**Success in Academic Surgery**
*Series Editors:* Lillian Kao · Herbert Chen

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Colin A. Martin *Editors*

# Diversity, Equity and Inclusion

Springer

# Success in Academic Surgery

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All of the intended volume editors are highly successful academic surgeons with expertise in the respective fields of basic science, clinical trials, health services research, and surgical education research. They are all also leaders within the Association for Academic Surgery (AAS). The previous AAS book, Success in Academic Surgery: Part I provided an overview with regards to the different types of surgical research, beginning one's academic career, and balancing work and life commitments. The aims and scopes of this series of books will be to provide specifics with regards to becoming successful academic surgeons with focuses on the different types of research and academic careers (basic science, clinical trials, health services research, and surgical education). These books will provide information beyond that in the introductory book and even beyond that provided in the Fall and International Courses. The target audience would be medical students, surgical residents, and young surgical faculty. We would promote bulk sales at the Association for Academic Surgery (AAS) Fall Courses (www.aasurg.org) which take place prior to the American College of Surgeons meeting in October, as well as the AAS International Courses which take place year-round in Australasia, Colombia, West Africa, and France. Courses are also planned for India, Italy, and Germany and potentially in the United Kingdom and Saudi Arabia. As the AAS expands the course into other parts of the world, there is a greater need for an accompanying series of textbooks. The AAS has already received requests for translation of the book into Italian. These books would be closely linked with the course content and be sold as part of the registration. In 2011, there were 270 participants in the Fall Courses. In addition, we would anticipate several hundred participants combined per year at all of the international courses.

More information about this series at http://www.springer.com/series/11216

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# Contents

# Introduction

It is our pleasure to introduce the latest edition to the Success in Academic Surgery Series on *Diversity, Equity and Inclusion*. We are fortunate and excited to share with you a collection of chapters from experts in this space. Each chapter includes a thorough review of current literature on selected topics as well as anecdotal stories and scenarios that illustrate critical points. Most importantly, the authors have included tangible action items at the end of each chapter. This book is intended for students, residents, faculty, and staff of all levels and is meant to provide guidance, start meaningful dialogues, and help one recognize the need for personal and departmental growth around areas of diversity, equity and inclusion (DEI). The timing of this book could not be more appropriate. Many sectors, including academic surgery, have historically done poorly in creating and sustaining a diverse and culturally competent workforce. The lack of diversity is striking in regard to race, gender, and sexual identity. Several chapters in this book address this topic in a meaningful way. Beyond race and gender, there are also several ways in which one's differences within academic surgery may lead to isolation and missed opportunities. We hope that after reading this book, one will gain a better understanding of DEI issues, and they will be viewed as required surgical competency and tool to drive excellence in surgical care.

# Chapter 1
# Best Practices in Recruitment


**Ana C. De Roo and Erika A. Newman**

## 1.1 Introduction and Background

*A candidate for a surgical oncologist position is asked about her family responsibilities. The search committee discusses concerns that the candidate won't be able to write a faculty developmental grant in the departmental timeline with three children at home and a working spouse.*

What component of the discussion may lead to increased implicit bias during the hiring process?
What are structural changes in recruitment that may prevent this in the future?
How can a conscientious recruitment committee derail this bias and focus back on the candidate's potential and qualifications?

*A faculty search has been going on for 6 months, one URM candidate and one woman have been identified. The department is committed to interviewing diverse candidates but can't seem to find any qualified recruits.*

What are suggested efforts to expand the search?
What are the components of a diverse candidate pool?

*The surgical team in the OR is having a difficult time adjusting to a new surgeon's way of preparing the patient for procedures. They describe her as "bossy" and "pushy". They have started to complain to the division chief. The new surgeon tells her division chief that she is being treated poorly in the OR by the nursing staff.*

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How might the division chief address the concerns in an open and inclusive manner? What factors may be contributing to negative interactions and reporting?

## 1.2 Background

In academic surgery, maintaining diverse teams of faculty is a critical component to achieving the clinical, research, and educational missions of US medical schools and is a significant priority of the Association of American Medical Colleges (AAMC). In order to do so successfully, intentional and inclusive faculty recruitment practices are critical for department leaders and search committees. Such processes are complex and require thoughtful implementation as best practices have not been universally established. Leadership that embraces and cultivates an open culture for all individuals to thrive is the cornerstone of success in recruiting diverse faculty and building excellent candidate pools. Most institutions have aligned diversity, equity and inclusion as components of the core mission with value as high as grant attainment, publications, teaching, revenue, and clinical excellence. Recruitment shapes major aspects of the academic culture and the success of a department relies heavily upon successful hiring processes. Organizations with leaders that can effectively recruit and retain a diverse workforce gain broad competitive advantages that reach far beyond demographics.

Recruiting in academic medicine is a time, labor, and resource intensive endeavor. In a national survey of chairs of Departments of Medicine, Marsh and Chod found that academic leadership position searches commonly require 7–12 months, though occasionally can require over 24 months before conclusion [1]. Of the surveyed chairs, they spent between 5 and 20% of their time on recruitment, which does not account for the additional time required of the search committee and administrative staff that support faculty searches [1]. Filling an academic position also requires a capital investment: in 2001, national searches cost approximately $63,000, and approximately $85,000 in inflation-adjusted 2017 dollars [1–3].

Beyond time, labor, and resource utilization of recruiting, the mission of recruiting has transformed in recent years. Increasingly, academic medical centers have committed to recruiting and retaining a diverse workforce, in terms of gender, race, ethnicity, background, and cognitive repertoires. This has moved beyond dedication to the social mission of medicine to a greater understanding of the structural factors and performance benefits associated with diversity in academic medicine. Findings from the business world also highlight benefits of a diverse team: both in financial and innovation measures. In a multinational study of large companies, those with higher gender diversity (near 50% male/female managerial mix) outperformed those with minimal gender diversity (about 5% female managers) [4].

While we know that diverse teams perform better and diverse companies achieve greater financial success, diversity in academic medicine is lagging [4, 5]. Medical student makeup has changed minimally in recent years: women comprised 47% of medical school matriculants from 2009–2011 as compared to 46% in 1999–2001

[6]. Black, Latinx, and Native American matriculants increased from 14% of matriculants in 1999–2001 to 16% in 2009–2011. In academic medicine, women represent only 21% of full professors and 15% of department chairs [7]. The numbers are even worse in academic surgery: women represent just 13% of full professors and account for only 21 current chairs of surgery [8].

One contributor to this lack of progress at the faculty level is identified by Marsh and Clod in their survey of Department of Medicine Chairs: there are not enough female and/or under-represented in medicine candidates in final leadership candidate pools. While many searches achieved acceptable diversity in the eyes of survey respondents, this diversity did not translate to the final ledger of candidates.

Support from leadership is crucial in order to have a successful, sustainable recruitment practice that reaches diverse individuals, includes and integrates diverse individuals into surgery departments, and retains these individuals. The institution and leadership team must be committed to changing processes, but also to providing the resources necessary to achieve the goal of a diverse and equitable hiring process. This requires additional effort and resources in the identification of diverse candidates, standardization of interview processes that decrease the influences of implicit bias, and efforts to integrate the desired candidate into the broader academic community.

The first challenge in diverse and equitable recruiting is that bias pervades daily life. In this chapter, we will identify major types of bias and present mitigating actions. Next, developing an adequately diverse applicant pool requires broad reach and network expansion. We have collated best practices from a variety of University hiring manuals. Third, evaluation of candidates must aim to be objective, standardized, and fair. We present schema for the interview process and selection committees. Finally, diverse candidates are often disadvantaged in negotiation. We highlight actions to ensure fairer hiring processes once a final candidate has been identified.

## 1.3 Bias: A Challenge for Diverse and Equitable Recruitment

First, it is important for individuals involved in recruitment and hiring to acknowledge that "no one is pre-loaded with inclusive behavior." [9] Overcoming inherent preferences and biases is a key step in diverse and inclusive recruitment. It is critical to acknowledge and avoid overt biasing factors that may lead to differential achievement and disproportionate access to resources and mentorship. Next, subtler bias can be uncovered through deep personal understanding and acknowledgement of sources of bias [10]. Everyone has unconscious, or implicit bias, because this is a neural shortcut in categorizing complex information. Implicit bias has been identified in education, criminal justice, employment, and healthcare. We know that implicit bias affects our patients and contributes to health inequities and can also affect recruitment. A landmark study found discrimination in resume screening: resumes with white-sounding names received 50% more callbacks than African-American-sounding names [11]. The ability of department chairs and search

committees to decrease the influences of biases such as these requires awareness and willingness to continually learn. Common biases in academic hiring include [12]:

1. Implicit Bias: Unconscious bias influences how we assess, make assumptions, and stereotype others based on social and identity characteristics.
   Examples of how to mitigate:
   (a) Implicit Association Test (IAT): https://implicit.harvard.edu/implicit to identify personal biases in order to be aware of them—understanding existence of personal bias is the first step to addressing this.
   (b) Resources from the AAMC: (https://store.aamc.org/downloadable/download/sample/sample_id/168/)
   (c) Institutional resources and ongoing training in implicit bias
   (d) Peer to peer open discussions and broad accountability
   (e) Self-reflection and awareness
2. Affinity Bias: One particularly relevant subset of implicit bias—we rate more positively people who are similar to us in background, experience, appearance, or interests. Conversely, affinity bias leads to more negative assessments for candidates with differing backgrounds. Affinity bias can be euphemized as "good fit" or "bad fit".
   Examples of how to mitigate:
   (a) Identify additional triggers of affinity bias: academic pedigree, non-traditional career path or academic interests
   (b) Read and learn about workplace experiences of women and underrepresented minority groups
   (c) Develop programs that enhance cultural awareness and cultural competence
3. "Known Quantity" Bias: Internal candidates can be advantaged or disadvantaged in the recruitment process. Frequently, information about these candidates that may not be readily apparent from standard application materials is known or shared by members of the selection committee or received from colleagues. Elements of all other forms of bias may also be evident and increased.
   Examples of how to mitigate:
   (a) Open discussion of fairness and confidentiality for internal candidates
   (b) Work to decrease any subjective comments or discussions and stick to the objective data in the application materials
   (c) Avoid hear-say details
   (d) Adhere to standards that evaluate the applicant during the interview process only, and not on subjective elements of reputation
4. Evaluation Bias: Compared to the dominant group (typically white males), minority groups (women, underrepresented minorities) receive less favorable evaluation for similar accomplishments.

Examples of how to mitigate:

(a) Interviewing more than one woman and/or underrepresented minority candidate has been shown to result in open and fair evaluations. Gender and racial/ethnic background becomes less prominent with an increasingly diverse applicant pool.

5. "Early Bird" bias: ascribing higher value to applications that arrive early in the recruitment process.
   Examples of how to mitigate:

   (a) Waiting to read applications until a set deadline, or rearrange applications in an order other than that of arrival

After acknowledging that bias exists and influences the hiring process, recruitment committee members should challenge themselves and each other: where could bias influence this decision? [9] One suggestion is "flip it to test it", from a TEDx talk by Kristen Pressner, a Fortune 500 executive. She recommends reframing a reaction to a candidate by "flipping" them to someone of a different background. For example, if a Black female applicant is excited about a topic, she may be labeled "angry", but a white female applicant may simply be "passionate".

## 1.4 Initiating Recruitment

Traditional faculty recruitment was based on personal connections, trusted academic networks, and referrals. This has also typically been focused on choosing the most traditionally accomplished candidate without consideration of leadership potential or on diverse talent or abilities. We now recognize that cognitive diversity, leadership potential, and diversity of abilities and experiences are integral to success in academic medicine. In order to accomplish the goals of diverse and inclusive hiring, reaching potential candidates through casting a broad net is paramount. It is also important to consider faculty qualities and abilities that would add cognitive diversity to the teams in which an individual would work.

### *1.4.1 Clear Position Requirements*

The first priority is to clearly communicate the role and the requirements thereof [13]. Prior to advertising the position, communicate clearly and build consensus with the stakeholders about key job requirements, selection and evaluation criteria [13, 14]. Understanding and building clear priorities about the role, career path, and balancing departmental needs will allow for a more smooth and transparent recruitment process.

### 1.4.2 Communicating Institutional Commitments

In addition, when recruiting diverse candidates, it is beneficial to clearly communicate the cultural priorities of the institution. For example, from the University of Michigan Recruitment Handbook: "The college is especially interested in qualified candidates who can contribute, through their research, teaching, and/or service, to the diversity and excellence of the academic community." Particularly when recruiting high-level academic positions, including an inclusive statement such as "The University is responsive to the needs of dual career couples" may be inviting and also highlight the commitment to overcome one of the barriers identified by Marsh and Chod: the challenge of candidate/family relocation. In addition, communicating institutional commitment to mentorship may be attractive to applicants who frequently do not receive similar levels of support.

### 1.4.3 Posting the Position and Identifying the Pool

Diverse and equitable hiring begins with systematic and fair communication of the open position. Broad advertisement through scholarly publications, institutional websites, and social media is a first step. Targeted outreach to underrepresented groups can begin through academic societies, for example the Society for Black Academic Surgeons (SBAS), the Latino Surgical Society (LSS), the National Hispanic Medical Association (NHMA), the National Medical Association (NMA), and the Association of Women Surgeons (AWS), or targeted audiences. Personal contact at conferences may be another way to invite candidates to apply. Additionally, consider targeted outreach to solicit recommendations for women and underrepresented candidates. Finally, consider hiring as a continuous process: maintain networks [12, 14] for future searches and to identify those who may know the best external candidates.

Institutional commitment to a diverse pool of candidates can also help expand the search. While Marsh and Chod identified that about 70% of searches generated a diverse pool of candidates, this diversity did not translate to the finalist pools. Prematurely closing a search before institutional commitment to diversity is met will prevent achievement of this important goal. Assessing additional recruitment areas may help broaden the pool of finalists. Additionally, if this is a chronic challenge at an institution, using University-wide resources to understand why diverse candidates choose not to accept offers may identify addressable barriers. Many organizations have recently utilized recruitment standards such as the NFL's "Rooney Rule" to assure a diverse candidate pool. In 2003, the NFL implemented the rule to address problems of inclusive hiring and lack of diversity. The rule requires teams to interview at least one underrepresented minority candidate for all head coaching and front office positions. Many organizations have adopted the rule and have had overall positive and sustainable effects on diversity and inclusion.

Implementation of practices such as these will not lower standards but will find new sources of talent that may have been previously overlooked or excluded.

## 1.5 Interview Guidelines

A multifaceted approach to recruiting excellent faculty includes a meaningful interview process. There are many components of the interview that can increase success in recruiting diverse candidates and can lower bias. Conversely, a poorly executed interview experience can disadvantage an excellent candidate or shed a poor light on the institution. Interviews are best conducted in a group setting, where diverse perspectives are engaged and allowed to contribute to an objective evaluation. Factors to consider when assembling the recruitment or search committee include individuals who are diverse in gender, race and ethnicity, education and training, subspecialty, and rank. Other factors to consider include if they have worked on projects related to diversity, equity and inclusion and experience advocating for students, trainees, or other candidates of diverse backgrounds and experiences. Each committee member needs to be able to understand and find value in equity, inclusion, and diversity concepts. It is important that search committee members are self-aware, in terms of understanding their own culture, identity, biases, prejudices, power, privilege, and stereotypes.

The most fair and well-described group interview format utilizes relevant attribute-based questions that are streamlined to the job description and hiring criteria. Questions are also chosen to provide insight into a candidate's values that may or may not align with departmental culture and goals. Interview questions should allow objective assessment of critical behaviors and cover comprehensive topics like clinical judgement, research practices, teaching style, and views on diversity, equity and inclusion.

Example criteria and questions:

- Research related question: Describe your most recent accomplishment that you thought was innovative. (Articulates positive or negative outcome, articulates connection to overall purpose or career goals)
- Team player question: Describe a time when you were a part of a great team. What role did you play?
- Diversity, equity and inclusion: Give an example of how you have contributed to a diverse workplace environment. What do you see as the fundamental characteristics of organizations that create an inclusive environment? Please share an example that demonstrates your respect for people and their differences; and how you've worked to understand perspectives of others.

It is important to also consider questions or inquiries that may be inappropriate to ask during a formal interview process and prepare interviewers to avoid such questions. Though these may have good intentions, they can be offensive or disruptive to candidates and negatively impact the recruitment process. In order to avoid

this, it is best to utilize a small team of trained, high caliber, motivated interviewers or a search committees [14].

Examples of questions to avoid [13]:

- Questions about age, date of birth or birth certificates citizenship status or birth place
- Inquiries about marital status and children or childcare plans
- Comments about skin tone or complexion
- Inquiries about gender identity or sexual orientation
- Inquiries about religious preferences

Once the interview is complete, setting criteria and objective measures of evaluation will allow all candidates a fair opportunity in the recruitment and hiring process. Evaluation should center only on assessment of skills for effective clinical and research performance, and also on how the candidate's goals align with institutional values and goals. Critical care must be taken during this phase to decrease emergence of biases and avoid subjective details. The candidate's potential should also be discussed, rather than general feedback. Personal characteristics should be avoided. Recommenders of applicants may hold biases; therefore, letters of recommendation should be utilized with caution.

## 1.6 Negotiation Practices

The manner in which an offer is negotiated can have tremendous impact on the hiring outcome and candidate's career trajectory. The most important aspect is that the candidate and the University are open and honest about the circumstances of the hiring procedures and resources available. University leaders and chairs that provide clear details about the job specifics, mentoring opportunities, developmental plans, and availability of resources is critical for successful hiring and retention long-term. It is important to recognize that candidates may have different levels of mentoring during the negotiation process and that women and underrepresented minorities are may be disadvantaged in the negotiation process and may be less prepared to advocate for themselves. It is up to department leaders to empower candidates to advocate for themselves and to assist when necessary. This may include supplying the candidate with a list of items to discuss during negotiations including: salary, lab equipment, research space, administrative support, travel funds, moving expenses, and other issues of concern [13]. This may also include supplying candidates with examples of previous successful hiring packages and utilizing AAMC standards for salary offers. Some institutions utilize a negotiation facilitator, which may help the candidate navigate discussions around career path and research support. This person may provide support and assist the candidate in articulating needs to the chair or dean [13].

If a candidate does not accept an offer, a search team may find it helpful to request feedback on the interview and negotiation process. This may inform future searches and allow for continual growth and improvement.

## 1.7 Onboarding and Retention

Once a candidate begins an appointment, the most critical predictors of success are associated with adequate mentorship and close career guidance. There are complex reasons why a high percentage of diverse candidates, particularly women and underrepresented minorities leave academics or are not successful in promotion and advancement. Though it remains very difficult to outline precise factors, mentorship and sponsorship are key components of faculty success. Successful mentorship teams that function to provide guidance and support in all areas related to clinical, research, education, and leadership development enhance retention efforts. It is also important to have crucial review and evaluation of milestones with annual reviews and tenure reviews [13]. A detailed developmental plan that outlines tangible yearly goals and accomplishment tracking is also important for retention and successful academic advancement. It is also crucial for institutions to provide leadership opportunities and growth positions that allow faculty ongoing challenges and career fulfillment. Department chairs and section leaders have the unique challenge of tracking progress and determining faculty readiness for advancement or career shifts.

## 1.8 Conclusions

The highest performing teams benefit from broad cognitive diversity. To achieve this, a structured and intentional faculty recruitment process with fair and open practices is highly beneficial. An intentional and thoughtful process that (1) aims to decrease the influence of bias, (2) structures interviews and questions to provide objective evaluations, and (3) prioritizes fair negotiations and formal mentorship can leave to successful outcomes [15] (Table 1.1). Inclusive recruitment

**Table 1.1** Top academic recruitment issues with tangible interventions

| Issue | Interventions |
|---|---|
| Implicit Bias | • Implicit association test, awareness, repeat testing<br>• Standardized interview questions<br>• Interview team |
| Lack of cohort diversity | • Cultivate networks<br>• Targeted recruiting<br>• Highlight commitment to diversity/inclusion (paying attention to the support and inclusion of the diverse faculty you already have) |
| Support upon arrival | • Onboarding<br>• Formal mentorship<br>• Sponsorship<br>• Career development<br>• Ongoing improvement of the institutional culture<br>• Support the diverse faculty you already have! |

practices provide an opportunity for academic institutions to advance a diverse workforce and make impactful steps towards eliminating underrepresentation in US medical schools.

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# Chapter 2
# Advancement and Leadership Development


**Callisia N. Clarke and Jeffrey B. Matthews**

*A 41 year-old female African-American faculty member (1 of 7 underrepresented minority and 32 women surgeons in a department of 130) has been Assistant Professor of Surgery for 8 years. She has been proposed for promotion to Associate Professor. The departmental Promotions Committee is surprised to find that she is relatively deficient in publications, grants, and leadership participation on a national level compared to other Associate Professor promotion cases. She has an extensive clinical practice as well as non-clinical responsibilities in the department and medical school. She sits on the medical school diversity committee and the admissions committee, as well as multiple departmental search committees that take time away from her ability to conduct her research into the basis of health care disparities in the local community. Her teaching evaluations are average. Review of her promotion packet shows that while she is a dues-paying member of multiple surgical societies, she has been appointed only to a diversity task force in one subspecialty association and otherwise has no committee or officership roles. She is an occasional reviewer for her subspecialty's journal. She attends national meetings when she can, but feels stretched by her home situation with two school-aged children and a partner who is also a busy professional. The Promotions Committee wonders whether "the system" has failed this otherwise excellent faculty member who has had slower-than-expected academic and leadership progression. They recommend that the Chair re-evaluate the departmental climate for women, underrepresented minority, and LGBTQIA surgical faculty and how it may be improved to enhance career advancement more equitably.*

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## 2.1 Introduction

Despite the rapidly changing ethnic and racial demographics of the United States, lack of diversity within the physician workforce remains a significant public health concern [1]. Racial and ethnic minorities are more likely to provide care for medically underserved communities when compared to their white counterparts, and patients of color are more likely to seek out physicians of color to provide their care [2–4]. The impact of physician gender on receipt of preventative services and patient satisfaction has also been widely documented [5, 6]. The influence of LGBTQIA (lesbian, gay, bisexual, transgender, queer or questioning, intersex and asexual or allied) providers has not been as widely studied but some data suggests LGBTQIA physicians are more likely to provide care for and participate in research focused on LGBTQIA communities [7]. For these reasons, creating and maintaining a diverse physician workforce is critical to any effort aimed at eliminating healthcare disparities and improving health equity overall. At academic medical institutions, these efforts are arguably even more crucial. Academic medicine is the complex "system that produces the human capital, including the physicians who care for the patients and the educators who train those physicians." [8] In 2003, the Association of American Medical Colleges (AAMC) acknowledged this sentiment and adopted the term "Under-Represented in Medicine (URiM)," defined as racial and ethnic populations represented at lower rates in the medical profession compared to the general US population. Since then, significant formalized efforts have been directed at increasing the pipeline of women and URiM students applying to medical schools. However, little emphasis has been placed on faculty development to increase faculty diversity, and this shortcoming has negatively impacted our ability to make significant inroads as we strive to achieve health equity.

Lack of diversity within academic medical faculty cannot be not simply attributed to problems in the pipeline. While deficits exist throughout academic medicine, academic surgery in particular faces a steep challenge in attaining diversity equity and inclusion. Low racial and ethnic diversity in surgery is persistent, and while almost half of students matriculating into medical school are women, fewer women in general are entering surgical residencies. After completing surgical training, women and minorities are less likely to enter academic practices and those that do are faced with limited opportunities for advancement and promotion when compared to their white male colleagues [9, 10]. LGBTQIA physicians report similar challenges, with fewer networking opportunities and often non-inclusive work environments [7]. Black surgeons are less likely to be promoted from assistant professor to associate professor than any other ethnic group [11]. These measurable disparities and other intangible biases contribute to high rates of attrition for women and URiM faculty, compounding the lack of diversity in academic surgery.

