of diversity in the health professions
- Systems factors that will influence your journey
- Key elements that will enable diverse talent, like you, to be successful such as developing your academic profile, understanding the career path, and building your “Cabinet” for success.

## **Our Roots, Struggles: Value of Diversity**

Identities such as sexual orientation and gender identity, ability, veteran status, rural, first generation to attend college, are among the many attributes of diversity, beyond race and ethnicity, that bring great value to education, training, research, and patient care. Here we share one definition of diversity:

Being mindful of all aspects of human differences such as socioeconomic status, race, ethnicity, language, nationality, sex, gender identity, sexual orientation, religion, geography, disability and age [12].

There are multiple identities that contribute to an individual’s uniqueness and some identities may be more prominent depending on a particular context, i.e., at home, school, work. How these various identities influence each other, and how each identity may come with experiences of oppression and privilege speaks to the intersectionality of identity – a term coined by Kimberle Williams Crenshaw, JD [13]. Her work seeks to explain how identities and associated oppressions may function together and exacerbate each other. This is critical to understand how your own identity influences your experiences and your future role as a health professional.

Diverse teams have been demonstrated to be more productive, creative, and innovative than homogenous teams and the outcomes were of higher quality [14].

Diversity yields multiple benefits in clinical care, the classroom, and in the area of scientific discovery.

*In the educational environment:*

- Women and racial and ethnic minority faculty were more likely to use cooperative learning strategies, seek student input, and include perspectives and course content reflecting the experiences of women and racial and ethnic minorities [15–16].
- College students who interacted with racially and ethnically diverse peers demonstrated greater cognitive complexity, civic-mindedness, and increased confidence in engaging with individuals of different racial and ethnic groups [17–21].
- Exposure to diverse peers was perceived as important by dental students as part of their preparation to work with diverse patient populations [22].
- Diverse mentors who identify as LGBT provide important personal and professional mentorship to LGBT students aspiring to become health professionals [23].

*In clinical care:*

- Historically underrepresented racial and ethnic minority (URM) medical school graduates and physicians are more likely to serve racial and ethnic minority and underserved populations than non-URM medical school graduates [24–27].
- Women and racial and ethnic minority dentists are more likely to treat patients with Medicaid compared to White dentists [28, 29].
- Racial and ethnic patient-physician concordance enhances health outcomes and adherence to preventative health measures [30, 31].

*In research:*

- Gender-heterogeneous research teams generally produced journal articles that were perceived to be of higher quality by peers [32].
- Diverse researchers help broaden the health research agenda, and lead to greater contributions to science as measured by impact factor and citations [33–35].

Despite the benefits of diversity, there is so much work to be done across the health professions, in particular for the health diagnosing and treating practitioner occupations. (See Table 3.1) [36]. These occupations typically require graduate-level training.

Looking at diversity by race and ethnicity and gender is the most common data available. However, health professions organizations are improving their data collection to report on socioeconomic status, LGBT identity, and disability. For example, we know that medical school graduates in academic year 2020–2021, who responded to the AAMC national graduation survey ( $n = 16,611$ ), identified in the following ways [37]:

- 0.7% as a different gender identity from the sex assigned at birth
- 5% as bisexual

**Table 3.1** US health occupations by race/ethnicity, 2011–2015

	Non-Hispanic							
	Hispanic	White	Black	Asian	American Indian/ Alaska Native	Native Hawaiian and Other Pacific Islander	Multiple/Other Race	
US workforce <sup>2</sup> (#)	25,776,728	102,850,895	18,597,223	8,534,837	902,977	251,578	2,910,645	
US workforce <sup>2</sup> (%)	16.1	64.4	11.6	5.3	0.6	0.2	1.8	
Health occupations <sup>3</sup>								
<i>Community and social services occupations</i>								
Counselors	10.7	64.6	18.8	2.8	0.8	0.1	2.2	
Social workers	12.0	60.6	21.5	3.0	0.8	0.1	2.0	
<i>Life, physical, and social sciences occupations</i>								
Psychologists	6.3	83.5	4.9	3.4	0.2	(0.0)	1.6	
<i>Health diagnosing and treating practitioners occupations</i>								
Advanced practice registered nurses <sup>4</sup>	4.5	84.0	5.7	4.1	0.2	NR	1.3	
Chiropractors	3.7	86.7	1.9	5.4	0.5	NR	1.8	
Dentists	6.1	74.8	3.0	14.3	(0.1)	NR	1.7	
Dietitians and nutritionists	8.5	68.7	15.0	6.0	0.3	(0.1)	1.4	
Optometrists	3.9	78.4	1.8	13.7	NR	NR	1.8	
Pharmacists	3.7	70.4	5.9	17.9	0.2	0.1	1.8	
Physicians	6.3	67.0	4.8	19.6	0.1	0.0	2.1	
Physician assistants	10.0	72.7	7.1	7.3	0.6	NR	2.2	
Occupational therapists	4.0	83.8	4.4	6.6	0.2	NR	1.1	
Physical therapists	4.8	77.8	4.4	11.1	0.2	(0.1)	1.6	

<sup>2</sup>Population 16 years and older who are employed or seeking employment.

<sup>3</sup>Self-reported occupations.

<sup>4</sup>Includes Nurse Anesthetists, Midwives, and Nurse Practitioners. NR: data not reported because relative standard errors (RSE) > 30; estimate does not meet standards of reliability or data not present. Numbers in parenthesis represent estimates with relative standard errors (RSE) > 20 percent and should be interpreted with caution. Not all totals equal to 100 percent due to rounding.

- 4.3% as gay or lesbian
- 8.3% with a disability

There is also significant work to be done to increase diversity by income [38, 39].

The representation of racial and ethnic minorities discussed to this point has been focused on health care provider workforce. What does it look like in the workforce responsible for teaching future generations of healthcare providers? Sadly, there is also significant work needed to increase diversity in academia. Reports from the Association of American Medical Colleges (AAMC) and the American Dental Education Association (ADEA) provide some insight. In 2020, African American/Black, American Indian or Alaska Native, LHS+, Native Hawaiian and Other Pacific Islanders represented 7% of all full-time faculty at MD granting institutions, and women were underrepresented at higher ranks [40, 41]. The theme of underrepresentation among racial and ethnic minorities is also observed in dental school faculty. In 2018–2019 the American Dental Education Association reported that 56.3% of its full-time faculty were White while Blacks and Hispanics were 4.9% and 8.5%, respectively. American Indian, Alaska Native, Native Hawaiian and Pacific Islander faculty combined were 0.5% [42]. Demographic surveys of academic workforce of the other health professions reveal a similar trend of underrepresentation of racial and ethnic minorities in faculty ranks [43, 44].

**Systems Factors: Inclusion, Equity, and Anti-Racism/Anti-Ethnoracism** The dynamics of diversity are reshaping the world around us, creating unique opportunities to redefine and fulfill the mission of excellence in professional school education. However, essential to making diversity work is attention to systems factors that enable diversity – inclusion, equity, and anti-racism/anti-ethnoracism.

Inclusion can be defined as:

creating a climate that fosters belonging, respect, and value for all and encourages engagement and connection throughout the institution and community [12].

Inclusive environments focus on everyone thriving, and this is critical for the development of future health care professionals. As you evaluate your own educational experiences, consider elements of your current institutional culture or climate that help you to feel like you belong in the community.

Equity as defined by the World Health Organization as:

the absence of avoidable or remediable differences among groups of people, whether those groups are defined socially, economically, demographically or geographically.

Equity is manifested in issues of pay, access and quality of health, economic opportunity, career progress, to name just a few. Actions to promote equity in policies, practices, and procedures help to advance systems change where all individuals get what is needed to thrive.

In 2020, following greater public awareness of acts of anti-Black violence, many health professions organizations and schools began to acknowledge issues with systemic racism. This contributed to public statements and commitments to anti-racism:

“Being antiracist is believing that racism is everyone’s problem, and we all have a role to play in stopping it” [45]. Principles of inclusion, equity, and anti-racism/anti-ethnoracism speak to how leaders can improve the culture and climate of institutions to ensure that all individuals may reach their full potential. Within academia, there are specific roles in academic leadership that contribute to this systems change, and you can be part of that.

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## What Does It Take to Prepare for the Health Professions?

Now you can understand why the health professions need you to spark scientific discovery, to advance wellness and healing, educate and train the next generation, and lead us into the future of health and health care. So, what now?

We offer these insights based on our collective experiences (1) develop your academic profile; (2) understand the career path; (3) leverage your assets; and (4) build your “Cabinet” for success.

### Develop Your Academic Profile

College is an opportunity to explore and pursue your educational interests. Decide on a major that aligns with your interests and passion. One myth that persists is that students interested in the health professions must major in biology or in another science. That is not true. There are many liberal arts, social science, even art and music majors that pursue the health professions. The foundation to any health professions career is a solid grounding in the basic sciences. Here are some tips:

- Focus on acing those pre-requisite courses for your particular career focus.
- Understand your study and learning style. This will contribute to your educational success. Don’t hesitate in engaging your institutional learning center to get an assessment and to get tutoring support.
- Visit your professor during office hours to seek additional information and to share your career interests.

### Understand the Career Path

As you evaluate what skills and abilities you bring to the health professions, it is important to not undersell your experiences. You have acquired your own unique toolkit from formal activities such as coursework, internships, research, volunteer experiences, and employment, to name a few. Your toolkit has also been developed through aspects of your life that are organic such as your language, your family

background, or your geographical origin. Believe it or not, each of these elements are attractive to health professions schools, especially those who utilize holistic review. Holistic review is a process that encourages health professions schools' admissions committees to take the applicant's complete experiences into consideration in contrast to solely focusing on GPA and standardized test scores, like the Medical College Admission Test, Dental Admission Test, or the Pharmacy College Admission Test [46].

Despite this, interpreting which experiences to highlight on your applications can be challenging. Most health professions put forth a set of competencies for prospective students. For example, in medicine, AAMC has a resource outlining 15 core competencies for entering medical students. These competencies fall into three categories including pre-professional, science, and thinking and reasoning [47].

<i>Pre-professional competencies</i>	<i>Science competencies</i>	<i>Thinking and reasoning competencies</i>
Capacity for improvement	Human behavior	Critical thinking
Cultural competence	Living systems	Quantitative reasoning
Ethical responsibility to self and others		Scientific inquiry
Oral communication		Written communication
Reliability and dependability		
Resilience and adaptability		
Service orientation		
Social skills		
Teamwork		

Medicine is not the only health profession that recommends students possess a certain set of competencies upon entering their respective fields. While each profession maintains disciplinary-specific competencies, the Interprofessional Education Collective, which includes representation from nursing, dentistry, medicine, osteopathic medicine, pharmacy, and public health, worked together to develop core competencies and sub-competencies with the intention of preparing future health professionals to provide effective patient care using a collaborative approach. These core competencies include teamwork, communication, roles and responsibilities, and values and ethics [48].

## Leverage Your Assets

Regardless of the health profession, you are already gaining the desired skills needed to be successful. Taking some time to review each of the competencies and doing some self-reflection will help you uncover how your experiences connect to the proposed skills. Your participation on an athletic team or student organization can demonstrate your teamwork and leadership skills. The research project you completed in a course enabled you to utilize critical thinking and scientific inquiry. The care you provide to an ill loved one demonstrates your ethical responsibility to

others and reliability and dependability skills. These are just a few examples of how your life experiences are preparing you for your future career. To get some practical experience with determining which competencies you are mastering, one sample resource is the AAMC self-assessment guide in their “Anatomy of an Applicant” resource, which includes profiles of medical students who detail how they demonstrated the core competencies on their medical school applications [49].

Knowledge and development of these competencies are important, so you must create a plan to achieve them. This includes the following:

- Gaining exposure to the field in the form of volunteering, shadowing, or formal work experience
- Building your community of support in the form of advisors, mentors, and role models
- Determining options for financing your education

Each of these elements are critical to the success of health professions students, especially those who come from communities that are underrepresented and marginalized.

The pathway to health professions schools can be intimidating considering the investment in time and resources, especially if you do not have anyone in your family or community who has pursued this pathway. There are common reasons for those who come from historically underrepresented groups in health and healthcare to potentially not pursue their career aspirations:

- Absence of role models
- Lack of support
- Poor advising or access to information
- Misconceptions about an academic career path
- Imposter syndrome [50]

As one begins to explore the career opportunities in healthcare, they will undoubtedly hear many different opinions about “the best route” and “a specific timeline” they should follow. Although the opinions that may be shared may be well-intended, your pathway to a health career is yours and as unique as you. It should play to your strengths and, when possible, focus on building those areas/skills at which you’re not at your best. Everyone has strengths and areas for development.

## **Build Your “Success Cabinet”**

The United States presidents have a cabinet of advisors that guide their success. You should too. Research shows that mentoring is pivotal for educational and career



success. A thorough understanding of the mentor and mentee roles is critical to optimizing this relationship. In its most basic form, a mentor is someone who guides a person who has less experience, a mentee [51]. The mentor does this by building trust and modeling positive behaviors. Mentors can be one of your peers, a leader in your community, a health professional, or someone who you view as successful.

To be effective, mentors and mentees need to understand the importance of being dependable, engaged, and authentic. Your role as a mentee is critical to maximizing your mentoring relationship. As a mentee, make a plan for your mentor meetings, be clear about your needs, and always demonstrate openness to feedback, even when you do not agree.

In the context of this discussion, it is important to also understand the role of a sponsor. A sponsor is someone who supports or provides something of value [52]. In this case, sponsors most likely provide experiences or opportunities that help advance someone. As a pre-health student, people who sponsor clinical shadowing or research experiences are best classified as sponsors. When it comes to academic careers, a sponsor may be someone who provides teaching or tutoring opportunities to help someone develop some of the skills needed to be an educator. The nature of the sponsorship relationship is transactional. Not all sponsors are also mentors. Either way, consider your educational and career needs, and then identify potential mentors and sponsors at your institution or within your community.

Invest time in building a network of peers who are interested in the health professions. Join student groups or professional organizations. As you build these networks, you will meet individuals who may be potential mentors or sponsors. Remember you are composing your “cabinet for success,” which can include multiple individuals who are invested in your growth and career development.

Research has demonstrated that women, racial/ethnic minorities, and LGBTQ+ professional students purposely seek out role models and mentors from faculty who have similar backgrounds. Studies have also shown that these mentors may not always be readily available (i.e., “on demand”) given their numerous academic responsibilities and the lack of diversity at our academic health centers that limits their representation as potential mentors [53–55]. Keep in mind that being of the same background is not necessary for a strong mentoring relationship. Fortunately, several organizations and innovative projects have been created to help pre-health students, professional students, residents, specialty trainees network with women, underrepresented racial and ethnic identified individuals, and LGBTQ+ faculty (Table 3.2). Activities sponsored by these organizations and projects often include regional and national conferences, mentoring initiatives, webinars, local workshops, research competitions, and scholarship awards. More recently, digital platforms to facilitate networking and mentoring have emerged. MiMentor, MentorNet, and We are Healers are examples of such platforms [56–58].

In conclusion, diverse talent is critical for the health professions. We need you. There are so many opportunities to influence health and health care, and we hope that this book can facilitate your pathway to health professions school and to your future career as a faculty member.

**Table 3.2** National diversity-related pre-health professions and pre-faculty organizations

Building the Next Generation of Academic Physicians (BNGAP) <a href="http://www.bngap.org">www.bngap.org</a>	Our mission is to help diverse medical students and residents become aware of academic medicine as a career option and to provide them with the resources to further explore and potentially embark on an academic medicine career
Asian Pacific American Medical Student Association (APAMSA) <a href="http://www.apamsa.org">www.apamsa.org</a>	The Asian Pacific American Medical Students Association (APAMSA) is a national organization of medical and pre-medical students committed to addressing the unique health challenges of Asian and Pacific Islander American (APIA) communities. APAMSA serves as a forum for student leaders to engage these health issues and develop initiatives and projects addressing those needs. APAMSA provides an important venue for medical students to meet, exchange experiences, and develop personally and professionally through leadership and service
National Council of Asian Pacific Islander Physicians (NCAPIP) <a href="http://www.ncapip.org">www.ncapip.org</a>	NCAPIP is a national organization of Asian American, Native Hawaiian and Pacific Islander (AANHPI) physicians that advocate for the health and well-being of our patients and communities. NCAPIP board members comprise leaders in national, state, and local physician organizations and medical groups
Association of Native American Medical Students (ANAMS) <a href="http://www.anamstudents.org">www.anamstudents.org</a>	The Association of Native American Medical Students (ANAMS) is a student organization representing native American graduate health professions students throughout the USA and Canada. The goals of ANAMS include providing support and a resource network for all native Americans currently enrolled in various allied health professions schools
Association of American Indian Physicians (AAIP) <a href="http://www.aaip.org">www.aaip.org</a>	The Association of American Indian Physicians (AAIP) was founded in 1971 as an educational, scientific, and charitable non-profit corporation. A group of fourteen American Indian and Alaska native physicians sought to establish an organization that would provide both support and services to the American Indian and Alaska native communities
Latino Medical Student Association (LMSA) <a href="http://www.lmsa.net">www.lmsa.net</a>	The Latino Medical Student Association unites and empowers medical students through service, mentorship and education to advocate for the health of the Latino community
National Hispanic Medical Association (NHMA) <a href="http://www.nhmand.org">www.nhmand.org</a>	The <b>mission</b> of the organization is to empower Hispanic physicians to lead efforts to improve the health of Hispanic and other underserved populations in collaboration with Hispanic state medical societies, residents, and medical students, and other public and private sector partners
Student National Medical Association (SNMA) <a href="http://www.snma.org">www.snma.org</a>	Student National Medical Association (SNMA) is committed to supporting current and future underrepresented minority medical students, addressing the needs of underserved communities, and increasing the number of clinically excellent, culturally competent, and socially conscious physicians
National Medical Association (NMA) <a href="http://www.nmanet.org">www.nmanet.org</a>	The NMA promotes the collective interests of physicians and patients of African descent. We carry out this mission by serving as the collective voice of physicians of African descent and a leading force for parity in medicine, elimination of health disparities, and promotion of optimal health
Medical Student Pride Alliance <a href="http://www.pridealliance.net/MSPA">www.pridealliance.net/MSPA</a>	The Medical Student Pride Alliance (MSPA) is an activist and social organization committed to empowering sexual and gender minority medical students

**Table 3.2** (continued)

GLMA health professionals advancing LGBTQ equality <a href="http://glma.org/">http://glma.org/</a>	GLMA is a national organization committed to ensuring health equity for lesbian, gay, bisexual, transgender, queer (LGBTQ) and all sexual and gender minority (SGM) individuals, and equality for LGBTQ/SGM health professionals in their work and learning environments. To achieve this mission, GLMA utilizes the scientific expertise of its diverse multidisciplinary membership to inform and drive advocacy, education, and research
American Medical Women's Association (AMWA) <a href="http://www.Amwa-doc.org">www.Amwa-doc.org</a>	The American Medical Women's Association is an organization which functions at the local, national, and international levels to advance women in medicine and improve women's health. We achieve this by providing and developing leadership, advocacy, education, expertise, mentoring, and strategic alliances
American Assembly for Men in Nursing (AAMN) <a href="https://www.aamn.org/">https://www.aamn.org/</a>	To shape the practice, education, research, and leadership for men in nursing and advance men's health
Asian American/Pacific Islander Nurses Association, Inc. (AAPINA) <a href="https://aapina.org/">https://aapina.org/</a>	AAPINA serves as the unified voice for Asian American Pacific Islander (AAPI) nurses around the world. AAPINA strives to positively affect the health and well-being of AAPIs and their communities by supporting AAPI nurses and nursing students around the world through research, practice, and education; facilitating and promoting networking and collaborative partnerships; and influencing health policy through individual and community actions
National Black Nurses Association (NBNA) <a href="https://www.nbna.org/">https://www.nbna.org/</a>	NBNA mission is to provide a forum for collective action by African-American nurses to represent and provide a forum for black nurses to advocate for and implement strategies to ensure access to the highest quality of healthcare for persons of color
National Alaska Native American Indian Nurses Association, Inc. (NANAINA) <a href="https://nanaina.org/">https://nanaina.org/</a>	NANAINA is a committed group of persons from every corner of the country, dedicated to the health and well-being of the American Indian and Alaska native people. Some of us are ourselves American Indian, Alaska native, some not. We are nurses, non-nurses, serving or not in communities and programs for American Indians and Alaska natives. Regardless, we hope you will join us in our cause, our endeavors to raise the health of our people and to advance our profession
National Association of Hispanic Nurses, Inc. (NAHN) <a href="https://nahnet.org/about/mission">https://nahnet.org/about/mission</a>	NAHN is committed to advancing the health in Hispanic communities and to lead, promote, and advocate the educational, professional, and leadership opportunities for Hispanic nurses
Hispanic Dental Association (I) <a href="https://www.hdassoc.org/">https://www.hdassoc.org/</a>	As the leading voice for Hispanic oral health we provide service, education, advocacy, and leadership for promotion of overall health of the Hispanic and other underserved communities.
National Dental Association (NDA) <a href="https://ndaonline.org/about-nda/">https://ndaonline.org/about-nda/</a>	The National Dental Association promotes oral health equity among people of color by harnessing the collective power of its members, advocating for the needs of and mentoring dental students of color, and raising the profile of the profession in our communities

(continued)

**Table 3.2** (continued)

Society of American Indian Dentists (SAID) <a href="http://www.thesaidonline.org/">http://www.thesaidonline.org/</a>	The purpose of the Society of American Indian Dentists is to promote dental health in the American Indian community; encourage American Indian youth to pursue a career in the profession of dentistry; serve as a resource for assistance to American Indian students interested in the profession of dentistry; provide role-model leadership; promote American Indian heritage and traditional values; and promote and support the unique concerns of American Indian dentists
Tour for Diversity (T4D) <a href="https://tour4diversity.org/">https://tour4diversity.org/</a>	T4D connects high school and undergraduate students with current minority physicians (allopathic, osteopathic, and podiatric), dentists, pharmacists, and medical students, all of whom serve as tour mentors and facilitators

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# Integrating Community Service into Your Career Success

# 4

Clydell “Tré” Adams III, A. Jeffrey Wood, Damon Alvarez, and John Paul (J.P.) Sánchez

## Personal Story: Clydell “Tré” Adams III

*I’ve always had a profound desire to address and breakdown healthcare and environmental disparities in the communities that I’ve been a part of such as the Dallas-Fort Worth metroplex and surrounding areas, and the country of the Philippines. Aspiring to enter medical school, I knew that participation in community service was deemed important for those wanting to matriculate successfully. Thus, I engaged in multiple international mission trips and local health fairs through my church. The objective of the mission trips was the distribution of medical attention and life-sustaining essentials to hundreds of underserved indigenous Filipinos living in varying degrees of poverty, primarily in unsanitary localities with no access to primary shelter or basic medical care. The objective of the health fairs were to assist physicians or qualified personnel with minor medical treatments. I also engaged in similar work at my*

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*institution by starting a local Habitat for Humanity chapter. The chapter focused on the physical construction of new homes to provide shelter and safety to dozens of families who lived in poor circumstances. These activities to support communities in accessing bare-boned fundamental necessities were personally gratifying and aligned with my professional interests. Despite the impact that I believed I was having on these communities, it was inevitable to wonder if all the effort I was giving would ever truly make a lasting change. Reflecting on my work, I took time to assess the important facets like how I could improve on strategies, make my work reproducible for others, and how I could be efficient in sharing resources with the members of the community. I had not reflected on what aspects would be the most impactful as opposed to solely following my passion. This is where community engagement and community service scholarship become the center of your work. While we can always lend a helping hand, one should also consider the effectiveness and impact of your service contributions. We all have good intentions, but you want to make sure that the time invested, and the service provided yields tangible results along with the good "feeling" that we all receive for doing community service. Ultimately, you should strive for community service scholarship in your service work endeavors.*

*The importance of service and its role in the development of community-minded students considering health professions and academic careers cannot be understated. In a longitudinal study among two thousand college students, community service engagement had a positive effect on academic outcomes, values, self-efficacy, and career plans [1]. Another study highlighted that students who participated in service projects exhibited greater leadership ability and self-confidence than those who did not, as well as had a greater sense of empowerment in the years following their college education [2]. Thus, community service engagement may facilitate higher GPAs, increased critical thinking skills, deeper values, above-average self-rated leadership abilities, and greater interpersonal skills – ideals valued across the health professions. In addition, these ideals also provide a strong foundation for a future academic career.*

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## Terms and Definitions

**Community service** (Table 4.1) is defined as **services volunteered** by individuals or an organization **to benefit a community or its institutions** [3]. Many organizations identify a need they believe a community may benefit from being addressed

**Table 4.1** Definitions of community service, community engagement, and service learning

Community service	Community engagement	Service learning
Services volunteered by individuals or an organization to benefit a community or its institutions	The process of working collaboratively with and through groups of people affiliated by geographic proximity, special interest, or similar situations to address the well-being of those people	A form of community-centered experience education that places emerging health professionals in community-generated service projects and provides structured opportunities for reflection on the broader social, economic, and political contexts of health



and volunteer their time to do so. **Community engagement** (Table 4.1), on the other hand, is the process of **working collaboratively with and through groups of people** affiliated by geographic proximity, special interest, or similar situations **to address issues affecting the well-being of those people** [4]. By engaging with community members we would like to assist, we can thereby further understand what the needs of a community truly are and implement a more targeted project that may have a more meaningful impact on the well-being of these individuals. More so, to maximize the impact of a community service project, one must critically reflect on what aspects of the project have been successful and can be generalized to other similar communities. **Service learning** (Table 4.1) [3] is a form of **community-centered experiential education** that places emerging health professionals in community-generated service projects and **provides structured opportunities for reflection on the broader social, economic, and political contexts of health**. By learning from our community-centered services and applying them to broader implications of health, we are acting as future academicians by using a larger scheme of knowledge to make a significant impact on a larger population.

Once service learning has been established, we can use it as a foundation to create service scholarship. Scholarship is the creation of literary work or recognition of your service in the form of an abstract, article, manuscript, poster, book chapter, policy change, award recognition, etc. It is one of the primary ways in which we reflect on our experiences and share our knowledge with others in an attempt to promote further awareness of topics and impact in our communities. As a result, you may be acknowledged for the time and effort you put into what you are passionate about. Furthermore, scholarship is one of the primary ways academic institutions evaluate candidates, whether that be those applying to medical schools, nursing schools, dentistry schools, or other graduate level programs. Typically, those who are able to complete scholarship are given greater credibility by peers for using a scientific approach and rigor. This in turn creates an appeal for institutions to invest in you, either by accepting you into their institution or by offering monetary or other resource support.

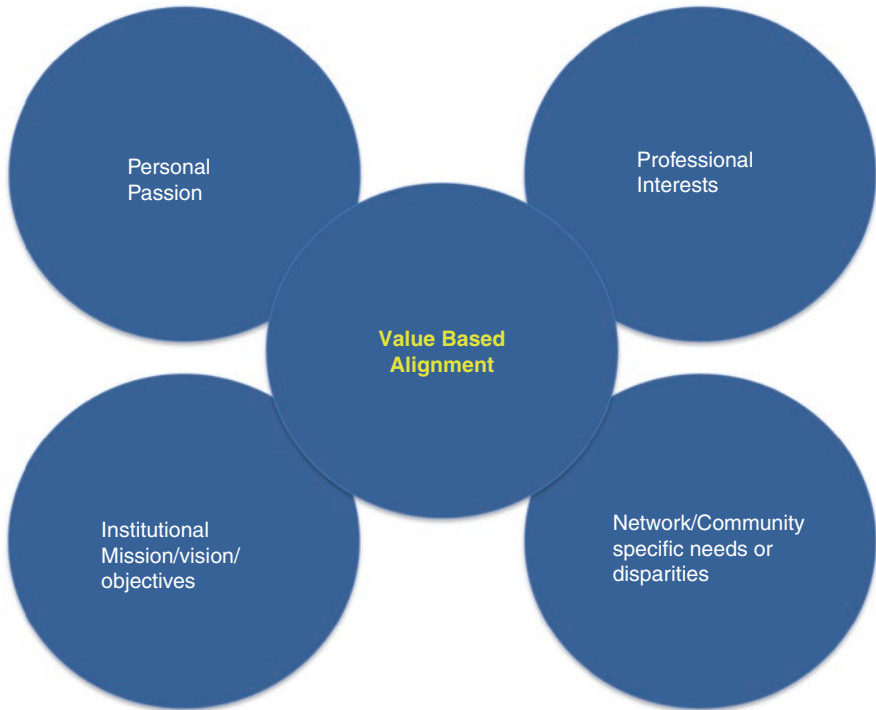
Before we expand upon how to go about creating such scholarship, let's first discuss how you should go about choosing a community service project that aligns with your personal and professional values and how such a project is going to be supported by your institution. So how can you begin to create a community service project that you are passionate about and can be transformed to scholarship?

1. Align your project with your personal and professional values.
2. Identify how such a project is going to be supported by your institution and community.

---

## Selecting a Community-Based Project and Value-Based Alignment

As you consider your service work, it is important to reflect on who or which community to serve. The community may be an academic, local, or remote community around the globe. You can opt to serve a community you identify with (e.g., by religious affiliation, ethnicity/race, gender identity, sexual orientation) or that is



**Fig. 4.1** Value-based alignment

different; both are valuable experiences. Reflecting on which community bears personal value or interest can lead to a more meaningful experience and, most importantly, starts your thought process of value-based alignment. Optimally, value-based alignment is achieved when one considers and aligns personal values, professional interests, community needs, and institutional mission and strategic plan. The more you can consider and align these four factors, the greater the likelihood of having greater buy-in from stakeholders and community impact (Fig. 4.1).

I was born to a father of a racial minority background and a mother who was an immigrant; both encountered several financial, ethnic, and language barriers. I learned from my parents' ability to cope with these hardships and wanted to assist others with similar adversities. I therefore attempted to assess and address the needs of local underserved minorities whose socioeconomic, ethnic, and language barriers deny them equity in access and quality healthcare compared to those without these hardships through community service.

Working with my church through their medical missions' programs and health fairs to heighten awareness of disease prevention, earlier medical diagnosis, and treatment, I learned that I needed to implement community engagement and service learning to improve the impact of my project. Upon realizing that my passion to serve was in line with my professional interests, I further tailored my service projects to both better suit their original missions and the interests of the underresourced

community. The church's stance on healthcare was in line with the community-specific disparities, but the services offered were not being broadcast to those who could use them most. Eventually advertisements were corrected, and the church's activities flourished outside the confinements of the city in which the church was located.

The neighboring local community also had a population suffering from inadequate living environments without the financial wherewithal to progress. So, to further support both communities, I served the Fort Worth, Texas area by initiating a Habitat for Humanity chapter at my institution; the first student-led organization at my school based solely on community service.

By reflecting on my efforts and the impact that I was having on the community, I realized that the various activities helped me develop my qualities of leadership, interpersonal skills, organizational skills, and confidence in my understanding of the needs of various communities.

By applying value-based alignment with separate, yet similar communities, I was able to create multiple successful service projects that were primed for scholarship. I became student head of both the international medical missions trip and local health fairs, treasurer of our university Habitat for Humanity chapter, and participated in several other community service projects that led to multiple poster presentations, academic approval in the form of grants, and non-academic honors, awards, and recognition both locally and regionally.

Applying value-based alignment to your service work can yield

- Improved skill sets: management, organizational, communication, leadership, etc.
- Elective credit for your efforts.
- Recognition inside and outside your institution (awards, certificates, scholarships, leadership opportunities).
- Acknowledgement locally or regionally (e.g., local news, national newspapers, etc.).
- Peer review publications: curriculum submitted to journals, book chapters, commentaries such as a letter to the editor.
- Presentations: oral or posters at regional or national conferences, committee reports, manuscripts, policy manuals, etc.

In addition, such an approach can help you to strategically allocate your efforts to address a defined community service void or gap; particularly important as defined voids and gaps are more likely to lead to a scholarly product.

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## **Community Service Institutional Requirements (Your Support Team)**

Many undergraduate college education programs and organizations provide sufficient opportunities for and support students' participation in community service activities and service-learning. For a listing of what community service opportunities

are available to you through your institution, contact your institution's appropriate representatives to learn more about how they can support your project and help you to make a more significant impact. For example, opportunities may be presented through the Office of Student Services or Office of Community Engagement.

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## **Making Your Service Work Stand Out in Your Graduate School Application**

When it comes to preparing oneself as a competitive applicant and for a future career in academia, a well-rounded individual is highly valuable to an institution; service work unequivocally contributes to that especially when done in the proper manner. The time spent doing service is not only a good highlight of your application to graduate school (e.g., medical, dental, or nursing) but it also can be used to enhance your academic portfolio even in the beginning stages of your career. For example, if you volunteered at a soup kitchen once a week throughout college, how can you place this on your application and produce scholarly activity that makes you even more competitive for graduate school admission and more attractive as an academic prospect? In this case, you can consider reaching out to your Office of Community Engagement or its equivalent, inform them of your volunteer activity and solicit research ideas. In terms of research, it could be something as simple as you noting any recurring themes among the soup kitchen patrons that render them unable to get meals for themselves; survey patrons to learn if they prefer to learn about how they can get governmental assistance rather than having to come to the soup kitchen for meals; or developing a project that investigates if coming to the soup kitchen (a social environment) increases their morale and/or increases their level of happiness (basically if they get more than just hot meals from their visit to the soup kitchen).

Remember that research projects can be quantitative and/or qualitative and, if done well, both approaches have great potential in achieving community service scholarship. When you develop such a project, findings can be made into a poster presentation and presented during a research day at your school or at a regional or national conference. In this example, not only can you put this service experience on your graduate school application but you can also include the fact that you developed a research project, developed a poster, and presented your finding at a symposium. In the event you produce scholarly work from this hypothetical scenario and decide to choose this activity as one of the most meaningful experiences on your graduate school application, your description will more likely impress a graduate school admissions officer or committee more than simply stating volunteer work at a soup kitchen. Volunteering alone is admirable; however, producing scholarly work through your volunteer activity exhibits that you take on initiative, identify problems, examine problems, and find solutions. It puts on display your critical thinking and problem-solving capabilities.

Some health professions may have a specific community-service requirement for applicants to fulfill. For example, the Association of American Medical Colleges

(AAMC) recommends that pre-medical students have at least one sustainable service activity specifically in a health-care setting [5]. Additionally, the Association of American Medical Colleges (AAMC) released 15 Core Competencies for Entering Medical Students that will be evaluated through the AMCAS application, and the ability to demonstrate many of these competencies translates into being a successful applicant [6]. Among these core competencies are Service Orientation, Cultural Competence, and Social Skills. The key principles behind these three competencies are that one is able to express their passion in serving others, is knowledgeable of the community's specific needs, and is aware of social disparities between themselves and those they are dedicating to help.

- **Service Orientation:** Demonstrates a desire to help others and sensitivity to others' needs and feelings; demonstrates a desire to alleviate others' distress; recognizes and acts on his/her responsibilities to society; locally, nationally, and globally [6].
- **Social Skills:** Demonstrates an awareness of others' needs, goals, feelings, and the ways that social and behavioral cues affect peoples' interactions and behaviors; adjusts behaviors appropriately in response to these cues; treats others with respect [6].
- **Cultural Competence:** Demonstrates knowledge of socio-cultural factors that affect interactions and behaviors; shows an appreciation and respect for multiple dimensions of diversity; recognizes and acts on the obligation to inform one's own judgment; engages diverse and competing perspectives as a resource for learning, citizenship, and work; recognizes and appropriately addresses bias in themselves and others; interacts effectively with people from diverse backgrounds [6].

The key principles behind these three competencies are that one is able to express their passion in serving others, is knowledgeable of the community's specific needs, and is aware of social disparities between themselves and those they are dedicating to help. For applications to dental and other health professional schools, this is especially well regarded, and can set you apart from other applicants. While a range of experiences are valued and help shape a well-rounded competitive applicant, a targeted approach that speaks to your commitment to your chosen healthcare profession is best.

Regardless of where you attend college, and where you aspire to apply after graduation, using Value-Based Alignment can help you become a more competitive applicant. Approaching service in this fashion, will help show a dedication to service in a longitudinal fashion, further impressing graduate school admission officers. It shows your ability to be able to perform well in the classroom and yet be able to participate in other meaningful endeavors. Not only does it make you an attractive applicant for a healthcare professional graduate program, it enriches your personal and professional development. It also demonstrates an applicant's cognitive approach beyond simply being an academically strong student applicant; some will consider this evidence of "maturity" and the most desirable quality of empathy.

## Community Service Scholarship

Completing community service scholarship involves the process of structuring and documenting your community service work in a scholarly fashion. Examples of scholarly work can be peer-reviewed journal publications, grant funding to continue your work, awards, and the passage of policies. Remember, completing scholarship will make you a more competitive applicant for graduate school and for a future academic career and appointment. Why do students therefore often fall short of translating community service to scholarship despite their heavy involvement in community service activities? Students likely fall short due to a lack of knowledge on how to properly model their projects to be translated into publishable scholarly work, and thus fail to plan and collect relevant data appropriate for significant research findings. The following are examples of frameworks and models that can help to address common scenarios and challenges frequently encountered by students, in transforming community service into scholarship.

### Frameworks: Crafting Scholarship from Your Service Project

Selecting an appropriate model or framework to design, implement, and evaluate your service project is important to achieving community-based scholarship. Rather than applying the traditional research approach, when conducting community service, it is advantageous to use a community-engaged participatory research framework. The more thought you give to each of these components, especially in considering community engagement, the better your chances are of completing community service scholarship. You do not have to use every element of a chosen framework, but the framework should fit your project's goals and objectives.

The table below contrasts similarities and differences between a traditional research approach and a community-engaged research approach [7, 8].

	Traditional research approach	Research with the community	Community-based participatory research approach
Who is defining the research problem?	Research defines the problem	Researcher in the community or with the community identifies problem	Community identifies problem or works with researcher to identify problem
Who are you conducting research with?	Research in or on the community	Research with community involved	Research with community as full partner
What role is the community playing in your project?	People as subjects	People as participants	People as participants & collaborators
Who is helping your project?	Community organizations may assist	Community organizations may help recruit participants & serve on advisory board	Community organizations are partners with researchers

	Traditional research approach	Research with the community	Community-based participatory research approach
What skills are being gained and by who?	Researchers gain skills & knowledge	Researchers gain skills & knowledge along with some awareness of helping community develop skills	Researchers & community work together to help build community capacity and skills
Who is contributing to the analysis and scholarship of your project?	Researchers control process, resources & data interpretation	Researchers control research, community representatives may help make minor decisions	Researcher & community share control equally
How are the results of your project being used?	Researchers own the data, control its use & dissemination	Researchers own the data & can use community to decide how it will be used & disseminated	Data is shared, researchers and community decide its use and dissemination

Models to consider in developing your service projects include the Kern (Fig. 4.2), S.M.A.R.T. (Fig. 4.3), and Cene models (Fig. 4.4).

The Kern model is a six-step approach to curriculum development which entails (1) problem identification, (2) a targeted needs assessment, (3) developing goals and objectives, (4) educational strategies, (5) implementation, and (6) evaluation and feedback [9] (Fig. 4.2).

The S.M.A.R.T. model recommends the development of objectives that are specific and significant; measurable and meaningful; achievable and action-oriented; realistic, relevant, and results-oriented; and time-based, time-bound, and trackable [10] (Fig. 4.3).

While both the Kern and S.M.A.R.T. models can be generally used for curriculum development, the Cene model is a different framework that was developed to specifically assist individuals in teaching about health disparities through community service activities. Using the Cene model, you should first decide on the primary purpose of the activity, which includes education or training; clinical or community service; or advocacy, policy, or community-based outreach or research [11]. Keep in mind that many activities can fulfill more than one purpose. Secondly, you as the project leader should determine the need for individual versus group involvement in the activity. Lastly, it is important to outline a time frame for conducting the activity. The Cene model in particular can illuminate aspects of the goals, outcomes, or methods of engagement for your research.

While it may seem overwhelming to pick one of the aforementioned frameworks or models, or one not discussed in this chapter, remember that you can choose to use more than one. We do recommend that you use at least one model when forming your community service project to maximize its impact and allow you to transform it into a scholarly product. In order to familiarize yourself with these models and feel comfortable applying them to your own project, try completing the following practice cases listed below [12].

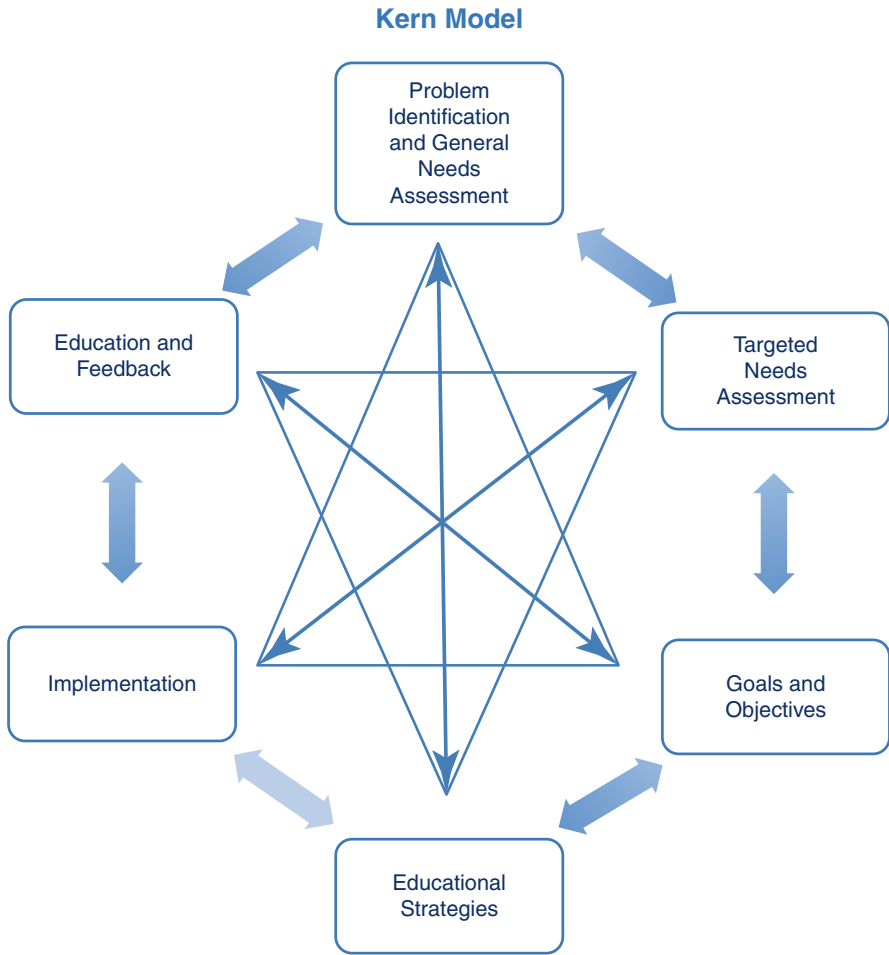


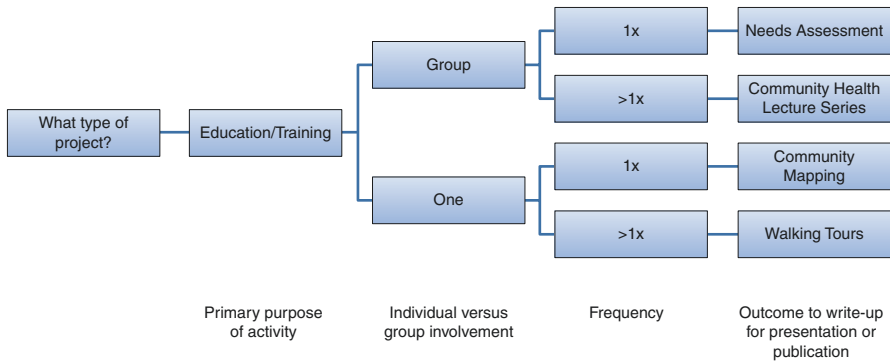
Fig. 4.2 The Kern model

Fig. 4.3 The S.M.A.R.T. model

**S.M.A.R.T. Model: Constructing Objectives**

- S - specific, significant**
- M - measurable, meaningful**
- A - achievable, action-oriented**
- R - realistic, relevant, results-oriented**
- T - time-based, time-bound, trackable**





**Fig. 4.4** The Cene model

## Practice Cases

Carlotta is a third year college student who would like to organize a health fair for Hispanic Heritage Month at a Catholic Church near the college. She sits on the Board of a student organization and is petitioning the Board to take on this activity in the next two months. She states to the members “many of the students attend mass there and some college staff and faculty are members of the Church, we need to do this health fair because the community surrounding the college is underserved and is suffering from so many health disparities. The community needs our help!” At the end of the meeting, she notices that only two members signed up to help with the planning and implementation.

- What would you have done differently?
  - Consider applying the SMART model, Cene model, or another model/framework to provide greater clarity to peers on the relevance of such a project and the level of investment needed from group members.
- How can you help Carlotta make this a more impactful and meaningful project?
  - Consider conducting a rigorous survey among Church members or a literature review of the health issues of Latina/Latino/Latinx, Hispanic, or of Spanish Origin + (LHS+)-identified individuals to better clarify unique health disparities.

## Case 2

Paul is a second year college student who has been working with an organization that distributes food and toiletries to undomiciled individuals in his local community. As he distributes food and toiletries, he is often asked a barrage of other questions regarding local services – housing, food stamps, health services, etc. He is also

concerned because nearly  $\frac{1}{4}$  of those he encounters have limited English proficiency. He has been feeling quite overwhelmed and wishes he could do more.

- What would you have done differently?
  - *Consider taking inventory of the questions he is being asked and construct a directory of local community-based organizations or services that can address such issues/ or needs.*
- How can you help Paul make this a more impactful and meaningful project?
  - *Use the Cene model to enlist additional individuals to assist with the inventory and directory. Also, consider recruiting individuals who speak the language(s) of the individuals being served.*

### Case 3

Jessica is a first year college student who has been volunteering by tutoring elementary school children in an afterschool program. She is troubled by the number of children who are overweight and continue to make bad food decisions. The program director shares Jessica's concern but lacks the funds to purchase healthier food products.

- What would you have done differently?
  - *Consider using the Kern model to design, implement, and evaluate a curriculum to instruct students and/or their parent on healthier foods.*
- How can you help Jessica make this a more impactful and meaningful project?
  - *Develop a resource guide on locations in the local community where parents can access affordable, healthier foods. Research the utilization of the guide and how it has affected foods purchased and changes in children's weights.*

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### Summary

In this chapter, we have presented several avenues for implementing a community service project that can be transformed into scholarship. We discussed the importance of value-based alignment and how different communities can benefit from your project. Remember to always keep in mind how your community service activity aligns with your own personal and professional interests. We explained that graduate schools are more interested in matriculating those who have backgrounds supporting community-based initiatives and community-based scholarship. Also, we introduced you to several models that can be used to structure and optimize your project to create scholarship from service. Be sure to utilize a model or framework when organizing your project and do not be afraid to overlap principles from different models to achieve your project's goals. If you utilize these suggestions and create scholarship from your service project, the result will be a project that is personally

and professionally rewarding, heightens the voice of the community, makes you more competitive for graduate school, and strengthens your foundation for an academic career.