Attempts to improve faculty diversity in academic surgery must not only include effective recruitment, but also must provide professional development opportunities that will lead to academic success, promotion, and retention. Programs designed for faculty advancement and leadership are an essential piece of the equation and

require intentional initiatives developed with input of minority faculty. These initiatives must align with departmental and institutional goals and garner significant support from institutional leaders. Every effort must be made to address barriers to leadership and promotion for minority faculty, a few of which are discussed in further detail below.

## 2.2 Creating a Culture of Equity, Inclusion and Empowerment

In order to address issues of career advancement for diverse faculty, surgery department and institutional leaders must assess their workplace climate. A "climate survey" may reveal features at odds with the diverse and inclusive culture that an institution may otherwise value and strive to create. The hallway of portraits of white male surgeons is almost always almost ubiquitous in departments of surgery. Many argue that these hallways are reminders of where we have been, but for many who look nothing like the white males depicted on those hallowed walls, the hallway is a daily reminder of just how "different" they are. Academic surgery continues to experience high rates of bullying, sexual harassment, and microaggressions that undermine a healthy workplace environment and impact faculty wellness as well as patient safety [12]. These are manifested in several ways. *Microassaults* are conscious and intentional discriminatory behaviors that aim to insult or belittle marginalized groups [13]. These assaults are especially painful and difficult to address when they are perpetrated by staff, patients, or family members, often in private interactions. Physicians of color and religious minorities experience these negative interactions frequently, and compounding their experiences is the lack of trust that institutions will support them in acknowledging and addressing the unfair treatment. If the response to such behavior is simply appeasing the transgressor, faculty are often left wondering if their presence or their work is valued at all. *Microinsults* are subtle verbal or nonverbal communications that are rude and insensitive and demean an individual's racial, religious, or sexual identity [13]. Faculty of color report being asked to detail their accomplishments because their own colleagues believe they were hired simply because of diversity initiatives or quota systems and no due to any accomplishments of their own. Women of color, especially Black women, are asked to "tame [straighten]" their hair to look more "professional" or satisfy biased dress codes. *Microinvalidations* subtly exclude, negate, or nullify the experiences of minorities [13]. These may be conscious or unconscious. Female faculty are frequently called nurses, even after introducing themselves as physicians and rendering high levels of care for prolonged periods of time to the same patient. Black faculty dressed in white coats and embroidered titles are asked to take out the trash or take away food trays by staff members or patients who cannot fathom a person of color in any other role despite multiple obvious clues. These behaviors disproportionately affect women, racial/ethnic minorities, LBGTQIA persons, and

religious minorities [12, 14, 15]. Sue et al. aptly states: "*These incidents may appear small, banal and trivial, but we're beginning to find they assail the mental health of recipients.*" [13] There must be a "zero-tolerance" policy in place for anyone witnessing or experiencing toxic behaviors and individuals must be empowered to speak up without risk of retaliation. Trudging back to the office, walking through the hallway of portraits of white male surgeons, becomes a little less innocuous after experiencing these transgressions daily.

At the core of these behaviors is implicit bias, a less tangible but nonetheless powerful force by which women and minorities are often marginalized both socially and academically. The negative impact of implicit bias on promotion and advancement cannot be easily measured but is likely to be both pervasive and profound. Few studies have attempted to quantify the impact of these biases as it pertains to faculty promotion. Studies have demonstrated that female faculty are more likely to receive lower teaching evaluations by medical students when compared to male faculty [16]. The discrepancy was even most significant for female surgical faculty when compared to pediatrics, obstetrics and gynecology, and internal medicine [16]. There are undoubtedly similar biases in evaluations of faculty of color. Racial and ethnic minorities are more likely to report experiencing conscious and unconscious bias from colleagues, patients, and students [17, 18]. The etiology of these disparate findings in faculty evaluations are multiple and complex; the result, however, is not. Teaching evaluations from students, trainees, and patients are used to guide decisions of promotion, reappointment, and compensation, creating an even larger disparity for women and minority faculty in surgery. These and other factors may contribute to lower compensation, low rates of retention, and slower promotion in women and faculty of color [11, 19]. Department leaders and promotion committees must be aware of these consistent patterns of faculty evaluation to avoid unintentionally perpetuating the problem.

Minimizing the objective effects of implicit bias and preventing social and academic isolation by creating an atmosphere of equity, inclusivity, tolerance, and empowerment are critical to development and retention of faculty from diverse backgrounds. A discriminatory workplace environment contributes to lower career satisfaction and transition out of academia in racial and ethnic minority faculty [17, 18]. To build, we must first retain.

## 2.3 Equitable Compensation and Promotion

Racial and ethnic minority faculty are less likely to be promoted to full professor than their White counterparts, even after controlling for gender, academic productivity, and grant support [20, 21]. Despite long-standing data acknowledging these disparities in promotion and efforts to increase physician workforce diversity, racial and ethnic minorities continue to be underrepresented in surgical academia and surgical leadership [11, 22] (Fig. 2.1). Over the last decade there has been an approximate 15–20% *decrease* in the proportion of Black associate professors of surgery

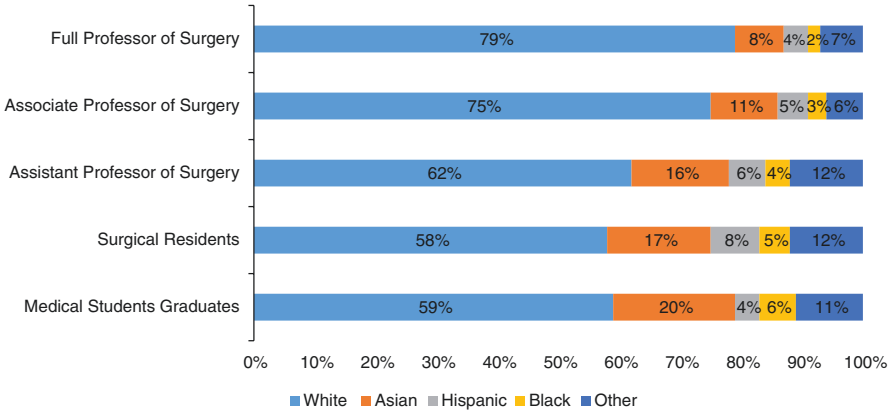


**Fig. 2.1** Attrition of Minorities in Academic Surgery (last year available data for medical students and general surgery residents was academic year 2018–2019; last year of data available for full time faculty was academic year 2017–2018; other includes American Indian, other, unknown, multiple race)

and a 3% decrease in the proportion of Black full professors of Surgery [22]. While the proportion of Hispanic associate and full professors of Surgery has increased over the same time period, Hispanics remain significantly underrepresented, accounting for only 6% of all surgical faculty when compared to 18% of the general population [1, 22, 23]. Because academic rank is often a major driver of compensation, inequities in promotion perpetuate lower salary scales for URiM faculty compared to their peers [24]. Progress has been made in gender equity in surgery. Over the last 30 years we have seen a steady increase in female representation in academic surgery with an approximate threefold increase in the number for female surgical faculty. Still, women account for only a quarter of assistant professors of Surgery, 20% of associate professors of surgery and 10% of full professors of Surgery when compared to 40% of surgical trainees [9, 12]. However, even when controlled for fair promotion practices, female surgical faculty were often compensated significantly less than male counterparts [19, 25, 26]. The intersectionality of gender and race creates a unique set of challenges for double minorities in surgery and is far *"greater than [simply] the sum of racism and sexism"* as stated by Kimberly Crenshaw [27].

Institutions committed to reversing these inequities have implemented fair and transparent guidelines for promotion and compensation [19, 28]. Surgical departments and their institutions should regularly and systematically review their promotion and compensation practices, especially focusing on attaining equitable advancement and salary structures for at-risk populations including women and URiM surgeons. This is particularly important as studies have shown that women and URiM faculty are more likely to experience imposter syndrome and are therefore less likely to self-advocate or self-promote when compared to White males [25, 29]. A critical tenant in these efforts is transparency and fairness in starting salaries

as closing the pay gap is exponentially more difficult than preventing it. Surgical leaders must serve as advocates in the fight for pay equity, proactively engaging in practices that eliminate this unjustifiable problem.

Barriers to promotion of female and URiM faculty are multifaceted. Many institutions still support a process of divisional or departmental recommendation for promotion without significant oversight or review. This process that renders itself vulnerable to subjectivity in regard to who is deemed 'ready' and when. Additionally, in many institutions, the requirements for promotion are vague, and for vulnerable populations, the goal post seems to be constantly moving further away. New approaches are necessary to achieve equity in promotion if we are to increase diversity in academic surgery.

1. ***Level the playing field***—The notion that all faculty arrive at their first position with equivalent skill sets and proficiency is fanciful at best. For URiM faculty, the societal constraints and privilege systems that often limit resources necessary for academic success are present long before matriculation into medical school and continue throughout their careers. That said, the distance travelled to attaining promotion for each faculty differs significantly, with URiM faculty especially vulnerable to starting on uneven footing. Early implementation of formalized mentorship programs with tailored metrics that meet each faculty member where they are, identify areas of weakness early, and implement a formalized development plan may minimize the impact of disadvantages.
2. ***Transparency in policies and requirements for promotion***—The path to promotion should be clearly delineated and reinforced with frequent and formalized assessments of the necessary milestones and interventions as needed to correct deficiencies. Not meeting the requirements for promotion should never be a surprise. Within a transparent system, faculty should always know where they stand on the requirements for promotion. Additionally, all faculty members should receive formal guidance in the preparation of their promotion packets. For many, these secrets in style and order of presentation to augment accomplishments have been passed around for those with access to leadership inner circles. However, women, racial/ethnic minorities, LBGTQIA persons, and religious minorities are often not invited into spaces where these behind-closed-doors conversations occur and as a result, may not be privy to the pearls and wisdoms afforded others which that increase the chances of a successful bid.
3. ***Addressing the minority tax***—Many institutions now offer alternative tracks for promotion outside of grant-funded research and publication record. Clinical Educator tracks support promotion based on efforts in teaching. However, many other under recognized contributions exist that provide equal visibility for institutions, generate revenue, and enhance the educational experience for trainees. Global health initiatives, community engagement, diversity initiatives, quality improvement and patient safety work, and policy and advocacy are a few non-traditional pathways that are often not weighed in traditional promotion portfolios. Nevertheless, these efforts often add measurable value to the institution and are central to carrying out the mission of academic medicine. Women, LGBTQIA

and URiM faculty are more likely to volunteer or practice at community-based clinics that serve underserved and uninsured patients [3, 6, 7]. Cohen first described the disproportionate demand of URiM faculty to champion health equity and institutional diversity efforts in informal and often undervalued roles [30]. Deemed the "minority tax." URiM faculty are frequently tasked with assisting in recruitment efforts for both new students and faculty. They serve as mentors, both formally and informally, to URiM student, trainees, and junior URiM faculty. Since the number of available minority mentors are few, the work, which many are happy and willing to do, can become burdensome and detract from more tangible achievements, which further negatively impacts the path to promotion [31–34]. By assigning value to these traditionally unrecognized efforts in the promotion and tenure process, we can make true inroads in aligning the work of equity and inclusion with institutional goals and effectively addressing the national need for increased racial and ethnic representation in academic surgery.

4. Ensuring diversity within promotions and tenure committees—In order to make significant change, all must "have a seat at the table", actively participate in the discussion, and champion the values of equity and inclusion.
5. Mentorship and sponsorship—This topic will be discussed in more detail in a later chapter in this book. Briefly, there is a shortage of effective mentors for women, LGBTQIA, and URiM faculty at most academic institutions. This may lead to feeling of isolation due to an inability to recognize and adjust to institutional politics or to access institutional resources. Fortunately, organizations such as the Association of Women Surgeons (AWS), the Latino Surgical Society (LSS), the Society of Asian Academic Surgeons (SAAS), and the Society of Black Academic Surgeons (SBAS) exist in part to support the professional development of their respective members and may serve as a significant source of mentorship and sponsorship for those who may not be able to identify a committed champion at their home institutions. Encouraging and supporting women and URiM faculty to attend these conferences and participate on committees may be paramount to their success.

## 2.4 Faculty and Leadership Development

In addition to promotion, leadership development is an essential component of faculty satisfaction. Appointment to institutional administrative roles and regional or national committees allows for individual and institutional advancement and increases faculty engagement. Academic institutions, professional societies, and governing bodies have recognized the potential value of formalized leader and leadership development for physicians, both for the individual and for the institution. In academic surgery, women, Blacks, Hispanics and Asian Americans as a whole remain significantly underrepresented in leadership [35]. Interestingly, Asian Americans are overrepresented in medicine when compared to the general population but are still less likely to be promoted to leadership positions in surgery. Similarly,

despite increasing representation in academic surgery, there continues to be a paucity of women in positions of leadership [35]. These facts negate the argument that simply creating a pipeline is sufficient to achieving diverse surgical leadership. Instead they point to a set of deeply entrenched barriers that favor the promotion of white males to leadership and inhibit similar opportunities for women and minorities.

Recently, academic medical institutions and societies have implemented formalized leadership development programs (LDPs) for faculty. These programs may focus on a variety of academic, executive or clinical functions that augment the individuals' skillsets and promote institutional or societal engagement and access to leadership roles. LDPs specifically addressing women and minorities have the potential to address needs of faculty vulnerable to attrition, increase retention, and promote of diverse faculty, and improve overall health system performance. Several surgical societies, including the American College of Surgeons (ACS), American Society for Transplant Surgery (ASTS), Society of American Gastrointestinal and Endoscopic Surgeons (SAGES), Society for Black Academic Surgeons (SBAS), and Society for University Surgeons (SUS) offer formal surgeon-specific LDPs to their members and report some success.

Lucas and colleagues surveyed faculty development/affairs deans at academic health centers across North American to characterize the prevalence and natures of LDPs [36]. With a response rate of 58%, nearly all (93/94) respondents reported some form of leadership training in their institution, and most (61/94) reported a formal internal program [36]. Straus and colleagues conducted a systematic review to better understand the impact of leadership training programs for physicians on measures including physician participant outcomes [37]. While high-quality data was limited, they did find a trend towards improved promotion and retention among LDP participants.

Other studies have assessed the outcomes of LDP participation for women physician leaders. Recognizing the disparity in promotion of women in academic medicine, the Association of Academic Medical Centers (AAMC) and many institutions initiated LDPs to address the dearth of women leaders in academic medicine. Helitzer and colleagues surveyed a national cohort of women who had participated in AAMC Women in Medicine (WIM) professional development programs or the Executive Leadership in Academic Medicine (ELAM) program housed at Drexel University College of Medicine, all aimed at augmenting leadership skills in early and mid-career women physicians [38]. They found that respondents overwhelmingly reporting improved executive function especially in four skillsets: interpersonal communication, leadership, negotiation, and networking [38]. Chang later evaluated retention in a study population of women who had participated AAMC or ELAM programs compared to their male colleagues and female colleagues who had not participated in the programs [39]. They found a statistically significant increase in retention among women who participated in the programs compared to those women who did not participate and to male colleagues [39]. This trend persisted

across all ranks from assistant to full professor and suggest that LDPs may reduce attrition and increase faculty engagement.

There are fewer studies addressing the experiences and outcomes of URiM-directed LDPs. One study of minority faculty development programs sought to evaluate their impact on URiM faculty recruitment, recruitment, and promotion [40]. While the presence of minority-specific LDPs was not associated with an increase in any of those outcomes, well-established programs with longer duration or programs that targeted multiple components resulted in increased minority faculty representation over the 10-year study period, suggesting that programs designed for minority faculty development require time and investment and must adapt and mature in order to yield stronger results [40].

In many respects, the needs of underrepresented surgeons mirror those of their counterparts; however, several components have been identified that likely increase programmatic success of LPDs with respect to minorities in surgery. Programs should introduce content that parallels participant career advancement as specific skill sets can be more impactful at varying career junctures [38, 39]. Competency areas that have been identified as imperative in leadership development include leadership concepts, setting direction and leading change, working with and developing others, communication skills, teambuilding, business skills, self-management, negotiation and self-advocacy, personal positioning and planning, and mentorship and sponsorship. [36, 38, 39, 41]

Institutional or societal investment in faculty career development particularly for racial and ethnic minorities and women appears to convey a sense of value that is likely to result in better work satisfaction, engagement, and ultimately retention. These programs offer tangible benefits to the individual that improve performance and increase visibility. Sponsorship or nomination to participate in these programs may signal the institution's investment in individual faculty development and potential for promotion within the institution.

## 2.5 Summary

Health equity is contingent on creating and maintaining a diverse physician workforce that reflects the communities they serve. Despite some improvements in the so-called pipeline, representation of minority populations in academic surgery continues to lag and disparities in promotion and leadership advancement remain. To address these workforce gaps, institutions must:

- Achieve and maintain an environment of inclusivity and diversity
- Promote transparency in promotion and compensation
- Develop or sponsor participation in formalized career development programs that promote minority and women faculty to positions in leadership.

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# Chapter 3
# Mentorship Principles and Practice


**Michelle H. Moniz and Justin B. Dimick**

## 3.1 Introduction

More than a decade ago, the *New York Times* Corner Office section featured a particularly insightful interview. If you are not familiar with the Corner Office, it is a column that focuses on leadership, usually interviewing a successful business executive in a question and answer format. In this particular interview, the question posed was "How do you ensure you are hiring people who will be successful leaders?" The answer provided by this particular CEO was as powerful as it was simple: "I ask them to tell me **what** they have built and **who** they have developed." This perspective seemed different than how leadership was often conceptualized. Namely, the CEO placed equal value on production and development of people. On reflection, however, this makes sense. Production and development are inherently related. As a leader, the more you understand the goals of the people in your organization—and invest in helping them achieve those goals—the more you will tap into their discretionary energy and improve their capacity to do better work.

Effective mentorship is essential for helping people develop their goals. The best organizations foster a culture that relentlessly focuses on developing their employees. Mentorship is defined as a dynamic, reciprocal relationship in a work environment between an advanced-career incumbent (mentor) and a beginner (mentee) aimed at promoting the career development of both. Sponsorship is a related activity, but with several key differences. The activities of mentorship include helping

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mentees develop skills and capabilities, providing tips and strategies, navigating unwritten rules, and reducing isolation and stress. The activities of sponsorship include helping others connect to career opportunities, advocating for advancement, publicly endorsing the mentee, and helping confront and interrupt bias. Effective mentors are also sponsors for their mentees, but leaders should always be looking to sponsor even those they do not directly mentor.

## 3.2 Mentorship Philosophy

Our mentorship philosophy is firmly grounded in a single rule: Each person has a "golden nugget" that represents their unique combination of interests, skills, and life experiences that can add value to our world if developed through effective mentorship. We believe the job of a mentor is to help the mentee find that golden nugget, and to harvest each person's potential to serve our collective mission.

Within the context of academic medicine, we often discuss the tripartite mission: Clinical Care, Research, and Education. We believe the modern vision for an academic medical department should include a fourth mission that ties them all together: Culture. The key activities of a leader in an academic medical center include the following:

- **Clinical Care:** To move the delivery system from a hospital to a regional network. To use technology-enabled solutions to improve access and care coordination.
- **Research:** To foster a diverse portfolio of scholarly work, including health systems, basic/translational science, education, global surgery, workforce diversity, and any other domain that needs rigorous study to move academic medicine forward.
- **Education:** To train the future leaders in academic health centers and equip them with the tools to succeed in a rapidly changing healthcare landscape.
- **Culture:** To move from a hierarchical to an inclusive culture locally and nationally.

As we work with individuals—either those we mentor or those we sponsor—we think about how their "golden nugget" aligns with one or more of these aspects of our vision. It is important to note that to move forward such a vision, there is no room for a one-size-fits-all description of success. Academic departments need a colorful tapestry of faculty phenotypes to accomplish this vision and reap the "diversity bonus." [1] It is important to value and appropriately resource all of these phenotypes.

Harvesting the "golden nugget" of a mentee is a two-step process. The **first step** in the process is to listen to the mentee. Ask open-ended questions to explore

their background, interests, and goals. As a starting point, this may seem counter-intuitive given the traditional view of the mentor as an expert. However, if your goal is to understand each mentee's unique pathway, you have to start by asking questions. The mentee will often not have a clear view of how their passions, interests, and goals lead to next steps. Finding the intermediate goals between their starting line and their finishing line is your job as a mentor; i.e., guiding them toward the projects that will help them develop the right set of skills and a portfolio of work that will be recognized as "productive" according to relevant benchmarks.

Moreover, by listening to your mentee's stories and helping them weave their unique passion, skills, and experience into their career vision, you are validating who they are and the impact they'll have on the world. You can help them understand how their unique story and pathway, including the challenges they have faced along the way, can be accessed to serve others.

The **second step** of the process is to find where the individual's interests overlap with the opportunities and resources available. Early on in the mentoring relationship, it is unlikely that you will have a project that perfectly fits all of the individual's interests. This is especially true if the mentee does not yet have a clear idea of how their interests relate to their future goals. The linear narrative that we often use to describe our path from interests, to insight, to career trajectory is only linear in hindsight. The road itself is usually non-linear, often a function of random events, and punctuated with failure. It is important to find projects that are thematically related to the mentee's interests, and—perhaps more importantly—to include an opportunity to learn the skills important to their career development. Often, you may need to connect the mentee to other individuals in your network to learn skills that are outside your own area of expertise.

## 3.3 Lessons Learned from Our Own Mentors

The philosophy and process we describe above is built around lessons learned from our relationships with mentors and mentees over the years (Table 3.1). We will share some of these stories of our own experiences to illustrate these principles.

### *3.3.1 Always Have Your Mentee's Back*

The first lesson is to **always have your mentee's back**. As you become more senior in an organization, it is sometimes difficult to remember how vulnerable you were earlier in your career. Each transition seemed governed by a set of forces that were

**Table 3.1** Principles and practice of effective mentorship

| Principle | Practice |
|---|---|
| **Always have your mentee's back:** Mentees are often vulnerable and dependent on effective mentorship for career advancement. | • Understand your mentee's goals<br>• Track their progress towards those goals<br>• Be accountable for their success |
| **Take your mentee where they want to go, not where you went:** Avoid the natural inclination to recreate your mentee in your own image. | • Ask your mentee what their specific goals are<br>• Help them hone their unique career vision<br>• Listen actively |
| **Cultivate a relationship of bidirectional learning:** Mentors can learn from mentees, including new skills, areas of expertise, collaborators, and perspectives. | • Identify the intersection between your interest and the mentee's<br>• Cultivate this area for mutual growth<br>• Actively engage with new collaborators that can help develop you both |
| **Foster a culture of mentorship:** Good mentors tend to run out of bandwidth as they become leaders, and they should cultivate a culture supporting positive mentorship behaviors by all group members. | • Be a good role model<br>• Hold yourself and others accountable for mentee goals<br>• Implement infrastructure (e.g., launch teams) to ensure equal access to strong mentorship |
| **Think beyond your lived experience:** Because the pool of mentors may not be as diverse as the mentees, cross-race, cross-culture, cross-class, and cross-gender mentoring is extremely important. | • Engage in honest conversations about social identities<br>• Recognize how your mentee might be perceived differently than you in the workplace<br>• Do the hard work of critically evaluating and understanding your own privilege and implicit biases |
| **Be an upstander, not a bystander:** Even the best interpersonal mentorship may be inadequate if unequal organizational policies and culture persist. | • Advocate for recruitment, hiring, and promotion policies that are rule-based and non-negotiable<br>• Call out sexist and racist behaviors in the workplace as unacceptable and challenge colleagues to a higher standard of behavior |
| **Critically evaluate your mentorship skills:** Self-reflection is one of the most important tools a mentor possesses. Take the time to honestly assess how you're doing. | • Solicit concrete, actionable feedback about your own performance as a mentor—what does your mentee need you to do differently?<br>• Monitor the diversity of your mentees and take stock of your sponsorship behaviors—are you elevating diverse voices? |

Practical lessons learned by the authors from their own experiences as mentees and mentors

opaque and out of your control. An effective mentor understands their power to help others navigate these transitions. Strong mentors demonstrate what renowned clinical psychologist Carl Rogers called *unconditional regard* [2]. They communicate warm acceptance of a mentee's experiences, even when performance lags or setbacks occur. By suspending judgement, a mentor powerfully communicates that the mentee can experience failure without losing the mentor's esteem and inoculates mentees with resilience for future challenges.

"*I learned this lesson from my first mentor, Dr. Pamela Lipsett. As a student at Johns Hopkins, I decided very late to pursue surgery. I was going to apply to internal medicine and perhaps become a cardiologist, or pulmonologist, focused on clinical trials and outcomes research. Outcomes research was not "a thing" in surgery, and I knew I ran the risk of being seen as a bit atypical. This fear was justified. When I discussed this plan with the chair at the time, he strongly suggested that I pursue a more typical path of working in a bench laboratory for a year.*

*So I did take a year off but, rather than working in a bench lab, applied for the National Institutes of Health (NIH) Clinical Research Training Program. This was the first year of the program and it seemed like a perfect fit. Being the first year, there only 48 applicants for 45 spots. Despite the favorable probabilities, I was not selected for the program. I felt pretty low at the time. I needed to find a way to support myself financially and to establish a foothold in surgery.*

*I found myself in the office of Dr. Lipsett, who was a known student advocate. No doubt sensing how lost I was, she said: "Don't worry, I have your back." And she did. She offered me a spot on her research team and helped me successfully apply for surgical residency the next year. She took me under her wing when I was at my worst, my most vulnerable, because she saw that I wasn't defined by my lowest moment.*"—Justin Dimick

### *3.3.2 Take Your Mentee Where They Want to Go, Not Where You Went*

The second lesson is **take your mentee where they want to go, not where you went**. There is a natural inclination to recreate your mentee in your own image. This is based on the assumption that an individual who seeks you out as a mentor has the exact same goals that you did at their career stage. However, this is almost always a faulty assumption. There is no doubt some aspect of what you do, or who you are, that drew your mentee to you. Perhaps they consider you a role model, or they think you can help them develop skills important to their advancement. Maybe you are an important connector, or sponsor, who can create career opportunities for them. The key to providing effective mentorship is to identify your mentee's goals and exactly what they need from you to achieve them.

How do you understand their goals? How do you understand what you can do to help them achieve their goals? The answer to these questions brings us back to the process we described above about harvesting the mentee's "golden nugget." You ask them questions. Good questions. Then, even more importantly, you listen. We usually start by asking them about their career vision. Sometimes this works, and the mentee describes their goals with clarity; other times, their vision is not yet clear

enough to describe vividly. Often, you can see career possibilities a mentee hasn't even imagined. We then ask them about their past experiences, with the ultimate goal of understanding what they are passionate about as reflected in their life choices to date. Ultimately, we are searching for the intersection between their interests and our own. Do we have ongoing projects that are close enough to their interests to be of interest to them? We can usually find some overlap in our interests and then give them a few options to choose from.

This should not be a one-time exercise at the beginning of the relationship. Rather, this conversation should last for the duration of the mentee-mentor relationship. A good mentor will use their knowledge of the field, inject some creativity, and help the mentee surface and crystallize their own unique career vision—then help them develop the skills, network, institutional savvy, and narrative to make it happen.

It is important to recognize that having a unique career vision does not remove the obligation to learn the basics of a field. When taking on a new mentee who seems to want to create their own field of inquiry from day one, we introduce them to the story of Nietzsche's Three Metamorphoses [3]. In this essay, Nietzsche describes creativity as passing through three metamorphoses of the spirit, in this order: to have the spirit of the camel, and bear the burden of learning past knowledge; to have the spirit of the lion, with the courage to challenge convention; and to then have the spirit of a child, to begin again with new ideas. In the context of mentorship, the first phase is important: buckling down and learning what others have done on the topic and mastering basic skills is necessary before being able to challenge convention and embrace novel ideas.

*"The example that I often use when speaking about this process is Andrew Ibrahim. Andrew was a research fellow who entered our research group with an interest in architecture and how the built environment influences surgical outcomes. This topic was new to me and it was a challenge to find an area of overlap with my own research agenda. I started by telling him the Nietzsche story and encouraging him to master the basics of measuring surgical outcomes. Meanwhile, I gave some thought to other projects that would be of interest. Ultimately, we decided that the geography of hospital distribution and the lack of access in rural areas was something that interested us both. Andrew went on to publish a paper on this topic that was highly influential. It was also clear that Andrew was struggling with the idea of being "different." Many of our discussions focused on the value of differences and how diverse perspectives are necessary to do the best work. Eventually, Andrew became more comfortable with carving out his own niche. As our discussions matured over time, we both became interested in how the growing hospital networks could better leverage their assets to improve the delivery of care and we published a model for how regional networks could improve care delivery by decentralizing care. Andrew went on to become Chief Medical Officer for a large architecture firm while still a surgical resident, and is joining our faculty with a joint appointment in the medical school and the school of architecture."*—Justin Dimick

### 3.3.3 Cultivate a Relationship of Bidirectional Learning

The best mentors recognize how much there is to learn from engaging with mentees. Growth of the mentor is a natural byproduct of a strong mentor-mentee relationship. This learning comes in three ways. First, the end result of stepping into the "zone of overlap" between your interest and a mentee's interests will create an opportunity to flex into a new, but adjacent area of study. Exploring these new areas will no doubt spark new ideas—as most innovations come at the field of intersecting disciplines, when ideas are combined in new ways [4]. Second, entering a new field will lead to developing new research skills and building new collaborations. Finally—and most importantly—working with junior colleagues, and listening to them, will help mentors appreciate different perspectives, especially if the mentor engages with a diverse group of mentees. In addition to expanding your perspective as a mentor, reciprocal learning also breaks down the traditional, hierarchical model of mentorship. This may be particularly important for mentees who might prefer a collaborative and egalitarian learning environment, rather than a "top-down" approach.

> *"After my residency, I did a fellowship in health services research. My research mentor, Dr. Matt Davis, was an impeccable mentor—kind, radically candid, and always palpably invested in my well-being, both as a learner and as a person. I respected and admired him immensely and, perhaps naively, couldn't imagine him struggling with anything at work. And I will never forget the day, towards the end of my fellowship, when at the end of our mentorship meeting he said, "Michelle, we're going to be colleagues soon. As my colleague, I want to ask your advice about something." I felt like I was 10 feet tall. My trusted mentor asking me for advice was one of the most empowering moments of my early career. Now with my mentees, I seek out opportunities to name their strengths and ask their advice."*—Michelle Moniz

### 3.3.4 Foster a Positive Organizational Culture of Mentorship

When you develop a reputation as a good mentor, you will no longer have time to mentor everyone who seeks you out. Your bandwidth is likely to become limited at about the same time that you become senior enough to take on leadership roles. The goals of a leader of a research group or laboratory are different. Rather than mentoring everyone directly, you need to ensure that everyone you are responsible for has access to good mentorship. There are several strategies to achieve this. First, develop infrastructure to track and assess mentorship longitudinally. In our research group, and now our department, we use Launch Teams to ensure equal access to mentorship and to monitor progress according to key milestones [5].

Second, group leaders should foster a culture of mentorship [6]. Culture simply means "how we do things around here." When mentorship of the next generation is expected and pushing mentees to the front of projects to take credit becomes routine, you have established a positive mentorship culture. What does this look like? Senior faculty mentor junior faculty; junior faculty mentor residents; residents mentor students; senior students mentor junior students; and so on—it's a "Ponzi scheme" of mentorship that benefits everyone. How do you establish such a culture? You role model that behavior as a leader. You publicly reward that behavior. For example, when chairs award endowed professorships in the department, which are always limited in supply, they are rewarded to those who serve others through mentorship. Finally, experienced mentors need to become meta-mentors. A meta-mentor is someone who doesn't simply monitor the progress of their direct mentees, but is also periodically checking on their mentee's mentees (i.e., their grand-mentees). This can be done informally or formally—by serving on their launch teams or acting in a "mentor the mentor" role on career development grants. This process allows the mentor to help their mentee develop mentorship skills and also promotes a culture of positive mentorship.

*"A few months ago, I started a K award writing group for two early career faculty in my department. I do not have the bandwidth to be the primary mentor for all of these individuals myself, but I've learned a little about grant-writing along the way and wanted to pay it forward. It has been an incredibly rewarding experience. I've had the joy of helping these talented individuals hone their ideas, commit to their training goals, build their mentorship team, and refine their writing. Moreover, by meeting regularly, we've created a safe space where issues other than the grant writing sometimes emerge. The group attendees provide peer mentorship to one another to problem solve and navigate the social architecture of our department. Moreover, I often learn tidbits that help me amplify my colleagues' perspectives to leaders in our department."*—Michelle Moniz

### *3.3.5 Think Outside the Box of Your Lived Experience*

Cross-race, cross-culture, cross-class, and cross-gender mentoring is increasingly common. While academic medicine is diversifying, many senior leaders, and therefore mentors, continue to be white men. When mentoring across differences, humility and curiosity go a long way. Call out the identity difference, engage in honest conversations about social identities, and forecast that you will likely make assumptions and mistakes that warrant the mentee's frank feedback. Do the hard work of critically evaluating and understanding your own privilege and implicit biases.

Recognize that your mentee may sometimes feel the burden of being an "other" (e.g., one of the only persons of color in your department), or an "only" (e.g., the

only woman in a formal leadership role in your department). When a mentee experiences a microaggression, validate their experience and be willing to explore what it might reflect about your department and its culture. But don't stop at commiseration. Offer practical solutions and collaboration in navigating these challenging experiences. Show them how to draft a respectful email to a colleague after an uncomfortable situation arose in the operating room. Help them file a formal complaint in the case of gender harassment. When coaching mentees in navigating the social architecture of your organization, keep in mind that they may be perceived very differently than you when exhibiting identical behavior. For example, women may be penalized for competitive, individualistic behaviors, while identical behaviors in men are chalked up to confidence and competence. Helping your mentee navigate the biases and stereotypes present in any workplace is just as crucial for their advancement as teaching them skills.

> *"My default state is team-oriented, nurturing, and deferent to a fault. In that way, my personality often aligns with traditional gender norms. On the one hand, this role congruence is a form of privilege. Perhaps it makes me more likable, makes my mistakes more forgivable. On the other hand, it might limit workplace opportunities, if colleagues assume that I don't 'fit' the decisive, "alpha male" leadership style. I think about this often with mentees. When I'm coaching someone before a negotiation or a group meeting, I try to stop and think about how they will be perceived. Will their competence be assumed or their judgement questioned? Will their contributions be valued or unrecognized? Will they be evaluated objectively or through the filter of a stereotype? And given that context, how can we make sure they are maximally effective?"*—Michelle Moniz

### *3.3.6 Be an Upstander, Not a Bystander*

Mentors often hold positions of power in their organization, and they can and should leverage their social capital to advance policies that enable their mentees to succeed. This is particularly important for mentees who are women, people of color, first-generation physicians, individuals with disabilities, and others from sometimes marginalized groups. Mentees in underrepresented groups are likely to face additional challenges in the workplace. One in three women in academic medicine will experience sexual harassment [7]. People of color may face barriers to research funding [8] and promotion [9], unsupportive or even hostile workplace climates [10], and the burden of leading diversity efforts (often without compensation or recognition). Mentors play a crucial role in advising mentees in navigating these challenges. But this is not enough. The best interpersonal strategies for mentorship may be inadequate if unequal organizational policies and cultures persist. Mentors can advocate for recruitment, hiring, and promotion

policies that are rule-based and non-negotiable. They can call out sexist and racist behaviors in the workplace as unacceptable and challenge colleagues to a higher standard of behavior. They can nominate underrepresented individuals for prestigious honors and plum leadership roles to rectify current disparities in representation of women, people of color, and other groups at decision-making tables in academic medicine [10–15].

### *3.3.7 Critically Evaluate and Improve Your Own Mentorship Skills*

Good intentions are nice, but action is better. Self-reflection is one of the most important tools a mentor possesses. Take the time to honestly assess how you're doing. Carve out 5 min at the end of meetings with mentees to solicit concrete, actionable feedback about your own performance as a mentor—what does your mentee need you to do differently? Monitor the diversity of your mentees—does the gender and racial-ethnic makeup of your mentees represent your goals for your department? Take stock of your sponsorship behaviors—are you elevating diverse voices in your likes and retweets on social media?

*"A few years ago, I began working with a LGBTQ+-identified mentee who studies healthcare access for individuals in the LGBTQ+ community. At multiple points in our work together, they have taught me so much about myself and my biases. We were on a group email, where a colleague opened with 'Hey Ladies.' This mentee politely but pointedly shot back, "I don't know if I've ever considered myself a 'lady." That gentle reminder about gender identity stuck with me. I am an obstetrician gynecologist, and I immensely value my role as a 'women's' healthcare provider—yet I've come to recognize how that label can feel exclusive. In my manuscripts, I try to use more inclusive language—replacing 'women' with 'individuals.' In preparing presentations, I reflect on whether everyone in the audience will see themselves reflected in my stories, quotes, and imagery. In working with my mentee, I've witnessed how painful it can be to feel unseen and the profound impact of people leveraging their power—whether it be a formal authority or simply social status—to elevate diverse perspectives."*
—Michelle Moniz

## 3.4 Learning from Case Studies

The following case studies were designed to supplement the mentorship framework and lessons above by working through common mentorship pitfalls.

### 3.4.1 Case Study #1

*A senior male physician with an excellent reputation for scientific productivity has a small amount of bandwidth and is considering taking on a new mentee. He is meeting with two new faculty members. The first, a woman, came to the institution specifically to work with this senior physician and shares many common scientific interests. The second, a man, has interests that somewhat align with the mentor but not as closely, and they know each other better because they share a common hobby: golf. The senior male physician, who enjoys social interaction with mentees, is worried about taking on a female mentee given the recent #MeToo fallout. He believes it would be prudent to take on the junior male physician because it would be lower risk and not force him out of his comfort zone.*

This case study raises several common problems that enforce existing gender disparities in academic medicine. Unfortunately, the idea that men should avoid mentoring women in this era is voiced commonly [16]. This creates an obvious inequity in mentorship and potential for advancement given that the majority of leaders, who control access to opportunity, are older men. The path of choosing someone like you, especially someone who shares the same hobby, is an implicit bias that needs to be confronted. The best path forward here is for the mentor to honor the commitment to mentor the female faculty member. Further, any social components of the mentor-mentee relationship should be structured so that all mentees have equal access and no one is excluded or made to feel uncomfortable.

### 3.4.2 Case Study #2

*A senior surgeon within the department is well-known throughout academic surgery for her clinical and scientific expertise. She is among the highest profile academic surgeons in her specialty and is in high demand for speaking as a visiting professor or keynote at conferences. Rarely does she say no to these opportunities. Because of her high profile, and the opportunity to sponsor effectively using her network, many junior faculty, residents, and students at the institution seek mentorship from her. However, many of her mentees fail to make progress on projects. She is often the bottleneck for projects and, because of her busy travel schedule, often does not have time for one-on-one meetings with her mentees.*

This case study represents two classic forms of mentorship malpractice [17]. Mentorship malpractice can be divided into active and passive phenotypes. The passive phenotypes include the bottleneck, the country clubber, and the world traveler. The academic surgeon in this example is clearly a bottleneck for her trainees, which is likely due to the world traveler tendencies. They key to avoiding this type of passive mentorship malpractice is to keep yourself accountable as a mentor. Be vigilant about surveying your mentee's projects to ensure that you are not limiting their movement forward. Sometimes this happens because you are taking on too many

mentees, but it is often due to not placing enough priority on their projects. The very best mentors will treat their mentee's drafts like a "hot potato"—getting them back immediately and prioritizing them. For the world traveler, the answer may be scaling back travel to an appropriate level. There are likely other obligations, besides mentorship, where world travelers might fall short—including their clinical practice, management tasks, and time with family. Some travel for gaining national and international reputations is important, but do not mistake the external gratification that comes from these events for true contributions to our tripartite mission.

### *3.4.3 Case Study #3*

*A mid-career surgeon scientist has begun to attract a large number of mentees due to perceptions that he is a rising star in his field. One particular resident research fellow has been working on an idea with him for a society grant for trainees. Before the grant is scored, the resident sees on social media that the attending has just received a larger grant that has the same specific aims. The resident was not involved with that project and did not receive any credit for her contributions. After speaking with other mentees, this appropriation of ideas by the mentor appears to the commonplace and viewed by many as the "price of doing business" with this particular mentor.*

The surgeon in this scenario has committed a form of active mentorship malpractice [17]. Active mentorship malpractice phenotypes include the hijacker, the exploiter, and the possessor. This case study illustrates a hijacker, who takes the mentee's ideas for their own. These active forms of malpractice destroy culture and create a negative environment for trainees. The mentor in this scenario could have encouraged the mentee, helped them develop the idea, steward the project to completion, and ensure that the mentee receives credit for their creativity and hard work. For the mentor, this approach will help build a positive mentorship culture and result in developing a reputation of being other-focused, which is an essential cornerstone of integrity—the most important aspect of leadership.

### *3.4.4 Case Study #4*

*An early career female surgeon scientist is preparing to present findings from a quality improvement initiative within her department. The parts of the initiative she directed led to successful improvements in care, but other aspects of the initiative led by colleagues were less successful. She is under consideration for a division director position in her department and knows this meeting is an important opportunity to demonstrate her leadership skills. Her mentor, a senior male surgeon scientist, advises her to "Claim your victories! Be clear that you succeeded where others failed. That's what I would have done."*

The mentor in this scenario has failed to recall that women may be perceived differently than men for the exact same behaviors in the workplace. In particular, women are often expected to be communal and collaborative and may lose social capital when displaying agentic or competitive behaviors. The same behaviors praised as "assertive" in men may be disparaged as "aggressive" (or worse) in women [18]. The mentor in this scenario could have paused to think outside his own lived experiences and reflect on how the mentee might be perceived by others. Together, the mentee and mentor might have strategized about how best to navigate the meeting in the context of existing workplace biases and assumptions, thereby enabling the mentor to help the mentee achieve her professional goals.

## 3.5 Conclusion

This chapter began with the idea that mentorship is a key attribute of effective leadership. Leaders focus on the development of their people. In academic medicine, this development can be a catalyst for improving clinical operations, scientific inquiry, educational programs, and culture. The best mentors always have their mentee's backs; take the mentee where they want to go, not where the mentor went; create a dynamic of bi-directional learning, where the mentor learns as much as the mentee; foster a positive culture of mentorship; think beyond their own lived experiences at work; act as upstanders for workplace equity; and use self-reflection to constantly strive for mentorship excellence.

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# Chapter 4
# Research Track and Focus


**Rachel Atkinson, Herbert Chen, and Zara Cooper**

## 4.1 Introduction and Case-Based Examples

Promotion and recognition within academic surgery is inherently linked to research productivity. The inequality and lack of diversity seen in other aspects of academic surgery, such as leadership positions and award recipients [1–3], is likewise demonstrated in the realm of research support and dissemination. This is demonstrated under three general categories: content bias (such as favoring traditional areas of research such as basic science over "softer" fields like education); institutional bias (well-funded programs with "big names" are more likely to receive funding and publication, and the system reinforces this funding pattern); and bias against researchers who are underrepresented in medicine (URIM), including women and minorities.

Take for example Dr. Jared Lee, a general surgery resident applying to vascular surgery fellowships. Dr. Lee has a long-standing interest in medical ethics research and has published several papers on autonomy in critically ill patients that are frequently cited in Continuing Medical Education (CME) courses on medical ethics. Additionally, he wrote an op-ed piece on the impact of physician wellness on patient care that was published by the Wall Street Journal and was highly publicized by the lay press. During an interview for fellowship, an attending physician interrupts Dr. Lee while he is describing his research interests, asking why he hasn't focused on

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contributing to the scientific knowledge of the field. He leaves the interview concerned that despite pursuing research in something he feels passionately about and producing meaningful results, his career as an academic surgeon may be stunted by his chosen area of study.

Dr. Margaret Williams is a first-year junior faculty member at a rural academic medical center. Her residency and fellowship training were all performed at large, urban hospitals, but she accepted this position due to proximity to her aging parents and promising advancement opportunities within her department. She plans to apply for a career development award from the National Institutes of Health (NIH), which requires a formal research mentor. Based on advice she has received from previous recipients of similar awards, she knows that the NIH prefers that mentors be based locally near the grant applicant in order to encourage close collaboration and guidance. Additionally, primary mentors must have their own funding secured prior to focusing on supporting the research of others. Unfortunately, Dr. Williams' project proposal was inspired by a mentor at her urban residency program, and there are few senior faculty at her current institution with interests and backgrounds relevant to her work. Furthermore, resources for those interested in research at her small hospital (such as biostatisticians and funding for data analysis software) are limited.

Finally, Dr. Patricia Campbell is a Black female associate professor of thoracic surgery at a major academic medical center. She has authored over 30 publications in her field and recently received her score and summary statement of her first NIH R01 grant proposal. While comments noted her expertise in the research topic, her score was not competitive enough to be awarded funding. Following her grant rejection, she discovered that a White male colleague with comparable experience received a better score and secured a large grant for his project.

Although overly simplified, these three anecdotes reflect areas of inequality in academic surgery that hamper the advancement of the field by disadvantaging potential investigators. The evidence supporting the existence of these three forms of bias and proposed interventions to mitigate them are outlined below.

## 4.2 Evidence of Bias in Research

One posited source of bias in funding and publication of research is bias against the topic of study. Hoppe et al. analyzed over 157,000 new and renewal applications for R01 NIH funding from 2011 to 2015 and found that Black and African American applicants were 1.7 times less likely to receive funding than their White counterparts [4]. In their quest to understand the etiology of this disparity, they found that topic choice was one of the strongest influences on funding between race groups. Once in the discussion stage of NIH review, controlling for topic choice in analysis reduces the funding gap between Black/African American and White applicants by 21% ($p = 0.005$). Poorly funded topic areas included disease prevention, health disparities, and patient-focused interventions. Specific words recurring in those

applications included socioeconomic, healthcare, disparity, lifestyle, psychosocial, adolescent, and risk.

This finding may correlate with work done by Azoulay et al. examining trends in the types of studies funded by the NIH as compared to the Howard Hughes Medical Institute (HHMI) [5]. They noted a tendency of the NIH to prioritize funding for "safe", short-term projects likely to produce results rather than riskier, cutting-edge topics with higher risk of failure. Contrary to this, HHMI explicitly states that its goal is to encourage exploratory research, and encourages investigators to reallocate resources when facing failure. Azoulay's group notes the very structure of the funding cycles for NIH and HHMI reflect the ethos of each institute; NIH has a 5 year cycle with one renewal, while HHMI has more opportunity for turnover with a 3 year cycle.