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### **Personal Story: A. Jeffrey Wood, DDS**

*I am the accidental educator. My goal upon entering dental school was to have a successful private practice and to be a positive influence within my community. After dental school, I was offered advanced standing in the university's medical school but decided to sit out a year during which I volunteered at a local Children's Hospital based on a personal interest in patients with clefts of the lip and palate. Through this activity, I was offered a pediatric dentistry residency, which I almost declined; however, in the end, I accepted. During my residency I was "asked" ("no" was not an answer option!) by the department chair to fill in for a faculty member out on leave, which I reluctantly did. I found that I loved teaching and started to consider it as a short-term part of my career plan. Upon graduating from my residency, I was asked to permanently fill a teaching position in the department – this time I had the full range of answers available to me. I decided to accept on a short-term basis, but found that I enjoyed teaching more with each passing semester. I also had a flourishing practice within the school.*

*As I reflect on my own career trajectory, I see a clear focus on the "service of teaching." My community service occurs within my academic community. What exactly is the "service of teaching?" Simply stated, it is a way to positively affect patients beyond those for whom you personally provide care.*

*Most individuals seeking healthcare careers are motivated to help improve the lives of others. The obvious beneficiaries of this desire are individuals and communities for which the practitioner provides care over the span of a career, and those numbers can be impressive. By teaching future healthcare practitioners, the academician can also help to improve the lives of an exponentially larger number of individuals and communities, including trainees and all of the patients that trainees will eventually care for in their professional careers! Think of this as compounding interest on your savings account. Through my "service of teaching," I have the ability to reach thousands through my students.*

*As a gay-identified man, there has been one experience that constantly reminds me of my service as teacher with academic health centers. The moment that I decided that I had a role as a full-time educator came at a pivotal moment, where I defended a student who was outed by a classmate, and up for dismissal from the school for "not fitting in here..." (which was what was stated in the hearing minutes). As a member of the academic performance committee, I demanded that a rational explanation be read into the minutes, reminding the members of the committee that our minutes were legally discoverable. With a lot of grumbling and sour looks around the table, it was decided that the student would not be dismissed but "watched closely" for deficiencies going forward. Being a gay man, I found this*

*upsetting and made me question whether I really wanted to continue in academics. The answer to my question came when I was called to the Administration Offices and given a "friendly" warning. I was told that what I did in my personal life was my own business, but that if the word "gay" ever became associated with my name, I would be dismissed from the school regardless of my tenure status. I have never shied away from a challenge and, at that moment, I knew that I did indeed have a role to play in academic dentistry and, regardless of how rocky the road might become, I was there to stay.*

*I cannot think of a more impactful or fulfilling decision that I have made in my life! The "accidental educator" and "dedication to the service of teaching" is the role that was meant for me.*

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## **Personal Story: Damon Alvarez**

*Education and learning have always been a large part of my life; I have always pursued new knowledge ever since I was very little. Pushing the boundaries of my understanding has been a key component of my life and I don't think it will ever stop. Luckily, my mother worked in the field of education, so growing up I had someone who would help me challenge my current level of understanding. This fostering of my passion for learning is what has led me to the idea of being that same person for others in their own academic journey.*

*I have been fortunate to see what a difference it makes for students to have a professor who is not only passionate about the material but also has a genuine interest in the success of their students. In my last couple years finishing my undergraduate degree, as well as the prerequisite courses needed for my pharmacy school application, my wife Kaella was teaching undergraduate-level courses in English at our local university, and I was lucky enough to see how much of an impact she made on her students. Seeing how much her students appreciated an educator who was invested in their learning and made the material as interesting and relatable as possible was a very impactful experience for me. Watching the enthusiasm her students had for each reading and assignment made me want to sign up for her classes myself, as she created new and unique activities and projects for the students as the class progressed.*

*The mark of a truly great educator is someone who is able to inspire their students and encourage them to pursue their own goals and passions. Taking their material to the next level by constantly adapting their teaching strategies to facilitate their student's learning is a key factor as well. Being able to get your students to engage in the material and have them want to continue with it after the class is over is something that I want to encounter when I transition into my role as an educator. Creating an environment where students can ask questions, learn new material, and discover what motivates them is what I want to bring as I continue to pursue academia post-graduation.*

*Just after graduating from high school, I was fortunate to be a part of a community service project that really changed the way I viewed community service and the*

*different avenues that students and volunteers can make a difference in the community. The project was helmed by Sean Thomas, one of the pivotal educators in my academic journey, and was a way for students to experience the many issues facing communities across my home state of New Mexico. The title was the Reality Project, and the focus was for students to see firsthand how various social, economic, environmental, and other issues impact communities across the state while highlighting the different ways students can make a positive impact on both the various issues and the communities involved.*

*As we made our way across the states, the region, and community specific issues of the state became clearer to the group along with how even small initiatives can make large impacts. I am extremely grateful to Mr. Thomas, and the many groups that worked with us during the trip as I was able to take away so much from the project.*

*Transitioning to my current role as the Community Service Co-Chair for the American Society of Health-Systems Pharmacists—Student Society of Health Systems Pharmacists (ASHP-SSHP) chapter at the University of College of Pharmacy, I am able to bring the knowledge I gained on this trip into practice. Being able to work with local chapters of national organizations has been such a rich and rewarding experience and one that I will continue to pursue post-graduation. For those who have a passion for community service, there are always avenues and organizations that are looking for volunteers and these experiences can lead into larger and more impactful roles. Community service is a very special endeavor as you are able to witness firsthand the difference and impact one person can have in not only another's life but also an entire group of people in need.*

*I was able to find a role where I could put my skills and experiences to use in order to better serve others and as I transition into the position of Community Service Chair, I hope to make an even greater impact working with the at-risk and those in need in my community. Working with community service organizations is a truly rewarding way to engage in your community and you can take these projects even further by developing scholarship from them. After investing both effort and time into your projects, take them one step further by showing others the impact of your work through scholarship; this will show your intended program's admissions board that you are able to bridge community engagement with competency in academic scholarship.*

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# Realizing Your Leadership Potential

# 5

Leonor Corsino, Jasmine N. Chigbu, Michelle Robinson,  
Joel Dickerman, and Damon Alvarez

## Personal Story: Leonor Corsino

*I was born in the Dominican Republic to a large family. I am the youngest of six and raised in a family of professional altruistic parents and siblings. Growing up I never thought of myself as a leader. However, leadership was always present in my life. As a child I witnessed both of my parents being very engaged in the local community (e.g., Rotary Club and Catholic Church) and in their professional fields. Early in life, I learned how important it was to assume leadership roles that increase your network, knowledge, and opportunities.*

*Despite my early exposure to leadership, becoming a leader was not clearly part of my plan. Even though I did not have a plan to become a leader, I engaged in activities that definitely had a huge impact on what I do today. In high school, I was the class president and engaged in a program entitled “Natural Leaders.” This free program gave me the opportunity to work with a group of professors at the local Pontificia Universidad Católica Madre y Maestra University and gave me tools to*

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*better understand how to work with others. In medical school, I was a Teaching Assistant in anatomy, histology, and embryology. These early experiences increased my ability to interact and work with a diverse group of individuals. However, I was not sure where my professional life was heading. I had many dreams, many ideas, and not much time to follow through all of them.*

*My path to leadership was not intentional; it happened by working toward my own unique ways of thinking and being recognized by others for my dedication and passion for what I do and love. Despite not having an intention to become a leader, I had the natural skills to be one. While pursuing my career in medicine I worked and engaged in many activities that filled my spirit and kept me motivated to do and be better. These activities led to many more opportunities to engage in roles that served as the basis and foundation to my current leadership positions. Currently, I am one of the few Hispanic/Latino faculty at my institution that holds leadership roles.*

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## **Personal Story: Michelle Robinson**

### **Striving to Thrive**

*It's easy for me to laugh now about things that caused so much strife for me in the past. I recall my frog dissection in high school biology when I prematurely cut out vital structures rendering the whole exercise useless because I could no longer follow along with the lesson. The plant in my botany lab only grew to a quarter of its expected height. And my drosophila fruit fly experiments were a total failure. Although I knew in theory what was supposed to happen and I thought I followed all the instructions, my results were often mangled. These events taught me three important lessons that were important for leadership: resilience – because I never gave up; problem solving – because I had to figure out what went wrong and how to salvage my grade; and benevolence – because I developed empathy for others who might find themselves in my position and wanted to use what I had learned to help them do better [1].*

### **Resilience**

*My childhood home in Brooklyn was in a neighborhood that was 100% African-American and Latino, as was my school and church. This changed as I entered a science-based high school and a suburban college followed by dental school and graduate school, all at predominantly White institutions. An important part of resilience for me was the ability to adapt as I moved from everyone being Black and Latino to almost being the only one. Because I wanted to be relatable to others from different backgrounds without losing my own identity, I grew to value authenticity and tolerance. This meant that I loved my Caribbean peas and rice with plantain but I was always willing to try dishes that were favorites of others and I even learned to cook a few. Being resilient helped with interacting with all types of people, surviving any environment, and recovering from failure. Don't get me wrong. I always want to succeed. But I have learned far more from failure and the times when things didn't*



*go as planned. My application to college was a 7-year deal that included my undergraduate degree and entrance into dental school. Before completion of the 3-year B.S degree, the dental school that was tied to the program closed and I was faced with having to go through the dental admissions process which I had worked hard to avoid. This was the best thing that could have happened. It resulted in a scholarship, a lifelong mentor, a best friend who is my son's godmother, and an education that was comprehensive and propelled me to a successful residency and career.*

### **Problem solving**

*Everyone has a knack for something. It could be sports, trivia, fashion, or making friends. Mine is problem-solving. I don't mean riddles and such. I'm talking about unfavorable situations that make you say "how did I get here ... and how do I get out?" I think that the ability to problem-solve comes from a lot of reading and ample problems with which to practice the skill. My single mother had to raise my sister and me on a budget, and one of the places that I always enjoyed (and it was free) was our weekly visit to the local library. As I got older I was able to visit much more expansive libraries throughout New York City and there was much to learn and read. Travelling around New York City and being a victim of crime and potential scams while attending school, working, and cavorting with a very diverse group of friends can be a recipe for obtaining problems to solve. When I was in college, one of my favorite professors was accused of making racist comments in class. A group of African American students filed charges against him, which led to an investigation. I remember the group of students saying to me "You heard what he said, right? You'll back us up if they ask you, right?" This was quite the conundrum for me. I had heard the comments that the students were referring to but did not perceive it in the same way. My impression of this professor was a caring and dedicated teacher with a bad sense of humor. As the investigation ensued I felt forced to choose sides. During deposition questioning, I had to be honest and admit that the comments in question had been said in class and that they had been offensive to several students. I left the deposition knowing that the professor would lose his job. In the end, I decided to write a letter to the campus leadership explaining how I was torn during the deposition because the professor had shown poor judgment with his words, but I had also seen him help students of color by staying late after class to tutor, writing recommendation letters, and offering advice for professional school admission. I graduated before knowing the resolution, but felt I had done what I could to represent both sides.*

### **Benevolence**

*To be a good leader means that you are making things better for others. This is where benevolence comes in because it is all about others and not about me. When I was in dental school, I excelled at didactic work, but it would take many hours of practice for me to perform at an acceptable level on assignments based on hand skills such as tooth carving. One evening, I was in the lab late at night when a senior student came in to retrieve an item he had left behind. He approached me to say hello and saw that I was working on a tooth preparation. Then he did something that I am still grateful for to this day. He took off his coat, sat down next to me and*

*showed me what I was doing wrong. He did that several more times over the next few weeks and it made a major difference in my method for completing these assignments and in my final grades. I still think about how I felt when he helped me – a combination of gratitude and relief – and I knew that if I was ever in a position to do that for someone else that I would absolutely do it. In fact, I seek out opportunities to be there for others. As an academician, I get to provide encouragement to prospective students, support and direction to my colleagues, and nurturing for the careers of current students and graduates.*

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### **Personal Story: Joel Dickerman**

*Upon entering college, I had not imagined myself being a leader – my goal was simple: study hard, do well, and hopefully enter medical school after graduation. Upon entering medical school and later residency training, I again had no thoughts of leadership. In retrospect, I was asked to be a leader in many for–s – serving as a mentor for fellow medical students, serving on committees, and even leading small teams of health care providers in the provision of medical care. I was simply too busy to reflect on the opportunities and responsibilities I had been given.*

*When cily medicine residency program, I felt honored and unprepared. Because of this new position, leadership was a defined role I needed to consider. It made me realize that I had not received much training in providing feedback to residents or students, and even less as a team leader charged with developing the careers of others. Additionally, our practice served to provide care for a growing number of diverse HIV patients at a time when few treatments were available for patient management and there had been little training on cultural humility. It was with the help of my wife that I began to look at these “challenges,” which, in the past, I would have tried to avoid or minimize. I learned that my patients were often my best “teachers” and that becoming a leader involved a great deal of humility, listening, and following. Also, I needed to undertake formal leadership training to refine the set of skills and competencies required of a healthcare leader. Fortunately, I was given a chance to undertake formal leadership training – a program that transformed how I saw myself as a peer and team leader. I learned that being a leader meant I was to work with others to develop a shared vision and, more importantly, to assure my co-workers had the resources and skills to get their respective work done. I was to facilitate change and improvement, not demand it.*

*The “opportunities” I experienced changed my career path. I became increasingly involved in positions that would help me, and those I worked with, provide care to a larger scope of patients and provide more comprehensive care that addressed both the social and cultural determinants of care. I have been fortunate to serve as a family medicine residency program director, a medical director for a clinic, a member of a hospital leadership team, and as a chief medical officer for an accountable care collaborative serving over 160,000 patients. In my current role as a dean and chief academic officer, I have the opportunity to train future educators, mentor faculty, and improve health care across an entire region. My focus has*

*changed from that of a single patient or trainee to serving thousands of patients and hundreds of providers in a way that would positively influence the health and well-being of my community.*

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## Leadership in College and Beyond

To be a leader, you don't need to be born with it. Most leaders will get the skills by engaging in leadership roles and learning from others. Leadership has to do a lot with skills that you learn and acquire over time. You can start obtaining these skills as early as high school or in college. Leadership skills can be learned, developed, and perfected [2]. Furthermore, these skills are adaptable and should always evolve, change, improve and, in some instances, you might need to replace them to accommodate new and evolving needs and environments [2]. Remember that a good leader has the ability to influence others and work toward a shared goal or vision. Having a good understanding about your strengths and what you do best is a good place to start. From here, you can assess where you need to grow and what you need to learn. The world is constantly changing, and you must adapt to fulfill your personal needs and those of the ones you lead.

Each generation can clearly identify with a leader of their time that changed the way we do things and that led us during challenging times. We can identify the leader that was and/or an agent of change and inspiration to others. As you consider a career of lifelong learning, it is important to start learning skills that will allow you to be a leader. Also, it is critical that you learn to assess your personal needs and areas of skill development.

As we embark on this journey to learn more about leadership, how to become a leader and skills needed to succeed as a leader, let's start with a simple exercise.

**Exercise 1** Think about two people who you have worked with that you feel were good leaders and their leadership qualities. Be specific, write down what makes them a good leader, what specific qualities they have, list things that you highly value in them as leaders.

Individual	Leadership Qualities

After completing the exercise above, take some time to reflect on how the leaders you listed in your exercise have been a source of inspiration and motivation to you and others. How do you think they became leaders and how can you achieve a similar path? Write your reflections down in a paper or journal.

## Leadership Roles and Generations

Each generation has specific influences, core values, and work ethics, and currently represent certain leadership roles in our society and academic environment. Below is a summary of how each generation differs.

	Boomers	Generation X	Millennial	Generation Z
<i>Born</i>	1946–1964	1965–1980	1981–2000	2000–2010s
<i>Influences</i>	Civil rights, Vietnam war, space travel	Watergate, dual-income family, downsizing	Digital media, school shootings, 9/11 terrorist attacks, AIDS	Clued-in, cyber-smart; access to internet and smart-phone
<i>Core values</i>	Success, relationships	Work-life balance, skepticism	Individuality, inclusivity, diversity	Work independently, not reliant of traditional office hierarchy; curious
<i>Work ethic</i>	60-hour work weeks, stay at the same place of work	Work smarter not harder	Ambitious, multi-tasking, entrepreneurial, training, “face time”	Seek instant gratification; look for dream job; hard-working
<i>Leadership roles</i>	Chancellors, deans, CEOs	Professors, rising leaders	Preparing for leadership roles	Wanna drive a bigger cause

As older generations start to retire and exit their current leadership roles, it is highly necessary that the current generations, **YOU**, start to think, train, and develop to fulfill the needs of new leadership.

To become a leader, it is important to first ask yourself, why you should lead?

**Exercise 2** Write down 2–3 reasons why you should consider a leadership role.

Reasons to consider a leadership position/role
1.
2.
3.

We all have the potential to successfully lead and the potential to become a successful leader. In addition to being an agent of change, there are many benefits to leading. First, you have the opportunity to make a change. Second, you can start to build lifelong relationships with peers and others [3]. Third, earlier in your career, you can start becoming more visible to your administration and other leaders. Lastly, it provides you with the opportunity for personal and professional growth.

Some of the highly important skills you will acquire and enhance while assuming a leadership role includes the following [3]:

- **Communication Skills:** these include your written and oral communication. These skills will constantly evolve and improve as you lead meetings, release statements, and constantly interact with a diverse group of individuals.
- **Time Management Skills:** an important and significant skill to acquire and perfect early in your career, in particular when trying to manage your competing professional and personal demands.
- **Confidence:** confidence to share your ideas, thoughts, solutions, and innovative approaches to problem-solving.
- **Identification of Career Path and Trajectory:** by engaging with other leaders you will gain an understanding of other career paths and trajectories that perhaps you did not get exposed in the past or did not know where possible, allowing you to further consider crafting your own career path and trajectory.
- **Emotional Intelligence:** a set of skills that are essential for successful leadership [4].

These include the following:

- Self-awareness: knowing one’s self, your strengths, weakness, values, etc.
- Self-regulation: being able to control or redirect your directive impulses and moods
- Motivation: appreciating achievement for its own sake
- - Empathy: understanding other people’s emotional characteristics
- Social skill: building rapport with others in a manner that moves them in a desired direction.
- **Managing People:** the ability to successfully influence and guide a diverse group of individuals is significantly important as you embark on a career that requires you to work with individuals with different professions, backgrounds, goals, and perspectives. Learning how to navigate environments where working with others is part of the norm is extremely valuable [5].

While it is important to learn how to pursue a leadership role, its importance, and why you should consider it, it is also of value to think and consider what makes leadership ineffective.

**Exercise 3** Think about 1–2 situations when leadership was ineffective. What made it ineffective? Be specific and detailed.

Situation	What made it ineffective?

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## Leadership Theories

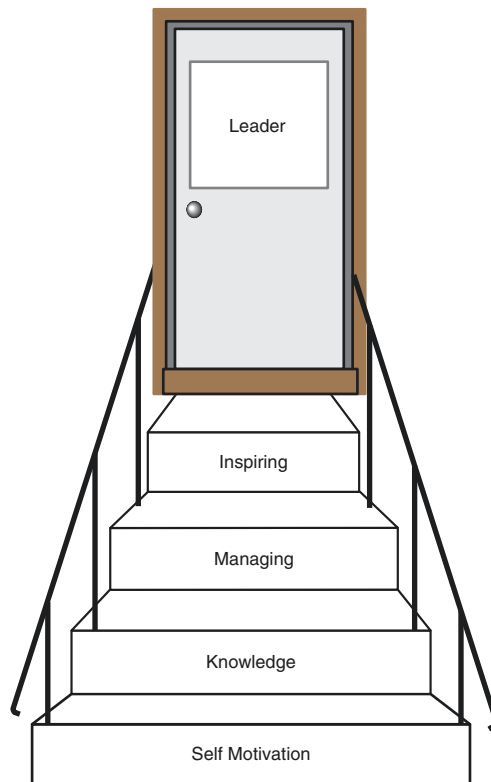
There are leadership theories that have been studied throughout the centuries. For the purpose of providing those most commonly used, we will focus on three of these: transactional, transformational, and situational, and introduce the role of emotional intelligence for the leader.

- Transactional leadership was first described by Max Weber in 1947 and subsequently by Bernard Bass in 1981. This type of leadership involves motivating and directing followers primarily through appealing to their own self-interest. The power of transactional leaders comes from their formal authority and responsibility in the organization. The main goal of the follower is to obey the instructions of the leader. The style is mentioned as a ‘telling style’. The leader believes in motivating through a system of rewards and punishment [6–8].
- Transformational leadership was first introduced by James Downton and later developed by James MacGregor Burns in 1978 [8]. Transformational leadership goes beyond the more traditional style of transactional leadership (which focuses on supervision, organization, and group performance) and emphasizes that people work more effectively if they have a sense of mission. The transformational theory requires leaders to communicate their vision in a manner that is meaningful, exciting, and creates unity and collective purpose; the manager who is committed, has a vision, and is able to empower others and is described as a transformational leader. Transformational leaders are able to motivate performance beyond expectations through their ability to influence attitudes [8, 9].
- Dr. Paul Hersey and Ken Blanchard created situational leadership [10]. Situational leadership style is an adaptive style. The leader using this style focuses on how best to get “buy-in” of its followers observing all existing variables in the environment to reach its goal [11]. It emphasizes leading your team based on the following factors: Develop people and workgroups, bringing out the best in people and use persuasion rather than negotiation to reach its outcome; This type of style is very useful in a crisis when the leader needs to be vigilant regarding resistance to change from the group. In this manner, the leader is an observer and

easily adapts its style of leadership to “bring in” the followers. If used effectively, leaders will identify champions for change from the group.

- Emotional intelligence (EI) started gaining popularity in the 1990s after Daniel Goleman wrote about the superior performance of leaders who aligned with their emotional intelligence (EI) rather than with their technical expertise [12]. Leaders with high EI are said to be successful in creating positive cultures and create a more “human” environment. There is an important difference between managing and leading. Management produces order and consistency, whereas leadership produces change and movement.<sup>13</sup> Four characteristics of leaders with high EI include [12] the following:

- **Inspiring:** the ability to inspire others to be and do the best. To inspire their group to work toward the common goal with enthusiasm.
- **Managing:** the ability to lead, inspire, and manage teams.
- **Knowledge:** having an in-depth knowledge of the groups’ missions, goals, and particular expertise that allows the group to achieve them.
- **Self-motivation:** being able to have the motivation to constantly focus on your goals and having the inner motivation to push forward despite challenges and setbacks.



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## Leadership Roles in Academic Centers

There is a vast array of opportunities to lead while engaging in an academic setting. Each role requires different sets of skills, but all can be attainable with the appropriate preparation and commitment. Below are examples of leadership roles in academia.

- **Dean of Graduate School** – the role of the Dean is to oversee all of the School’s activities as they pertain to the school’s academic mission.
- **Chair of Search Committees** – in this role, the Chair of the search committee works with others in the committee to identify, interview, and recruit leaders for school positions.
- **Chair of Department** – leaders in this role are responsible to implement the rules as they pertain to the school’s clinical, research, diversity and inclusion, and educational mission.

In addition to the academic roles mentioned above, there are other opportunities to lead that will allow you to influence change. These include roles in the government, private organizations, and community organizations. For example, Chief Executive Officer/President, Board Chair, Secretary of Health, National Institute of Health (NIH) Director, or Center for Disease Control and Prevention (CDC) Director. Further, while you embark in this journey and as your interest in leadership emerges, gets stronger or reinforced, you can start to engage in leadership roles. There are a significant array of roles in undergraduate schools, during graduate school, and during your residency. These roles include student government, pre-health or health interest groups, chapter president of student’s interest groups, and chapter president of diversity and inclusion groups.

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## Skills Gained from Undergraduate Leadership Opportunities

Many skills can be acquired when engaged in leadership opportunities during your undergraduate years. As we discussed earlier in this chapter, leadership requires preparation, commitment, and willingness to learn and grow in the process. Some of the skills you might acquire while engaging in different opportunities during this vital time of your education are listed below.

- Student government
  - Learn meeting procedures and protocols
  - Collaborating with campus leadership
- College clubs and organizations
  - Writing or editing a strategic plan: mission, goals, objectives
  - Ability to lead peers
- Community Service
  - Learn about social justice and health equity issues



- Communicate effectively with community members, gatekeepers, and leaders
- Athletics
  - Learning team member’s strengths and weaknesses
  - Facilitating teamwork and collaboration

Let’s review some case studies.

## Case 1

Jeranil was elected as president of the Minority Pre-Health Careers Club. Since the announcement, she has been approached by several individuals with requests. A freshman has asked her to start a biochemistry study group, a senior asked her to plan a graduation celebration party, and a faculty member has asked for her to speak with incoming students about the club. Jeranil is feeling overwhelmed by the multiple requests.

- How would you handle being a leader in this situation?
- How would you write about this situation in an application?

This can be an overwhelming situation especially as Jeranil assumes a new position. This is a common problem when employing a transactional approach; trying to lead while attending to the self-interests of others. Through emotional intelligence, Jeranil can delegate responsibilities to others who are seeking professional development experiences to become more competitive for graduate school. Jeranil can also bring together the students and faculty to discuss an action plan to work collaboratively and achieve each outcome in a timely fashion.

In her application to graduate school, Jeranil can discuss how serving as Chapter President afforded her the opportunity to inspire various members of her university to come together to develop and implement an action plan to support her peers in pursuing the health professions. She can share how she created an environment that was energetic versus draining, collaborative versus self-centered, and innovative versus problem-oriented.

She can describe how she gathered the interests of her members and then in a democratic fashion assigned these tasks to be undertaken by leadership members to ensure all tasks were managed effectively and efficiently.

## Case 2

Dwayne has been participating in work-study for his biochemistry professor, transferring her written basic chemistry lectures into a web-based, interactive system. His professor has been impressed with his computer skills and technological savvy and has approached him about converting lectures for additional faculty in the department. Dwayne is excited because he has a number of ideas on how to improve

the use of technology and social media in the undergraduate curriculum, but, so far, he has been in the role of a “tech guy” and hasn’t yet been asked for his ideas.

- How can Dwayne use this opportunity to develop his leadership skills?
- How would you write about this situation in an application?

Dwayne has a great opportunity to enhance curricula materials for learners. Dwayne can work with his biochemistry professor to convene a meeting of faculty and learners to solicit their ideas on the use of technology and social media platforms to advance teaching. During this meeting, Dwayne can share his knowledge and skills and offer to train others to convert their educational content to an interactive web-based platform. He can inspire departmental leaders to work collaboratively and effectively in overhauling their educational platform.

In his application to graduate school, it would be important for Dwayne to describe how he worked with faculty and learners to evaluate their current educational platform and transform it into an interactive web-based platform. He should highlight the number of learners and faculty involved, how much and which content was converted and how he trained faculty and learners to be self-sufficient in creating new educational technology.

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## Conclusion

Independent of what level of your career you are in, you will find an extensive array of opportunities to lead. If you apply these leadership styles and learn which leadership styles are more effective, you will be successful in academia and any other field. It is important to get involved in activities that are in alignment with your interest and passion. Identifying, early on, what motivates you and excites you will serve as the driving force to a productive and meaningful professional life. Get involved! Volunteer for leadership positions that will enhance your leadership skills. Be strategic when selecting activities to engage in. Know where you stand, evaluate YOURSELF! Seek coaches, mentors, and sponsors in academia. Learn from those around you and be a good listener. There are plenty of opportunities to serve and hone your leadership skills. Make leadership development a priority by looking for opportunities around you!