Finally, economist Danielle Li examined nearly 100,000 NIH grant applications and their reviewing committees for "intellectual proximity," or how much expertise reviewers had on the topic of applications under their purview [6]. She found that the more intellectually related a reviewer was to an applicant, the more likely the application was to receive a higher score and to be funded. This may disadvantage investigators in niche fields, perpetuating a cycle of disproportionate funding for certain dominant areas of study.

With regards to institutional bias, the primary issue is a cycle of funding success that is concentrated within a select few institutions. From 2010 to 2019, eight of the top ten independent hospitals receiving funding from the NIH have remained consistent: Massachusetts General Hospital, Brigham and Women's Hospital, Boston Children's Hospital, Children's Hospital of Philadelphia, Dana Farber Cancer Institute, Cincinnati Children's Hospital, Beth Israel Deaconness Medical Center, and St. Jude Children's Research Hospital [7]. The remaining two spots have alternated only between five different hospitals during that time. The annual success of these institutions, on the scale of hundreds of millions of dollars in federal funding, places them at a clear advantage for recruitment of top researchers, which in turn leads to continued success.

There also exists institutional bias within NIH itself. Shavers et al. out of the National Cancer Institute (NCI) conducted sessions of mixed methods "concept mapping" to identify clusters, or themes, of barriers to racial/ethnic minority investigators applying to and being competitive for NIH funding [8]. One of nine clusters identified was "Institutional Bias in NIH Policies." See Table 4.1 for a list of the statements within this cluster. Common themes include systemic issues of bias, absence of a true peer-review process within the NIH, and homogeneity of review committees.

The most robust evidence on bias in research exists within the realms of race and gender. In 2011, Ginther and colleagues analyzed over 83,000 R01 applications from more than 40,000 unique investigators for trends between priority score, applicant self-reported race, and probability of receiving funding [9]. They found that applications from Black investigators were 13% less likely to receive funding than white applicants; this discrepancy decreased to 10% when controlled for demographic factors of the applicants, including educational background, native country,

**Table 4.1** Institutional bias in NIH policies[a]

| |
|---|
| • Systemic bias that makes the conduct of research in minority communities challenging (i.e., lack of quality surveillance data). |
| • Absence of truly peer review process. |
| • Lack of support from program officers for research applications from minority investigators that are near the funding line (e.g., funding by exception). |
| • Policies that restrict minority investigators from being principal investigators on their research projects. |
| • Bias, prejudice, racism and discrimination in peer-review groups. |
| • Inadequate representation of racial/ethnic minorities on grants review and other NIH committees. |
| • Lack of any real commitment by NIH to reduce health disparities. |
| • Misuse of minorities in requests for applications (RFAs) to force partnering with majority institutions. |
| • Study sections that are not responsive to research issues primarily involving minority populations. |
| • Lack of accountability of the principal investigators for training grants. |
| • Review committees that are not multidisciplinary or multidimensional with regards to expertise, career level and demographic characteristics. |
| • Lack of NIH staff belief in the necessity of including minority investigators in research. |
| • The extra scrutiny that grant proposals on minority health are subjected to. |
| • The number of restrictions placed on special awards granted to minority scientists (e.g., rewards that allow the awardees flexibility based on individual needs to use the funding for either salary or research expenses). |
| • Bias against underrepresented scientists, HBCUs and other minority-serving institutions. |

[a]Adapted from **Table 2** by Shavers et al.

record of publications, training, previous research awards, and employer characteristics. Additionally, Black and Asian investigators resubmitted grants more frequently than Whites before they received an R01 and were also less likely to resubmit an unfunded award. This disparity exists even amongst applicants who have previously participated in NIH-sponsored research training and fellowship programs (T and F series awards), which imparts significantly higher rates of successful funding. Of note, there was no difference in likelihood of funding for applications which received high priority scores, regardless of applicant race.

Five years following the publication of these findings, Ginther's group performed a similar analysis, this time including gender as well as race [10]. This study found that Black women MDs were nearly 13% less likely to receive R01 funding as compared to white women MD applicants, while white women MDs and PhDs were equally as likely to be funded as white men. They refer to this a the "double bind" of minority women in research. As of 2015, only 3% of all full-time medical school faculty were Black or African American, of which 54.5% are women [11]. Thus, with Black researchers and female researchers each being individually disadvantaged groups, women comprising the majority of Black investigators results in this racial minority group being overall less likely to receive funding.

Other groups have found that women are disadvantaged in research funding, regardless of race. In 2017, Magua et al. combined qualitative thematic analysis with computer assisted data abstraction to assess trends in descriptive terms used in R01 summary statements [12]. They found that men were more likely to be described as independent trailblazers ("highly innovative" "leaders" and "pioneers") while women were described as dependent supports ("expertise" in "excellent" environments). Women received significantly worse summary scores than men, and these disparities were not attributable to the quality of research. The authors posit that implicit gender bias may cause reviewers to interpret prior research achievements and qualifications more favorably for men, as they play a more "agentic role" as compared to women who are viewed as knowledgeable in their given subject area but not necessarily leaders. Another group led by Myers et al. out of the University of Pittsburgh performed a systematic review of articles examining gender disparities in funding in relation to h-indices, a marker of research productivity and quality. They found that male academic surgeons had significantly higher h-indices as compared to female academic surgeons [13]. Interestingly, when stratified by ranks of professorship (i.e. assistant, associate, and full professor of surgery), there was no difference in productivity at the levels of associate or full professor. Based on this, the authors supported previous hypotheses from papers within their review that attribute this early-career disparity to women prioritizing familial obligations during child-bearing years, but maintaining research productivity at senior faculty levels.

## 4.3 Solutions

So what is the scientific community doing to mend these gaps in diversity, equity and inclusion within academic surgery? The existing literature reflects an ongoing conversation, which is necessary for drawing attention to the issue. The NIH has acknowledged the likely interplay of implicit bias on the grant review process, and in response to this created an Early Career Reviewer program [14]. This group hopes to specifically recruit junior faculty from backgrounds underrepresented in medicine (URIM), as well as those from institutions with less established research departments, with the goal of increasing representation amongst funding application reviewers, but also supporting pipelines to disadvantaged groups. In response to concerns that the NIH does not support riskier exploratory research as robustly as HHMI, they created the Director's Pioneer Award (DP1) with a specific focus on "transformative" research. However, critique of this notes that unlike the HHMI investigators, "Pioneer Award status is not renewable and does not really alter the time horizon of the evaluation, since Pioneer awardees will need to compete for R01 grants once their pioneer status expires after 5 years" [5].

The NIH also announced a plan to use Project Implicit, a validated tool for assessing the presence of implicit bias, in order to identify areas for improvement amongst their employees. While this is useful information to obtain, one should

note that a meta-analysis performed by Forscher, Lai, et al. found that while mandatory bias training improves performance on such tests, this does not translate to changed behavior in practice [15].

Similar interventions are being implemented at the departmental level. The Department of Surgery at the University of Alabama at Birmingham has created several pipeline programs to improve minority and female recruitment [16]. The Pre-College Research Internship for Students from Minority Backgrounds (PRISM) pairs medical students from URIM backgrounds with surgical faculty members to provide early mentorship and research guidance. Similarly, the Surgery Undergraduate Research Experience (SURE) provides early exposure to surgical research for women and minorities at the undergraduate level. Additionally, URIM medical students from outside institutions have the opportunity to receive a scholarship to participate in a 4-week visiting elective to the UAB Department of Surgery.

Another proposal has been to double-blind the manuscript review process by removing all identifying author information at the time of submission [17]. Enzo Palombo out of Swinburne, Australia described a practice where he consciously nominates a female colleague as an alternate reviewer anytime he declines to review a manuscript [18]. Finally, an announcement that garnered much attention in the lay press was the June 2019 announcement by Dr. Francis Collins, Director of the NIH, that he would no longer serve on all-male panels (colloquially known as "manels") in order to encourage gender parity amongst invited panelists in scientific forums [19]. In conclusion, these interventions, along with ongoing assessments of their successes and shortcomings, are reasonable starting points for mitigating the existing disparities. However, the conversation should continue to be revisited until true parity in academic surgery is achieved.

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# Chapter 5
# Choosing a Surgical Specialty


**Lesly A. Dossett and Julie Ann Sosa**

*Michelle is a junior surgical resident starting to consider her choice of surgical specialties. Her favorite rotation was on the trauma service, in large part because she was allowed to do multiple procedures independently in the intensive care unit. She is concerned about the work-life balance of a trauma faculty member, but she is worried about raising this concern to her faculty mentors. She wonders what factors she should consider when making her specialty choice.*

Approximately three-quarters of graduating general surgery chief residents pursue post-residency surgical fellowship training, leading to general surgery largely becoming a specialty-based practice [1–5]. In the US, more than 20 specialty fellowships of surgery are recognized; this does not include other surgical specialties, such as orthopedics, neurosurgery, urology, ophthalmology, and otolaryngology, all of which have separate residency training programs [6]. General surgery residents believe that pursuing specialty training will lead to better success in the job market, a better income, and potentially a better lifestyle [7]. While decision-making around specialty choice is complex, some key factors provide a framework for how learners can make an informed specialty choice. These include consideration of the types of cases and clinical problems that will be encountered in the specialty; quality of life and on-call responsibilities; competitiveness of the specialty's fellowship match; the job market and financial compensation; alignment with extra-clinical research or advocacy interests; and the influence of mentors (Table 5.1) [2, 8].

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**Table 5.1** Considerations around making a specialty choice

| |
|---|
| Scope of practice (patients and cases) |
| Quality of life and work life integration |
| Alignment with extra-clinical interests |
| Competitiveness of fellowship match |
| Specialty job market and salary |
| Influence of surgical mentors |

## 5.1 Framework for Making a Surgical Specialty Choice

Do you want to be a specialist or (relative) generalist? Some specialties, such as hand surgery or transplantation, are relatively narrow in their scope of practice, both in terms of diseases treated and the variety of index cases performed. Others, such as surgical oncology, pediatric surgery, and trauma and acute care surgery, remain broader in disease scope and procedure types performed. Some learners are attracted to the "super-specialist" concept, where a narrow scope of practice allows for deep expertise, such that sooner rather than later it might be possible to comfortably take on the most complex cases within the field or be the pre-eminent content expert. In this scenario, variety is primarily derived from clinical nuance and complexity. In contrast, a more "generalist" practice may involve a wider variety of disease pathologies and anatomic locations.

What types of patients do you want to care for? A high level of intellectual curiosity regarding the disease processes most commonly treated by the specialty is of critical importance in choosing a specialty. For example, a practice in surgical oncology requires a keen interest in tumor biology, multi-disciplinary care and coordination, and acumen in interacting with patients and families potentially facing end of life decisions. A practice in transplantation demands an understanding of rejection and immunosuppression as well as an appreciation for the social determinants that may impact a patient's success after transplantation. As much as possible, decisions around specialty choice should be made in light of the common diagnoses and pathologies that will be encountered by the specialty (i.e. the 'horses') rather than the rare or exceptional cases (i.e. the 'zebras').

What are you needed to do? Almost all specialties have a mix of cases that could be considered "want to" and "need to," and sometimes the "need to" can drive specialty choice. In most cases, a new surgeon's early case mix will include a healthy number of "need to" cases, so comfort with these cases should be considered when making a specialty choice. For example, a person who enjoys living donor kidney transplantation will likely need to do a variety of dialysis access cases or deceased donor procurements before achieving a more advanced practice mix that includes more of the "want to" cases.

What about quality of life? Choosing a specialty that brings fulfillment is a necessary first step in achieving optimal work life integration. Basing specialty choice only on quality of life or call responsibility considerations may lead to dissatisfaction if the cases and patients don't ultimately align with a resident's interests. But

quality of life and call responsibilities cannot be completely ignored, as they are significantly correlated with subsequent job satisfaction and burnout [9]. A systematic review demonstrated some variation in satisfaction and burnout by specialty, with pediatric and endocrine surgeons demonstrating the highest career satisfaction, whereas a significant proportion of plastic surgeons and vascular surgeons were least satisfied [10]. These factors should be considered both in the context of the resident's *present* and *future* life interest and responsibilities. What is appealing when you are young might not continue to be so appealing when you are older or approaching the end of your career.

How does the specialty align with your research, education or advocacy interests? For residents considering a career in academic surgery, the clinical specialty choice ideally is synergistic with extra-clinical research, education, service, or advocacy interests. A resident with significant interest in pursuing a scientific career studying vascular biology would likely achieve optimal synergy in the practice of vascular surgery or transplantation. While exact alignment of academic interests and clinical practice is not always required, a synergistic relationship between scholarly interest and clinical practice is likely to lead to the most success and will certainly entail more efficiency in the long term.

How competitive is the fellowship match? Concern about matching into a fellowship program is rated as a significant factor in specialty choice by nearly a quarter of residents [2]. One study analyzed trends in a normalized competitiveness index over time and rated pediatric surgery as the most competitive specialty, while surgical critical care and vascular surgery were the least competitive [11]. These results are consistent with other studies that have documented a 50% match rate in pediatric surgery [12]. Consideration for the likelihood of a successful match should be made in conjunction with surgical mentors within the field and take into account objective metrics such as American Board of Surgery In Training Examination (ABSITE) scores, rotation evaluations, research and publication record, and references.

How is the job market? Successfully matching into a surgical specialty fellowship does not guarantee employment in a job that is entirely supported by cases in that clinical discipline, and fear of unemployment or underemployment can be a major factor in specialty choice [13]. Particularly for specialties treating relatively rare diseases, graduating fellows may find few desirable employment opportunities awaiting them at the end of fellowship training. This can mean significant compromise around employer geographic location or institution type. For specialties treating more common diseases and conditions such as breast surgical oncology, trauma and acute care surgery, and/or colorectal surgery, the job market may present options with an immediate specialty-based practice. For specialties and in areas with a more limited referral base, new graduates may consider a more generalized practice early in their careers until a specialty practice can be built—i.e., an endocrine surgeon may consider doing general surgery while building referrals around thyroid, parathyroid and adrenal pathologies. Differential financial compensation also may be considered, but only 20% of residents rate income as an important factor in their choice of clinical specialty [2].

What future trends may impact the specialty? Advances in endovascular surgery have transitioned vascular surgery away from open procedures to catheter-based procedures using imaging guidance. Similar advances in therapeutic endoscopy have changed the scope and complexity of many disorders treated by minimally invasive surgeons. Discoveries in cancer therapeutics could drastically alter the surgical indications for some diseases. These future trends include potential innovations in technologies, such as devices or techniques that will require substantial commitment to ongoing continuing medical education. While not entirely predictable, some consideration should be given to the role future discovery or trends could have on case mix and specialty choice.

Who are your influential surgical mentors? Along with the patients and cases typical of the specialty, fellows rank the influence of a mentor as among the most important factors in their choice of specialty [8]. Surgical mentors can most closely model the experiences of a faculty or attending specialist with regard to the mix of outpatient and inpatient time, call responsibilities and ability to achieve work-life integration. Surgical mentors who are passionate about their specialty and derive fulfillment through their clinical work can be compelling recruiters to their surgical specialty, but learners should be careful not to rely only on anecdotal experiences based on an 'N of 1'. Instead, residents should pursue broad exposure to clinical mentors and current fellows via different rotations (and electives when possible) during residency and through networking at regional, national or international meetings.

*Ben is a senior surgical resident who has decided to pursue a fellowship in minimally invasive surgery after spending 2 years in a vascular biology lab. He discusses this choice with his research mentor who tries to be supportive, but ultimately laments that he is "wasting his talent."*

While many of the above factors should be considered when choosing a surgical specialty, other factors should raise a red flag in specialty decision making. These include choosing a specialty to please a mentor or other influential person and perceptions about specialty hierarchy.

Seeking approval from a mentor, parent or other influential figure. The best mentors do not want to create mentees solely in their own image; rather, mentoring requires generosity and the ability to allow mentees the opportunity to create themselves in their own right [14]. The decision to not follow in clinical footsteps of a beloved mentor can be a difficult choice for a mentee, but one that should be fully supported by the mentor. Similar to seeking approval of a mentor, specialty choice should not be dependent on other external pressures, such as approval from family members, friends or other colleagues. Physician's children are 24 times more likely than their peers to enter medicine, speaking to the "inherited" nature of the medical profession. While there are not strong data with regard to the influence of family members around subsequent specialty choice, one can assume that a parent's specialty choice could significantly influence the choice of the child. Learners with physician family members should seek the advice of those family members, but also

be certain they are making a specialty choice that aligns with their own interests. Remember: life is short, and it is yours to live!

Perceived specialty hierarchy. Perhaps due to biases related to the surgeons that choose certain specialties or the patients or diseases treated by these specialists, some hold onto the view that some specialties are more highly valued and require substantially more surgical skill, while other specialties do not. Other specialties could be viewed as more appealing for other reasons. This implicit belief could be seen in the clinical specialties of surgeons most likely to be selected for leadership positions, such as Chief of Surgery or Department Chair, where historically the clinical specialties of surgical oncology and transplantation have been heavily represented, and breast surgical oncology or minimally invasive surgery have been underrepresented. This bias can unnecessarily create pressure for trainees to pursue certain specialties or discourage the most talented residents from pursuing other specialties.

## 5.2 Practical Steps in Making a Decision

*Ben is a medical student applying in surgery. He has an interest in pediatric surgery and is uncertain about what steps he should take to decide whether or not this is the correct choice for him.*

Students and residents considering a surgical specialty can take numerous practical steps to decide whether that specialty is the right choice. These include making wise initial choices related to residency selection; keeping an open mind; seeking opinions from a broad range of mentors; and taking a "test run" of what it's like to work in that specialty through experiences on elective rotations, research projects, and at national meetings (Table 5.2).

**Table 5.2** Practical steps in making a specialty choice

| |
|---|
| Select a residency program with broad clinical exposures. |
| Keep an open mind during clinical rotations. |
| Seek broad and diverse opinions about the specialty and your skillset. |
| • ABSITE scores |
| • Research and publication history |
| • Technical ability |
| Look for experiences that allow for a "test run". |
| • Elective rotations |
| • Mentored research projects |
| • Attend a national specialty meeting |

The influence of the general surgery training program. Rotation experiences have been demonstrated to highly influence resident perception of specialty scope [15]. Some general surgery training programs have a few specialties that are particularly prominent at their institution, in part as a result of the influence of departmental leadership, a research or scholarship focus, geographic location and referral base, local competitors, institutional priorities, or long-standing tradition. This relative prominence can influence specialty choice through early clinical rotations or influential surgical mentors. Similarly, if a particular program has a relative weakness in a clinical discipline (few providers or a small market share or footprint), it might be less likely that residents will have significant enough exposure to the specialty in a meaningful way to cast a fellowship choice in that specialty in a favorable light. Given the strong influence of clinical exposure, it is therefore important that applicants prioritize residency training programs that are strong across many disciplines and that have a track record of placing applicants into many different clinical specialty fellowships. Additionally, exposure should be balanced throughout the clinical years, such that residents can experience specialties before important choices regarding research time or fellowship must be made.

Keep an open mind. While young trainees may be influenced by early rotations, it is important to keep an open mind regarding subsequent fellowship choices. Early experiences (whether good or bad) do not always transition to the typical experiences of senior residents, fellows and faculty in that specialty. Certain experiences that may be very impactful for a practicing surgeon—such as talking a patient through a new cancer diagnosis and then performing his or her cancer resection—may not be easily accessible to a junior surgical resident. By keeping an open mind, trainees can ensure that they have the most information regarding a specialty through their longitudinal experience and graduated responsibility.

Seeking broad opinions. While it is common for trainees to focus on one or two close surgical mentors when selecting a clinical specialty, it is important to consider the opinions of a broad group of faculty and peers when making a specialty choice. Diverse opinions may provide a more balanced view of the pros and cons of various specialties or work to dispel misconceptions about certain clinical disciplines. Soliciting mentorship from a diverse group of faculty also provides some protection from choosing a specialty only because of one dominant mentor, as other mentors can provide advice and support to the resident in case of a split in recommendations or conflict with the primary mentor.

Give it a test run. One of the best ways to confirm that you have made the correct choice about specialty is to give it a test run through dedicated or elective rotations, working on a research project, and/or attending a national meeting in that specialty. This ‘deeper dive’ in the clinical discipline can help to confirm that clinical or research problems are interesting to you, and that the choice seems to be a good fit. Alternatively, a test run may cause re-consideration of specialty choice even relatively late in the process. If this occurs, it is important to remember it is never ‘too late’ to change course if the specialty no longer feels as if it is the best option.

## 5.3 Diversity, Equity and Inclusion Considerations and Specialty Choice

A diverse surgical workforce is necessary to ensure that the field of surgery is optimally positioned to solve complex problems, care for patients, and train the legacy generation [16]. While there have been increases in the number of women choosing to pursue a career in surgery, these gains have not been seen across all specialties, and little progress has occurred around recruiting underrepresented minorities (URMs) into surgical fields. For example, while women and men are equally likely to pursue post-residency fellowship training, there are gender-based differences around specialty choice. Women are more likely to pursue fellowships in surgical oncology, colorectal surgery, and critical care, whereas they are much less likely to pursue fellowship training in thoracic surgery, vascular surgery and transplant surgery (Table 5.3) [4]. These data raise several diversity, equity and inclusion considerations around specialty choice.

Mentorship and representation matters. Given the observation than an influential mentor plays a critical role in a resident's specialty choice, ensuring access to mentors for all trainees is critical for optimizing diversity, equity and inclusion across surgical specialties. Women and URMs in surgery frequently cite a lack of mentorship as contributing to their general dissatisfaction [17]. Since mentorship is cited as a major influence in choosing a specialty, a paucity of mentors in certain specialties may contribute to gender- or race-based differences in specialty choice. Faculty from all specialties should ensure they are open to mentoring a diverse group of residents. Availability of effective mentorship also requires that specialties work to achieve equity among their ranks at all levels, including leadership positions. Representation and activities at national meetings (particularly around networking and social activities where informal mentorship occurs) should be made to be as inclusive as possible to communicate an openness of the discipline to a diverse workforce.

Work-Life Integration. Some specialties are perceived to be less receptive to the integration of motherhood. In a survey of general surgery residents who were pregnant and delivered a child during surgical training, 15% of respondents altered their fellowship plans owing to perceived challenges of work-life integration. These women commonly did not pursue fellowship or switched to breast surgery or trauma and acute care surgery [18]. In order to achieve diversity, all specialties should actively consider their family leave policies and work to create the most permissive policies possible within the confines of what is required for excellent patient care.

**Table 5.3** Percentage of active physicians who are female by AAMC defined specialty

| | 2007 | 2010 | 2013 | 2015 | 2017 |
|---|---|---|---|---|---|
| General surgery | 13 | 15 | 17 | 19 | 21 |
| Thoracic surgery | 4 | 5 | 5 | 6 | 7 |
| Plastic surgery | 11 | 13 | 14 | 15 | 16 |
| Vascular surgery | 8 | 8 | 10 | 11 | 13 |

Data available at www.aamc.org

*Susan recently completed a fellowship in trauma and surgical critical care at the urging of her mentors. Now in her first year of practice, she finds she misses elective surgery and a longitudinal relationship with patients. She is considering a change of specialty but is uncertain about how to take the next step.*

There is more than one way to get to the right specialty choice, including choosing the wrong one initially. There are no definitive data on the number of surgeons who change specialties; given the high rates of dissatisfaction and burnout that exist within surgery, it is likely that many consider a career change, and some pursue it. Deciding to train (again) in a different specialty can be disruptive, requiring a geographic move and resulting in income loss, but for those who pursue it, the end result can be rewarding. The process of changing specialties can be informed by many of the strategies outlined above, including talking with mentors and surgeons in the specialty, seeking broad opinions, and gaining some experiences in the specialty to the extent possible. In addition, those who are considering a specialty change should consult with a trusted mentor or professional coach to assist with self-reflection with regard to the motivation for the change. Once the decision is made, charting a path forward will likely require consultation with members of the specialty to determine the best re-training options.

## 5.4 Conclusion

Almost all general surgery residents will at least consider post-residency training, and up to 80% ultimately pursue it. Important considerations include having a thorough understanding of the types of cases you most enjoy doing and patients you most enjoy treating, seeking guidance from trusted mentors, and identifying early "test run" experiences. Ultimately, the decision must be based on personal interests and life considerations which inform the professional choices. Specialty societies should promote diversity of membership and inclusivity among the leadership to ensure their specialties remain open to a diverse candidate pool.

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# Chapter 6
# Selecting One's Type of Practice


**Desmond Huynh and Shirin Towfigh**

## 6.1 My Story

### *6.1.1 Practice Type 1: The University Job*

Similar to most surgical residents, my medical school and residency experience was a mélange of clinical patient care and research, with academic role models. Upon graduation, I had multiple local job offers but did not want to leave my home town. I had to choose between a top tier busy but small private practice that would pay me very well or a low-paying tenure-track busy County-based job where I could teach medical students, residents, and fellows, do research, write grants, etc.

I chose against the high-paying private practice job and accepted the university job at 70% lower salary. I had to take in-house call to support my salary. I was not paid based on clinical output, rather based on my perceived value to the University and the Department of Surgery. I became heavily involved with the medical school and with surgical education, building multiple award-winning programs. I had an amazing mentor, Dr. Thomas Berne. He guided me to grow my research and advance my surgical career. I brought in over $2 million in grant funding.

The university job was so satisfying, but I could not grow in the Department no matter how much I excelled. My value to the University was real but intangible; I was not bringing in clinical revenue. I never got a pay raise. The burden of in-house call was hindering my ability to be more academically productive. I was up for Associate Professor of Surgery and it was unclear if my Chairman would support

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my application. My Chairman controlled the trajectory of my career. I felt trapped in a job I liked that had a very low ceiling. I had to leave.

### *6.1.2 Practice Type 2: The Employed Job*

For my next job, geographic location was not as important. I was looking to have the liberty to build programs while staying academic and with an increase in salary. There were great tenure-track Associate Professor jobs, as Division Chief or higher, at several Universities. I was lucky to find the unicorn job: a local job that paid me well, where I could focus on my love for surgical education, build programs, and gain prominence nationally. The Chairman was new to this large Community hospital and was tasked to grow his Department to national prominence. I was going to be one of the key members of his team to do so, and so he was supportive of my career aspirations and didn't care if I was not clinically productive. As a private hospital, they couldn't offer me a tenure-track title, but I found that such titles were no longer meaningful.

There is no such thing as a unicorn job. The hospital soon learned that it's not cheap to employ surgeons who aren't clinically productive. No matter how many papers I published or talks I gave, no matter how prominent our department, the administration considered my efforts more of a drain on their resources. What I considered to be a very academic job soon transformed to a very clinical one. I was expected to maximize wRVUs while still building and maintaining a medical student program, skills lab, MIS/Bariatric fellowship, and do research. I had to slowly give away the programs I had built in order to make room for my increased clinical load, as I became the busiest employed general surgeon in my Department.

I met with my Chairman, as I was unhappy. I accepted the job based on its promises to be an academically productive job with focus on surgical education. It evolved into a clinically heavy job, and I was self-funding my own academic aspirations. I told him, "I don't understand how what I am doing is any different than being in private practice." His answer: "It's not."

### *6.1.3 Practice Type #3: The Private Practice Job*

Why would I choose to be employed with a limited salary and a whole hierarchy of administrative bosses, when I can be my own boss, without a ceiling on growth? I was offered great jobs, including Chairman positions, Residency Program Directorships, etc. I decided I did not want to be employed anymore. The thought of being controlled by an external force was no longer palatable to me. My next step in life was to be in solo private practice.

Private practice was never on my radar, but time and experience can change you. What I valued most was to do what I loved: I built my own Hernia Center and grew

my clinical practice while maintaining my research output. I suffered no salary inequity in doing so. I had no academic title of value. I still teach students, residents, and fellows, but with much lower interactivity than I used to. That is still one part of my job that I truly miss.

I had to learn a lot in order to make sure I had a successful private practice. Nobody teaches you the skills to succeed in private practice. I had to learn business money management, medical billing, hiring, and the rules and regulations of running a business. As my ceiling was lifted, so had my safety net. I incurred the risk of failing at any time. Given my successful clinical practice history and my unhappiness in an employed position, that was a risk I was willing to take. I could learn the rest. The independence I now have far outweighs the risks and stresses intrinsic to owning a private practice.

## 6.2 The Practice Types

Traditionally, surgical practices have been described as either "private" or "academic." This delineation was often made based on the presence of residents, involvement in education, and research capacity. However, this definition can be misleading as it falsely conflates employment models with educational/research involvement. Many surgeons in a private practice model, such as myself, are academic as we do educate residents and are involved in research.

I prefer to think of practice types as either "Institutional" or "Community-based." An Institutional practice is usually a salaried position in a larger health system. A Community-based practice can be either as a single surgeon or as part of a group of surgical partners. The key differences between these two are outlined in Table 6.1.

**Table 6.1** Differences between "Institutional" and "Community-based" practices

| | Institutional | Community-based |
|---|---|---|
| Older names for: | Academic | Private practice |
| Income | Employed with base salary<br>Income ceiling<br>Billed charges pre-determined | Employed with base salary or no guaranteed income<br>No limit on income<br>Control over billed charges |
| Referral | Automatic referral base | Must build and maintain referral base |
| Benefits | Included | Purchased |
| Call | Cross coverage or shift coverage | Cross coverage or self coverage |
| Work hours | Fixed | Flexible |
| Academics | Potential publication requirements<br>Required education | Self-funded research time and support staff<br>Voluntary education |
| Misc. | Administrative oversight | Independent |

Surgeons working as part of a large institution trade a certain amount of autonomy for the support and resources available from the institution. Their income is at least a base salary. The surgeon is assured a reliable monthly income within a set institutional pay structure. This is an example of compromising a ceiling for a safety net. While a large institution will provide security and a level of assured income (the net), there is usually a limit as to how much income you can earn (the ceiling). Today, most institutional structures offer incentives for clinical productivity which is typically (a) based on billed charges on which the surgeon has no influence, (b) a fraction of what has been collected, and (c) partially tithed back to the institution. As value-based care becomes important, institutions have placed more emphasis on increasing the clinical volume of their surgeons [1]. The clinical income gained by an institution's surgeons helps offset salaries and costs incurred by purely scientific employees, such as by PhD researchers and their labs. Theoretically, other metrics such as research productivity or publication requirements may be used at institutions to augment surgeon compensation; this is usually not a significant determinant of income.

Community-based practices are typically private practices whose income is purely based on clinical revenue. The surgeon's income may be based on clinical productivity or they may be employed with a base salary. If there is a base salary, there is often an incentive for clinical productivity over a certain milestone. Community-based surgeons often have more control over their business plan, including their fee schedule, i.e., how much they charge for their services and how much they wish to work. There is typically no incentive for research or education productivity. Any such activity is performed separate from their clinical practice.

The referral patterns can be different for the Institutionally employed surgeon versus that of a community-based surgeon, with potential impact on their income. Surgeons within an institution have a built-in referral pattern from the health system at-large in addition to some referrals from the community. They also have an automatic cadré of specialists they can rely on if they need help. In contrast, community-based surgeons must build and actively maintain their referral base.

The call system varies tremendously based on specialty and practice type. As an Institutionally-employed surgeon, there is often cross-coverage by your division's team members, and there may be residents and fellows that reduce the impact of being on call. Most have a "shift work" model where the surgeon assigned to be on call protects the other surgeons from clinical responsibility. Thus, patients may not see their own surgeon when presenting with a problem. This is a nice time to bring up the *locums tenens* model. Such surgeons are hired on a temporary contract to serve as the on call surgeon, usually to fill a gap or void in surgical coverage for a hospital or group.

Some community-based surgeon groups practice similar cross-coverage models. Some groups provide cross-coverage among themselves for evenings and weekends. However, patients who seek care by surgeons in a community-based private practice tend to expect more personalized care. It is not uncommon for a community-based surgeon to be nearly always on call for their own patients.

## 6.3 Final Comments and Words of Advice

While we have outlined typical differences among Institutional and Community-based practices, surgeons' practices are nowadays much more of a hybrid. Most Institutional surgeons are expected to be clinically productive like a community-based private practice surgeon. Meanwhile, many Community-based surgeons are contributing to surgical innovation and advancement in their specialties, despite not having the backing of a large institution.

Ultimately, the type of practice you choose will have to match your personal priorities. Note that these priorities may change, as did mine. As time passes, you age and you gain life experiences. Whereas you had certain expectations of where you would be in life and found happiness with certain types of work, that may change over time. And that is normal.

I recommend that your first job be in a system with high surgical volume with access to seasoned surgical mentors. A busy clinical practice will allow you to hone in on your surgical technique and preferences and make independent decisions in the operating room, thus improving your practice as a surgeon. Access to senior mentors can help you grow clinically as well as offer career guidance.

I also recommend that you read a lot. There are some online resources that can help the early career surgeon. These include articles provided by the American Medical Association and the American College of Surgeons [2–4]. Also, KevinMD.com has hundreds of blogs by physicians who have already been through this process, sharing their experiences about the pros and cons of their practice type.

Most surgeons do not stay in the first practice they join. The average first job lasts 5 years and most average 3 jobs [5–8]. This is because as you grow in your first practice, you start to identify what you like about your job and what you wished you could change. Perhaps your first job did not provide you with the career trajectory you were hoping for. You may wish to look for a job that has better support and opportunities for career advancement, whether that be breadth of cases, research support, academic prowess, or supportive colleagues with whom you may have a better rapport. Perhaps your Chairman is not supporting you unconditionally or colleagues are preventing you from building your name. Perhaps you feel that you have a vision that does not match the mission of your department. Perhaps you are growing your family and feel that a different job, either geographically or in terms of income potential, may be better.

When seeking your second or third or fourth jobs, your priorities will change. Perhaps you wish to work less or take less call. Perhaps you wish to have a larger impact nationally or internationally, which involves a lot of travel and time away from your institution. Perhaps you have a clinical niche you wish to grow and are looking for a practice that will cultivate that.

The best choice of practice for you is the one that brings you the most joy and fulfillment. As Mark Twain wrote, "find a job you enjoy doing, and you will never have to work a day in your life." Follow your gut and your lead. Do not be afraid to make the difficult decision to leave a secure job. Know that most people do not stay

**Table 6.2** Key issues and interventions

| Issue | Intervention |
|---|---|
| Independence | Community private practice |
| Guaranteed income | Institutional or employed community practice |
| Research staff support | Institutional practice |

in the same job. Also, remember that, as a surgeon, you have so many options and opportunities. There are jobs with and without call, with and without emergencies, with short and long hours, of low and high acuity, and jobs like *locum tenens* that pay well but are temporary and without the long-term responsibilities. Identify your priorities and consider how the various aspects of each practice opportunity can meet your goals [Table 6.2]. Lastly, reassess your career every 5–10 years and be open to change.

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# Chapter 7
# Alternative Paths

**Dawn Coleman and Sanjay Krishnaswami**

## 7.1 Introduction

Diversity typically refers to the inclusion of varied types of people, but it importantly also denotes the incorporation of novel or under-represented elements, qualities, or lines of thinking. In the not so distant past, academic surgeons were primarily of two phenotypes, basic scientists and clinical researchers. As it has been well described that diverse teams produce better health science with broader impact, there has been increased recognition of a value-based, 'extended academic phenotype'. This improves our effectiveness and impact by collectively empowering our varied strengths, and by leveraging our uniqueness for competitive advantage. Understanding that surgeons are uniquely positioned to identify new opportunities for improving patient care and developing cures for human disease in such a model, a variety of academic surgical pathways have recently emerged [1]. These include education, ethics, global surgery, and innovation among many others. Such a less-travelled path can be challenged by a genuine lack of understanding, misconceptions about its academic potential, or perceived misalignment with institutional vision. However, while you may not initially receive the same degree of acknowledgement, mentoring, or support, if the subject is where your true passions lay, time and patient self-application will be recognized and rewarded. This chapter aims to champion the extended 'phenotype' by exploring the challenges, opportunities, and considerations to achieve sustainable success along an alternate career path in academic surgery (Fig. 7.1).

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**Fig. 7.1** Cloud of alternative career paths

## 7.2 Challenges and Opportunities

Relatively new fields of study in academic surgery, such as surgical palliative care, innovation, ethics, education, and academic global surgery, have all faced common practical challenges [2, 3]. These include gaining traction within surgical departments, creating new interest groups or societies, and developing forums for presentation of their scientific work among others. The basis of these issues are generally grounded in the following themes [4] (Fig. 7.1):

- Skepticism from the academic surgical community: Belief that this is more of a hobby than a true academic pursuit (e.g. global surgery viewed solely as mission work). Belief that "everyone does it" so it can't really be academic (e.g. 'innovation is commonplace', or 'we all are educators')
- Skepticism from non-surgical colleagues in the field of study: Belief that the existing avenues of knowledge already cover needs (e.g. surgeons are interventionists and not equipped to address palliative care issues, or surgery is not an essential component of global population healthcare)
- Uncertainty of potential impact of the work: Will this actually make a difference? (e.g. studying medical ethics won't really change the way we approach ethically challenging situations)
- Difficulty with funding: Belief that lack of existing funding lines demonstrates non-legitimacy and non-viability of the field
- Complicated logistics in creating and sustaining collaborations (e.g. if no one in your institution does this, how can you commence this work)

It is important to acknowledge and face these issues head on. While every new field of study poses a set of unique challenges for those wishing to enter, as an interested person it is upon you to view these as opportunities and not barriers. Any misconceptions about academic potential or scope will need to be addressed. When looked at from another's perspective, reflect on what makes this field difficult to grasp as an academic pursuit. For example, in global surgery the fact that there is no local, brick and mortar research space and the "laboratory" is dispersed in field locations worldwide makes this confusing to many. Consider what you can do to make the idea of scholarly work in your field more accessible to those not doing it. Can you partner with non-surgeons who are well-recognized in this field? Furthermore, think about what specific lines of study would improve the short- or long-term impact and direct relevance of your work to your department or institution. Finally, pursue unique funding sources such as federal exploratory grants, private foundations, and societal grants that may overlap with an aspect of your work.

## 7.3 Common Considerations When Starting Out

Regardless of the academic field, starting out is a critical period and preparation is key to success [5]. Many of the following considerations may be applicable to mainstream academic surgery pathways, but they are particularly relevant in emerging fields where the career path is not yet paved and where information and support may be lacking.

*What ignites you?* To build and maintain a positive view, think first about what aspect of this endeavor is most intellectually and emotionally stimulating. If given the opportunity, what specific project could you talk about for hours on end? What clinical, educational or research dilemma or idea excites you enough to stay up all night to solve, publish or write a grant? When you struggle with a slow pace of progress, when your supervisors can't seem to understand your alternative academic path, or perhaps when you do achieve success, the answers to these questions will serve as a pilot light to continuously rekindle your sense of purpose.

*Self-reflect on your personal strengths and limitations*. What gaps do you need to fill in to find success in this new area? Whether it's surgical education, global surgery, health care economics or policy, study the field and read the relevant literature. Expand your skill set with intention. Consider obtaining an appropriate advanced degree to gain expertise and specific qualifications (i.e.: Master of Public Health/Masters in Global Health/Masters in Education/Certificate Program in Biomedical Innovation etc.). Consider applying for a travel award to a center which does the work you wish to be involved with.

*Identify others that do what you want to do.* Build your team and your strategy with intention. Identify mentors within your field and outside it. No single mentor can provide all the assistance you need, so acquire mentors for different aspects of your career path. Then, expand your network of colleagues—cognitive diversity is valuable! Great work is done collaboratively and often at the intersection of different fields and schools, so seek out partners from other schools at your institution, or other

domestic and international centers. Furthermore, harness the power of community through social media—connect with others who have similar interests through Linked-in, Facebook or twitter and join online groups beyond your local area. You will be surprised how many people have common goals if you go looking for them.

*Work on a plan to communicate your interest.* Learn to relate these pursuits effectively and often to your leadership and your peer community. It is critical to develop both a succinct "elevator speech," and a more expansive vision statement and (3–5 year) career plan. Join societal committees that overlap with your field of interest—speak up on conference calls and at meetings, ask questions and share ideas. Brainstorm ideas with colleagues that you can begin to write up in the literature and then do it often. Understand that if it is not written down it is often viewed as never having happened.

*Don't forget the external factors.* Your degree of involvement in and commitment to your alternate path is likely to be significantly influenced by factors beyond yourself. What time commitment are you willing and able to devote to discovery in a new field? The balance between time needed for clinical obligations and your scholarly pursuit should be considered when pursuing initial employment positions or even in your choice of paths itself. Do you have debt or financial obligations that may influence the timing at which you pursue your path or the viability of it overall? Surgeons are paid primarily for clinical work and if you are doing work not immediately recognized or compensated, pursuit of an emerging course of study may affect your financial bottom line, at least initially. What about your significant other or children—are they understanding of this endeavor, or of an age to tolerate recurring absences that may occur with pursuit of a unique academic path? Consideration of the foregoing factors upfront will allow you to adjust for them and more readily achieve your academic goals.

## 7.4 Academic Advancement in an Alternative Pathway

When pursuing one's passion in an emerging academic pathway, it is easy to get consumed by the task at hand and not pay attention to how your work fits into the seemingly mundane process of academic advancement. Don't fall into this trap. Promotion remains the fundamental currency by which academic legitimacy is typically measured across universities in North America. This legitimacy is key as options to pursue a new path may be limited by the ability to gain acceptance and support for this pursuit [6]. For work to be considered academic it generally falls into one of four cardinal areas:

1. Education (guiding surgeons, trainees, or multidisciplinary providers in the emerging path)
2. Research (furthering clinical, education or basic science investigation in a field)
3. Advocacy (supporting domestic or international surgical care through policy change, promoting activities of other surgeons within your field, or other methods)

**Table 7.1** Common basis for academic promotion

| |
|---|
| Service |
| • Clinical productivity |
| • Deep involvement in patient care |
| • Development of novel clinical care techniques/ modalities |
| • Recognition of expertise |
| • Clinical trials |
| Research |
| • Creation of new knowledge |
| • Ongoing publication record |
| • External funding |
| Education |
| • Breadth of teaching and scholarly education activities |
| • Acknowledgement of teaching excellence |
| • Coursework development to increase expertise |
| • Educational publications |

4. Development (creating clinical programs, surgical systems or career pathways in the field)

When a body of work has been established and consideration for academic promotion is being given, there are traditionally three criteria that are considered–education, research, and patient care. Promotion criteria traditionally bend towards numbers of publications and grants, but increased attention has been given recently to service and teaching activities within many universities (Table 7.1).

Although the pillars of promotion do not need significant modification for those in an emerging field, their interpretation may need to be expanded upon and the significance of one's activities within the promotion context may need to be further explained to the unfamiliar. As an example, although research funding is often very restricted in emerging areas, project funding for trainees is often much more attainable. Of course, residents and students would be unable to qualify for these funding lines without support of expert faculty, who should be credited for their mentorship and involvement in study development during consideration for promotion. Another example can be seen in the realm of global surgery, where time spent building alliances with Health Ministries and program development in resource-poor regions is crucial to creation and maintenance of AGS endeavors, but will warrant description to others in the context of promotion.

## 7.5 Sustaining Success

Achieving professional legitimacy through your institution's academic advancement system is an essential building block to *your* success. However, to maintain the

success of any *program* you build in your alternative academic path you must always demonstrate the local relevance of the work. Healthcare organizations typically want to know how these new activities enhance their working processes and reputation. Will the program directly or indirectly benefit patients? Can your activities advance trainee education? In what way does the new work you are doing align with the institutional mission? Consider whether there are parallel or spin off projects that you can undertake with other local stakeholders to broaden the applicability and visibility of your work. Always being cognizant of how an aspect of your work could be developed to fit within overall departmental or institutional plans (without fundamentally altering its spirit) is more likely to garner robust support [7].

Other important points to aid in maintaining support and sustaining success include:

- Consider how your work could establish a new care paradigm or alter thinking about a disease or intervention
- Establish interest groups or journal clubs in the area
- Develop rotations for trainees or coursework in the field
- Involve residents in opportunities to publish and present, develop prolonged trainee research experiences
- Write a textbook in the area, especially if none has been done before—consider 'review article' or 'opinion piece' that can be disseminated and referenced
- Never stop exploring potential funding sources—consider industry, patient-groups, and philanthropy
- Always pose questions, leave a paper trail. With time, advance the subject of your work from the broad to the specific
- If your initial studies in the emerging pathway are descriptive because of a dearth of literature in the area, ensure with time that they progress to comparative and ultimately interventional investigations

It is impossible to comprehensively review the innumerable 'alternate academic paths' available to you. The 'Success in Academic Surgery' series has previously published 'Developing a Career in Surgical Education' (2013), 'Clinical Trials' (2013), 'Academic Global Surgery' (2015), and 'Innovation and Entrepreneurship' (2019) as good references within these areas. Table 7.2 represents considerations along a few representative pathways.

## 7.6 Conclusion

Development and maintenance of a diversity of paths in academic surgery empowers authentic engagement, propels creativity, and fuels sustainable growth in academic surgery. Despite challenges, establishing a career in an alternate pathway can be extremely gratifying. The chance to be involved in a field at its inception and to help establish foundational knowledge is a reward unto itself. To be successful you must first identify what ignites you and then set out with intention on your path by

**Table 7.2** Resource examples for alternative academic pathways

| Track | Options for furthering knowledge/advanced degrees | Societal resources | Funding mechanisms |
|---|---|---|---|
| Education | Masters in Education, Master of Health Sciences (Health Professions Education), Surgical Education Research Fellowship (ASE/Institutional); Surgeons as Educators Course (ACS); Education Scholars Programs (Institutional) | AAS<br>ACGME<br>ACS<br>APDS<br>AMA<br>ASE<br>AWS<br>Specialty-Specific | AAMC, AERA, ASME, FIPSE, Institute of Education Sciences (US Dept of Education), NBME, Robert Wood Johnson Foundation, Association for Women Surgeons |
| There are numerous opportunities for Institutional and Societal service and leadership—consider medical student education (serve as clerkship director, or on medical school Admissions/ Curriculum Committee), resident education (serve as program director or associate program director). Document educational activities. Participate in simulation-based training, curriculum development, coaching/mentoring and credentialing [3]. | | | |
| Team Science | TEAMSCIENCE.NET (An online learning tool for team-based biomedical research); Team Science Training (Institutional) | AAS (Early Career Development Program)<br>SUS<br>Specialty-Specific | NIH: RM1 Grant (Collaborative Program Grant for Multidisciplinary Teams); Multi-PI Research (R01/R12), Program Project Grants (P01), Exploratory Grants (P20), Center Core Grants (P30), Biotech Resource Grants (P41), Specialized/Comprehensive Center (P50/60), Clinical Trial Planning (R34)<br>International: NSF, DOD, Multiple Foundations (i.e.: AHA) |
| *SciTS: Encompasses an amalgam of conceptual and methodological strategies aimed at understanding and enhancing the outcomes of large-scale collaborative research and training programs. | | | |
| Innovation | Innovation and Biodesign Programs (Institutional) that encompass: healthcare economics, HIT, health policy, quality and outcomes, lean startup methodology, human-centered design, big data, medical writing, intellectual property, innovation and entrepreneurship, leadership, management [8] | AAS<br>ACS<br>SUS<br>Specialty-Specific | ACA, PCORI, Aetna Foundation, NIH High-Risk High-Reward Research Program, DOD |

(continued)

**Table 7.2** (continued)

| Track | Options for furthering knowledge/advanced degrees | Societal resources | Funding mechanisms |
|---|---|---|---|
| The clinician innovator pathway presents a new career path within academic medicine that may be ideal for trainees interested in the intersection of healthcare delivery and emerging healthcare technologies. | | | |

*ASE* Association for Surgical Education, *ACS* American College of Surgeons, *AAS* Association for Academic Surgeons, *ACGME* The Accreditation Council for Graduate Medical Education, *APDS* Association of Program Director in Surgery, *AMA* American Medical Association, *AWS* Association of Women Surgeons, *AAMC* Association of American Medical Colleges, *FIPSE* The Fund for the Improvement of Postsecondary Education, *NBME* National Board of Medical Examiners, *SUS* Society for University Surgeons, *AERA* American Educational Research Association, **SciTS* The science of team science, *NIH* National Institute of Health, *PI* principle investigator, *NSF* National Science Foundation, *DOD* Department of Defense, *AHA* American Heart Association, *HIT* Health Information Technology, *ACA* Affordable Care Act, *PCORI* Patient-Centered Outcomes Research Institutes

studying the seminal literature, seeking further education as needed, and identifying your peer and mentor network. You must learn to communicate your interests succinctly to employers and potential donors while always leaving a paper trail to promote legitimacy of your efforts. Furthermore, always considering how your work in an alternative academic pathway can be made more broadly relevant to your department and institution will garner support and effect sustainability. Above all, following your passions patiently will lead to the greatest success. Good luck to all embarking on your path!