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# Building Your Social Capital Through Mentorship

# 6

Leonor Corsino, Jasmine N. Chigbu, Claymore Kills First, Vernell P. DeWitty, and Donna Grant-Mills

## Personal Story: Jasmine N. Chigbu, MS

*During my undergraduate years, I did not have any real mentors. I only had a handful of teachers who I liked, but often had no sustainable connection to beyond a specific class for a short period of time. However, graduate school was the first time I realized that mentorship relationships are built on mutual investments in the other person. As a graduate student, I had the opportunity to work with Dr. Kathryn Andolsek and Dr. Leonor Corsino who were the first people, outside of my family, who truly believed in my ability to not only become a physician but also a physician leader. Both took the time to understand my past academic experiences and provided me with advice and guidance that acknowledged my past but focused on my future goals. Consequently, they provided me with honest feedback about my goals, efforts, and strategies for applying to medical school and reaching my next milestones. During this time, I was also able to connect with two other mentors, Dr.*

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*Mark Stacy, and Mr. Paul James. Although they came from various professional backgrounds, one was a physician and leader in medical education and the other worked in the Office of Institutional Equity, through our discussions on institutions, equity, and inclusion, they both helped me clearly define my vision for the world. Through that vision, they challenged me to develop, question, and act in ways that aligned with my vision.*

*As a current medical student, the mentors who have had the greatest impact on my life are those who have advocated for my personal, professional, and academic growth, beyond what I ever expected. This has been exemplified in the following ways: through mentors challenging me to reassess and truly understand who I am and who I want to be; advocating for my personal growth; mentors taking the time to understand my values and listen to my goals in efforts to advise and steer me toward resources; advocating for my professional development; and mentors who have been eager writers of medical school and scholarship letters of recommendation, advocating for me academically.*

*What I've realized over the past few years is that mentorship is a mutual relationship. It requires the effort and devotion of both parties to be sustained, formative, and transformational. As a result, mentorship has widened my perspective as a student and young adult in ways I never imagined. Mentors have helped make me a competitive applicant for medical school and it has allowed me to develop more self-efficacy to advance in academic medicine in the future.*

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## **Personal Story: Claymore Kills First, PharmD, BCOP, BCPS**

*I descend from warriors and survivors. I descend from brave men, fierce women, and sacred children. I descend from community. My ancestors survived genocide because of community. I am here today, as a clinical oncology pharmacist, because of community.*

*For Lakota people, family is more than your mother, father, brothers, or sisters. You are not raised by your parents alone, but rather you are raised by your grandmothers and grandfathers, your older brothers and sisters, your aunts, uncles, cousins, neighbors, and your entire community. The Lakota word for father is *até*; this is also the word we use for our father's brothers. The Lakota word for mother is *iná*; this is also the word we use for our mother's sisters. Your aunts and uncles are your parents. They are just as responsible for raising you as your mother and father are. Your community is just as responsible for raising you as your parents are. In my life, I have only experienced this community-based approach to raising children within my tribal culture. I have carried this with me and have sought to apply it as I navigated the academic realm of Western society.*

*During my education and training, I recognized those who had characteristics that I wanted to emulate, those who had academic achievements I strived for, and those who fostered growth in my own practice. For me, there was no one mentor who guided me every step along the way. There were many mentors who contributed to varying degrees along my journey. Some much more than others and some for*

*only fleeting periods of time. But each one guided and encouraged me in ways that I didn't even realize I needed.*

*One day while in undergrad, my phone vibrated in my pocket while I leaned against the biology lab bench. My heart stopped and I grabbed my backpack and walked out of class. I already knew what waited for me on the other end of the phone. I had been waiting all day for this call, and the longer I waited the worse I knew the conversation would be. I packed my dorm room up and left without a word to anyone at my university. My father's gastric cancer had returned and I was going home to be with him for his final days.*

*From that point on, I knew I wanted to work with oncology patients. I knew I wanted to support others who were going through what I had gone through. Once I returned to school the following year, I spoke with my professors, TAs, and classmates about potential career options. I researched online and cold-called professionals for shadowing experiences. At the time I didn't know it, but I was venturing into my first professional mentoring relationships, and I was doing it with the Lakota values I was raised with. I found a community of professionals and peers who mentored me and guided me through the process of applying to pharmacy schools.*

*Once I was accepted to pharmacy school, I had a whole new community to explore and find mentorship in. I searched the faculty directory to find the coordinator of our oncology course and I emailed her. She became my first and most important mentor in pharmacy. She introduced me to a community of professionals who all had goals and careers that aligned with what I wanted for myself. They had achievements that I longed for. She, along with this new community she introduced me to, fostered my professional growth with the goal of an academic practice.*

*I often look back on this time during graduate school and residency with fondness. This time was the most challenging and tiring experience I have ever had, but the community mentorship I found along the way helped to build the foundation of my career. I chose to carry characteristics and practices from each mentor I found helpful, and I left those characteristics and practices that did not fit my career behind.*

*Mitákuye Oyásij is a Lakota phrase that means "All My Relations." We are taught that we are related to every person, every living thing, every non-living thing, every rock, mountain, and all the water that brings us life. We do not exist as individuals, but rather are a part of the collective community of earth. We are here to support each other, to protect each other, and to love each other. Academia fosters a climate of competition and one-upmanship, but it doesn't have to be this way. We can build an academic community of support and mentorship.*

*I encourage you to be brave and seek out a community of mentors who can fill the various roles that you will need along your academic journey. I encourage you to adopt the traits of the mentors whom you admire and leave behind the traits of those you do not. I encourage you to grow or change your mentor community as your academic career grows. We all have different personalities and different academic goals. No single mentor will align exactly with your personality, needs, or academic goals, but a community of mentors will.*

## **Personal Story: Vernell P DeWitty, PhD, RN**

*The nursing profession presents outstanding opportunities that range from serving as a nurse practitioner with the ability to operate an independent practice, a nurse researcher at National Institutes of Health, a professor at leading higher education institutions. Nurses are consistently rated higher in honesty and ethics than all other professions that Gallup asks about, by a wide margin. While medical professions in general rate highly in Americans' assessments of honesty and ethics, nurses have rated higher [1].*

*My pathway into nursing was not deliberately structured; however, opportunities evolved as I progressed, and my talents and skills were recognized by others. The contributions of mentors to your career progression is critical.*

*Unlike many of the health professions, there are many pathways to becoming a nurse, starting at the Associate Degree up to the terminal degree of Doctor of Philosophy. My first degree was the baccalaureate degree, then the masters', and finally culminating in the Doctor of Philosophy. Returning to school to complete an additional degree was always motivated by my need to master a new body of knowledge and address problems I identified when providing care for patients. Early in my career, I moved into nursing management because of the impact of management in changing care delivery systems that improve care for patients. Along the way, mentors serve an important role in supporting and guiding your career path. You may select some of your own mentors and at other times, your mentors select you.*

*As a new nurse manager, I was employed at a hospital where the nursing workforce was unionized. Unions are helpful in negotiating better work conditions and advocating for the workforce. In health care settings, these issues must always be aligned with what is in the best interest of patient care. I was assigned to observe them in the bi-annual union negotiations sessions. The negotiations reached a critical point regarding scheduling that resulted in an impasse. As the management team went into a closed caucus, I noticed a clause in the existing contract that allowed the management team to advance the negotiations resulting in a favorable agreement that both sides agreed to. As a result of this session where I was a non-participant observer, the hospital director noticed my skills of close observation and ability to influence others, although I was the most junior person at the table. Following this experience, he became my mentor. This relationship afforded me the opportunity to participate in meetings with the Executive Team and share in budget meeting negotiations. These new skills that I developed helped to advance my career and prepared me for higher positions that I may not have considered.*

*We choose mentors or they choose us, in either case, it is important that you take the opportunity when it presents. It is important that you identify why you want a mentor and the goals you wish to achieve during the relationship. This important first step allows you to make the next decisions about persons who may be best suited to meeting your goals. Once you identify a possible mentor, take time to get to know each other and share previous mentoring experiences. Discuss goals and how you each think the relationship should progress [2].*



*Successful mentoring relationships depend on the ability of both the mentor and mentee to maintain the mutuality of their agreements [3, 4].*

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### **Personal Story: Donna Grant-Mills, DDS, M.Ed**

*The experience of the poet, who stated ages ago, “the lines of my life have fallen unto me in pleasant places; yes, I have a good heritage.” So it is when I personally look into the rearview mirror of my life’s journey through mentorship, my professional growth, and how I got to where I am today, the shoulders on which I stand, I embrace that heritage and it becomes real for me. Those individuals, and there are many – Dr. Charles W. Gibson, Dr. Richard Kelsey, Dr. Benjamin Kimbers Jr., Dr. Bonnie Stanley, and Dr. Jeanne Sinkford, to name a few; a “cloud of witnesses” whose humanistic and “high touch” holistic approach, was highly instrumental in reinforcing my values, beliefs, attitudes, and actions toward achieving my goal to become a healthcare provider. Dr. Gibson, a practicing dentist in Cincinnati, Ohio, graduate of Howard University class of 1952, leader in the community, and son of the great migration of African Americans from the south, was my initial mentor. In 1971, my high school cooperative education program placed me in his dental practice to be exposed to the dental profession through dental assistant training. Apart from the didactic and practical aspects of training, Dr. Gibson took a special interest in nurturing and molding my budding aspirations to become a dental hygienist. Our participatory mentoring sessions required that I show him my report card each grade period. I remember specifically, on that fall day when I presented the first quarter grades, he carefully read the grades and said “with grades like these, you should be going to dental school.” At that time, I did not perceive becoming a dentist was a realistic imagination. But, his voice and strong words of trust and confidence in my ability to succeed resonate and remain an indelible imprint in my consciousness. After matriculating and practicing dental hygiene, I continued my humanistic mentoring relationship with Dr. Gibson – he cared about my efforts and I had faith in his advisement. I also during this time acquired new mentors from shared experiences with cohorts, elders in my community who encouraged me, and college professors. My career in academic dentistry began as a dental hygiene instructor at the Ohio State University (OSU) in 1979. After two years of teaching at OSU, I was recruited to teach dental hygiene at the University of Cincinnati. In 1984, I accepted an appointment to teach at the Community College of Baltimore. When I met with Dr. Gibson for a mentoring session and to bid goodbye, I joyfully shared with him the teaching appointment in Baltimore, MD. In his commitment to sustain the ongoing mentoring process, he immediately wrote a letter to introduce me to one of his classmates from the Class of 1952 who had a practice in the city. Through this letter, the mentoring baton was passed on to Dr. Benjamin Kimbers, also a well-known community leader, a benevolent man and father figure to me whose guidance and unwavering support led me to pursue and receive the Doctor of Dental Surgery Degree from Howard University. During our mentoring, casual conversations, and discussions at family dinners, Dr. Kimbers shared his experiences of discrimination*



*when he was a dental student at Howard University, having to walk several miles from school to the Library of Congress, passing by libraries of educational institutions that did not allow Negroes access for research and study. His compelling stories and experiences reminded me of the struggles that African Americans had to go through before Affirmative Action policies were introduced that have now given rise to the present-day policies of diversity and inclusion. This also made me understand that a significant component of mentorship must include a very strong emphasis on the systemic factors that can negatively impact the process. I cannot overstate the importance of holistic mentoring as a necessary pillar to anchor the bridge that mentees must use to cross over the inevitable challenges in their career and educational journeys. As shared above, to be successful, efforts must be continuously nurtured and carried on in a willing, participatory nature between mentor and mentee.*

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## **Mentor**

This chapter will focus on mentoring by first defining the profile of mentors and outlining their capacity to mentor. A mentor in a particular field or endeavor advises or trains another person – mentee – as that person works toward stated goals and objectives. As experienced and trusted advisors, mentors facilitate program development and the process through which the mentee will navigate to achieve desired outcomes in a humanistic manner. In this chapter, we will focus on mentoring, but first we need to define what a mentor is. A mentor, advises or trains another person as that person works toward a goal. It is important to understand the difference between a mentor, a coach, and a sponsor.

The concept of a mentor can be seen as far back as Homer's *Odyssey* where young Telemachus was given an adviser named Mentor [5, 6]. From that, the definition of a mentor as an experienced and trusted advisor developed. In today's world, there are similar constructs to that of a mentor. A coach, for instance, is someone who teaches or instructs on a specific skill (e.g., coaching on how to create a CV). A sponsor is someone of authority or position who creates an opportunity for you that you otherwise would not be able to access on your own [6].

Embarking on a mentor-mentee relationship requires a clear understanding of expectations and the factors that will enhance the relationship. Significant factors include (1) setting focuses, (2) prioritizing, (3) capitalizing, (4) aiming for largest return on investments, and (5) stretching goal to stretching experiences [6].

It is necessary to construct well-defined goals and objectives as a prerequisite to achieving impactful mentor/mentee relationships. These goals should help mentees improve their skills and advance their careers. Mentors support mentees by helping them prioritize to reach their goals. Both mentor and mentee can capitalize on their time together and achieve a maximum ROI (return on investment), by stretching goals and encouraging mentees to take risks. Mentees learn from mistakes and re-evaluate failures as learning experiences. With proper support from a mentor, these

experiences lead to personal growth of the mentee. Finally, an effective mentoring relationship can also help mentees push their goals beyond what they thought was possible.

Numerous studies have highlighted the impact of mentor–mentee concordance:

- Mentoring can play a significant role in addressing the lack of minority faculty and students at academic healthcare institutions as it provides “an avenue for interaction and camaraderie” amongst underrepresented students, faculty, and staff [7, 8].
- While gender and ethnic similarities between the mentor and mentee are important factors, non-minority mentors “seem to understand and appreciate minority students’ perspective and have volunteered to serve as mentors for these students” [7, 9].
- Although “mentored residents were nearly twice as likely to describe excellent career preparation...under-represented minority residents were less likely to establish a mentoring relationship than their peers” [7].
- Mentoring plays an important role in the perceived outcome on career readiness, but also exposes the difficulty underrepresented students face in developing a relationship with a mentor [7, 9].

### **Mentoring Models**

- Mentoring programs should be tailored to their respective settings and environment and “an understanding of the cultural parameters and unique needs and issues of different minority groups” [9].
- “Mentoring must be encouraged and rewarded if underrepresented minorities are to achieve and maintain positions of influence and leadership in academia” [9].

### **Challenges to Models [7]**

- Institutional variability: The role of mentors can vary from place to place and it is important to be aware of a particular institution’s policies, particularly the capacity a mentor can play.
- Resources: Resources can also pose a challenge to mentoring models, especially when they are scarce. Understanding what resources are and are not available can help maintain realistic goals and expectations.
- Incentive models: Another challenge is incentive models. Do mentors get monetary compensation for their time or recognitions for the mentoring?
- Specialties and Subspecialties: The more highly specialized one becomes in their career, the harder it may be to find an appropriate mentor in one’s field who has the availability to establish an effective and supportive mentoring relationship.

This list is by no means exhaustive and other challenges can be identified; however, these were found to be the most prominent.

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## Identifying a Mentor

There are various ways to identify a mentor, the most common being from one's home institution. Being in the same physical location offers a great deal of convenience and can help in keeping both parties in the mentor-mentee relationship accountable. However, one does not need to be limited to the boundaries of a home institution. Some individuals have mentors at different institutions that provide mentoring for different aspects in their career. Also, peer mentoring is a good way to get mentoring. Academic societies often have programs that pair mentees with mentors based on interest, and mentoring relationships can often be forged via networking at regional meetings and conferences. Via search engines like Google and social media platforms, the internet can also serve as a powerful tool when searching for a mentor. Another great source to identify a mentor is the National Research Mentoring Network (<https://nrmnet.net/#undergradPopup>). This great resource net is particularly helpful in that it can address limitations at one's home institution and does not require traveling to conferences. Additionally, journals may serve as a source of identifying published authors as potential mentors in the mentee's area of interest.

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## Mentoring Process

Generally, most mentoring relationships have four phases with specific outcomes from each phase:

1. **Preparing: Getting Ready.** Each mentoring relationship is unique and both mentor and mentee must prepare individually and in partnership for the mentoring experience. This is a discovery process that lets both parties determine the viability of the relationship.
2. **Establishing the agreements.** During this phase, mentor and mentee agree on the goals and create a shared understanding of their assumptions. They should also agree on boundaries of the relationship.
3. **Growth and Learning.** This is the time when both mentor and mentee work on the goals they agreed upon and make sure they are making progress as desired. This is the time for candid feedback.
4. **Coming to closure.** This phase is for acknowledging and celebrating achievement of goals. It is an opportunity to decide how you wish to move forward or continue the relationship.

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## Successful Mentoring Relationships

- Preparation is key to success.
- Begin with the end in mind. What do you want to get from the relationship? Clear expectations is key.

- Background and homework prior to the meeting. Making sure you are ready to fully engage and take advantage of the mentor's expertise.
- Recurring Events. Make sure the relationship is long lived and sustained. It is important for a mentor and mentee to agree on the length of the relationship. When that period ends, they may agree to continue the relationship or they may celebrate what was achieved and move on.
- Create a timeline. Develop a timeline that will help you track your achievements.
- Consistency: This is a two way relationship and you need to make sure you also bring things to the table to discuss (e.g., projects, professional and personal challenges, etc).
- Accessibility: Be prepared to be flexible, especially in setting up meeting days and times.
- Professionalism: This is a professional relationship and should be treated as such.

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## Mentoring Challenges

All mentor-mentee relationships will evolve over time and challenges that might not have been identified initially may come up during this course. One framework to consider in evaluating the mentoring relationship is the following – reassess, refocus, and recommit.

- Reassess: it is important to be aware that some mentor-mentee relationships might not work. Make sure to assess how things are going, and if it is time to consider finding another mentor.
- Refocus: keeping up with the expectations and task is important to demonstrate your commitment and focus.
- Recommit: always make it a priority to recommit to the relationship, especially when things get busy in other aspects of your life.

For example, it is important to reassess each goal at hand, and if the timeline created toward that goal has been sidetracked, it is important to bring the focus back to that initial goal. Alternatively, if a goal has changed, then this reassessment can also help recommit efforts toward a new goal. Addressing challenges like these as soon as they become an issue can help maintain the effectiveness of the mentor-mentee relationship.

Ultimately, we would like your mentoring experience to be a beneficial one so that you too can, in turn, invest your time in mentoring someone. However, the expectation is not for you to be as good as your mentor, we want you to take from your experiences and be better than your mentor. By being on both the mentee side and the mentor side you will know the true value of a mentor and can support someone else on their career goals just as you were once supported.

It is reasonable to think that you may outgrow your mentor. Your mentor has invested in you because they believe in you. Moreover, the expectation is that you

will go on and mentor others. Outgrowing your mentor does not equate to losing that person, but rather allowing the relationship to naturally evolve.

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## Example Case

### Mentee

Charles is a college student who is interested in eventually becoming an emergency room physician. Charles has been informed by a medical student mentor that the summer between his second and third years of college serve as a great opportunity to be exposed to emergency medicine and engage in clinical shadowing and research. These activities may heighten his competitiveness when applying to medical school. Through the pre-med group at his school, he has become aware of which EM faculty offer opportunities to college students.

### Mentor

Dr. Stephanie Gomez is an esteemed EM faculty member who is involved in clinical care, community-based participatory research, and serves on the medical school's admission committee. Her research focuses on HIV testing in the emergency department. She publishes 3–5 articles a year and attributes her productivity to her hard-working and organized college, medical students, and residents on her research team. She tends to accept students onto her research team who at the very least clearly state their passion for an EM and research career, can verbalize tangible goals and expectations, have written out their goals and objectives, and have an appreciation of the role of the mentee and mentor.

### What would be one approach to establishing a strong mentor-mentee relationship?

Consider using the 'Effective Meeting Checklist' to prepare you for your first encounter [10, 11]. Each of the following bulleted items should be considered:

- Location (e.g., where the meeting will occur that is convenient for mentor)
- Clear aim or agenda set (e.g., agenda of the meeting) (e.g., what brought mentee to want to meet with a mentor)
  - Define roles (e.g. have a clear expectation of mentor and mentee roles)
  - Personalization (e.g. mentee explains what opportunities he/she hopes to be afforded that aligns with his personal and professional interests)
  - Goals and expectations (e.g., clearly outline common goals and objectives for mentor and mentee)
- Setting dates (e.g. for next meetings or activities)
  - Documentation (e.g. taking notes during each encounter to document expected next steps and outcomes)

- Time & tracking (e.g. tracking dates and times of meetings and activities)
- Summarize meeting (e.g. at the conclusion of each meeting with mentor, summarize what was discussed to further verify the next steps)

As you consider your support team to fulfill your professional dreams, mentors along with role models, coaches, and sponsors are invaluable. Therefore, it is critical to spend an adequate amount of time and effort in selecting the right mentor or mentors and developing the relationship. A mentor can uniquely support your academic, personal, and/or professional needs, especially if you have common lived experiences and/or interests. The Effective Meeting Checklist is one approach to format your initial and subsequent encounters with prospective mentors to succeed in setting a mutual focus and priorities, capitalizing on common interests, aiming for largest return on investments, and stretching goal. Your university not only hosts a potential large pool of health professional mentors but also faculty mentors, providing a unique glimpse into both professions. Moreover, mentors can be accessed through various entities – other universities across the country or globe, specialty societies, the authors of peer-reviewed publications, community-based organizations, etc. For those already interested in becoming faculty or senior academic leaders, BNGAP ([www.bngap.org](http://www.bngap.org)) is a unique network to meet with health professional learners and faculty who aspire to serve as the next generation of academicians!

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Renee Williams, Nicholas N. Brutus, Susan Staggs Vos,  
and Anthony Pho

## Personal Story: Renee Williams

*How does one define educational scholarship and why is this important? Looking into my past, I started developing myself as an educator since my time in college. I started high school in America when I migrated from Jamaica, West Indies. During high school, I did not think much beyond the fact that I wanted to be a doctor. While in college, I decided to major in computer science while doing the premed courses. While I did not actively seek out opportunities to function as a teacher, I seemed to gravitate toward those types of activities. I worked part-time as a tutor for the science courses. Since I was teaching my peers, this required me to learn and adapt to different learning styles, depending on the student I was teaching. My summers were not spent in the lab, they involved activities within education. One summer, I did an internship at a high school in the Bronx teaching a summer course. I also got involved in a project called the Freedom School. This initiative was implemented by college kids, including myself, whereby we would go into inner city high schools and teach about different aspects of the sciences. Interesting how with the skills I started learning in college developed through my time in medical school and as a physician*

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*in training. These were the building blocks for my future as a clinician educator. Before we begin, let's start with some basic terms and definitions.*

### **Personal Story: Susan Staggs Vos**

*My journey toward academic pharmacy began long before I can even remember. The pharmacy class of 1948 at the University of Tennessee had only fifty students, five of which were women. When Captain William B Staggs began pharmacy school, the odds were against him that he would find a future wife in that class. However, the odds had been in his favor for the last few years. He had just completed his time as a fighter pilot in World War II. Soon after the first few weeks of pharmacy school, he asked his classmate, Betty, on a date. By their graduation day, they were married with one child and another one on the way. They moved to east Tennessee and opened a community pharmacy. They may not have known it at the time, but they were creating their legacy. Their children and grandchildren would go on to work in healthcare and lead their communities because of the example they saw in Bill and Betty. The shoulders I was privileged to stand on belonged to my mom, who was an educator and librarian and my dad, who was the eldest son of Bill and Betty, and who owned and operated pharmacies in middle Tennessee. I got my start in pharmacy at a young age—my first job was at the age of 5 years and included dusting shelves, scooping ice cream in the soda fountain, and running the cash register.*

*Early in my education, I encountered one of many mentors that would help to shape and guide my path to academia. I was able to see the critical role that teachers and mentors play in shaping the lives of their students. After graduating pharmacy school, I completed 2 years of pharmacy residency focusing in pediatric pharmacotherapy. This additional training allowed me to hone my skills as a pediatric pharmacist and teacher and ignited the flame that would inspire me to look for opportunities in academic medicine.*

*The role models I had in my family shaped who I became as a pharmacist. I recognize the privilege I had in being able to watch my grandmother work in our pharmacy. I was able to see on a regular basis two women with careers which gave me an invisible backpack of guides, tools, and special provisions to navigate the educational system and the career ladder. But, as I recognize that invisible backpack of tools I received because of my privilege, I acknowledge it is our job as healthcare providers, faculty, and leaders to ensure everyone has access to the tools to help others define and achieve success on their own terms. Many marginalized identities continue to face significant obstacles to achieve success. My hope is that I use the privilege I received through unearned assets to serve as an ally to those needing their voices to be heard.*

*Looking back on my journey thus far, my mentors, colleagues, family, and friends continue to have the biggest impact on my career. Surround yourself with good people and keep doing good for others along the way.*

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### **Personal Story: Anthony Pho**

*When I was in high school, I had a teacher who asked the students to give them feedback about their class at the end of the semester. I remember how my classmates and I quickly filled a whiteboard with a list of things that we did not like about the*



*class. Our teacher took our negative feedback in stride. They asked us to sort the things we did not like into categories and then to propose specific ways to improve each category. We soon learned that coming up with improvements was a much more difficult exercise. This was my first taste of educational scholarship, thinking about how information is being conveyed to learners and how to improve this. I became the student body representative on the curriculum committee at my high school. The curriculum committee had many functions but an overarching goal of improving education at the school. Being involved helped me to continue to learn about how people learn and to begin thinking about how teaching innovations can optimize learning for all. When I decided to become a nurse and eventually a nurse practitioner, I joined the curriculum committees for my bachelors and masters programs. I learned that patient education is an important part of nursing training and teaching nursing students to be teachers themselves could be challenging! I did a lot of patient teaching when I worked as an RN in the emergency department, quite often with limited time to convey important information to patients and their families. When I finished my master's degree, as my first nurse practitioner job, I worked for a medical college where again, I joined the curriculum committee. I met faculty members that invited me to teach seminars to the medical students and residents (physicians in training) about topics that I remain passionate about to this day like LGBTQ health and patient-provider communication. Over the course of my education and career, being involved with curriculum committees have profoundly shaped me as a clinician-educator and how I think about conveying knowledge, whether that be counseling my patients about their health, teaching other clinicians how to provide culturally competent care, or presenting my research at scientific conferences.*

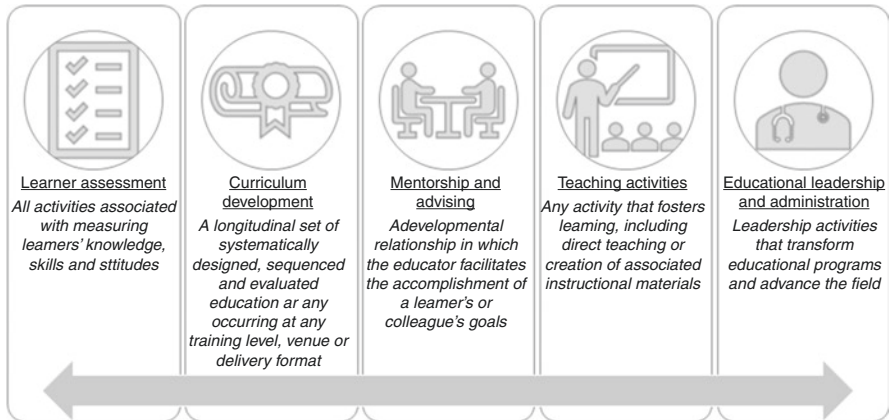
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## Terms and Definitions

It is important to note that scholarship and education are intertwined domains. What defines *education* in academia and who is the *clinician-educator*? Is it simply being a good teacher or should an educator go beyond just teaching? There are five categories of educator activity per the Association of American Medical College's (AAMC) Group on Educational Affairs (GEA) [1]. These are learner assessment, curriculum development, mentorship and advising, teaching activities, and educational leadership and administration [1] (Fig. 7.1), as defined by Simpson et al. (pg. 1006).