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# Chapter 8
# Overcoming Bias from Patients and Their Families: Protecting Our Trainees and Ourselves


**Wendelyn Oslock, Edward M. Barksdale Jr, and Heena Santry**

**Case 1**
A 43-year-old white female surgeon on emergency general surgery call meets a patient with gastrointestinal perforation. The patient is taken urgently to the operating room for a laparotomy and bowel resection at approximately 1 am. After surgery, the surgeon speaks with the family in the family waiting area updating them on the confirmed diagnosis, expectations for recovery, and possible time to discharge. The following day at 3 pm, the surgeon is contacted by the Patient Advocate. The family is upset that the surgeon never came to talk to them after surgery.

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**Case 2**
A 50-year-old Hispanic male colorectal surgeon is making daily rounds. He is seeing a patient who is post-operative day #2 after a sigmoid colectomy for a history of diverticulitis. He met the patient in the clinic for initial evaluation and operative planning and then again on the morning of surgery prior to proceeding. The patient is not on high dose narcotics or experiencing delirium. When the surgeon enters the room with a white male medical student, the patient says, "Hi doc," to the medical student then tells the surgeon to pick up her empty food tray.

**Case 3**
A 33-year-old African-American female surgical chief resident wearing a hijab is seeing a patient in the emergency department for suspected appendicitis. When she walks into the patient room, the family becomes visibly tense. After she introduces herself as the surgeon, the patient's husband states, "We don't want someone like you taking care of her!" They insist on care from another surgeon. The chief resident's fellow chiefs rally around her and offer to see the consult.

**Case 4**
A 25-year-old female medical student is working with a surgeon in clinic. She recognizes the next patient as one she had cared for a few weeks prior on the floor. During a visit to the patient room on day of discharge, he had touched her inappropriately. Seeing him in clinic, she wants to avoid an additional interaction. She asks the attending to see the next patient instead, saying she had an uncomfortable interaction with him before discharge.

In recent decades, surgeon demographics have become more representative of the broader US population. While surgeons have historically been predominantly white cisgender males, surgical patients increasingly find themselves being cared for by surgeons from different backgrounds. Female surgeon representation is increasing, though to differing degrees across specialties. In general surgery, female residents increased from 28% in 2005 to 38% in 2016; and, if this trends continues, the proportion of women surgeons is expected to reach parity by 2028 [1, 2]. Nevertheless, only 22% of general surgery faculty were women in 2014 and women are not expected to achieve parity among full professors until 2096 [2, 3]. Orthopedic surgery remains the specialty with the lowest proportion of women. The proportion of women trainees only rose from 11% in 2005 to 14% in 2016 with just 16% women at the faculty level [1, 3]. Racial underrepresentation is even more pronounced. Black surgeons comprise only 5% of trainees and 3% of faculty compared to 12% of the overall US population [4]. Similarly, Hispanic surgeons make up 5% of trainees and 4% of faculty compared to 15% in the overall US population [4].

How race and gender intersect in the surgical workforce, along with religious, sexual orientation and gender identity representation, are not well-described. Changes at the societal level, however, are increasingly moving toward a more diverse professional workforce.

Despite persisting inequities in the surgical workforce, demographic changes are occurring; thus, surgical patients will increasingly find themselves receiving care from ever more diverse surgeons. As this transformation occurs, patients and their families may sometimes rely on heuristics and bring their own implicit and explicit biases when interacting with healthcare professionals. Implicit bias, also known as unconscious bias, occurs when an individual's subconscious prejudicial beliefs or unrecognized stereotypes about individual attributes such as ethnicity, gender, socioeconomic status, age, sexual orientation, etc. result in an automatic and unconscious reaction and/or behavior [5]. Unconscious bias occurs as part of normal cognitive processing and may result in unintentional discriminatory or hurtful actions [5]. Explicit, or overt, bias is recognized by the individual with the prejudice who then may or may not choose to act on it [6]. Such biases on the part of surgeons have been extensively studied and can negative impact access to care, treatment decisions, and outcomes [7]. The impact of patient biases, on the other hand, are less well elucidated. A recent study from Hu et al. of >99% trainees surveyed after completing their American Board of Surgery In-service Training Exam does, however, provide some insight. Twelve percent of surgical residents reported experiencing racial discrimination "a few times a year" and 27% of female residents reported facing gender discrimination at least "a few times per month." [8] Patients and families were the predominant perpetrators of discrimination by race (47%) and gender (44%) in that study [8]. Sexual harassment is defined as a type of gender discrimination that can occur to surgeons of all genders [9]. Hu et al.'s study also found that 27% of the 761 surgical residents who reported sexual harassment identified patients or their families as the predominant perpetrators at 31% [8]. While the aforementioned survey did not account for the interplay of race or sexual orientation, a previous study found higher rates of sexual harassment of LGBTQIA physicians [10].

## 8.1 Discrimination

Surgeon selection occurs in two very different scenarios. Patients scheduling a planned surgery can proactively exert surgeon preference, which may in part be driven by explicit or implicit biases. On the other hand, patients meeting a surgeon for the first time for an unexpected surgical emergency typically do not have a range of health care facilities and surgeons to choose from and may be displeased with the surgeon assigned to their case. Both overt and unconscious discrimination based on how a surgeon looks or is perceived (e.g., racism, sexism, homophobia, islamophobia) may manifest in these different situations.

When patients have the ability to choose their surgeon, they report surgeon competency and reputation as the most important factors [11]. While this appears neutral, several studies have found bias in terms of how competency is attributed [12–14]. For example, female surgeons that were rated as more warm or communal

were also rated as less competent. When asked explicitly, however, the majority of patients report no gender preference [11]. Nonetheless, 27% of female patients preferred a female breast surgeon, 22% of patients preferred a male orthopedic surgeon, and 43% of male patients preferred a male urologist [15–17]. In the one study that assessed for racial preference, 84% of patients had no preference while 16% of patients preferred a surgeon of the same race [15]. Characteristics such as religion and sexual orientation or the interaction between various demographics have not been explicitly studied.

Biases like those described above might not be known by individual surgeons, making them difficult to address. Most encounters for elective surgery occur through referral from non-surgical specialists. Evidence suggests that referring physicians themselves may harbor implicit bias on the competency of surgeons with a tendency to refer less often to women, especially after knowledge of an adverse event [18]. Implicit bias may also impact patients' selection as studies using implicit association tests have found a preference for male surgeons [19]. This may lead to even more bias in surgeon selection than documented explicit preferences suggest.

In emergency settings, patients may not be in a position to choose another surgeon based on their implicit or explicit preferences. The challenge of addressing discriminatory requests for a new surgeon typically occurs in this setting. Discriminatory requests for care by another physician have been extensively described in the lay and professional press [20–26]. However, the prevalence of these occurrences is not known. Importantly, however, some patients' requests for a clinician with specific demographic characteristics may come from a justifiable desire. For example, a Muslim woman may request a female clinician given the Muslim tradition that women not be uncovered in the presence of non-familial males. Other patients and their families, on the other hand, may simply be prejudiced. While a competent patient is allowed to refuse care, even potentially life-saving emergency care, for whatever reason, Paul-Emile and colleagues have provided a framework that includes a medical and legal perspective [27], including the mandates of the Emergency Medical Treatment and Active Labor Act (EMTALA) [28]. When a discriminatory request to change a surgeon is not due to delirium, dementia, or psychosis, accommodating the request can be made by individual physicians if the transfer of care is acceptable to the physicians involved, consistent with employment rights laws, and does not compromise the standard of medical care [27].

## 8.2 Microaggressions

Overt discrimination as a result of patient biases are described as "painful and degrading indignities" exacerbated by physician ethical obligations to subordinate self-interest to the best interests of the patient [27]. Such episodes in the course of one's professional practice result in moral distress. Microaggressions, as the term itself alludes too, are far less obvious to those outside the identity being assaulted, insulted, or invalidated, and are often unconscious on the part of the perpetrator [29]. The term microaggression was defined by Sue and colleagues in 2007 as,

"brief and commonplace verbal, behavioral, or environmental indignities, whether intentional or unintentional, that communicate hostile, derogatory, or negative slights." [30]

Applicable to surgeons who bring with them many years of education, training, and robust processes of credentialing and certification, Tschaepe writes in his essay on microaggressions and epistemic justice that "microaggressions undermine the credibility of knowers…. [such that] their autonomy is called into question and diminished." [31] Importantly, microaggressions in their repetitive insults, invalidation, alienation, or dismissal have been found to have negative health impacts [32, 33]. When surgical residents' experience with microaggressions was studied, 100% of residents reported experiencing microaggressions from patients, e.g., being mistaken for a nurse, OT, PT, or receptionist or being ask: "When is the doctor coming in?" [29].

## 8.3 Harm to Surgeons

While the data is admittedly sparse regarding patient and family bias, the manifestation of implicit and explicit bias toward surgeons consciously or unconsciously viewed by patients or their families as "other" undoubtedly creates harmful via negative professional experiences with ramifications for surgeons' mental health and well-being. Among surgical residents experiencing microaggressions a few times per month was associated with higher odds of both symptoms of burnout (aOR 2.9) and suicidal thoughts (aOR 3.1) compared to residents reporting no gender or racial harassment [8]. Notably, female residents were found to have higher rates of burnout compared to their male colleagues, however this relationship disappeared once rates of mistreatment were controlled for [8]. In addition to burnout, chronic exposure to microaggressions may manifest in decreased career performance, depression, anxiety, sexual dysfunction or binge drinking [29]. Affected surgeons must navigate and cope with such negative workplace experiences and their consequences while also providing necessary care. Importantly, residents and surgeons who are employees of health care institutions have legal protection to work in an environment free from discrimination and harassment on the basis of "race, color, religion, sex, and national origin" pursuant to Title VII of the 1964 Civil Rights Act [34]. While the language of the law merits updating in the modern era, this law still applies to many surgeons who may experience the effects of bias in the course of providing care.

## 8.4 Strategies to Combat Implicit and Explicit Bias from Patients and Families

Strategies to mitigate discrimination can be implemented by three key actors: surgeons themselves, surgical teams in the course of patient care, and hospitals. First, Dr. Choo recommends that all surgeons should identify themselves as doctor five

times with three verbal and two visual cues—"Hi I'm your doctor, Dr. _____," while showing patient badge that says doctor. At the end of interview, "Again I'm Dr. _____," while writing their name on the board in room [35]. If all surgeons adopt this behavior, it will not be isolating to those who must do so based on societal expectations of what a surgeon should look like and it will potentially ameliorate the invalidation of being assumed to not be a surgeon. Second, patient facing surgical teams should use each other's titles when interacting in front of patients and family members to prevent confusion.

When misidentification does occur it can be reflexive to try to prove one's self and demonstrate one's competence [25]. Nevertheless, a more effective response may be to maintain professional detachment and ask questions to understand the source of discomfort to see if it can be addressed [36]. Surgeons should feel empowered to correct patient or family expression of bias. This includes politely clarifying roles and responsibilities when misidentification either to one's self or to other members of the team. It also includes stating that all members of the team are there to provide excellent care without regard to race, gender, or sexual orientation and that we expect the same from our patients and their families.

Additionally, there are many things organizations can do to foster a culture of diversity and inclusion from patients. This may be accomplished through directed signage in prominent locations throughout the health system that might state: "_____ Healthcare prides itself on a diverse and inclusive workplace where our physicians, nurses, technicians, and staff can freely apply their experience and talents to provide high-quality care to all in need." Marketing materials (e.g., brochures, websites) should highlight surgeons of various backgrounds working together. Lastly, policies should be implemented to transfer hostile patients once stabilized when necessary. Within the broader health system, referring physicians can be advocates for mitigating bias among patients they are referring to underrepresented surgeons by emphasizing their professional strengths when making the referral. Further, referring physicians and hospitals should also review their referring patterns to screen for and address biases if found.

When episodes of discrimination and microaggressions do occur, surgeons, surgical teams, and hospitals need to be proactive in addressing the moral distress experienced by those targeted by bigoted patients/families. For individual surgeons on the receiving end of discrimination and microaggressions, it is imperative to use one's best judgement when deciding to engage and maintain professional detachment during the event [36]. Regardless of choice to engage with the patient or family member, it is important to debrief with a trusted colleague and remind yourself of your worth [25, 29, 36]. Often in the case of microaggressions, and sometimes even overt discrimination, one may question if the event/act did indeed occur so this debriefing conversation can help provide that feedback and support [32]. If instead you observe this happen to a trainee or a colleague, it is important to support them by intervening as an active bystander and directly addressing the patient or family [32, 36]. If you observe a patient making a crude comment, it is up to you to inform the patient that such language is not acceptable. If a trainee confides in you while a

patient is still admitted, consider ways to take action to show that this behavior is unacceptable and that you will advocate for your trainee's safety. This can include speaking to the patient directly, pointing out the inappropriate behavior as unacceptable. It can also include speaking to other staff to ensure they are aware to prevent any other staff from experiencing something similar. The ACTION framework provides a template to: **A**sk clarifying questions; **C**ome with curiosity not judgement**; T**ell them what was problematic; **I**mpact discussion**; O**wn feelings; and request appropriate actions as **N**ext steps [37]. At the institutional level, the efforts detailed above will boost the morale of affected surgeons by showing them that they work in a diverse and inclusive environment under leadership that supports them and will not tolerate discrimination and microaggressions. In addition, hospitals must hold group debriefing forums after acute events to help staff better handle similar events in the future [36]. Many hospitals could also develop more concrete policies around racial discrimination that go above and beyond Title VII protections [26]. Furthermore, some have argued that discrimination or harassment should be reported as instances of workplace violence given potential harms to clinicians in terms of their personal health outcomes [26, 38–40].

Overt racism, sexism, homophobia, transphobia, islamophobia and unconscious bias can impact every aspect of societal engagement, including encounters for surgical care. As the surgical workforce continues to diversify, experiences that were previously anecdotal are beginning to be studied and quantified. Fortunately, physicians are developing ways to address and prevent discrimination and microaggressions on individual and institutional levels (Table 8.1). Such changes will be key to foster environments where all surgeons feel welcome, comfortable working, and can perform their best.

## 8.5 Case Solutions

**Case 1: Microaggression.** After clarifying the situation, the Patient Advocate meets with the family. He shows them a picture of the surgeon on the hospital website and gently reminds them that they had indeed met the surgeon and lets them know that she will continue taking excellent care of their loved one.

**Case 2: Microaggression.** The medical student quickly corrects the patient saying, "I can grab your tray, Dr. ____ is your surgeon. He is the one you want to talk to."

**Case 3: Overt Racism.** Their team attending says that he will not have a member of his team ostracized and facilitates transfer elsewhere after notifying the patient that the hospital does not accommodate discriminatory requests.

**Case 4: Sexual Harassment.** The attending supports her decision. When he meets the patient, he provides appropriate care. At the conclusion of the medical portion of the examination and treatment planning, he educates the patient on expected patient behavior with all members of the healthcare team.

**Table 8.1** Actions to mitigate the occurrence and effects of bias on surgeons

| | Self | Others | Institution |
|---|---|---|---|
| Prevention | • Use 5 cues to identify self | • Use title when speaking with colleagues<br>• Encourage staff to use title if overhear<br>• Review personal referral patterns<br>• Highlight professional strengths when referring to underrepresented surgeon | • Encourage use of title "doctor" consistently<br>• Display signage priding diverse workforce<br>• Highlight diverse surgeons in marketing and promotional materials<br>• Review referral patterns<br>• Expand Title VII policy |
| Discrimination | • Seek to understand reasons for refusal<br>• Help the patient nevertheless<br>• Maintain professional demeanor<br>• Clarify roles and responsibilities<br>• Debrief with colleagues after event | • Refusing to comply with discriminatory patient requests<br>• Call out inappropriate language in the moment using ACTION framework<br>• Deescalate event if necessary<br>• If trainee/colleague shares event, take steps to address | • Consider transferring stable patients who are hostile to staff<br>• Hold faculty forums to debrief after events<br>• Report as instances of workplace violence |
| Microaggression | • Clarify roles and responsibilities<br>• Debrief with colleagues after event<br>• Practice professional detachment | • Call out inappropriate language in the moment<br>• Check in with colleague after event | • Report as instances of workplace violence |

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# Chapter 9
# Gender and Surgery


**Laura K. Krecko, Caprice C. Greenberg, and Jacob A. Greenberg**

## 9.1 Introduction

A significant gender achievement gap exists in surgery. Women account for 45.6% of active GME trainees in the U.S, yet remain outnumbered by men in surgical specialties [1] and significantly outnumbered by men in positions of surgical leadership [2]. The decreased representation of women in higher academic ranks despite an increased presence in surgical training suggests the persistence of a "glass ceiling" for women in surgery [2, 3]. This chapter serves to summarize the factors influencing the gender achievement gap in surgery, including implicit gender bias and subsequent differences in recruitment, retention, burnout, promotion, and pay. The following discussion aims to promote awareness of key issues of gender in surgery in order to effect both personal and systemic interventions that can lead to meaningful change.

Differential treatment based on gender in the academic setting begins in childhood. Consider the following example. A middle school creates a program for students with an aptitude for math and science. Invited students have the opportunity for educational enrichment that allows them to cultivate their demonstrated skills in these areas. Students participate in this group outside of regular school hours, and upon invitation into this group, sign a "contract" promising to not boast of their participation to their classmates. One day a female student who is a participant in the program answers a question incorrectly in math class. A male classmate (who is also a member of the enrichment program) tells the female student that she has "no math skills." The female student does not verbally engage the male student but instead writes on her notebook, "I've got math skills, you're just jealous." The

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notebook is then seen by their teacher who views this as a form of boasting. The female student is dismissed from the program—and the male student is allowed to remain in the program and receives no formal discipline or repercussion for his actions.

There are any number of gender-based lessons that the students could take away from this interaction, including: (1) girls are "bad at math"; (2) it is acceptable to tell a girl she is "bad at math"; (3) girls should not stand up or defend themselves when disparaged by others. All of these lessons adhere to traditional gender norms and are inherently harmful. Such events underscore the differences in expectations and subsequent treatment of students based on gender even at this young age. Even when differences in ability are not present, differences in attitudes are. For example, despite similar performance in mathematics, male students have more positive attitudes relating to math than female students, and estimate their mathematics IQ to be higher than females [4–6]. Furthermore, cognitive and mathematical skills tend to be viewed as more inherently "masculine" whereas social and emotional intelligence tend to be viewed as "feminine", further cementing gender stereotypes [6]. If young female students who display confidence about their cognitive skills in math are reprimanded for being arrogant and male students are allowed to belittle their female classmates, it is no wonder that these attitude and achievement differences exist throughout our society. They are being taught and reinforced at an early age.

Gender roles molded in childhood continue to affect performance, achievement, and social interactions in professional roles throughout adulthood. These differences are felt acutely in the healthcare setting, particularly in historically male-dominated fields such as surgery. Despite the increasing percentage of women training to become surgeons, there remain deeply entrenched perceptions of traditional gender roles in surgery. Consider the following example. A female surgical intern is on one of her first overnight calls. She is struggling with nasogastric tube insertion on a patient with a small bowel obstruction, and asks an experienced male nurse for assistance. The nurse places the tube, and upon placement the patient begins gasping and sputtering, and whispers, "I can't breathe!" The intern turns to the nurse and says, "I'm concerned the tube is endotracheal. We need to pull it." The nurse is confident that the tube is in good position, but the intern is concerned and persists in her request. The tube is pulled, and the nurse looks up at the intern and says, "What's your plan now, doctor?" Later the intern overhears him recounting this story, using a high-pitched voice to imitate her.

Further examples of challenges faced by female surgical trainees abound:

- A female surgical resident decisively states she would like to use Monocryl suture rather than a stapler for skin closure at the conclusion of a case. Later, the scrub tech privately comments to her chief resident that she feels that the resident was being "pushy" when she made her selection. This resident has been told she needs to be more assertive, and is unsure how to reconcile this conflicting feedback.
- A female resident has been referred to as "young lady," "dear," and "honey" by healthcare staff and patients. She has read a note in the chart referencing her as

"(First Name)" and a male resident on her team as "Dr. (Last Name)." She spends extra time on rounds explaining her position as a physician to staff and patients and worries about how to do this in a way that does not sound arrogant but gets her point across.

- A female surgery PGY5 and male PGY2 are rounding on a patient together. The patient consistently looks to the male PGY2 for decisions and answers to his questions, despite the fact that the female chief resident is more senior, experienced, and is the one asking the questions and explaining the plan of care.
- A female resident is worried about a sick patient who needs an ICU admission; however, the female nurse manager is passive aggressive as the resident attempts to facilitate admission. When the resident responds assertively with frustration and anger, the resident is put on administrative leave.

The above examples provide anecdotal evidence of gender-based challenges in surgical training. Similar situations were experienced or observed by at least one of the authors of this chapter, and are emblematic of the experiences of many practicing surgeons and trainees. These types of occurrences are ubiquitous in our health system. The following discussion will investigate more objective evidence of gender-based discrimination and differences in achievement in the field of surgery, with the goal of promoting a discussion of tangible interventions needed to mitigate the impact of gender bias in surgery.

## 9.2 Gender Schemas and Implicit Bias

In order to discuss gender schemas and gender bias, these terms must first be defined. Caprice Greenberg's Association for Academic Surgery presidential address "Sticky Floors and Glass Ceilings" [3] defines and discusses these issues in the field of surgery in the context of Virginia Valian's book "Why So Slow? The Advancement of Women" [7]. Gender schemas can be defined as implicit hypotheses about sex differences that are acquired in childhood and continue to shape our lives in adulthood [7]. Conflict arises when people act in opposition to their presumed gender schema. This is particularly problematic in surgery, where classically "male" or agentic traits such as assertion, directness, and power-seeking are necessary for success, yet women who demonstrate such characteristics can be perceived negatively [3, 7–10].

The dissonance between adhering to expected gender roles and developing the skills and attributes needed to excel in surgical fields can be a source of extreme consternation for female surgical trainees. Furthermore, in addition to the challenges associated with acting against implicit gender schemas, female surgical trainees also face challenges with more explicit forms of bias. Female surgical trainees report more mistreatment including discrimination, abuse, and harassment than males and have higher associated rates of burnout [11]. Perceptions of gender disparities are also discordant between genders: Junior female physicians perceive

higher rates of gender discrimination than their senior male counterparts [12]. It is therefore crucial to address both these implicit and explicit biases in surgery. Health care institutions should implement programs geared toward implicit bias training to help providers and staff address and acknowledge their own biases [13] and must maintain zero-tolerance policies for explicit gender discrimination.

## 9.3 Recruitment

The effects of gender roles on career choice and professional development in healthcare are evident before residency training. Gender-based discrimination remains prevalent in medical school and the residency recruitment process, and has a significant impact on female surgeons [14]. Women and men have similar interests in surgical specialties prior to starting clinical clerkships [15], and this interest is affected by clerkship experiences, peers, and mentors during medical school. A recent study examining barriers to pursuing a career in surgery found that while both men and women were verbally discouraged from pursuing careers in surgery, more women viewed this discouragement as gender-based and were more deterred by concerns about marriage and childbearing [16]. Women are also more likely to be deterred from pursuing surgery by considerations such as the "surgical personality" and the view of surgery as an "old boys' club" [15]. Such data suggest that even if male and female medical students are equally interested in pursuing surgery, females may face more discouragement in doing so and may therefore be less likely to pursue surgical fields.

Those female medical students who continue to pursue surgery despite discouragement are met with another set of barriers during the residency application process. In a study examining hiring practices, male applicants with identical credentials as female applicants were rated as more competent and hirable [17]. Letters of recommendation written for men are 16% longer than those written for women, and letters for women are more likely to commend effort rather than accomplishments and include information about their personal lives [10, 18, 19]. Furthermore, a study of residency interviews in five specialties showed that women were more likely than men to be asked illegal interview questions, such as those pertaining to marital status and family planning [20, 21].

Such data point to the barriers that female medical students face in pursuing surgical training and emphasize the need for systematic methods to reduce bias in residency selection. Interventions could include blinded application review, standardized interview questions that are determined *a priori,* and zero tolerance policies for interview questions containing illegal content such as questions asking about family plans, marital status, or other intimate information. In addition to these systematic recruitment practices, exposing medical students early to male-dominated fields and to female role models may increase female matriculation into these fields [21].

## 9.4 Retention

Differential treatment based on gender not only affects recruitment of female medical students into surgical training, but also retention of surgical trainees. Female surgical residents face unique personal and professional challenges throughout surgical training. A recent study by Meyerson et al. [22] showed evaluations of operative autonomy to be biased against female residents. Female surgical trainees are more dissatisfied than males with patient safety, resident education, time for rest, and effect of duty hours on health during surgical residency [23], and are overall more likely to experience mistreatment and burnout [11, 24]. Personal factors also influence the surgery resident experience, and affect trainees differently based on their sex. For example, having a family has been shown to be protective for men but harmful for women [3, 24]. The reason for this is likely multifactorial, but may reflect the increased competing personal demands on women for household tasks and child-rearing. It is clear based on these findings that processes must be designed to even the playing field for operative autonomy so that women are afforded the same training opportunities as men, and that residency programs must identify and mitigate both professional and personal factors contributing to female surgical resident burnout.

## 9.5 Promotion and Pay

Despite the increasing number of women matriculating into surgery, women are underrepresented in positions of high academic ranks and surgical leadership. This phenomenon, seen not only in surgery but also in other medical fields, has been referred to as a "leaky pipeline"; however, the pipeline effect, where the number of women at the end of training is not representative of the number at the beginning, is likely an insufficient argument to explain the diminished number of women in medical academic leadership [2, 3, 25]. Multiple studies have pointed to sex as a primary factor in advancement and promotion in surgery. Sex has been shown to be the biggest predictive factor of becoming board certified [26], and there is up to an 18% difference between men and women in the likelihood of advancing to full professorship [27]. In addition to sex differences, differences based on familial obligations are also evident. A recent study showed that single women are more likely than women who are married with children to pass their certifying examination on the first try [28]. Some may attribute these differences in promotion and success to the increased likelihood of women to take time off work for maternity leave or other child-rearing responsibilities. Overall, female physicians are influenced differently by family circumstances including presence of children and partner status and are more likely than male physicians to work less than full time (LTFT) [29]; however,

this is not true in general surgery where 8% of men and women alike work LTFT [30]. Additionally, some have found that women publish fewer scientific articles compared to men, but do not take into consideration factors such as years to promotion, amount of dedicated research time, order of authorship, and other factors including systemic gender bias in the manuscript review process that may explain this discordance [31]. Furthermore, other studies show that women are more likely than men to publish their abstracts into full manuscripts, pointing away from the argument that women show diminished academic productivity compared to men [2, 3]. These data suggest that both gender and family life impact surgeons' abilities to ascend the academic ranks. It is essential that surgical leaders acknowledge the persistence of gender discrimination in surgical promotion, and actively work to fairly advance women in surgery.

Finally, contributing further to gender-based discrimination in surgery is the presence of a significant pay gap. Women and men have been shown to have similar career goals, yet women have lower salary expectations and a more negative perspective toward negotiating their salaries [32]. A recent study estimates that over a 30-year career, female academic surgeons are paid $1.3–2.5 million less than their male counterparts [3, 33]. It has been previously posited that the pay gap can be explained by the fact that women tend to practice in less remunerative specialties than men; however, investigations have revealed that the pay gap is not fully explained by specialty, hours, or academic rank [3, 13, 33, 34]. Beyond such occupational segregation, there are differences in referral patterns, time spent with patients, and case mix that can only be addressed by major systemic interventions.

## 9.6 Interventions

This discussion broadly identifies areas of gender bias and outlines factors contributing to the gender achievement gap in surgery. Several other groups have spent considerable time addressing these issues and we aim to highlight their work here. Notably, the paper by Sanfey et al., "Strategies for Identifying and Closing the Gender Salary Gap in Surgery," details the forces contributing to gender-based discrepancies in pay and offers an excellent summary of recommendations for promoting equity in surgery [13]. Both this AWS statement, as well as the list of suggested interventions proposed by Caprice Greenberg in her 2017 AAS Presidential Address "Sticky Floors and Glass Ceilings" [3], serve as the foundation for the following summary of interventions proposed to mitigate the impact of gender discrimination in surgery. The following personal and systematic changes can help to close the gender achievement gap and make progress toward gender equity in surgery, but further investigation and vigilance to identify and remedy systemic features of gender bias are needed.

### 9.6.1 Issue #1: Implicit Gender Bias and Discrimination

1. Look for opportunities to recognize women's contributions through amplification, or deliberately echoing a female colleague's contribution and assigning the contribution to her by name to ensure that it is acknowledged and she is given due credit.
2. Acknowledge personal and institutional microaggressions based on gender schemas and initiate education programs to provide implicit bias training.

### 9.6.2 Issue #2: Gender-Based Discrimination in Recruitment, Retention, and Promotion

3. Identify policies and leaders that promote equity in surgical specialties.
4. Ensure early exposure of medical students to female mentors in surgical fields.
5. Review individual letters of recommendation to minimize gender bias, ensuring similar length and quality of letters for male and female applicants.
6. Require blinded evaluation of manuscripts, grants, and applications in order to minimize gender bias during review.
7. Identify and define objective measures of success and milestones for promotion, and deliberately increase promotion of women into senior leadership positions.

### 9.6.3 Issue #3: Gender Pay Gap

8. Institute programs designed to provide residents with appropriate salary and resource expectations.
9. Increase transparency in compensation with objective, pre-defined milestones and regular performance reviews.
10. Ensure equal leave policies and tenure clock extensions regardless of gender identity and encourage all surgeons to utilize these opportunities.

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# Chapter 10
# Race/Ethnicity and Surgery


**Molly Flannagan, Sofya Asfaw, Paula Ferrada, and Henri Ford**

## 10.1 Anecdote 1

A well-respected surgical professor is the invited speaker for a conference at a large academic surgical department. As part of the events, there is a meet-and-greet to allow residents, fellows, and faculty speak with the professor. Dr. Z is a junior surgeon second-generation American citizen of Ecuadorean descent. The professor turns to Dr. Z and says, "you know, I told my fellow Mohammad to change his name to Matt so he could get a chief job." The group of residents appear uncomfortable, but no one says anything in response.

## 10.2 Anecdote 2

A black woman enters a patient room wearing a long white coat. A hospital emblem is present on the coat and her name and credentials are clearly displayed as well. She approaches a patient who is on the telephone. The patient pauses his telephone

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conversation while saying, “Hey, can I call you back? The lady that delivers the newspapers is here.” He hangs up and asks the black woman in the white coat to put his newspaper on the countertop. She introduces herself, “Hello, I’m Dr. X, we met yesterday, I’ll be taking care of you again today?”

## 10.3 Anecdote 3

A Middle-Eastern junior surgeon of Persian descent (Dr. Y) is at a staff meeting with the remainder of the surgical faculty and several administrative staff. One of the proposed initiatives is cultural outreach to the Saudi Arabian patient population at the hospital. One of the senior faculty asks Dr. Y to spearhead the initiative “because you speak the same language.” Dr. Y explains that he speaks Farsi, not Arabic. The senior surgeon persists, “well you’re at least from the same area.”

Inadequate representation of racial and ethnic minorities and women continues to plague the medical field. Underrepresented minorities (URM) (Black, Hispanic and Native American) comprise 30% of the overall US population, but less than 10% of practicing physicians. Additionally, only 4% of full-time faculty are underrepresented minority women and the number of black men enrolling in medical school continues to decline [1]. Despite efforts to rectify this problem over the past 60 years, not enough progress has been made [2–4]. A “leaky pipeline” (the attrition of students along the pathway to academic leadership) has been identified as contributing to the poor representation of women and minorities in medicine and surgery specifically. Several factors have been hypothesized to contribute to this, including gender and racial bias, daily microaggressions, overt mistreatment, socioeconomic struggles hampering pathway to medicine, isolation, and lack of role models.

Residency training is challenging under the best circumstances, however, minority resident physicians face barriers beyond that of their peers. Minority physicians are at higher risk than their majority counterparts of withdrawing from residency or taking an extended leave of absence [5]. Underrepresented minorities report numerous issues ranging from daily microaggressions to flagrant discrimination. Unfortunately, after decades of research attempting to improve the learning environment, residents today still continue to report similar challenges as were reported 50 years ago. Common themes reported by black residents over time include: lower expectations from faculty, more severe penalties for their mistakes, social isolation, daily microaggressions, being tasked as race/ethnicity ambassadors, and issues with personal and professional identity [2, 5–12].

## 10.4 Microaggressions

Microaggressions are everyday subtle verbal or nonverbal indignities, frequently unintentional, that serve to devalue women and people of color [13]. Much of the harm inflicted by microaggressions lies in their subtle, frequent nature. Victims of

microaggressions can report feelings of doubt about the nature of the insult and questioning the authenticity of their lived experience. Examples of microaggressions include assuming a female surgeon is a nurse, assuming a surgeon of color is an environmental services worker, asking an American-born Latino resident "but where are you really from?", and making statements such as, "I am a woman so I understand your experience with racial discrimination." The harm in microaggressions is beyond that of nonrace-based "everyday rudeness". They are daily, cumulative burdens in the lives of people of color and have a significant impact on their stress levels and even their health [14]. Microaggressions contribute additional strain in an already challenging environment and can contribute to the leaky pipeline.

Given this significant problem facing medicine and surgery, it is imperative that hospitals, universities and training programs actively implement solutions to help retain underrepresented minorities and women within the academic pipeline. Early interventions can target URM students prior to careers in medicine. Undergraduate students from all backgrounds often turn away from careers in Science, Technology, Engineering, and Mathematics (STEM) fields after encountering difficult introductory classes. This is even more pronounced among URM and first-generation college students (i.e. parents without a college degree) and can continue to perpetuate racial and socioeconomic disparities in academia. Using targeted interventions such as value-affirmations ("I am good at science") and utility-value interventions ("The study of biology is relevant to me") has been shown to improve performance and can help retain minority students within the STEM fields [15]. If there is a greater number of women and underrepresented minority students in the STEM fields at the undergraduate level, this could potentially increase the overall number of minority medical students.

## 10.5 Social Capital

Enhancing social capital of minority students, residents and junior faculty is another potential area to target. A study examining the social networks among medical students found that students with a greater number of social contacts within their class and social groups that included tutors or clinicians were able to achieve higher test scores than students without these social connections. It also found that students tended to form ethnically homogeneous groups. This was more pronounced among white majority students. For example, minority students' social networks contained 27% white contacts whereas white students' networks had only 12% minority contacts. Additionally, ethnic minority students tended to be less likely to name tutors or clinicians as part of their social networks. Because of this relative social isolation caused by group homogeneity among the white majority in medicine, minority students are less likely to benefit both from the resources from senior clinicians and the informal discussions and interactions that are valuable in learning the art of medicine [16].

Rather than place the onus solely on the minority student to seek out these contacts, developing bridging social capital that spans unconnected students with

faculty and majority students could help in several ways. Increasing the social capital and connectedness of minority students can increase access to resources, promote feelings of belonging, and hopefully improve retention.

## 10.6 Addressing Unconscious Bias

Promoting a workplace culture that is cognizant of unconscious bias is another important step in leveling an unequal playing field. Case-based unconscious bias training raises awareness of microaggressions, micro-inequities, and the power of their impact on their targets. These trainings should take place not just during onboarding but should be reinforced often at the institution (annual meetings, leadership training, etc.) [17]. Beyond heightening awareness, these sessions should help overcome cognitive "system 1" reactions (intuitive, automatic, error-prone) and help replace them with "system 2" reactions (slower, deliberate) [18]. This enables staff to catch themselves prior to the occurrence of a micro-inequity. During training, staff should be aware that unlearning stereotypes can sometimes be uncomfortable and trigger defensiveness. They should be reminded that competence in addressing unconscious bias is no different from achieving competence in anything else; it requires motivation and willingness to change [18, 19].

## 10.7 Micro-affirmations

Micro-affirmations are defined as "small acts, which are often ephemeral and hard-to-see, events that are public and private, often unconscious but very effective, which occur wherever people wish to help others succeed." [20] They manifest as small acts of generosity, giving credit where it is due, small gestures of inclusion, connecting people with opportunity, and providing support when people are struggling. In academic medicine, this can look like:

- Inclusion in professional settings—"You would be perfect to speak at this upcoming meeting; I will contact the committee chair to put you in touch."
- Introducing members of the team by their role—"Dr. K is a resident physician who will be taking care of you today."
- Diverse representation—ensure that portraits of women and surgeons of color are also displayed in offices and meeting spaces.
- Giving credit—"Thank you, but it was thanks to the hard work of Dr. R that we were able to secure the grant funding."

Transforming the culture of academic medicine to promote micro-affirmations is beneficial to everyone. Not only does it create a less toxic work environment, but it can provide an antidote to microaggressions and micro-inequities when they do

occur. Because microaggressions are often unconscious, even well-meaning people can commit them. If the overall culture of a department is one of recognizing, validating and affirming underrepresented minority and women physicians however, that positive culture may lessen the frequency and help mitigate the harm done by microaggressions when they do occur [19–22].

## 10.8 Reducing Prejudice

Causes of prejudice are difficult to study because messages about social groups are pervasive. Furthermore, it is impossible or unethical to assign individuals experimentally to most relevant groups. Biases are formed at a young age, before entering college and medical schools. Young children are often perceived as being untainted by the negative social biases that characterize adults, but many studies reveal that stereotyping and prejudice exist by the age of 4. In order to reduce prejudice we need to start early, enhancing positive peer pressure, and social learning.

## 10.9 Speaking Up

Unfortunately, even if hospital culture is one of promoting diversity, equity and inclusion, minority physicians can still be targets of racial discrimination by patients and their family members. This is particularly problematic for medical students and residents, who are in a vulnerable position. This limits their ability to advocate for themselves, and often witnesses to the harassment stay silent, which can compound the trauma. Black students have reported feeling they should remain silent during discussions around diversity and less than 20% of minority students who were subjected to racial discrimination reported it [1, 9, 10]. In cases of witnessed racial discrimination, it is imperative that the targeted individual does not suffer the secondary trauma of team members and colleagues looking away. They risk coming away from the experience feeling unvalued and isolated, which further risks losing them to attrition.

Underrepresented minority and women physicians and trainees should be empowered to remove themselves from a discriminatory encounter, if appropriate (patient not medically unstable or altered). Residency programs and medical schools can treat discrimination as they do other adverse events: acknowledging that the event occurred, conducting a team debriefing, and identifying areas for institutional improvement [1]. Medical professionals, especially those in the racial majority, should identify and call out discrimination when they observe it and hospitals and training programs should include training about discussing race and racism in medicine as part of faculty development [1].

## 10.10 Conclusions

Lack of diversity and representation from ethnic minorities and women continues to plague the field of medicine and, in particular, surgery. Implicit bias, microaggressions, socioeconomic disparities and lack of mentorship and role models are all contributing factors. Creating a culture of inclusion, affirmation and advocacy while recognizing biases and shifting social capital constructs may help to reframe this complex narrative.

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# Chapter 11
# Sexual Orientation and Gender Identity and Surgery


**Kishan M. Thadikonda, Katherine M. Gast, and Scott R. Chaiet**

Gender is one's intrinsic sense of who they are (man, woman, nonbinary, gender queer, etc.), while one's sex is physical anatomy and is assigned at birth. Sexual orientation (lesbian, gay, bisexual, etc.) reflects who a person loves and wants to have romantic relationships with. The LGBTQIA (lesbian, gay, bisexual, transgender, and or queer or questioning, intersex and asexual or allied) population includes sexual and gender identity minorities, but it should be emphasized that these are separate aspects of a person's identity. The gender unicorn (Fig. 11.1) illustrates the spectrums of gender and sexuality [1]. It is estimated that 4.5% of the US population identifies as LGBTQIA in the United States and 1.4% of people identify as gender expansive, or transgender [2].

Healthcare providers who identify as LGBTQIA face unique challenges in healthcare, such as choosing whether or not to disclose this information to colleagues or patients. Discrimination, bullying, and sexual harassment still exist in practice and LGBTQIA medical students, residents, and surgeons may face bias. A

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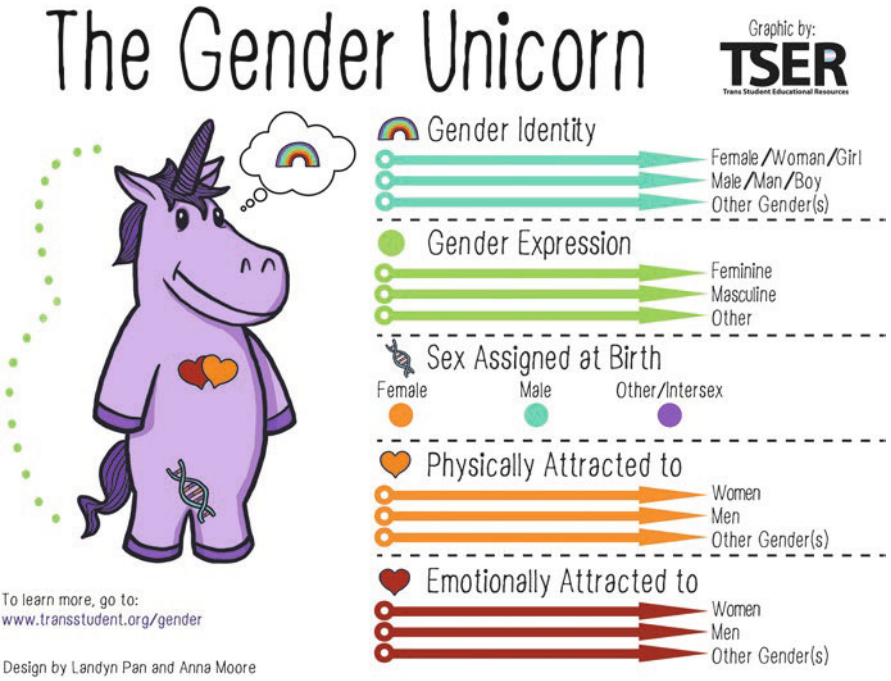


**Fig. 11.1** The Gender Unicorn is a resource developed by Trans Student Educational Resources (TSER) that shows the differences between gender identity, gender expression, biological sex, and physical and emotional attraction

recent survey of LGBTQIA physicians, reported 22% of respondents were socially ostracized and 65% had heard derogatory comments about LGBTQIA individuals in the workplace [3]. This trend unfortunately extends to medical students. The 2017 Graduation Questionnaire, administered to all graduating medical students by the Association of American Medical Colleges, indicated that 2.1% of graduating medical students have been subjected to offensive remarks/names [4]. Similarly, a study of medical students by the Stanford LGBTQIA Medical Education Research Group found that 30% of sexual minorities (lesbian, gay, bisexual) and 60% of gender minorities (transgender, gender expansive) concealed their identity in medical school. Over 40% of students who concealed their sexual or gender identity stated that fear of discrimination motivated their decision [5].

Surgical specialties have specifically been singled out by the LGBTQIA medical community as being the least welcoming. A 2016 study looking at specialty choice among sexual and gender minorities in medicine found that Orthopedics, Neurosurgery, Thoracic Surgery, General Surgery, and Colon and Rectal Surgery were thought to be the least inclusive specialties [6]. Furthermore, the conclusions from this study mirror data from a similar study 20 years ago which identified surgery and surgical subspecialties as the most biased [7].

While there has been increased interest in research and training of health care providers in order to advance the quality of care for LGBTQIA community, there is still

a well-documented distrust between patients and providers as well as between physicians who self-identify as LGBTQIA and colleagues who do not [3, 8]. LGBTQIA patients are a diverse group of people that vary in race, socioeconomic status, and age, but collectively represent an underserved patient population in healthcare often referred to as sexual and gender minorities (SGM). These patients face higher rates of adversity in access to care and discrimination by health care providers. A recent survey of transgender patients estimated that at least one third of patients who saw a health care provider in the year preceding the survey had a negative experience related to their gender identity and nearly a quarter of patients did not seek healthcare due to fear of mistreatment. Furthermore, a third of the respondents did not see a healthcare provider in the year before the survey because they could not afford it [9]. Access and discrimination are especially prevalent issues when it comes to surgical care for the SGMs. A recent survey of transgender patients showed more than half of respondents who sought coverage for transition related surgery in 2015 were denied and 21% of respondents were covered but had no surgeons in their networks [9].

Herein we present three scenarios in which LGBTQIA identity impacts patient care and workplace environment.

**Example 11.1** Rolando is a transgender man (sex assigned female at birth, patient identifies as male) who was involved in a high-speed motor vehicle collision and is taken to the closest Level 2 trauma center. His GCS is 14, he is in no acute distress, and able to communicate to providers with ease. During his trauma evaluation, he is misgendered repeatedly with female pronouns and called his legal name on his chart, which is not his preferred name. Furthermore, inappropriate comments are made regarding his external female genitalia when a physician taking a medical history asks Rolando, "What parts do you have?"