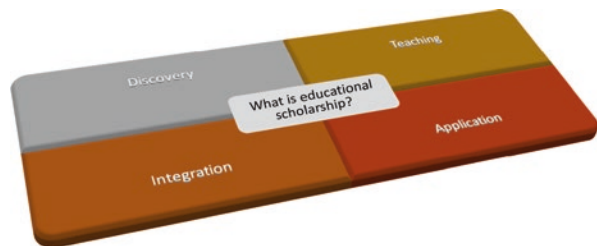
The clinician-educator role is an interconnection of the above domains. While one may focus on a particular area such as learner assessment, in general most teaching activities intersect with each other. For example, as a *college student*, you may give a reproductive health workshop at a local high school and do a pre- and post-test to assess efficacy in conveying new knowledge. This activity would fall in the domains of a teaching activity and learner assessment. If you did a series of workshops, you have just built a curriculum.

Being an effective educator is much more than giving a lecture or participating in an educational activity. Effective educators promote student engagement



**Fig. 7.1** The categories of educational activities

**Fig. 7.2** Domains of educational scholarship



and learning in their classrooms, workshops, and clinical environments. Effective educators approach learning through scholarly inquiry, asking themselves how students might best learn and apply the material. Clinicians study the literature and use evidenced-based medicine combined with patient values to make decisions about individual patient care. Likewise, effective clinician-educators study the literature and use evidenced-based teaching methods to help learners succeed.

Next, we will define scholarship. In the general sense, this means contributing to the generalizable knowledge by making your work public and accessible through a peer review process and publications. Peer review is an important aspect of scholarship, this means your work has been reviewed and critiqued by peers in your discipline. As defined by Boyer, scholarship has four domains, discovery, integration, application, and teaching (Fig. 7.2) [2].

- *Discovery*: original research, knowledge for its own sake [2, 3].
- *Integration*: Making connections across disciplines, illuminating data in a real way, interpreting, drawing together, and bringing new insight to bear on original work [2, 3].
- *Application*: Engagement with society to apply what is known [2, 3].
- *Teaching*: To make accessible and to participate in the transformation of what can be known with others [2, 3].

Boyer made the definition of scholarship more inclusive by defining the scholarship of teaching. Glassick expanded upon Boyer's work by defining the six standards of scholarly work which includes clear goals, adequate preparation, appropriate methods, significant results, effective presentation, and reflective critique [4].

#### List 1. Criteria for Scholarship in Education

- Educational activities can be informed by both the latest ideas in the subject field and the most current ideas in the field of education.
- Be open and accessible to the public.
- Be subject to peer review, critique, and evaluation using acceptable criteria.
- Be accessible in a form upon which others can build.

In the pre-planning stages of any educational work or research, ensure that you are keeping the criteria for scholarship in mind. Prior to implementation of any project, you should define how you will fulfill the criteria for scholarship. Since you are early in your career, we would highly recommend discussing your idea with the mentor who can assist in strategizing how to best implement your initiative with the intention of achieving scholarship or, more specifically, publishing. Reviewing the publishing or author guidelines of educational journals is a good first step in planning your educational research.

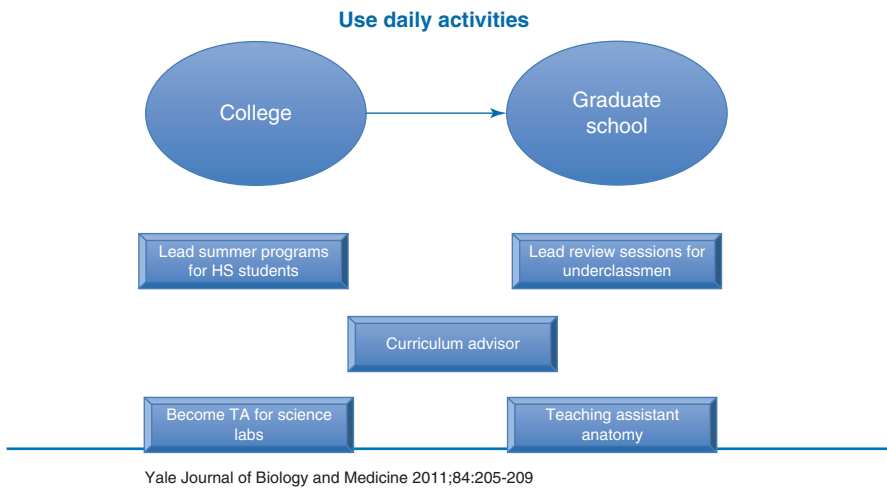
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## Activities for Scholarship

We have now defined the scholarship of education. How do we put this into practice? It is essential to understand that a lot of teaching activities can easily be transformed into scholarship by asking the right questions; for example, changing the system by which your college assigns incoming college freshmen to advisors. First, you could develop a new worksheet or modify an existing worksheet, have this evaluated, then publish the information in an academic journal [5, 6]. There are many opportunities that are already in existence (Table 7.1). The great thing about educational scholarship is that your workplace or classroom is your lab.

**Table 7.1** Activities for scholarship

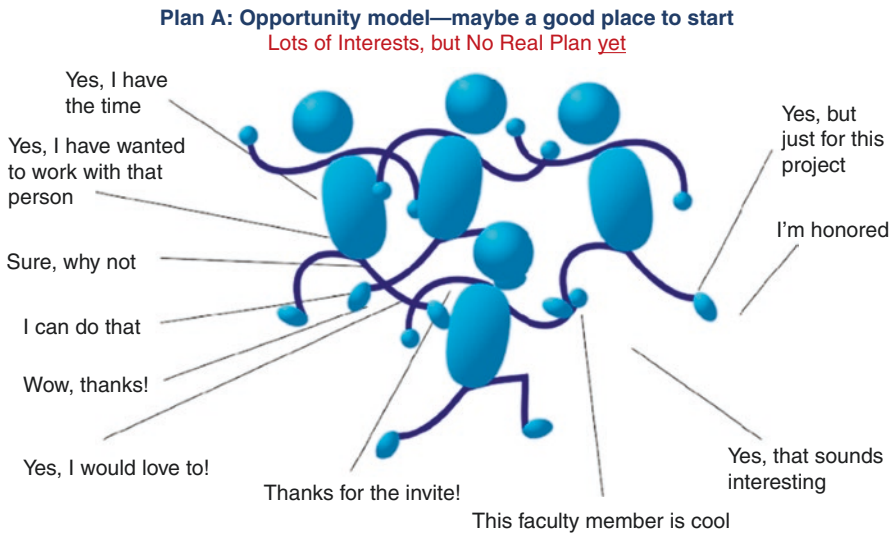
Activity	How to turn into scholarship	Make it count twice
Create a lecture series for pre-health students	Create poster for a national meeting	Submit for publication
Create teaching/mentorship program for college peers	Oral presentation at your institution	Present at another site with added information or to a new specialty
Dorm leader educational activity	Measure pre/post session knowledge and attitudes	Submit for publication



## The Educational Portfolio

From college to graduate school and beyond, it is important to maintain an educational portfolio which is documentation of the *quality and quantity* of your work. The quality of your work is reflected in presentations, learner and/or peer evaluations, publications, and self-assessment. After each activity, get learner feedback and document this within your portfolio. If no evaluation form is available, you can create your own on paper or electronically. Each institution is different, and some may use an online platform while others may require a paper document. A piece of advice, update this portfolio on a regular basis. Every time you do a new teaching activity, present at a conference, or publish a new paper, add it to your portfolio and write a brief description about what you learned from the experience. This is very important to include on your application to professional or graduate school or to any position throughout your career.

## Now What?



We have discussed some of the fundamental aspects of achieving and documenting scholarship in education. However, you are probably wondering – “How can I achieve these particular goals while in college?” Well, there are a variety of ways, but for the purpose of this chapter, I will highlight two models. The first model is the opportunity model, which involves taking on a variety of projects and exploring a myriad of interests. In the opportunity model, there is no definitive plan or pathway. Consider all projects that are presented as an opportunity to learn more about that particular educational landscape. This model provides a powerful stratagem to learn and develop yourself as an educator as you find your area of focus. A second model involves personal values and passion. In other words, this would be “an ongoing way to express and work on things that are of personal value and interest to you [6, 7].” Unlike the previously mentioned model, this requires an identified area of focus to build on your knowledge, skills, and attitudes to strengthen and build upon your foundation. In this model, a degree of self-reflective practice is required to understand your educational identity and your future goals and desired impact over time. However, we would recommend this model at a later stage in your career. It is not uncommon to start with the opportunity model to explore all options and then transition to the values model as you progress. We would also recommend taking courses geared toward education to give you the knowledge and skills in the conduction of research.

Now it’s time to do some practice cases to see if you have picked up on the concepts discussed thus far. These cases are based on real world scenarios; however, these great projects were not taken to that next level.

## Practice Cases

### Scenario 1

Robert is a junior who is involved in a student group that recruits high school students from underserved neighborhoods with an interest in pre-health studies. The students are broken up into groups with a task of teaching a lesson. Robert helped the students put together lessons from basic biology and chemistry topics using multimedia. After the lesson and lunch, Robert facilitates a question-based review session.

- What would you have done differently?
- How does this fit into the five educator categories?
- What are some thoughts on how to transform this educational activity into scholarship?

*In the above example, prior to beginning this task, Robert should have thought about how he could make this count twice. Specifically, how to evaluate the efficacy of his session, improve upon it, and disseminate his work. Here is an explanation of how this fits into some of the five educator categories.*

- *Curriculum Development: Robert organized the learning activities for the day.*
- *Mentorship and Advising: He advised students interested in pre-health studies.*
- *Learner Assessment: This was not formally done; however, there could have been a short quiz or test based on the learning activities for the day.*
- *Teaching Activities: This consisted of the review session along with formulating the assignments for the groups.*

*Generating scholarship from the project would involve an evaluation tool of the entire session from which he can use data to generate an abstract on building a workshop for undergraduate students underrepresented in medicine. This abstract should be submitted for presentation at a national meeting in the education category. He could then write a corresponding manuscript and submit to a journal dedicated to medical education.*

### Scenario 2

Joanne is a senior who has an interest in LGBTQ health. She gets involved in a session on how to communicate with members of the transgender community. She develops a small group simulation experience where students would teach a health-related topic. After the simulation ended, Joanne would lead a debriefing session about the experience and highlighted the teaching points. Her audience consisted of college freshmen.

- What would you have done differently?
- How does this fit into the five educator categories?
- What are some thoughts on how to transform this educational activity into scholarship?

*This is a similar scenario but a different project. In essence, Joanne can do an evaluation of her session with a tool such as a questionnaire with open ended questions. She can then write an abstract on how to utilize simulation in teaching about LGBTQ health issues. This can be submitted to a medical education research day at her institution and on the national level. This simulation can then be written and submitted to a repository such as MedEdPORTAL, which is a peer-reviewed online journal for medical education activities. Doing these simple things would give Joanne a local and national abstract along with a publication. Publishing within the field is an example of educational leadership. Doing the lecture and developing the scenario would be considered a teaching activity. By expanding on what she has already accomplished and developing more OSCE scenarios, Joanne is now involved in building an undergraduate student curriculum around LGBTQ health. The OSCE itself is an assessment tool, so, by implementing her OSCE, she is essentially participating in learner assessment activities.*

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## How to Go from “Doing” to “Publishing”

Before we discuss publishing, it is important to remember the significance of scholarship. For those of you applying to graduate or professional school, it makes you a more competitive applicant. In 1976 Nelson Mandela wrote in a letter while on Robben Island “a good head and a good heart are always a formidable combination. But when you add that to a literate tongue or pen, then you have something very special.” First and foremost, with co-contributors, discuss publication options in your pre-planning stages. Publishing is THE criteria for scholarship across domains. Seek mentorship, formal or informal, to guide you in this process. This is a well-traveled road and your journey will be less challenging with guidance.

Prior to any project, do a general and targeted needs assessment to identify gaps and understand what currently exists [8].

### *Needs Analysis: Start with a Good Literature Review*

- What is known about the topic?
- Are there any gaps you can fill?
- How can you build on what is already known?
- Has this been extensively studied before?

Based on your needs assessment, develop a well thought out research question. You should spend time formulating your research question; this is important as it informs your study methodology [9].

### Developing a Research Question

- Helps define what it is you seek to answer
- Keeps it well focused
- Keeps it clear

The research question informs which outcomes to evaluate. Typically, in educational research, you are investigating changes in knowledge, skills, and attitudes. This can be assessed qualitatively or quantitatively with knowledge tests, questionnaires, focus groups, or interviews. The strategy chosen is dependent on the data desired and research question [9].

For example, if you would like to assess pre-medical students' awareness of and performance on the Medical College Admissions Test (MCAT), you may use a simple knowledge-based test which collects quantitative data. Expanding on this idea, to measure the impact on knowledge of an educational intervention would require a pre- and post-test evaluation of your learners. However, if you would like to assess the perceived impact of an educational intervention to increase knowledge of the MCAT examination, you may consider using focus group interviews to collect qualitative data which may yield richer results. Standardized test-taker experiences provide a great strategy to observe a learners' skills and collect qualitative and quantitative data. Details regarding conducting educational research is beyond the scope of this chapter, but instructions are available through a variety of resources, including the AAMC 2017 e-book "Conducting Research in Health Professions Education: From Idea to Publication."

Before implementation, submit your project to your institutional review board (IRB) for approval or exemption. This is an important step, as rules vary depending on institution. In fact, educational research may not be considered human subjects research at some institutions, while others may require a full review. Once your project is finished and your data has been analyzed, start writing immediately and submit your workshop or abstracts to local, regional, and national meetings for peer review and presentation. You can start writing your introduction and methods before you get your data. Beyond that you should also think of submitting your work as a manuscript, book chapter, or newsletter [7]. Educational resources for publications include journals such as Journal of Nursing Education, Journal of Dental Education, Academic Medicine, Journal for Graduate Medical Education, and Medical Teacher. Online resources such as MedEdPORTAL ([www.mededportal.org](http://www.mededportal.org)) or other online forums provide ample opportunities to disseminate your work. If you are unsure regarding what resources exist, discuss with your mentor or explore professional societies focused on medical education.



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## Personal Story Continued (Dr. Williams)

*Looking back at my college experience, I missed opportunities for educational scholarship due to lack of knowledge. Later in my career, what did I do to develop myself as a clinician-educator? I started volunteering and seeking out opportunities to teach as a graduate medical trainee and as a faculty member. During my fellowship, I wrote and participated in an OSCE scenario that was eventually published in one of my field's major journals [10]. I made my leadership aware of my interest and was proactive in being involved in undergraduate and graduate medical educational activities. To that end, I also completed a Masters in Health Professions Education (MHPE) in 2018 to obtain formalized training in curriculum development and educational scholarship. For clarification about the themes in this chapter, here is an example from my own journey. I noted that our patients were inappropriately discontinuing certain medications prior to their endoscopic procedures based on advice from their medical providers. When a resident physician approached me for a project, we discussed doing a series of lectures, with our trainee physicians, along with the nursing staff educating them on these issues. The resident physician worked on two lectures, one for trainee physicians and one for our nursing colleagues and implemented a pre- and post-test survey to evaluate knowledge acquisition. We presented our work at an institutional medical education day and at one of our national meetings. This project was then published in MedEdPortal [11]. This is a classic example of how a knowledge gap was addressed using an educational activity, which in turn was transformed into scholarship through dissemination and publication.*

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## Questions for Reflection

1. What are my take-home points from this chapter?
2. What are my next steps to improve upon myself as an educator?
3. How will this make me a stronger medical school applicant?
4. Do I see myself as a clinician-educator in the future?

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## Summary

If you're planning on a future career in academic medicine, the role of the clinician-educator is now recognized as a valuable pathway for success. It is important to realize, now as a college student, how to navigate this landscape and give yourself the necessary tools to be competitive. Remember the domains and definition of scholarship, reflect on the educational activities or roles in which you have been a



**Fig. 7.3** The pathways of educational scholarship

participant or a leader, and start documenting in your educational portfolio. The opportunity model will assist in accomplishing your long-term goals and work toward disseminating your work via the various platforms that currently exist. In a nutshell, get started, seek mentorship, be organized and timely, and always think of publishing your work [8] (Fig. 7.3).

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Dennis Spencer, Edmond R. Hewlett, Lindy Zhang,  
Andrea Garcia, and John Paul (J.P.) Sánchez

## Personal Story: Andrea Garcia

*I remember the overwhelming sense of panic I had when I realized during my sophomore year of college that I had to do all of these extra “things” to get into medical school. “What do you mean summer internships, research, and shadowing? You mean there’s more to figure out than just taking the right classes? How did everyone else know but not me?” Being a first generation college student, I honestly thought all I had to do was graduate with a good GPA, work (because I had to), and apply.*

*By the time I connected with the right programs and advisors, I knew that I needed to apply for research programs. My first research experience was an 8-week*

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summer research program at the National Institute of Diabetes and Digestive and Kidney Diseases. Because this program was geared for underrepresented minorities like myself, they thought of things that other programs might not have considered – like the fact that our parents didn’t necessarily have the funds to fly us across the country and pay for living expenses. While I did meet my future best friend as a result of that program, I wasn’t sold on the idea of bench research. Nonetheless, I came home with some skills that I would then use for my remaining years of undergrad and that would definitely help with my medical school application.

I wasn’t truly excited about research until my second experience at the National Institutes of Health (NIH) through the NIH Academy. After graduating from college, I still had to take the MCAT and decided that I’d take a year off to study. The NIH Academy was a post-baccalaureate program that allows folks to work full-time in a lab while they apply to graduate programs. The Academy was special in that folks from underrepresented minorities got the added layer of learning about health disparities and receive additional support in their application process. I knew I was passionate about American Indian and Alaska Native (AIAN) health and made sure to express that. I was paired with an amazing mentor, Jack Guralnik, in an epidemiology lab at the National Institute on Aging. He was willing to not only teach me statistical analysis on the job, but allowed me to pursue my passion of AIAN health by using certain datasets. He even arranged for an opportunity to work on a research project with the Eastern Band of Cherokee. This experience lit a fire in me because I could investigate hypotheses based on my own personal and community experiences and support these with actual data. Even more, my particular research project had direct policy implications that intersected with tribal vs. state laws. I was over-the-moon excited that I could provide evidence that could save lives.

Flash forward through medical school, residency, and fellowship: I continued to pursue the type of research that excited me (AIAN health) and began to broaden my skillset to not only biostatistics, but health services research, community partnered participatory methods, and even explored Indigenous research methodologies. I learned very fast that research could be a tool for reclaiming narratives, uplifting the wisdom and answers that our communities already have, and a tool for advocacy. In my current job as a physician with the Los Angeles County Department of Mental Health, I get to use research in efforts that address AIAN homelessness, address diabetes distress and social isolation, smoking cessation, and beyond. Research has become a tool in my everyday repertoire to help improve population health, address structural inequities, and liberate resources.

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## Personal Story: Dennis Spencer

“Hey Coach – Sorry for arriving late! I was held up in lab... my experiment took longer than I thought” This was a phrase my high school track & field coach would hear from me more times than I’d like to admit. I was captain of my school’s team and a ranked top individual performer in the 800 meters race in Maryland. He would cut me some slack, wanting to support my participation in the school’s “Ingenuity Project,” which was an initiative to provide laboratory research

exposure to Baltimore city youth. I was able to leave school grounds during the day in order to do my own original research project in the laboratory with an assigned mentor at the University of Maryland after my lunch period. This early experience taught me three important lessons: (1) I really needed to work on my time management (before my coach's patience ran out!); (2) Performing original research is exciting albeit unpredictable, with highs and lows; and (3) I WANTED TO BE A SCIENTIST!

I grew up in a household with parents who instilled in their children the importance of education and the doors it can open. My mother did not have the opportunity to go to college herself as she had my sister while she was still in high school. My father only attended college later after returning from serving in the Vietnam War. As non-scientists, they both supported my interest in becoming a scientist, although they felt unsure how to help me pursue this dream. What they did know to do was to reinforce in me that I can do anything I put my mind to do, especially during those moments of self-doubt. I would eventually matriculate to Morehouse College as a NASA Scholar (academic merit scholarship) that required recipients perform lab research a minimum of two summers. While there were additional resources for identifying research mentors through the award's administrative office, it was difficult finding a good lab. I learned the importance of asking past and current members of the lab to learn of their experience to help inform my decision. I ended up enjoying three very different summer research experiences. Since my lab in high school studied microbiology, I chose to work in non-microbiology labs the summers after my freshman and sophomore years to "round out" my exposure as a budding scientist. These experiences, though fun, reinforced for me that I am drawn more to questions about microbiology and pathogens. I then worked in a parasites lab starting the summer after my junior year and continued as a paid research assistant throughout my remaining time in college. In this lab, I worked on understanding a key pathway in the parasite that causes the disease "African Sleeping Sickness," ultimately to hopefully provide a novel target to treat and prevent infection of this poorly studied (yet potentially deadly) condition.

My academic mentor and older classmates introduced me to the idea of combining my interest in becoming a scientist with medicine towards the pursuit of an MD-PhD career. I ultimately applied to combined MD-PhD programs after college, leveraging my earlier research experiences to craft a narrative of my evolution as a scientist in my applications. I completed a PhD in microbial pathogenesis from The Rockefeller University, where I sought to understand the pathogenesis of *Streptococcus pyogenes* induced "Strep Throat." Around this time was an expansion in high throughput next generation sequencing platforms that could be used to identify important features of a consortia of bacteria (esp. on the skin and in the gut) in what had been recently coined "microbiomes." I would continue mentored post-doctoral research experiences during my Residency and Clinical Fellowship exploring the role of the gut microbiome on health and disease. I am now a Physician-Scientist practicing Pediatric Gastroenterologist and working in close collaboration with infectious disease and GI colleagues on clinically relevant gut microbiome projects.

Across these narratives, the co-authors share how research not only strengthened their application to a health-related graduate project but remained as a career

interest that could be fulfilled through an academic position. In addition, the co-authors share the wide variety of research activities (e.g., clinical, bench work, population-based, etc.) that can be undertaken and are equally valuable in serving as a competitive applicant and exploring an academic career. This chapter aims to ensure that college and post-bacc learners gain an early and robust introduction to the different types of health research opportunities; the various settings, fields, and populations research can be performed in; the basic skills necessary and acquired through research; examples of research scholarship; and most importantly, how research enhances a trainees' competitiveness for graduate school and aligns with an academic career [1].

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### **Personal Story: Lindy Zhang**

*I grew up in a household that valued education. Like many immigrant families, my parents believed that seeking a good education equated to a good life with money and societal respect. As an Asian American female, I was to be quiet, respectful and blend into society. But, equipped with an education, I started to challenge the status quo. I pride myself in living in two worlds and strive for success in both: I value discipline and respect for others from my Chinese heritage, but I value individualism and independence from my American lifestyle. These two worlds collided in my pursuit of a good education and became what is now my professional career.*

*I attended the Bronx High School of Science, a specialized math and science public high school in New York, where I was first exposed to the potential of a research career. I participated in the Bronx Science research program and learned how to format a resume, write professional emails to colleagues, formulate research questions, and design experiments. Through it, I got my first research position in a behavioral science laboratory at the New York University. To be blunt, I did not learn much about the actual science; but, I learned about the process of getting into a lab or what it means to be "in a lab." Until this time, I had absolutely no exposure to the world of higher education nor people in academia. I look back at my naivety and wish I had said one word during a lab meeting or focused on reading the literature. On further reflection, I realize that this was not my "missed opportunity." I had no basis to even start to ask a question as I did not grow up nurturing such skills or thought processes; instead, I had focused on being studious and disciplined, which I realized also kept me invisible. I re-evaluated my strengths and my weaknesses and identified skills I needed to gain if I wanted to continue in the field of science research.*

*With these lessons learned, I attended the University of Michigan and restarted my research career. However painful my high school research experience was, I knew I still loved to learn, explore, and create in science. I enrolled in the Undergraduate Research Opportunities Program (UROP), a guided course on how to get involved and be successful in research. I spent time understanding and gaining "soft skills" alongside my academic skills. I learned the importance of*



*formulating attainable goals. I joined a neuroscience lab on a project to develop a mouse model of age-related changes in the vestibular system. My mentor, Dr. King, taught me how to design experiments. He questioned every step of my experiments as I worked and reworked my project. Slowly, I realized I was a little more comfortable with science, the analysis, the critical thinking, and the flexibility required to be a scientist. He challenged me to participate in many public speaking opportunities. Along the way, I found my passion in biochemistry and signaling pathways. Instead of restarting my research career, Dr. King and I shifted the focus of my project and collaborated with another researcher in the department of biochemistry. In the end, I completed an undergraduate honors thesis titled, “Old Ears and Falling Mice,” and graduated with an acceptance to medical school.*

*Nowadays, I do translational research on pediatric sarcomas and immunotherapy, which is quite different from my prior research. I still hold these past experiences close to my heart as they shaped the type of scientist I continue to aspire to be: one who is determined, focused, and unafraid of making mistakes or changing courses. The toughest lesson I learned was that failures and successes have equal value in my path to being “accomplished.” In research, as in life, you must not only be ambitious, plan experiments, and manage time closely, but also be flexible. What you decide to do may not be what you end up doing, but every opportunity is a learning experience. Everyone in the field will appreciate your struggles and ability to reflect on the lessons learned, making you a more compelling candidate for future positions. Always ask yourself why and what’s next.*

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## **Personal Story: Edmond Hewlett**

*I entered dental school with no awareness, and thus no interest, in an academic career. Decades later, I look back on my career in academia with humility and deep gratitude for such a rewarding and gratifying job. What happened in between?*

*I grew up in South-Central Los Angeles, one of four children raised by our mother after the untimely death of our father. Mom instilled in us a deep and abiding respect for education and an expectation that we would all graduate from college, and for these values I am eternally grateful. I developed what would become a lifelong fascination with science as a youngster; I enjoyed school, and earned good grades in elementary and high school. My dream college was UCLA because my older brother and sister went there and I was a huge fan of its sports teams. Note that it was 1972, and the process of choosing a college then was nothing like that of today. I was accepted to UCLA and chose Biology as my major for the sole reason that I liked science, blissfully unaware that I’d be surrounded by hundreds of super-competitive pre-med students in my lower division science courses. Ill prepared for the pre-med world, I struggled to maintain a C average after excelling at my small high school. It didn’t help that I had no idea of what I “wanted to be,” thus lacking the intense goal orientation and competitive fire of my pre-med peers. That changed once I became acclimated to college, learned how to study, and decided to pursue a*



career as a dentist. Armed with a strong upward trend in my grades, I applied and was accepted to the UCLA School of Dentistry. My goal was clear: graduate, open my office, and enjoy a career of caring for my patients.

The initial spark of my interest in academia was the way I was treated by a key subgroup of my instructors. They seemed genuinely committed to helping me become an excellent dentist, treated me with respect and encouragement, and made it a safe space to ask for help and to fail without being shamed. This affected me deeply and caused me to think how great it must be to do that for someone like me. Fast forward to senior year where, by graduation, I had definite plans to come back and join the ranks of our many part-time faculty who took a day or so out of their practices each week to teach at the school.

I graduated, left L.A. to complete a general practice residency program at the University of Illinois Chicago Medical Center, returned home, and found an associateship in a private practice, and was hired to teach part-time at UCLA for 2 days a week. Perfect! Over the ensuing 5 years I was given more responsibility in my faculty position, ultimately leading to encouragement to apply for open full-time position in my department. This coincided with dentist-employer's desire to sell me his practice as he was retiring. This abundance of riches in opportunities caused me to search my heart – which would make me happy? I loved the intellectual stimulation and teaching students at UCLA, but I also loved practice. The decision turned on the fact that I'd be able to continue patient care at the UCLA Faculty Group Dental Practice. I applied for the UCLA position in 1980, and was thrilled to be selected.

NOW we get to the research. My tenure track position required research productivity for advancement up the ladder, and I needed a mentor. I was fortunate to have a former instructor take me under his wing to start my research career, beginning my journey along the path of progressively focusing my research interests and working with other wonderful mentors and collaborators. The work was demanding (more so than even dental school!), but the explosive growth of my knowledge and skill in research was exhilarating. My ability to meet the rigorous criteria for advancement to tenure and later full professor was critically dependent on a successful research program, and I am deeply indebted to all of the colleagues who helped me become a researcher. More seniority in our faculty has brought with it new responsibilities and opportunities to serve our school and continue this marvelous professional journey.

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## What Is Research?

Research involves a high level of curiosity and is often aligned with passions and values you may already hold as a learner. Research often aligns with personal and professional interests. There are several types of research that may be more meaningful than others based on your personal and professional interests. For example, you may be more inclined to do biomedical research because of a lab project you

had in a science course, while others may be interested in educational research or community-based participatory research because of their passion to serve their own community. Others might find themselves attracted to several research types and that's okay too. It is important to reflect on your experiences thus far, where you've found yourself leaning towards in terms of interests, and who you would like to follow in their footsteps.

Consider the following questions when considering the type of research to pursue:

- Is there an area in my field I am drawn toward? Would a specific research type better complement the field I am interested in working? Is there anyone I can identify who is modeling anything kind of similar within my (or a similar) field?
- What questions do I have that can allow me to better understand the day-to-day activities and responsibilities of different health profession careers (e.g., nursing, dentistry, and medicine), the patient populations they serve, and how to promote health equity?
- What types of research have I done and what did I like or dislike? What were some of the successes and challenges in participating in research?
- Who might be engaged in the type of research I'm interested in? Who are the researchers working in academic settings that can serve as my role models, coaches, or mentors?

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## Types of Research

The following is a list and description of various types of research that you can engage in during college.

***Basic Science Research*** This type of research is also commonly referred to as 'bench research'. It's conducted to increase the foundational knowledge and understanding of physical, chemical, and functional mechanisms of life processes and disease. Rather than directly solving a biomedical problem in humans or animals, basic science research lays down the groundwork of our basic understanding of relevant components. It may involve observing, describing, measuring, and experimental manipulation. A basic researcher seeks to add to the store of knowledge about how living things work. A basic researcher's experiments add pieces to the immensely complex puzzles of life [2].

Basic science studies will typically incorporate bio-specimens (e.g., cell and tissue cultures), animal studies, or physiologic experiments. Some common topics include bioengineering, biochemistry, cancer and cell biology, microbiology, physiology (e.g., endocrinology, immunology), pharmacology.

Historically, this is the most common type of research experience available to undergraduates, but it is important to note that this is not the only option for a student. It is also important to realize that many of the skills learned in a basic science lab will translate to other types of inquiry later in one's career.

**Translational Research** This type of research involves using knowledge gained from basic research and methodically applying it to a practical setting to address a specific medical problem. It is a means to translating information from cell biology, genetics, and biochemistry into clinical knowledge for development of new medications, medical interventions, and/or procedures.

There are two types of translational research – bench-to-bedside and bench-to-community. In bench-to-bedside, basic science discoveries are applied and researched in human subjects. In bench-to-community, the aim is to have basic science discoveries accepted into practice through education, economic analyses, and reworking a currently used tool.

**Clinical Research** This research has the most *direct* impact on the patient. Clinical studies include determining the safety and efficacy of medications, devices, diagnostics, and treatment. Clinical studies outcomes may inform prevention, diagnosis, symptoms relief, treatment options, or behavioral interventions. It takes place in a hospital or clinical setting and is focused on treating specific human and animal diseases and other ailments. Clinical research builds upon the knowledge learned through applied and basic research [2].

There are two types of clinical research: observational and interventional or clinical trials. Observational studies include cross-sectional, case-control, and cohort studies. Interventional studies, or clinical trials, are randomized-controlled trials. These have participants randomized to either an experimental group or a control group and the only expected difference in outcome is due to the one variable being studied.

Learners involved in clinical research frequently undertake tasks such as consenting subjects, collecting data, and doing follow-up calls.

**Health Services Research** It uses scientific investigation to study how social factors, financing systems, organizational structures and processes, health technologies, and personal behaviors affect access to health care, the quality, safety, and cost of health care, and ultimately, our health and well-being. Its research domains are individuals, families, organizations, institutions, communities, and populations [3]. Two areas of health services research that have gained considerable attention are patient safety and quality improvement. Patient safety research produces solutions and interventions for safer care. It translates research findings into solutions and improved practices and policies [4]. Quality improvement is the combined effort of everyone in a healthcare system to make changes that will lead to better patient outcomes (health), better system performance (care), and better professional development (learning) [5].

Undergraduates can often be involved in this type of research by working with health departments, schools of public health or public policy, foundations, and other agencies.

**Population-Based Research** This type of research is framed to answer a question that can be applied to an entire population and the external validity of the

results is the most important component of the study. If it does not include the entire population being studied, the group should reflect the traits of the overall population. Three common types of population-based research include community-based participatory research, epidemiologic research, and policy research.

Community-based participatory research (CBPR) can provide direct encounters and engagement with communities of particular familiarity to learners (e.g., geographic, racial/ethnic, etc.) Learners often find CBPR a fulfilling means by which to serve their community while developing critical thinking skills and creating scholarship (i.e., research manuscripts and grant proposals); all fundamental skills to succeed in an academic career [6].

**Educational Research** This research includes investigation or research of learner assessment, curriculum development, educational mentorship or advising, educational leadership and administration, and/or teaching activities; impact of educational interventions in patients' outcomes; and workplace-based educational assessments. It serves as a unique opportunity to assess and reform the culture underlying health profession education. This type of research would include assessing the development, validity, and application of standardized exams and admission policies.

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## Methodologies in Research

Just like there are various types of research, there are various research methodologies, including quantitative, qualitative, and mixed methods. The type of research methodology typically most familiar to undergraduate students with a science major will be quantitative.

*Quantitative Research* typically uses numbers to test hypotheses and make predictions by using measured amounts, and ultimately describe an event by using tables, figures, and graphs. Examples of numbers can be age, temperature, blood pressure, or number of drinks in the past.

*Qualitative Research* describes the type and quality of a subject, while interpreting and attempting to understand an event. By using narrative descriptions (e.g., quotes), the purpose of qualitative research is to give someone a picture of what the researcher is understanding. Examples of data collection include focus groups, interviews, or observation.

*Mixed Methods Research* uses both quantitative and qualitative research to investigate and describe phenomena.

All of these methodologies are easy to use, but they take patience and practice to get right and take time to complete. Sometimes, when there is no way to quantify an effect (or find data represented), qualitative methods can be used. Frequently, qualitative methods reveal more questions and can be used to inform further research.

## How to Gain Meaningful Experiences?

**Step One: Analyze your Personal and Professional Interests** Begin by writing down your interests: What type of research question are you interested in exploring (e.g., the prevalence of HIV/AIDS in certain populations, new modalities to treat breast cancer)? What type of research would you like to experience (basic science, clinical, population-based, educational, etc.)? Are there any communities you would like to work with (e.g., geographic, racial/ethnic, religious, economic, etc.)? What type of research do you enjoy reading about and who is leading those projects? What type of research career might be personally and professionally gratifying?

Speak with others to help you in describing and refining your interests. Within your colleges and universities, you can consider reaching out to an academic advisor, pre-health club faculty advisor, or advisors of an Office of Research. Your lecturers and professors, irrespective of the course, are probably engaged in research and can serve as role models, coaches, and mentors. They may even afford you an opportunity to serve as an intern on one of their studies.

Across the country, there are numerous structured programs to provide learners with research experiences and career development. These programs can be housed in health departments, (e.g., Health Research Training Program of the New York City Department of Health and Mental Hygiene – <https://www1.nyc.gov/site/doh/about/employment/hrtp-internship.page>) academic health centers (Morehouse College’s Project IMHOTEP – <https://www.morehouse.edu/academics/centers-and-institutes/public-health-sciences-institute/project-imhotep/>), federal agencies (NIH Summer Internship Program – <https://www.niehs.nih.gov/careers/research/summers/index.cfm>), and private organizations (Pfizer - <https://careers.pfizer.com/en/early-careers>). They can be offered over the summer, semester, or an entire year. Ask peers and graduate health professional students which programs they have been a part of or ask advisors which programs their students have applied to and participated in.

**Step Two: Have a Clear Understanding of the Purpose and Goals of the Research Project** After writing a research question and reflecting on your personal and professional interests, you might find a research project or have one in mind. After investigating research opportunities further, ask questions so that you understand the purpose and goals of the research project. If they are not clear, suggest ways that the purpose and goals could be clearer.

**Step Three: Is There Alignment Between Your Interests and the Nature of the Research Project?** This is the decision-making moment. Do your interests align with the goals of the research project? If so, think of ways you can get involved with the research and propose possible ways to contribute. If not, look at other options that may fit your interests or goals more closely.

**Step Four: Seek Mentors** Early identification of a mentor is important and necessary for your success. Do not try to start a research project or academic career alone. If you don’t already have a mentor, try looking for one in your college or a nearby

medical, private, or federal institution. You can also browse school websites, Twitter, or other online avenues to find someone. Consider contacting co-authors of a recent article that you have read or conduct a literature search via PubMed to identify co-authors of research topics that interest you.

For example: Alzate-Duque et al. [8].

***Step Five: Be Clear About the Desired Outcomes Within a Time Period*** Know that research takes time – a whole research and/or academic career can be built around just one research question – so try not to overwhelm yourself with different projects. It would be worth it to decide which area of the research you’re interested in and stay focused. This can also be a great opportunity to learn or build upon skills you can apply as a future academic health professional.

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## **What Are the Basic Skills Needed to Succeed?**

There are several skills you’ll continually develop as you engage in research activities and as a future scholar in the field of academic nursing, medicine, dentistry, pharmacy, or other health profession [7]. These skills aren’t learned overnight, but rather something to be practiced, honed, and refined.

***Literature Searching*** One of the basic skills you can learn as a practicing researcher is how to sort through information and find relevant and current evidence that may strengthen your point. Depending on the resources available at your institution, you may have access to a plethora of databases indexed by health professionals that lead you to legitimate sources of information. PubMed, a database of articles indexed by the National Library of Medicine, is a great way to start exploring terms and topics of interest. Looking at Medical Subject Heading, or MeSH terms, is a great way to get a sense of the literature in areas of health and what research is currently being done in the field. Your mentor may assist you in finding keywords or MeSH terms to use in a search. A medical librarian can assist in conducting literature searches, managing your citations, and looking through other information resources available at your institution.

***Generate Hypotheses and Formulate Study Questions*** After a review of the published literature, your mentor will guide you through formulating study questions and hypotheses. They might even have one in mind that you can work from to develop your own.

***Study Design and IRB Submission*** Consider the methodologies mentioned earlier in this chapter and discuss the possibilities with your mentor. This can often be one of the most challenging portions of research and you may have to take additional training or classes to gain more skills in this area. Know that you must describe your study in full detail and learn the rules first – especially if wanting to include human participants, which does require approval through your institutional review board.

***Recruitment and Data Collection*** In this step, you'll be recruiting participants (if necessary), building a team (if necessary), creating surveys and/or pre/post-tests, and collecting feedback. This process is usually pretty time-consuming and takes careful preparation. Consider a data collection software that may assist you in this stage of the research process.

***Empirical Analysis*** Regardless of the methodology, you'll want to build in time to analyze the data. There are different ways of doing this based on the data collected. For quantitative data, it is required to know how to use statistics software like SPSS, STATA, or Excel. For qualitative data, it may be worth exploring NVivo or other software. If you are unfamiliar with statistics software, consider recruiting a statistician as part of the research team.

***Interpretation and Writing*** Your mentor can help guide you through the interpretation of data and provide some areas you might write on to deliver findings on the research to colleagues, patients, or the general public. It may be worth investigating where your mentor has published and possible avenues for publication before getting too far along in the writing process. It may be worth doing this as part of the research process – just be sure to draft a timeline for yourself, so you can finish projects and ultimately publish an original research contribution.

***Poster and Oral Presentation*** An important thing to remember about the research process is that it's ultimately about sharing what you've found with others. Your findings may have the power to change care for patients, influence policymakers, or teach a lay audience about a new topic. You can often get there by delivering your findings at a conference either through a poster or oral presentation. This is a way to first gain exposure to the academic world and can gain great contacts that will last throughout your academic career. Have a conversation with your mentor about possible conferences to present at and any advice they would have during the proposal process.

***Manuscript Preparation and Submission*** Research findings can also be disseminated through reports or journal publications. Sometimes your research work can fulfill credit for a course or independent study project. A well-planned study can potentially be submitted for publication consideration in a peer-reviewed journal. Ask your research mentor or principal investigator if there is an opportunity for you to serve as a co-author on a report or journal article and/or what is required in terms of tasks to fulfill that role as a co-author. Since most studies take years from development to scholarly write-up realize that a summer or semester research experience may not fulfill the requirement to serve as a co-author, but if you and the advisor are agreeable to your continued involvement, ultimately you might be able to serve as co-author.

The following cases have been designed to re-enforce potential research opportunities that exist to increase your competitiveness for health professional graduate school and help you build a foundation for an academic career.



### Case 1

Michelle is a second year college student and she has completed introductory chemistry and biology labs. Due to her excellent performance in her biology lab, Professor Perez asks if she is interested in a summer research position. She is excited about this but also eager to explore research opportunities with human subjects.

She speaks with an advisor to review opportunities for her summer.

*Option one: To work with Professor Perez on an existing project studying the mechanisms of drug resistance in bacteria.*

*Option two: To approach Professor Harris, that served as a guest lecturer in her biology class who mentioned starting a new clinical trial study on a new treatment for cystic fibrosis.*

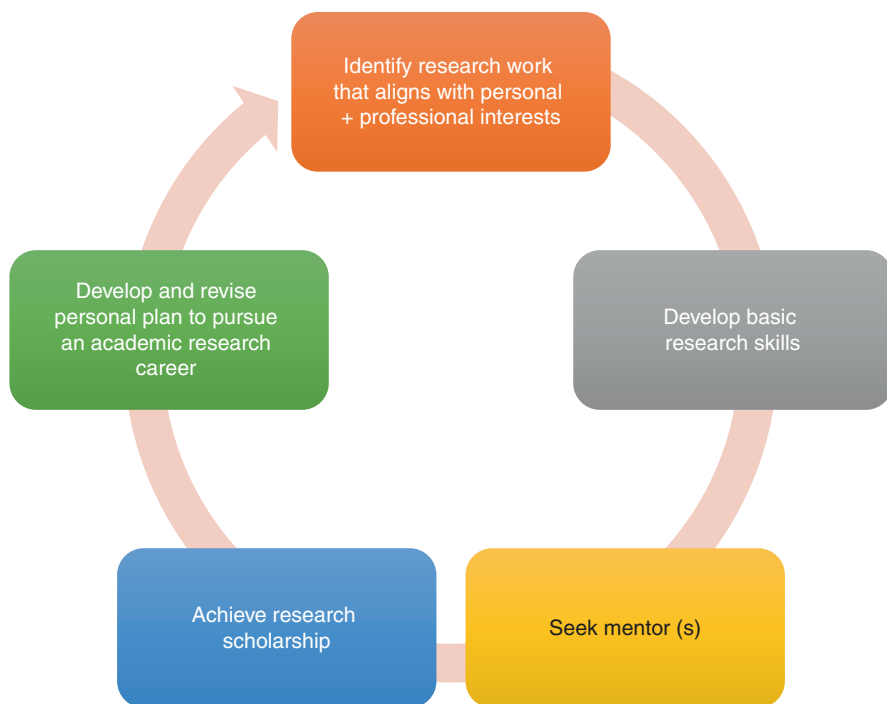
What would be the pros and cons for each of the options listed above?

<i>Option one</i>	<i>Option two</i>
<i>Pros: Develop a better appreciation of basic science research and develop bench work skills; learn about the structure of a lab; network with basic scientists who can serve as role models and mentors; better understand microbiology and, specifically, concepts associated with drug resistance</i>	<i>Pros: Develop a stronger relationship with a medical school faculty member who can write her a recommendation letter to medical school; gain a greater appreciation of clinical research and associated skills; better understand the pathology and treatment options of cystic fibrosis</i>
<i>Cons: It's an existing project so there may be limited tasks or roles to play; does not involve direct contact with human subjects</i>	<i>Cons: As a new study, it might take several months before gaining IRB approval and affording Michelle an opportunity to engage with human subjects</i>

If you were Michelle, which option would you select and why?

<i>Option one continues... That summer, Michelle works with Dr. Perez and one of his senior graduate students to determine the structure of a new drug resistant protein. Over the next 2 years, she spends most of her lab time growing bacteria and purifying proteins. She is also included in lab meetings and helps to write a section of a paper on the crystal structure of the protein. Her research mentor suggests presenting her project at the next SACNAS or ABRCMS conference. She gets her abstract accepted to be featured as a poster to one of the conferences.</i>	<i>Option two continues... Michelle approaches Dr. Harris, a pulmonology professor, who guest lectured in her biology class, about getting involved in clinical research. She is delighted to include her. Over the summer, she takes an introduction to clinical research course in the mornings and spends afternoons in pulmonary clinic, administering surveys to patients with cystic fibrosis. She gets to know a medical student and resident physician who are also working on the project. When the student and resident graduate the next year, Dr. Harris asks her to be the research coordinator for the study. Michelle's research experience spanned over a longer period of time but she was able to build skills related to designing and implementing the study. She wrote up her research project and was able to present her findings at a well-respected institution during a research poster day.</i>
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**Fig. 8.1** Research experience and paving a way to an academic health professional career

In considering option one or two, both research experiences are valuable and would allow Michelle (or you) to explore health professions careers and refine her personal and professional interests (Fig. 8.1). Either provides new health-related knowledge and skills, affords an opportunity to develop new role models and mentors, enhances critical thinking and problem-based learning skills, and builds on written and oral presentation skills. If you have a positive and successful research project, your research mentor may also serve as a good person to write you a letter of recommendation for graduate school.

Remember, research experiences not only increase your competitiveness to graduate but also help you develop a foundation for an academic career. Your research experience can be listed on your application to graduate school as a meaningful experience affecting your career interest, showcase your aptitude in the health sciences beyond your coursework, and it can serve as a topic to discuss in your personal statement or interview. In terms of building a foundation for an academic career, early and on-going experiences with research design, methodology, and scholarly writing can be built upon and lend to developing a niche or identity around a specific topic that can increase your chances of employment as a faculty member.

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# Telling Your Story: Resume, CV, and Applications

# 9

Asia T. McCleary-Gaddy, Susan Staggs Vos,  
Patricia Xirau-Probert, Chidimma Okwara,  
and John Paul (J.P.) Sánchez

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## Personal Story: Chidimma Okwara

*As a college student, I spent a lot of my time focusing on making sure I performed well in my courses and was serving my community through extracurricular activities. My ultimate goal was always to apply to medical school, and I worked hard in order to accomplish it, but there were some things I wish I had known to do in order*

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*to optimize my application experience. I was clueless about the process of applying to medical schools and was not prepared.*

*Creating and regularly updating a CV, having a cover letter prepared, and documenting the extracurricular activities that I did over the course of my 4 years in college would have saved me a lot of time and stress. Because I was unaware of this, I hit a point in my junior year of college, where I really struggled to balance preparing all of these documents from scratch, meeting with my advisors regularly to make sure I did them correctly, while still trying to excel in my classes. Being unprepared did have some consequences. For example, I was not able to get a committee letter of recommendation from my school because I was not staying up to date on the due dates and requirements.*

*I share this story to remind you to be aware of all the requirements for your medical school application. People tend to focus on the academic and research aspects of being a good applicant, but can overlook the importance of understanding the process and being prepared in advance in order to give a well-rounded and competitive application.*

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### **Personal Story: Asia T. McCleary-Gaddy, PhD**

*I attended Rice University in Houston, Texas, for my undergraduate career, where I decided to major in Psychology. As a freshman in college, my goal was to become a clinical psychologist that focused on mental health and coping mechanisms of African American and Latinx adolescents. During my Introduction to Psychology course, we were mandated to participate in Research and was also offered the opportunity to conduct research within a psychological laboratory that focused on discrimination in the workplace. This laboratory resonated with me the most because this was a common experience in both African American and Latinx communities. Over time, I realized that I really enjoyed research and thus through the Office of Multicultural Affairs and Research, I applied and was accepted into the Mellon Mays Undergraduate Fellowship (MMUF) – a pipeline program that was designed to assist underrepresented students who were interested in pursuing a PhD.*

*Outside of academia, I was also an avid member of the Black Student Association (BSA) and an organization that facilitated dialogue on “hot button” topics that ranged from religion and dating to politics and oppression. Therefore, in reflection of my academic passions and personal passion, I knew that in the next 5–10 years I wanted my career to focus on the improvement of underrepresented communities and foster more positive interpersonal and interracial interactions.*

*As we neared the end of the semester and it was time for me to return home for the summer, I had a conversation with the laboratory’s Principal Investigator (PI) to discuss internship options. My PI was a white woman, but would often discuss the importance of seeing and working with a researcher who also shared the same background as my own. Thus, that summer, she highly recommended me for an internship at Columbia University in my hometown of New York to work with an African American woman who had received her PhD in Psychology.*

*Through my experiences in the lab conducting research on discrimination with a Caucasian and African American woman mentor and my experiences as a fellow learning from other underrepresented individuals who have attained their PhD, I was confident and well prepared. I was accepted as a doctoral candidate at the University of Vermont (UVM) in a lab that studies how stigma affects health. During my time at UVM, I taught courses, mentored undergraduate students, conducted research on stigma, and worked as an intern at the Vermont Department of Health and Larner Medical School analyzing data for their Office of Diversity and Inclusion.*

*Collectively, these experiences showed me the importance of the Office of Diversity and Inclusion and how it combined three **threads**; (1) commitment to underrepresented communities (2) research for evidence-based decisions (3) faculty appointment for teaching. These three facets were prevalent in my CV under “Community Service,” “Volunteer,” “Research,” and “Work Experience.” It tells a consistent story of what I am interested in as a scholar and faculty member.*

Even when it's not pretty or perfect. Even when it's more real than you want it to be. Your story is what you have, what you will always have. It is something to own.

—Excerpt from “Becoming” by Michelle Obama<sup>1</sup>

Telling your story is analogous to weaving the threads of your professional journey. We often think of threads as long, thin fibers that when woven together make a fabric. The quality, density, color, and composition of the threads make the fabric strong and attractive to its user. In this chapter, “threads” is a figurative term that refers to the varied professional experiences and accomplishments that make an applicant attractive to an institution. This chapter serves as an introduction to the resume, curriculum vitae (also known as CV), and graduate school application. Collectively, these documents illustrate the narrative of your professional journey. Although these are components to a complete application, these documents should tell the story of where you started and how it has informed your decision to apply to where you intend to go. First, this chapter will define and explain the differences between a resume, CV, and an application. Next, we will identify best practices to develop a competitive CV and graduate application. Lastly, this chapter will describe the importance of active documentation practices and how planning current activities will set the stage for a future faculty appointment.

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## **Should I Be Building a “Resume,” “CV,” or Start the “Application”?**

*The term *resume* comes from the French origin meaning “summarize.”<sup>2</sup> A resume is a one-page document that is used to apply for jobs or internships in various industries. A resume consists of your name, contact information, education, work experiences, and relevant work-related skills, listed in reverse chronological order. Resumes have a focus on work experience but are adaptive. This means that the past*

experiences most relevant to the job you are applying for should be centered over your last position.

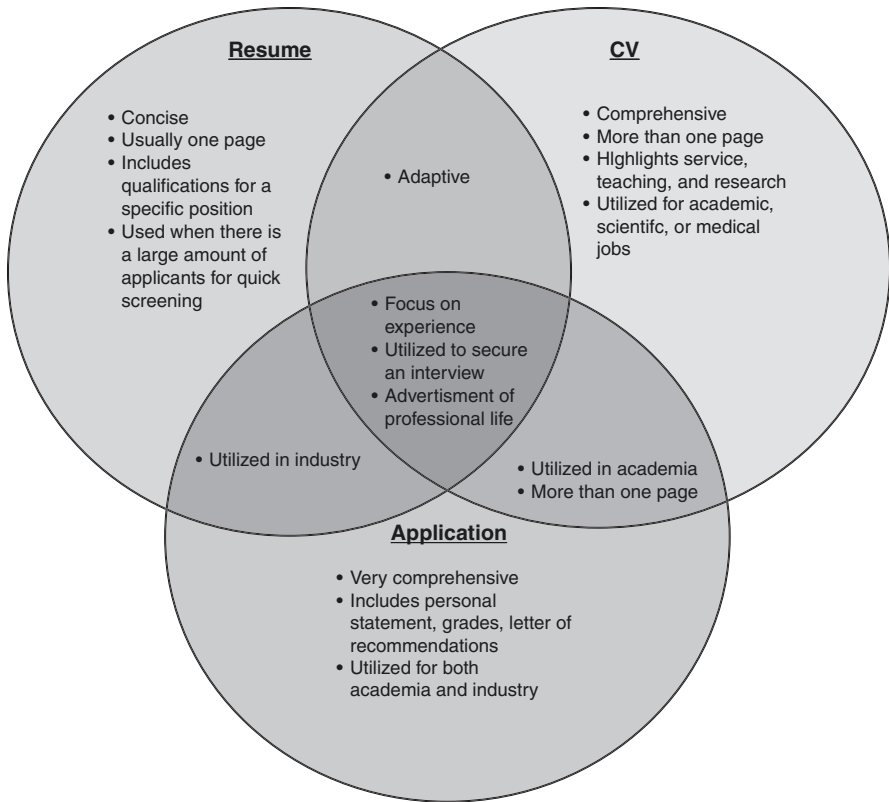
*The term curriculum vitae* (or CV) comes from the Latin origin meaning ‘course of life’.<sup>3</sup> A CV, is a multi-page document that is used to apply for academic, educational, scientific, or research positions. Similar to a resume, a CV consists of your name, contact information, work experience, and relevant work-related skills. However, it also includes a summary of your academic background, teaching and research experience, publications, presentations, awards, honors, affiliation, licenses or certifications, professional memberships, service activities, and references. This should also include leadership roles, clinical experience, technical skills, and language proficiencies. Since there are more subsections of a CV, the document will most likely be many pages.

For faculty in academia, a CV includes three major threads: teaching, service, and research or scholarly productivity. Teaching encompasses any time you have shared knowledge with a learner and could include lectures given, courses taught, or tutoring services. Service includes a variety of experiences such as serving in leadership or committee roles, serving patients through clinical practice, or serving the community for the greater good. Research and professional productivity include applying for grants and anything you have “produced” such as oral or poster presentations, patents, or publications. As you develop your CV, planning activities in these three major threads can assist in creating a strong application and as you transition into a faculty role.

You can often access CV examples through your professional development organization. For example, for medical students, visit the Association of American Medical Colleges (AAMC) website – [www.aamc.org](http://www.aamc.org). You can also access CV templates online, often through your own institution. These tools can assist with formatting; however, you should be adaptive and update your CV to be more relevant as your career advances. It is important to note that as you move between institutions, you will be expected to modify your CV to comply with the formatting of your new institution. For example, as a college student, the format of your CV will differ from the formatting of your CV recommended by your professional school.

*An application* is a largely standardized document that consists of a collection of grades, standardized test scores (e.g., MCAT/DAT/GRE/PCAT scores), recommendation letters, personal statement, activities, experiences, and letters of recommendation or support. All of these things are compiled into a large application file and are submitted through an online, collective application portal. In comparison to both the resume and CV, the application is not adaptive, and should be listed in chronological order. Most pre-health and professional schools offer webinars or other forums to help students deliver a successful application.

Although there are many similarities between these three documents, they each have unique attributes that differentiate one from the other and provide greater detail into the professional narrative also known as the “threads” of your life. Take a look at Fig. 9.1.



**Fig. 9.1** Similarities and differences between resume, CV, and application

## Best Practices for Developing a CV and Application

For pre-health students, a resume is seldom required for their varied positions within the health field. Therefore, the remainder of this chapter will discuss best practices for creating a strong CV and application.

### CV

As you begin preparing your CV, you will want to consider the following to help you get started. Organize your CV in a format that tells the most compelling story about yourself. For example, if you have more poster presentations than peer-reviewed publications, it may be wise to place the presentations section above

**Table 9.1** Common sections for curriculum vitae

Main heading – to provide your contact information	<p>Full name (preferably as it appears on legal documents)</p> <p>Abbreviations for professional degrees are listed in the order in which they were received</p> <p>Home address and telephone number</p> <p>Students may wish to include temporary and permanent addresses, with dates effective</p> <p>Do not include age/date of birth, sex, race, height, weight, marital status, names of children, health</p>
Education and training	<p>Inclusive dates (months and years) are important</p> <p>All degrees received, as well as colleges and universities attended, unless limited (e.g., single summer course at a community college)</p> <p>Current educational programs, if applicable (e.g., graduate/certificate study) with anticipated graduation date</p> <p>Spell out all school names and addresses</p> <p>Professional licensure and certification</p> <p>Include dates obtained and expiration dates, if applicable</p> <p>Certifications, life support training (e.g., ACLS)</p>
Professional experience	<p>Job or internship title</p> <p>Name and address of each organization or institution</p> <p>Beginning and ending date</p> <p>Supervisor and their title</p> <p>Brief description, if desired, using action verbs describing responsibilities and accomplishments</p> <p>Do not include information about jobs that are irrelevant to the position you are seeking or your current career</p>
Presentations	<p>Title of each presentation, meeting name or audience, location, and date</p> <p>If this section is lengthy, consider subsections (e.g., local, state, national, international, invited)</p>
Publications	<p>Use the common medical literature reference (i.e., bibliographic) format</p> <p>Bold your name</p> <p>If lengthy, consider subsections (e.g., peer-reviewed (or refereed) and non-peer-reviewed publications, abstracts, monographs, books edited, books/book chapters written, other editorial activities (e.g., editorial board membership, newsletter editor), and other media (educational CD-ROMs and videos)</p> <p>Don't forget about local or institutional newsletter articles (e.g., hospital newsletter)</p>
Teaching activity (or experience)	<p>Include instructional method/title, course number and name, audience, college or university, and dates</p>
Research (or research projects)	<p>Project name, names of the director and colleagues, institution, address, dates, source and amount of any funding received, and your role in the project</p> <p>May include research in progress</p>
Special projects	<p>Describe activities that are not adequately captured in other headings (e.g., podcast invites)</p>
Professional activities	<p>Organization name, offices held, and dates</p> <p>May wish to include any journal review/editorial board activities in this section</p>
Honors and awards	<p>Title of award, organization conferred by, and date</p> <p>Consider including any special scholarships</p> <p>Include explanation, if necessary</p> <p>Honors/awards received before college should not be included, unless truly outstanding</p>



**Table 9.1** (continued)

Community service	Does not have to be healthcare related Include the organization or group supported, your role, city and state, and dates Community or lay presentations (formatted as in presentation section) Media interviews (formatted as in presentation section)
Special skills or expertise	Computer skills, language skills, or research techniques
References	If you don't have references, don't list this section; never list the phrase "available upon request" Can be on a separate page with reference contact information Always ask permission of your references Provide all contact information for each reference Make it easy for your references to provide information about you. Give them a folder or email them an organized document with your CV, personal statement, and any other relevant information. Make sure they know what program you are applying to – you don't want them to say you'd make an excellent dentist when you want to be a pharmacist!

your peer-reviewed publication section. Moreover, if you have special certification in a specific field or skill set, it may be advantageous to place that section in the beginning of the CV to show your uniqueness. See Table 9.1: Common Sections for CV.

Formatting the CV is one of the most important considerations as you want the reader to enjoy reading your CV. Ideally, the format should be aesthetically pleasing and intellectually exciting. Use a font that is easy to read but also stands out, such as Times New Roman, Arial, Calibri, or Garamond. Keep the colors, font size, headings consistent so that it's easy on the eyes. Make sure there is enough blank space or white space for the eyes to rest by effectively using margins and space between the text. Strategize on font size (14–16 pt for section titles, 11–12 pt for normal text) and when to bold, underline, or differentiate in all caps. Often, dates are placed across the right-hand side of the page with experiences on the left-hand side. Lastly, avoid splitting sections across a page break.

Do not underestimate or undervalue your work. Be specific and diligent in gathering and documenting all activities that fit under each section. This is your time to “brag about yourself” and show-off all your hard work. Be sure to use appropriate action-oriented verbs when describing your experiences and skills attained. Also, remember that quality will always trump quantity. For example, under the “Community Service” subsection of a CV it states “volunteered with a pathway program for elementary school students.” This could be revised to state, “Directed 2-hour workshop for pathway program for 20 underrepresented students in 5th grade.” The inclusion of an action-oriented verb “directed” and the quantification of the work that you completed (number of hours, number of students) provides a better picture of the work you have done. Let's try another example:

## Professional Experience

McGovern Medical School

May 2020–January 2022

Contact Tracer for COVID-19

- Notified, interviewed, and advised close contacts to patients with confirmed COVID-19

Examples of stronger revisions:

- (a) Interviewed 55 close contacts with patients with positive COVID-19 exam
- (b) Executed notification and interviews of 55 contacts of patients confirmed with COVID-19
- (c) Mobilized and directed unit of 10 colleagues to notify 55 close contacts of COVID-19 patients

When it comes to making yourself a competitive applicant, you will want to have a CV that has a strong foundation with a variety of experiences. After drafting your CV, have another person look at your document as if they were an interviewer. We often focus on our strengths and rationalize that these will compensate for what may be missing – but take another look and notice areas that need additional experiences. You may consider increasing your clinical exposure, engaging in community service and volunteerism, conducting educational work, gaining research experience, serving in leadership roles, but most importantly make sure to do what you are passionate about and not simply to check boxes. For example, review the personal story (at the beginning of the chapter) of Dr. McCleary-Gaddy. Her extracurricular activities, research activities, educational activities, and leadership roles were all in different labs and organizations but told one coherent story about her interests. Never do something with the sole motivation of “fluffing” your CV.

## Application

Learn from the personal story of Chidimma at the beginning of the chapter. It would be smart to initiate the application process at least 6 months before you plan on submitting your application. For example, an admissions cycle may have a deadline of December 1; however, the applications are received starting 6 months earlier in June. In this scenario, you should plan to apply by the end of June rather than waiting until December first. It’s important that you submit your application as early as possible to ensure your best chance at getting accepted. Toward the end of the application cycle, if the seats have filled, you may not be offered admission even though your application is competitive. It is important to beat the crowd.

You start with the submission of your primary application, sometimes followed by submission of a secondary application(s), interviews, and then you wait. An applicant to either medical school or dental school would have to know that the

MCAT takes 7.5 hours and costs \$320 while the DAT takes 4–5 hours and costs \$445.4 5 (2021) With this knowledge, it would be important for them to not only prepare early because the score report takes a month to be released, but also give themselves time to retake it if needed.

Professors also may need some time to write your recommendation letters. If you do have that six-month time period, it is important that you have a strong relationship with the person you have asked for a recommendation letter in order to get a good strong quality letter. As a result of the multiple moving parts, the application process can seem long and daunting. The biggest takeaway here is to be organized and apply early – when the application cycle begins.

Networking is also a critical component of the admission process. Simply emailing and reaching out to admissions offices or diversity offices and getting your name known is a version of networking. Attending open houses and pre-health conferences are also great opportunities to network laterally (e.g., with other students who are in the same position as you) and upwardly (e.g., admission officers, deans, and directors). Talking with professional students in your chosen field and asking for advice, as well as, reaching out to people for recommendations is also networking. Reaching out and asking questions helps you understand what you are reaching toward, how you need to prepare to be successful, and how to achieve your goals most effectively.

The following are additional tips for networking as you solidify your career goals:

1. Call professional school admissions offices and ask for help (for example, if you are interested in medicine, you might call your state school's College of Medicine Admissions Office). Most admissions offices have a list of alumni who will gladly discuss their profession with interested students; they may even offer shadowing opportunities.
2. Go to your academic advisor, they may have ideas and can point you to the right resources.
3. Go to (or call) your Career Counseling Center and ask if they have a list of alums who are willing to talk with students about their career choices.
4. Attend your school's career day or health career tabling events. Most colleges and universities host professionals and companies from around the country, and even internationally, to give students an opportunity to network and learn about career options.
5. If your school does not host a career day, look at the other schools nearby, and if they do, contact their career counseling center to see if you can have permission to attend.
6. Use your network: Ask your family and friends if they know anyone in the fields you are investigating – typically, you may find someone with a connection.
7. Cold Calls: Do some internet research, reach out to professionals in your area of interest, and ask if they would be willing to spend a little time with you discussing their profession. See sample script below.

**Sample Script:** The following is a script to start you off... adapt it to your own needs.

“Hello, my name is \_\_\_\_\_. I am a student at \_\_\_\_\_ and am working to learn more about the [career that I am interested in pursuing]. I am calling/writing today to inquire if Mr./Mrs./Dr. (be sure to use the correct title) would be open to scheduling a meeting with me. I have read many positive things about their work, and I would like to hear how they chose this field and what they have learned in their time as a (an) \_\_\_\_\_ (insert profession here). I would be glad to submit my questions ahead of time if this would help. Thank you for your time and consideration.”

It is important to prepare for this call by being as polite and professional as possible. Additionally, you will want to have your calendar out in front of you in case that the person is immediately ready to make an appointment with you. You should also be ready to take notes as you talk with the offices. You may need to jot down an address or directions or phone numbers as well as the time and date of the appointments. You do not want to get someone willing to talk and then waste their time while you look for a pencil. Also, you should have your list of questions prepared ahead of time.

A major impediment to early submission of an application is the personal statement. Ensure you have plenty of time to write your personal statement. When writing your personal statement, there are a lot of questions you are going to have to ask yourself. Why do you want to pursue that field? What makes you unique? Does your passion and individuality project to the reader? While most of your application needs to be focused on the previous questions, you may also want to use a few lines to address a weakness on your application in your personal statement. If your grades suffered one semester due to a personal struggle, you could explain this briefly so that admissions officers have a better sense of your journey.

If allowed, have others you trust give you feedback on your personal statement and review it for typographical errors. Things to remember from this resource: **DON'T BE AFRAID TO ASK FOR HELP!**

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## **Creating Habits: Documenting Current Activities Sets the Stage for a Future Faculty Appointment**

You successfully applied and matriculated to college and now you are refining your approach to be a competitive applicant to professional school (nursing, medical, pharmacy, or dental). The fundamental knowledge and skills you develop along the way can also serve you after professional school as you consider applying for a residency, fellowship, or an academic position.

It is critically important to get into the habit of regularly documenting your activities, scholarship, experiences, and honors. Documenting your experience can serve two purposes: (1) therapeutic and (2) diagnostic. Therapeutic, because it reminds

you of all the great work you've done and helps you develop a narrative. It is also diagnostic because through the assistance of others it can help inform you in which areas you are strong or weak. The more frequently you document your activities and scholarship, the more likely you will be able to speak about your experience in detail and with authenticity.

Create quality habits early on such as developing strong practices now and maintaining a quality CV; cataloguing supporting documents of activities you have been engaged in over your professional journey; storing your personal statements and recommendation letters; continuing to build your network; and constantly reflecting on your desired niche (what do you want to be known for?) The process from moving from college to graduate school, from graduate school to residency/fellowship, from residency/fellowship to faculty appointment are similar; developing strong knowledge and skills now will serve you for a lifetime. When an Assistant Professor applies to become an Associate Professor, that person must submit their updated CV to demonstrate the growth they have accomplished within the lapsed time. Your CV is your story!

An important task to help you organize your thoughts and next steps is to map your academic goals. Write down what you would like to accomplish within 5 and 10 years. Are there any circumstances or barriers that may make it more challenging to achieve your goals? Are there resources that could help you achieve your goals? Identify one to two individuals who have achieved the goals you have set and ask those people about the valuable lessons they have learned.

It will take time to develop your goals and become comfortable with planning. Have a strategic plan that you can follow and revise. When you're faced with a new initiative or project, ask yourself if it's something that is consistent with your goals. Build your support network, explore, and then dive deeper into a specific area of interest (clinical, educational or scholarly) to be recognized as a competitive individual. As you think about your goals, keep asking yourself why you want this goal and how it lines up with your strengths, characteristics, and previous work. It is important to be able to articulate your "why," as well as your goals.

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## Conclusion

The documents of your application should act as a thread, weaving the different parts to reveal one strong, coherent story about who you are personally and professionally. Throughout the years, you can sometimes forget the many activities or scholarly work you have accomplished. Thus, it is important to document everything that you do regularly for your application to reflect the most accurate portrayal of yourself. Submit your application as early as possible because "the first come, first served" motto often applies to admissions. Review submission guidelines and requirements early so your submission is tailored to each institution. Lastly, demonstrate enthusiasm, excitement, and be yourself.

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## Reflection Questions

- What are some “threads” in your journey thus far? What topics, activities, people, or offices do you routinely return to?
- Which school’s institutional mission or priorities match the things you prioritize in your life?
- Choose five qualities you possess and outline how you exercise these qualities.
- Write down what you would like to accomplish within a five-year period?
- Explain why these goals are important to you.
- Do you have strengths that will help you achieve these goals?
- Are there any circumstances or barriers that may make it more challenging to achieve your goals?
- Identify one to two individuals who have achieved the goals you have set. What questions would you ask them about the lessons they have learned?
- What would you consider to be one of your weaknesses? How has identifying this weakness made you a better person and what can you do to improve?

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# The Profile of a Competitive Applicant

# 10

Nicholas N. Brutus, Patricia Xirau-Probert,  
Claymore Kills First, and John Paul (J.P.) Sánchez

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## Personal Story: Nicholas Brutus

*Early in my academic career, I doubted my capability to earn acceptance into medical school. For me, earning acceptance into the world of medicine was not a particularly familiar idea for my family as a first-generation Afro-Caribbean American. However, I affirmed to myself that it was achievable, it was possible!*

*Being a collegiate wrestler instilled in me values such as grit, resilience, and how to be coachable. Holistically, these foundational skills allowed me to excel academically as an undergraduate student and as a professional in my workplace. It was my mentors that saw my potential and guided my ambition to success. I utilized resources such as my pre-health advisor, other pre-medical students, diversity and inclusion administrators from various medical schools, and physicians from national organizations. Organizations such as BNGAP (Building the Next*

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*Generation of Academic Physicians) helped me connect to a network of diverse students, residents, and faculty that was a source of motivation. I was able to see successful clinician-educators that looked like me. From the support of my established network, I learned to be proactive and how to benefit from critical feedback. What helped me the most in balancing a busy schedule as a full-time student-athlete and working part-time, was staying organized with a planner, keeping an updated CV, and having the materials for my medical school application ready early.*

*Throughout the pre-medical process, I realized my own self-worth which gave me the confidence to advocate for myself during my interviews. But what made me “competitive” was engaging in meaningful activities that aligned with personal interests. I embraced opportunities such as coaching at my local high school wrestling team, advocating for my peers as a leader in student government and as a Resident Assistant, speaking on the importance of education at local inner-city public schools, and working for a medical device company focused in infectious diseases disproportionately affecting people of color. Once I gained confidence in my ability to succeed, I became a more competitive applicant for medical school and gained the foundation for a future academic career.*

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### **Personal Story: Patty Probert**

*As a first-generation Cuban-American woman, I received definitive messages about how I was supposed to live my life. My Cuban community valued tradition and culture, according to Old World rules. The main message was, “A woman does not need a professional career. She will not have the time to dedicate to it once she marries and has children.”*

*The limiting messages held me back as I started college. I began as a pre-medical student, but doubting my abilities and sense of purpose, I switched to an elementary education major. By my senior year, I realized that while I loved working with children, I did not enjoy teaching in a classroom setting. During my senior year internship, I worked with a teacher who advised that I look into counseling because she could tell I gravitated towards helping students who were struggling emotionally, rather than teaching the lesson plans. Her guidance helped me better align my personal and professional interests and better plan a path to graduate school and academia.*

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### **Personal Story: Claymore Kills First**

*For my first 3 years of college I was a Physical Education major, and then my father died from gastric cancer. I immediately left school to spend time with my mother and siblings. During this time, I also found my motivation and calling – to work with patients who had cancer. I wanted to help fill the need for Native American health care providers. I knew I could support other Indigenous families through the struggles and confusion of a cancer diagnosis.*



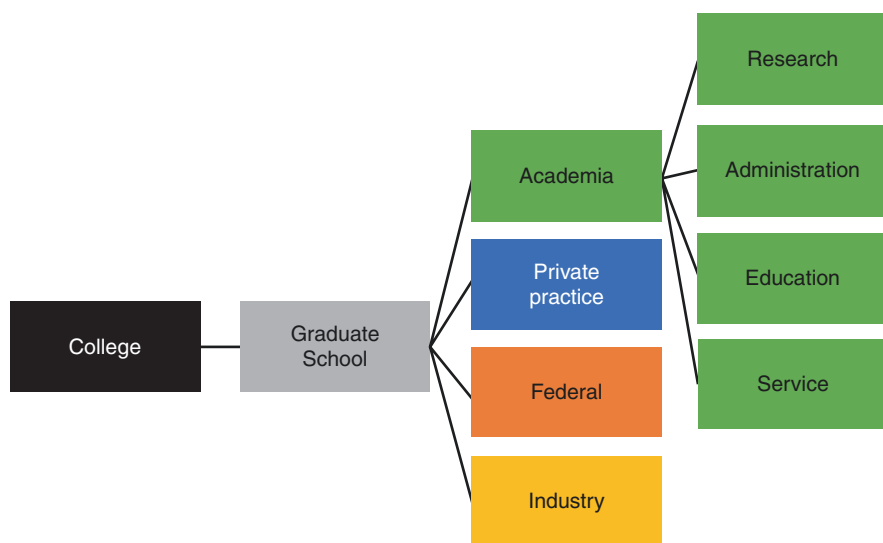
*When I returned to college, I set up a meeting with my advisor to discuss changing my major to chemistry in the hopes of pursuing a career in pharmacy. She was blunt when she said I didn't have the grades and she didn't think I could make it through the upper level chemistry courses. I never spoke to her again and went on to graduate with a BS in Chemistry. I struggled along the way, but remained determined, and started my journey that would eventually lead me to a career in academic pharmacy.*

## A Path to Academia

One of the benefits of a health professions degree is the numerous career pathways a student can choose after graduation. Upon completion of your degree, you may seek out additional training (e.g., fellowship) or employment opportunities.

Now take a moment and imagine yourself as a PharmD graduate. There are many opportunities after graduate school. You can work for a pharmaceutical industry, where you can apply your knowledge to research, discovery, and evaluation of a new developmental drug. Or, you can work in other environments such as federal or private agencies and focus on regulatory policies.

This book aims to help you consider undertaking a career at a college of pharmacy, or other health-related graduate school (e.g. Medicine, Dental, Optometry, Social Work, Nursing, etc.), and being responsible for academic research, teaching, service, clinical work, or administration. For example, if you choose to focus on service, some institutional activities you could be involved in are diversity and inclusion initiatives or admissions outreach. Figure 10.1 provides an example of a linear route towards an academic career.



**Fig. 10.1** Overview of career opportunities from college to graduate school to the career market

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## Extracurricular Activities and Professional Development

Internal and external activities to your college/post-baccalaureate program hold considerable value, when applying to graduate school and as you consider academia. Assuming a leadership position in a club or student government provides people and time management skills, emotional intelligence, and experience in leading change. If your undergraduate institution does not offer spaces of interest for you to develop these foundational skills, you can seek out comparable experiences by volunteering in a regional or national organization (e.g., National Hispanic Pharmacists Association), joining a research project (e.g., Biomonitoring of Great Lakes Populations, Agency for Toxic Substances and Disease Registry), or a public service program (e.g., American Red Cross). Also, leadership in any part-time or full-time job during college will contribute to your portfolio and will foster skills translatable to graduate school and in future academic leadership.

There is the opportunity to stay engaged with activities, programs, or topic areas (e.g., mentoring of youth) beyond college. In fact, many of the extracurricular activities that you engage in during college – service-, education-, research-related – are supported and expected within academia. Engagement in activities over an extended period of time – 2, 5, 10 years or even over an entire career period – shows commitment and dedication to a particular topic and can indicate a professional identity. Moreover, detailing your longitudinal engagement in an activity or focal area can enrich your CV, personal statement, and/or any application along your career journey.

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## Knowing the Process and the Importance of Timelines

It is imperative to understand the application process to graduate school, including the required application components and associated timelines. Some programs have “rolling admission” which means institutions accept applications on a continuing basis. Applicants who have a complete application early on will have a greater chance to be chosen than applicants whose application is complete later in the cycle. For example, to be a competitive applicant to medical or dental school, a candidate must complete prerequisite courses (e.g., biology) and standardized exams; submit letters of recommendation from professors and the Office for Pre-Health; submit a resume or CV; complete a general and secondary application; and complete mock and actual interviews.

Many students undertake these tasks while concurrently balancing other academic, professional (e.g., volunteer work), and personal (e.g., part-time work) responsibilities. To have a competitive edge not only in applying to graduate school but for a career opportunity, it is critical to understand and master the application game. Successfully applying and matriculating to graduate school provides you with foundational critical thinking, organizational and time management skills that can be applicable when applying for future positions. In fact, the process for

applying to graduate school, residency, or fellowship, or your first academic position, in some ways, are very similar. We will now explore some of these similarities.

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## **Academics: A Lifelong Activity**

Building and maintaining your knowledge and skills is part of lifelong learning. For example, as a college student, you are required to complete the necessary prerequisite courses and score competitively on your entrance exam (e.g., pre-medical students would be required to take the Medical College Admissions Test (MCAT), pre-dental students will take the Dental Admissions Test (DAT), and pre pharmacy students would take the Pharmacy College Admissions Test (PCAT)). As lifelong learners, you will be required to take examinations continually to advance in your career.

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## **The Application Process**

The application process for each stage possesses similarities as well. Letters of recommendation are required for professional school, residency programs, and when applying for faculty appointment or promotion. Remember, as a college student, you may have different requirements for obtaining a committee letter from your pre-health department and also be mindful of submission deadlines. Sometimes certain grade point averages (GPA), research experiences, and/or number of letters of recommendation are required. It is important to verify your eligibility for a committee letter as early as possible to avoid delays in having a complete application. Open communication with your pre-health advisor and planning appropriately can keep you ahead of the curve.

In addition, developing and sustaining meaningful relationships with faculty in college, faculty as a graduate student, and peer colleagues while in a faculty position, will allow them to write strong letters that better reflect your personal and professional attributes and successes.

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## **Maintain Updated CVs and Portfolios**

It is also imperative to get into the practice of updating your resume, CV, and or portfolio every other month so you do not forget important experiences. Accomplishments such as publications, abstracts, presentations, awards/recognitions, and events where you were invited to speak should be highlighted in your CV. Maintaining an updated CV will allow you to discuss your strengths and weaknesses more readily with others.

## Interviews

The next step in the process is the interview. The interview process to graduate school and for faculty appointments share similarities. Learning to interview well takes practice. It is important to utilize advising offices, mentors, or peers for mock/practice interviews. Be ready to answer questions such as “Why have you decided to pursue this career path?”, “What makes you a good applicant to our program?”, and “What are your greatest strengths and weaknesses?” The interview allows admissions committees to connect an application to a person. Most importantly, remember to be yourself. Do not answer questions based on what you think the interviewer would want to hear, answer genuinely. After the interview, be sure to send your interviewer a thank you letter. If you have a strong desire to attend one specific program you can follow the thank you correspondence with a letter of intent.

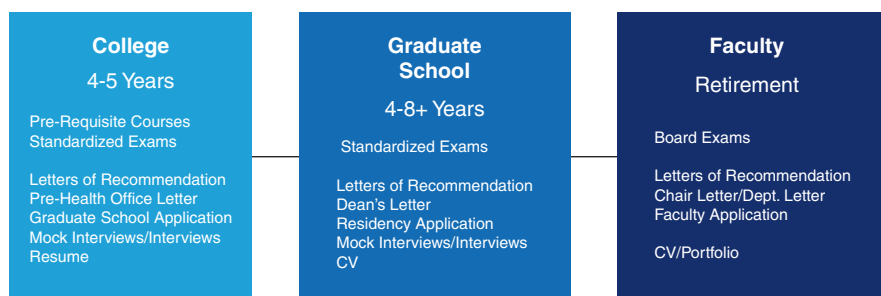
## Admissions Decisions

Lastly, a rejection does not speak to your ability to succeed. There are several uncontrollable factors that go into deciding who is accepted (e.g., institution’s class size, number of applicants, etc). This speaks to the importance of applying early in the cycle when your application can be evaluated in a smaller application pool (Fig. 10.2).

## Not All Paths Are Linear

The reality is that the path for many students is not always direct and many students do not apply to start graduate school immediately after college. Along the way, students may be inclined to pursue another degree or take a year off. One best recommendation is to “run your own race.”

As a pre-health student, you may feel the need to compare yourself to others leading to frustration or feeling rushed. However, if you always have your end goal



**Fig. 10.2** Timeline

in mind and you possess the necessary determination, you will reach your goal. Keeping this in mind, you should plan to apply to graduate school when you can prepare a strong application. Remember, your application reflects you, so present your best self to admissions and selection committees.

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## What Does It Mean to Be Competitive?

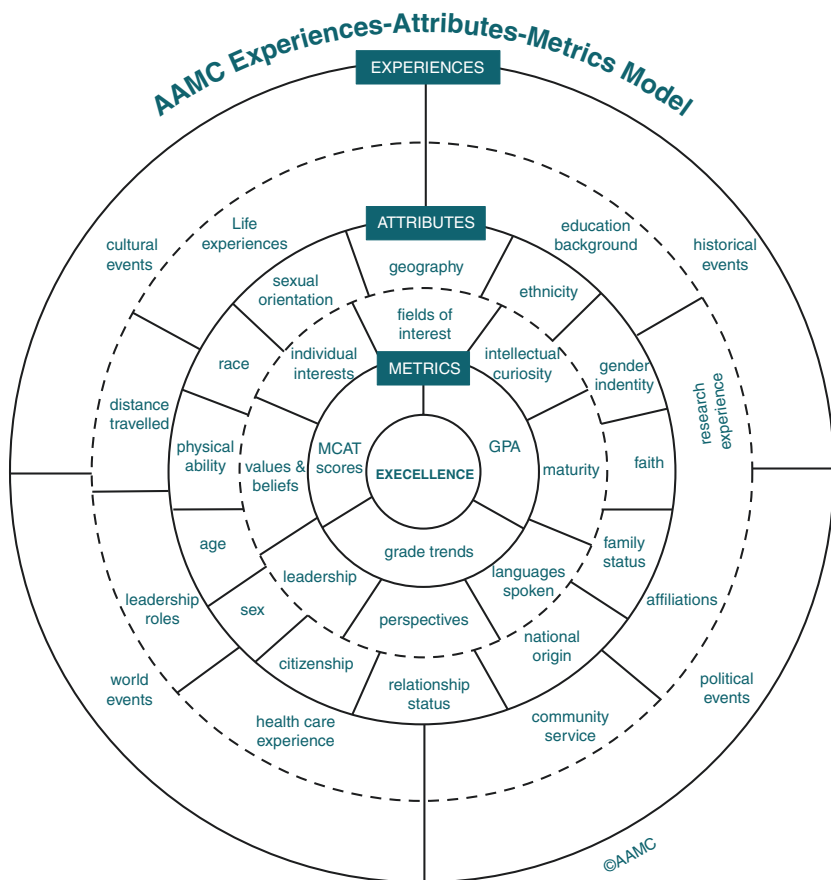
You will be asked to be competitive throughout your educational and professional journey. A common misunderstanding among many pre-health students is that your academic metrics will solely earn you acceptance into graduate school. With this, you see many college students focus heavily on maintaining the “perfect” 4.0 grade point average and aim for the highest possible standardized admissions test score. While some students may achieve this goal, graduate school admission committees follow a more holistic review process that evaluates applicant’s metrics, lived experiences, and personal attributes that will allow them to succeed as a graduate student and as a future healthcare professional. Holistic review, as defined by the Association of American Medical Colleges (AAMC), is “mission-aligned admissions or selection processes that take into consideration applicants’ experiences, attributes, and academic metrics as well as the value an applicant would contribute to learning, practice, and teaching” [1].

As mentioned previously, when you sit down for your professional interviews, the most important points to convey are (1) that you know yourself, (2) that you can elaborate and connect your experiences, and (3) that you know WHY you have chosen your career [1]. These points must intersect. Your interviewers need to come away knowing that you are self-aware enough to know why you are a good fit for your chosen career. This includes being able to articulate what comes easy for you and also what challenges you.

You will need to advocate for yourself and show the interviewers that you have the ability to reflect on what you learned from your experiences. It takes practice, but self-advocacy and evidence of self-awareness is essential. One exercise to help you come to the interview prepared is to develop an elevator pitch. This is a 2 minute description on your “why”, why do you want to be a healthcare professional, why is this career a good fit for you, and why are you a good fit for it? The elevator pitch is an excellent way to practice professionalism and concise communication, which will help during interviews for graduate school and beyond (Fig. 10.3).

Keep in mind, the holistic review process is an individualized way for schools to consider an applicant’s capabilities. Factors such as your academic metrics, personal attributes, and experiences are considered in combinations with how you will contribute value as a health professional graduate or health professional. The use of the holistic review process has increased in recent years and is the standard in most health professions.

The underlying concept of the holistic review is to ensure that students are seen as more than a number. Your lived experiences, unique personality, and talents are what make you stand out and is what will open doors for opportunity. Show



**Fig. 10.3** AAMC Experiences-Attributes-Metrics Model

admissions committees your skill sets and interests through the experiences you choose to partake in. You may be involved in research, teaching, and or community service. These experiences provide foundational skills that later in your career can translate into scholarship and possibly lead to regional or national recognition. Working or volunteering as a teaching assistant, tutor, or directing a course or a workshop are examples of educational experiences to engage in as a college student. If you are interested in research, working under a principle investigator (PI) as a data collector or co-PI on a research project will help you familiarize yourself with the nature of research and even allow you to learn the process of writing grant proposals or peer-reviewed publications. Service experiences can include oversight of diversity initiatives, leading pipeline programs, event planning or working with underserved children as a camp counselor. Be sure to continually seek experiences that align with your interests. This will aid you in choosing your next step for future stages of your academic journey.

## Documentation

As mentioned before, a crucial habit to develop now as a college student is to frequently document your activities and scholarship. A good strategy is to update your documents every other month. Keeping updated documents will not only keep you organized and on top of your work, but it can also be therapeutic and diagnostic. It will remind you of all the great work you have accomplished and help structure your narrative. This document can also be used, through the assistance of a mentor, to identify areas of strength and weakness. After each experience, be sure to keep a journal log of what you learned, what you saw, how you felt, and importantly, how it aligns with your personal and professional interests. Critical reflection on your experiences will inform you on which experiences were the most meaningful and impactful for your personal and professional development. Meaningful experiences will help inform your career interests, which will ultimately guide your career trajectory. Additionally, reviewing your journal log notes before your interviews will remind you of the moments when you felt most engaged and what you thought at the time; this kind of rich reflection can set you apart in the interview.

Your documentations will evolve over the journey of your academic and professional career. As a college student, your experience might be limited to one page in the form of a resume and an activity log/journal. In graduate school, as you engage in more opportunities for scholarship, publications, presentations, and service work, you can structure your work into a multiple page CV. As a faculty professional, along with an updated CV, you will include a portfolio which will include examples of your work (Fig. 10.4).



Fig. 10.4 Documentation

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## Institutional Resources

Institutional resources are there to help you with your personal and professional development. For each stage of your academic journey, administrative offices exist to set students up for success by offering guidance, advising, and mentorship. Offices for pre-health students are available to you as soon as you enroll in college. Similar offices exist during graduate school and even when you are faculty. In the rare situation where your college does not have a formal pre-health office, graduate school admissions offices or external organizations can fill the gap.

There is always support if you seek it. In fact, even if your college has pre-health advising, we encourage you to reach out to the admissions offices of the profession you are interested in pursuing. Most professional schools have a robust list of resources and activities to help pre-health students be successful applicants. As you progress towards a career in academia, you will find recruitment efforts to attract trainees and faculty into specific programs.

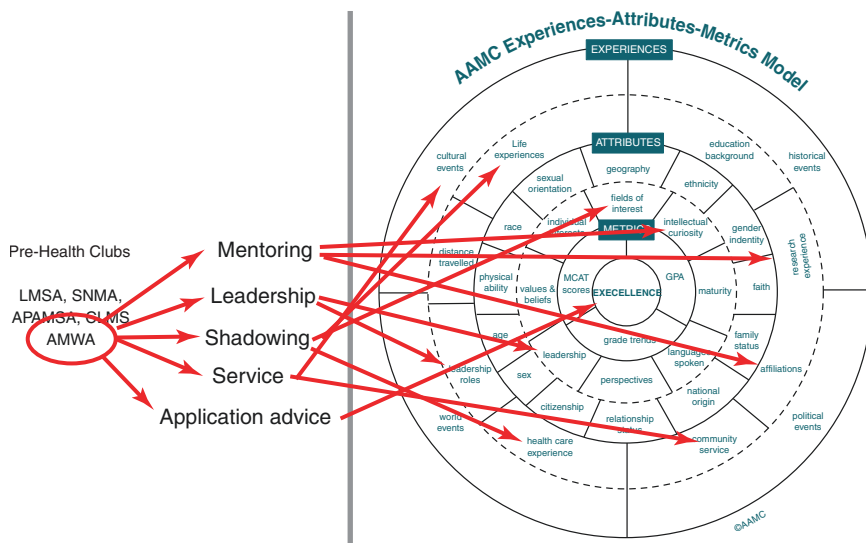
Similarly, just as advising services are available to support you, you can become an advisor, mentor, or champion for someone in the educational journey behind you. For example, after scoring well on your graduate school admissions exam, you can mentor others and prepare them for the same exam by sharing your strategies, techniques, and materials. Also, you may seek opportunities at your college to give tours, be involved in the high school to college admissions process, or become a student advisor.

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## External Resources

Many national organizations exist to connect like-minded students to a shared initiative. These external resources will help you with your personal and professional development. Being a part of a national organization that aligns with your identity, beliefs, and/or future aspirations, will help you stay accountable and broaden your network to others with similar passions. Strong networks are important as they can expand your access to professional opportunities, academic tutoring, and/or career advising. Figure 10.5 shows the connection of external resources to key benefits that will contribute to the development of your experiences, attributes, and academic metrics. The Student National Medical Association or SNMA [2] is an example of a national medical organization that connects underrepresented minority medical students and addresses the needs of underserved communities. Another example, among many, is the American Medical Women's Association which promotes the advancement of women in medicine and advocate for gender equity [3]. American Indian and Alaskan Native Students can find community with the Indians Into Medicine Program (INMED), which supports the enrollment of American Indians and Alaskan Natives into colleges and universities to pursue careers as health professionals [4]. A pre-dental student will want to view the prospective student section of the American Dental Education Association (ADEA) website; <https://www.adea.org/GoDental/>, where they can get information on the dental profession, the application process, a school by school comparison, the dental school curriculum and much more [5].





**Fig. 10.5** External Resources connecting to AAMC Experiences-Attributes-Metrics Model [1]

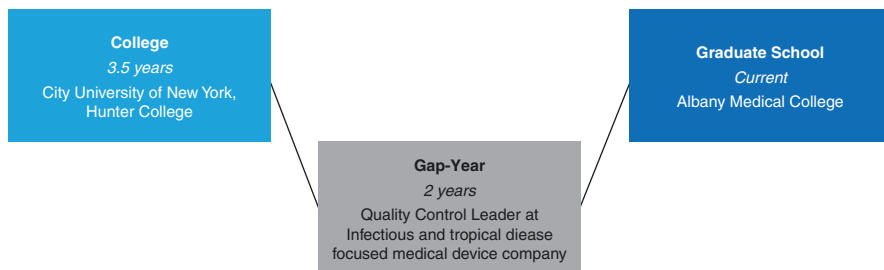
Applying these best practices to succeed in graduate school admissions has helped us fulfill our path and laid the framework to also prepare for faculty appointment processes.

### Personal Story Continued: Nicholas Brutus

*I can attribute my success to my mentors who have guided me throughout my journey. What made me a successful medical school applicant was confidence in my own ability to advocate for myself, my persistence in staying on top of my documentation, reaching out to admissions offices to advocate for myself, applying early, and the ability to elaborate on my experiences that showed my passion for medicine. Truthfully, it was not easy, but having mentors to reveal common “potholes” and to guide my journey made the greatest difference.*

*When I did poorly on my first MCAT attempt, I felt lost. I was heartbroken, but I never questioned my end goal of becoming a physician. I realized, by speaking with my mentors, that to conquer the test, I needed to change my study habits and allocate more of my focus on the exam. I was determined to only apply when I knew I was ready. This prompted me to take two gap years before entering medical school so I could properly study, engage in more meaningful experiences, and be more financially situated before entering medical school. I learned it was okay to pave your own journey. Every failure was a means to grow and to “fall forward”. This phrase used by Denzel Washington, helped me to be strategic in failure and to take something away from every opportunity regardless of the outcome.*

*Although I had to work full-time while preparing for my MCAT and completing my applications, I was able to score competitively on my second attempt and*



**Fig. 10.6** Nicholas Brutus' Journey

*ultimately earned acceptance into multiple medical schools with multiple scholarship offers. Reflecting on my experiences, keeping updated documents, building strong relationships with my mentors, and knowing when to ask for help is what built my strong foundation to become a successful applicant and for my future career in academic medicine (Fig. 10.6).*

## Personal Story Continued: Patty Probert

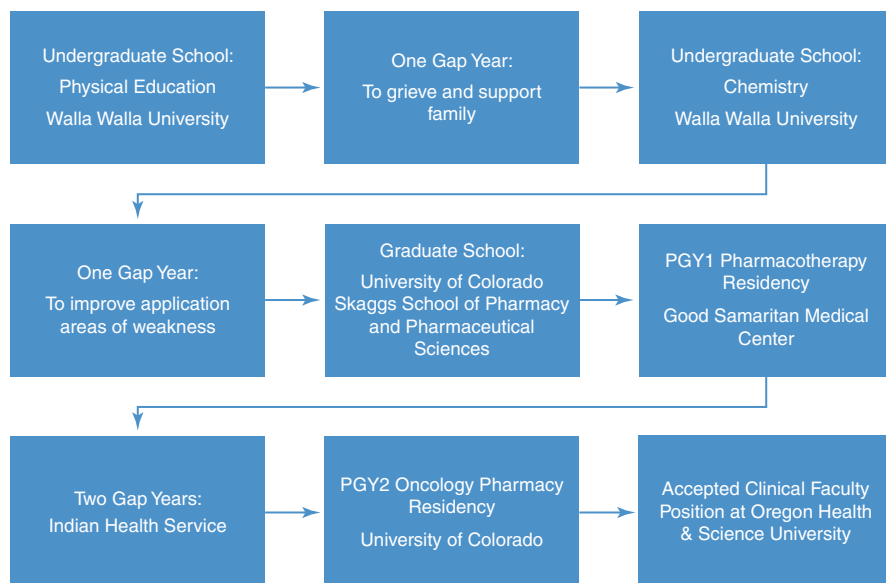
*Two years working with refugees taught me that I am someone who empowers, teaches, and connects deeply with others, and that I am at my best when I am helping others fulfill their potential. This knowledge led me to graduate school to become a mental health counselor. While in graduate school, I interned at the local Crisis Center. There, I was able to work with people who brought in their deepest struggles: thoughts of suicide, anger, loneliness, depression, hopelessness, abusive relationships, and so much more. With every client, I learned more about myself and craved a broader impact than working with one person at a time. This desire pushed me to pursue a doctoral degree, imagining that one day I would become the director of the Crisis Center.*

*Fast forward 25 years, in my current role, I now serve as an Assistant Dean of Student Advocacy and Inclusion and as a Clinical Professor. Countless pre-health students have asked me if applying to professional school a year after the “traditional” timeline will count against them. Reflecting on how powerful my own gap years were in defining the course of my future, the time away from schooling allowed me to pursue experiences aligned with my passion for teaching and enabled me to build an academic foundation which helped me successfully matriculate into graduate school and to a faculty appointment. The meaningful experiences that I took pride in made me competitive for not only graduate admissions but to my eventual faculty appointment and promotion. I continue to have mentors who have seen my own potential, and who kept pushing me past where I perceived my own limits to be.*

*And so I always tell my students, I believe admissions/selection committees are looking for applicants who are proactive, organized, and know themselves well enough to know why their chosen career path fits who they are.*

## Personal Story Continued: Claymore Kills First

*My advisor was right, I didn't have the grades! Although I did well in my chemistry courses, the 3 years I spent with below average grades as a PE major weighed me down. My GPA was not competitive. A mentor told me to look at my application and find weaknesses and strengthen them. So to help improve my application, I focused on the areas I could change. I took a year off after graduating and dedicated that time to studying for the PCAT, shadowing practicing pharmacists, seeking more research opportunities in the chemistry department, and revising my admission essay. What I learned about myself in preparing to become a competitive applicant for pharmacy school – self-determination, building academic and research skills,*



**Fig. 10.7** Claymore Kills First Journey

*strengthening my application – has continued to serve me, especially as I have pursued an academic career.*

*Everyone takes a different journey into academia. Just because your path isn't a straight line does not make it the wrong path. Sometimes we have detours or we have to stop all together. But it is never too late to get back on the path. It is never too late to make necessary changes to achieve your goals (Fig. 10.7).*

## Summary

In being a competitive applicant and pursuing a future career in academia, it is important to realize that you can build a strong foundation, now as a college student, to be successful. Building strong networks from institutional and external resources, engaging in meaningful scholarship opportunities, keeping updated documents that reflect your experiences, being honest about your strengths and weaknesses, and planning your journey are all components that will enable you to succeed. Remember, when it is time for someone to evaluate you for admission to a professional school or a faculty position, your attributes, experiences, and metrics will tell your story of what makes you stand out.

*In conclusion, as you work towards being a competitive applicant, reflect on the following questions:*

1. What information have I taken away from this chapter that will make me a stronger applicant to graduate school and beyond?
2. What skills can I build now to allow me to succeed in graduate school and in a future career of academic medicine?
3. Have I identified and built relationships with advisors and mentors that know and support me?
4. Am I engaging in and documenting opportunities that show my personal and professional interests?

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