**Theme 1: Distrust between patients and the healthcare system.** Subtle microaggresions and overt bias can contribute to a negative healthcare experience for LGBTQIA patients. A mix of provider bias and unfamiliarity, especially with gender expansive patients (those who do not identify as strictly male or female), can create this environment. A high incidence of prior poor healthcare experiences in the LGBTQIA community means that examples, such as the one above, only further generates distrust between patients and providers [9]. At its worst, examples like these can traumatize a patient influencing their future interactions with the healthcare system.

The electronic medical record should ideally identify a patient's gender identity and sex assigned at birth. For cisgender patients, gender identity and sex will match, but for those who are transgender or gender expansive, inclusion of both impacts preventative health screenings (pap smears, mammograms, prostate health). Inclusion in the EMR of patient's pronouns (he/him, she/hers, they/them, ze/zirs, etc.) is necessary to address patients in a respectful and competent manner.

Medical providers may lack educational training and transgender care competency. Even surgical sub-specialties that perform gender confirming surgery survey data shows high rates of inadequate resident training [10–12]. However, transgender and gender expansive may present for routine surgical care in the case of trauma or acute surgery. Therefore, comprehensive efforts to educate all types of surgeons in caring for transgender and gender expansive patients is critical.

In this example, the overall experience for the patient would have been improved by asking their preferred name, pronouns, and sex assigned at birth on admission. Anatomy and previous surgical history is absolutely relevant in a trauma situation, which could best be framed as "Have you had any gender affirming surgery in the past?"

**Example 11.2** Gloria is a female surgery resident who identifies her sexual orientation as lesbian. She is the junior resident on the pediatric surgery service and is transferring a 5-year-old patient with same-sex parents to the OR. She overhears the nursing staff joking with her senior surgical resident about the child's two fathers, asking, "which one is the dad in the relationship?". Gloria finds this offensive, but does not speak up due to fear of retribution and discrimination resident.

**Theme 2: Discriminatory environment for providers.** Medical students and residents often do not disclose their sexual orientation or gender identity given fear of discrimination [5, 13]. This is especially true given SGM providers feel like disclosing their sexual orientation or gender identity will affect their ability to advance their career or alienate them from their peers [5]. The reputation of surgical culture aggravates this problem as trainees are even less likely to be comfortable in what they perceive as an intimidating environment [6].

**Example 11.3** Sarah is a transgender woman (sex assigned male at birth, patient identifies as female) who begins to experience severe abdominal pain. She lives in a rural area and has had trouble finding a primary care physician who is comfortable providing care to transgender patients. Multiple providers have also refused to see her in the past given her gender identity. She delays seeking treatment for 48 h and when she finally does present to the local emergency department, she is found to have ruptured appendicitis with an associated abscess necessitating drain placement and an inpatient stay.

**Theme 3: Lack of access to medical and surgical care.** SGM patients have worse health outcomes and this is in part due to difficulty with access to care. Patients describe difficulty obtaining routine medical care in the form of appropriate health screenings, HIV prevention and treatment options, fertility and reproductive services, and even just welcoming primary care services. Furthermore, discrimination and outright refusal to be seen from providers add to the burden of obtaining medical care. A combination of these factors can lead to delays in critical surgical care and increased patient morbidity like in the example above.

These scenarios illustrate issues present within surgical care and herein we reccomend steps that can be taken to address them and provide a more inclusive culture for providers and patients. First, surgeons must recognize the disparities that exist and become a champion for change within their practice and the institutions for which they work. For this to happen surgical providers must learn about their own implicit biases, recognize the biases around them, and collaborate with their hospital systems to develop constructive solutions. What follows is a discussion of evidence based solutions for common problems surrounding delivering surgical care for LGBTQIA patients.

## 11.1 Terminology

Communicating with LGBTQIA patients requires being able to talk about sexual orientation and gender identity (SOGI). Gender identity refers to a person's sense of their own gender, which may not correlate with their assigned sex at birth. Gender is not necessarily binary; for example, people can identify as male, female, non-conforming or gender expansive. Those who identify as transgender may change their legal gender, and thus assigned sex at birth is an important clinical demographic factor. Sexual orientation is distinct and describes who people are sexually and/or emotionally attracted to. Familiarity with these terms and being able to comfortably ask patients about SOGI is a simple and integral first step for fostering a therapeutic relationship.

Gender identity also brings up the issue of name and pronouns. Name the patient wishes to use should be verified of all patients. Sometimes gender identity is not immediately apparent and knowing how to respectfully ask and correctly use pronouns prevents patient's from feeling alienated or offended. The most commonly used pronouns are "he/him/his", "she/her/hers", "they/them/theirs", and "Ze/hir/hir". Patients may also prefer to just go by their name as opposed to using a pronoun.

Meeting a new patient, gender identity questions are best framed as open ended questions.

"What name would you prefer I use to speak with you?"
"How would you describe your gender?"
"What was your sex assigned at birth?"
"Have you had any gender affirming medical interventions?"
"What pronouns do you use?"

## 11.2 Electronic Medical Record (EMR)

The EMR communicates patient information amongst healthcare providers and can be a powerful tool for taking care of LGBTQIA patients. After asking patients about name, preferred pronouns and sexual orientation the EMR presents an opportunity to store this information so it is clearly displayed for easy reference during future encounters. Additionally, the EMR can be used to collect and store an organ inventory for patients undergoing gender affirmation surgery. It is notable that these may change over time. The World Professional Association for Transgender Health (WPATH) recommends collecting this information in addition to transition related procedures and treatments so that appropriate health maintenance (e.g. cancer screening) may be recommended. It also can prove useful in traumas or emergent situations (Example 11.2). This information also can be utilized within to EMR to determine what normal lab values are for a patient (e.g. transgender male on testosterone may have an elevated hemoglobin if reference value is for a woman) and to prepopulate history and physical exam templates (e.g. last menstrual cycle, pelvic

exam). Most EMR products on the market have some of these capabilities but require advocacy from providers to implement and improve education on their use.

## 11.3 Education

Proper education regarding the nuances of caring for patients with different gender identities and sexual orientations is critical for all members of the surgical care team, particularly residents and medical students. A deficiency in medical school curricula addressing LGBTQIA care is well documented with a 2011 study reporting an average of 5 hours of LGBTQIA-related content in the entire curriculum [14]. The same deficiency has been observed with surgical residents from different subspecialities [10–12]. Educational initiatives both for medical students and residents usually consist of a one-time lecture where all of LGBTQIA health is attempted to be taught. Efforts for medical students should be focused on increasing clinical exposure to patients w/ monitored OSCEs, rotations with LGBTQIA-focused community health centers and direct care of transgender individuals during clinical rotations including surgery. Resident exposure to gender-related surgical care in surgical disciplines varies depending on subspecialty and geographic location making standardizing clinical exposure difficult [10–12]. However standardizing curricular content and increasing didactic time can be accomplished by integrating LGBTQIA health topics into existing lectures covering similar topics (breast cancer screening, differential diagnosis for abdominal pain) for cisgender, heterosexual patients.

## 11.4 Climate

Recruitment of LGBTQIA providers and creating a supportive climate are is critical to creating a more inclusive and progressive workforce similar to how the inclusion of racial minorities improved care for minority patients and training for non-minority providers. Medicine lags behind other professions in terms of effort put into recruiting and is compounded by the fact that the medical field does not track how many sexual and gender minorities are amongst their ranks. Further complicating the matter is the fact that many providers may not disclose due to fear of discrimination from colleagues and patients.

Efforts to improve recruitment therefore should start by including SOGI as standard demographic variables collected on applications throughout someone's medical career. While there is valid concern about the potential for this information to be used to discriminate amongst applicants, we cannot hold the medical field and institutions accountable unless we study ourselves more rigorously. This data can then be used anonymously by institutions to understand their SGM diversity and, engage in targeted recruitment. Targeted recruitment can take the form of LGBTQIA specific recruiting events, adding specific language to job postings, and efforts to

improve SGM workplace climate such as participating in the Healthcare Equality Index survey. Concentrated efforts will have the highest yield in geographical areas and medical subspecialties that SGM providers and trainees historically avoid despite the highest need from SGM patients.

## 11.5 Outreach

As a marginalized patient population LGBTQIA patients have many well documented barriers when it comes to accessing healthcare. Outreach is critical to help patients overcome these barriers and there a variety of ways to accomplish this as surgeons. The Gay and Lesbian Medical Association (GMLA), a nationwide organization dedicated to improving healthcare for the LGBTQIA community, offers a provider directory that lists LGBTQIA-friendly practices. Providers can search for themselves on this directory or create a listing to indicate that they are an ally for LGBTQIA patients and will provide discrimination free care. Another means of outreach is community education. The LGBTQIA community faces unique challenges with respect to health literacy and knowledge of health insurance options. Efforts centered on coordinating community events that teach patients about relevant issues such as health insurance, sexual health, gender affirming surgery, and health maintenance not only improved care for patients but presents an opportunity for surgeons to integrate themselves into the community as an ally.

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# Chapter 12
# Disability and the Surgical Career


**Jason D. Keune**

## 12.1 Introduction

If anything, surgery is a career of ability. Look no further than the Royal College of Surgeons statement on careers in surgery to find evidence that what surgeons are looking for in today's trainees is ability [1]. The site emphasizes "good communication skills" and "a bright, eager mind, manual dexterity and physical skills for performing an operation" in students who might contemplate a career in surgery. The American College of Surgeons, in another emphasis on ability, remarks that students considering surgical careers should note that "intelligence, professionalism, conscientiousness, creativity, courage, and perseverance on behalf of your patients are the critical factors." [2]

In stark contrast, many of our patients are disabled. Not every patient a surgeon encounters is disabled—but a vast majority might be considered to present with a disability. When this concept is nestled next to the idea that every human being has the potential to become disabled [3], the notion that disability, and a distinction between disability and ability, form the very fabric of surgery becomes very real. In this chapter, I review the challenges that a person with a disability might face in trying to enter the surgical field as a career. I also will consider the ways in which incorporating people with disabilities into the surgical workforce might have a modulatory effect on what surgeons consider disability and just what about the human body needs "fixing" and what might be left alone and considered valuable human variation.

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The prominent philosopher about disability, Tobin Seibers has rightly asked us to consider exactly what the relationship between the disabling impairment and the resulting functional limitation consists of [4]. Though there is no distinct conceptual model of disability that is considered within the surgical profession, the world outside of medicine has deemed the way that medicine and surgery respond to disability, "the medical model of disability." In the medical model, the disabling condition is considered to be based entirely on the physical impairment itself—and an end to the disability will come from a material "fix" of the body. "Medicalization" is a distinctly-related concept which tends to objectify people with disabilities by making every disability the object of the gaze that has curative intent.

An alternative to this way of thinking is the "social model," which considers the disabling condition to be rooted in the "lack of fit" [5] between disabled bodies and the built and social environment. The social model tends to see the disabled body as a valuable human variation and a reason to celebrate diversity [6]. The social model forms the root of many contemporary modifications to the built environment that most people are familiar with; curb cuts and wheelchair ramps transform the experience of people in wheelchairs, making environments that are impossible to traverse into ones that can be traversed much easier.

The Centers for Disease Control and Prevention estimates that one in five Americans live with a disability [7]. What qualifies as a disability is not precisely defined in contemporary culture. The Americans with Disabilities Act definition provides a clear understanding for purposes of the law but does not necessarily guide what could be considered a disability in the wider world. Disability researcher Rosemarie Garland-Thomson points out the shifting notion of disability stating, "Disability growth areas … include diagnostic categories such as depression, anxiety disorders, anorexia, cancers, traumatic brain injuries, attention-deficit disorder, autoimmune disease, spinal cord injuries, autistic spectrum disabilities and dementia" and also noting that many categories of disability have diminished or disappeared completely due to "improved public health measures, disease prevention and increased public safety." [8] The surgical conditions that we treat fall somewhere in these shifting sands, and not in one neat category, but rather distributed across the spectrum of what might be considered a disability.

## 12.2 The Case of a Medical Student Applicant with Strabismus

Picture yourself in the very private, closed-door room where the surgery faculty meet to discuss the medical student applicants to that year's residency program: the "rank-list meeting." Their job is to give these applicants scores based on a large number of factors so that we can legitimately rank them, as is required by the national resident matching program, also known as "The Match: National Residency Matching Program." [9]

The faculty are efficient—there is a lot of ground to cover and everyone has either a clinic or a case to do later in the afternoon, so they don't spend very long on any one applicant, driving people up the list and down the list depending on a complex rubric that they have spent a lot of time and energy developing. Occasionally, they give an applicant a devastating "DNR" ranking—"Do Not Rank" meaning that the faculty would rather scramble to get a resident spot at the last minute than rank the applicant before them under consideration.

Before them now is the candidate at hand who is an average surgical residency applicant in every single way, which means that the candidate had had a very successful academic career thus far: near straight A's in college, great test scores, top third of medical school, poised, confident, and sharp.

The fact that she has a severe monocular strabismus is brought up—everyone has noticed it but no one has asked her about it. It is offered that binocular vision is necessary for surgery and a certain hesitation settles on the room and the group remembers that they are pressed for time. Someone says they cannot imagine teaching a person without depth perception how to operate. Another person brings up that laparoscopic surgery is done with two-dimensional views all the time—and this is correlated with the two-dimensionality of monocular vision. Yet another person mentions that they know at least two monocular surgeons, both are fine operators, but both acquired the impairment after having trained in surgery.

The idea of possibly making a "reasonable accommodation" for this potential resident, as is required by the Americans with Disabilities Act [10] does not come up. According to The U.S. Equal Employment Opportunity Commission,

> Title I of the Americans with Disabilities Act of 1990 (the "ADA") requires an employer to provide reasonable accommodation to qualified individuals with disabilities who are employees or applicants for employment, unless to do so would cause undue hardship. "In general, an accommodation is any change in the work environment or in the way things are customarily done that enables an individual with a disability to enjoy equal employment opportunities." There are three categories of "reasonable accommodations":
>
> "(i) modifications or adjustments to a job application process that enable a qualified applicant with a disability to be considered for the position such qualified applicant desires; or
>
> (ii) modifications or adjustments to the work environment, or to the manner or circumstances under which the position held or desired is customarily performed, that enable a qualified individual with a disability to perform the essential functions of that position; or
>
> (iii) modifications or adjustments that enable a covered entity's employee with a disability to enjoy equal benefits and privileges of employment as are enjoyed by its other similarly situated employees without disabilities [11]."

There is a tacit, and unspoken understanding in this faculty group that accommodations would not be reasonable. There is no program or mechanism in surgery to accommodate a disability. The group does not rank her, and they move on to the next applicant.

This experience is probably similar to those had by many surgeons who work in academic training programs. What might seem arbitrary, in the spur of the moment, is, in fact, not. Surgeons value ability highly, and not just in their trainees.

## 12.3 Disability and Ability in the Background

Notions about ability and disability pervade surgery, although are often in the background. Consider the institutional multidisciplinary liver transplant selection committee [12]. A team of hepatologists, surgeons, transplant coordinators, social workers, psychologists and others gather around a table once a week and discuss each patient that has been referred to that center for liver transplant evaluation [13]. Volk et al. carried out observational research and conducted interviews with 50 such committee members, and noted several findings with regard to ability. They found multiple instances of "such factors as education, intelligence, and financial resources in their assessments of a patient's ability to carry out necessary treatment plans ("She's a simple lady"; "Yes, but do you think she's sophisticated enough?"; "He's been working throughout his adult life"; "He seems like an upstanding citizen"; "He is notable because he is high functioning, articulate, and sophisticated")" [13]. Though these authors found no evidence of denying a liver transplant based on disability, the decision was often a tenuous one that hinged on program performance statistics, reputation and business relationships, malpractice lawsuits or referral relationships.

Consider also, the problem that arises for proponents of deaf culture, when cochlear implants arose as a surgical means to treat deafness. Cochlear implants are surgically-implanted neuroprosthetic devices that directly stimulate the auditory nerve. They are remarkably effective as treatments for deafness, improving the ability of the wearer to hear speech without needing visual cues, to recognize normal everyday sounds, to listen in a noisy environment, to locate where sounds are coming from and the ability to use the telephone and the television [14]. Quality of life studies in both children and adults have reported significant improvement with Cochlear implants [15, 16].

With such positive findings, it may be hard to see from a surgeon's standpoint why a patient with deafness may not want a cochlear implant, however there is some resistance to their implantation. Many who are part of what is known as deaf culture consider deafness an identity, rather than a disability. Cochlear implants, then, can be seen as in insult to this identity, and as an attempt to extinguish deaf culture [17].

## 12.4 The Pipeline

Of course, prior to even appearing in before a surgery residency's selection committee, a potential resident must be accepted to and graduate from an accredited medical school.

The history of accommodation of persons with disabilities at the medical school level has been much more developed than at the surgical residency level. Diane Essex-Sorlie, who is a member of what was then called the Department of Biometrics at the University of Illinois, considering impact of the ADA on medical school

admissions, wrote in 1994, in *Academic Medicine* that "while definitions such as disability, qualified individual with a disability, reasonable accommodation, and undue hardship, are numerous and somewhat technical, understanding them is essential for medical school faculty, staff, and administrators to assess the Act's impact on and implications for their institutions and to assure adequate and appropriate compliance" [18].

More than 10 years later, Philip Zazove, a deaf physician and researcher at the University of Michigan published a paper in the same journal which indicated that Essex-Sorlie's admonition had not come to fruition. Zazove and colleagues examined the technical standards for hearing, visual, and mobility disabilities from 173 US medical schools and evaluated these with regard to their availability and relative to their compliance with the ADA. Their findings were abysmal, noting that most medical school technical standard's do not support provision of reasonable accommodations for students with disabilities as intended by the ADA. For example, 61% of schools lacked information on responsibility for providing accommodations for students with disabilities. This in an era in which medical schools along with everyone else have a federally mandated duty to assist qualified students with disabilities.

Lisa Meeks and Kurt Herzer have done substantial work in the field of disability and medical school. A report published by the duo in the Journal of the American Medical Association describes a survey of 89 United States schools of medicine who identified 1547 students with self-disclosed disabilities amongst their ranks. They report that 97.7% of the students received accommodations. An enthusiastic response to this report may be dampened by the realization that 97.8% of the accommodations were in the field of school-based testing for students with attention deficit and hyperactivity disorder, learning disabilities, or psychological disabilities. To be sure, it is to be celebrated that such disabilities are accommodated, however a very large group of persons with disabilities seem to be excluded from medical school accommodations by these lights.

Around 19% of the American population currently lives with a disability [19], but only around 2% of practicing physicians do—and most of these acquired the disability after completing residency training [20]. The barriers to people with disabilities matriculating and finishing a medical degree seem high—especially if it is not a specific type of cognitive disability that affects test taking ability. There is a dearth of literature examining the experience of people with disabilities in graduate medical education and no study looking at such experience in surgical training programs.

## 12.5 The Match and the Americans with Disabilities Act

The way that medical students are accepted into surgery residency training programs seem to preclude anyone with even hint of a diminishment of ability from being successful. A careful examination of this process will be useful to show

how challenging it is for the Americans with Disabilities Act to have any effect, and for any residency program director to attempt to follow the spirit of the ADA, even if sympathetic to the idea of admitting people with disabilities into surgical training programs.

The way medical students "match" into surgery residencies is a type of labor market known as a clearinghouse. The most prominent and focused writing about clearinghouses and the National Resident Matching Program (NRMP) is by economist and Nobel prize winner, Alvin E. Roth, an economist who studied the design and theory of clearing houses and was awarded the Nobel Prize for this work in 2012 [21]. Roth was involved in the revision of the NRMP system in the late 1990s, specifically the "couples match"; the part of the matching system which allows couples to match together as one unit.

What happens in the match is that students who are interested in a specialty make a rank ordered listing of the programs that they would like to enroll in and the programs make a rank ordered listing of the students that they would like to accept into their program [22]. Just prior to "Match Day," which happens yearly and usually in the springtime, a computer at the NRMP produces what is known as a "stable result", a maximization of the preferences of both students and programs. On Match Day itself students open envelopes, with some degree of simultaneity, that indicate where they will spend the next several years of their lives. Programs receive a list, simultaneously of who has matched. The relationships determined by this system are binding. Here, there is no concept of a classical "hire". There are no individual decisions about individual residents. Everything happens by cold, hard algorithm.

The first rule of centralized clearinghouses like the match is that privacy should be maintained. This is necessary because one can imagine what sort of gaming might happen if privacy was not maintained: candidates might hedge on programs that are more competitive, and programs might hedge on more competitive candidates with information asymmetry being the most important factor, instead of the desirability of the candidates and the programs. Roth has shown that both programs and candidates are safest when they submit their true preferences, stable outcomes are based on this feature, and that stable outcomes lead to longevity of the market [23]. Maintaining privacy therefore, not only linked to a purer result, but is also directly linked to stability and longevity of the NRMP itself.

It is important to explore alternatives to the "clearing house" style matching system in place, especially ones that are more traditional, since they might lend themselves to an outcome that is more just for persons with disabilities. The market for doctors' first jobs was in extreme disarray prior to the implementation of this particular market system [23, 24].The NRMP match is one of the most "stable" clearinghouses in existence.

One can start to imagine now how a person with a disability can become easily marginalized in a system like this that starts with fungible, orderly, pure numbers, emphasizes privacy, and has nothing in its culture to value disability or come up with "reasonable accommodation". It seems that it would be very challenging for a disabled person to bring a claim against a training program given the diffusion of employer responsibility which extends across all surgery residency programs and

the NRMP and the difficulty of identifying a discriminate individual, or even a group to charge with discrimination on the basis of disability.

Of course, in order for a potential employer to be able to know whether reasonable accommodations should be made, the particular details of the individual's disability must be known. Given that the ordering of medical students into a ranked list for admission to a surgical training program is complex and can, and often does hinge on soft, subjective evaluative features, it seems easy for residency training programs to avoid making accommodations, which may be costly, without ever being detected.

## 12.6 Why Does Any of This Matter?

Surgeons should be more inclusive of persons with disabilities—both in their interactions with patients, and when considering who might become a surgeon. With what is known about disability today, it is an injustice to maintain systems that excluded people with disabilities.

The architect Ray Lifchez writes conceptually about the social model of disability in *Rethinking Architecture: Design Students and Physically Disabled People*. When it comes to architecture, Lifchez considers what is cherished: "education, religion, commerce, family life, recreation" and what is not "illness, deviance, poverty, disability, old age." He points out that architecture does not create these categories but plays "a key role in providing the physical framework in which the socially acceptable is celebrated and the unacceptable is confined and contained." Going on, he poignantly states "thus when any group that has been physically segregated or excluded protests its second-class status, its members are in effect challenging how architects practice their profession." [25]

There is a clear analogy to be made with the environment of surgery. Here, it is not just a physical framework (though there certainly is one in surgery) but an entire environment of knowledge surrounding the person with the disability. Marginalization of patients with disabilities in surgery can be thought of similarly to that which Lifchez describes. Does surgery play a "key role in providing the physical framework in which the socially acceptable is celebrated and the unacceptable is confined and contained"? First, an argument from justice and second, an argument from utility.

Consider a 32-year-old female with severe cerebral palsy who presents with acute appendicitis. She is taken to the operating room and placed in as much of a supine position as might be achieved. She is uncomfortable in this position. The joints of all four limbs are flexed and fixed in the manner of many patients with severe cerebral palsy. She is well padded and secured to the table. As the anesthetist gives the first dose of Propofol, and gently asks, "Are you feeling sleepy?" the question is asked, "Since cerebral palsy is central, when general anesthesia is induced, will this patient's limbs relax and straighten out?" No one knows in the definitive manner that surgical trainees know other facts central to surgical practice. Answers

are given, but they are guesses. It is not that these trainees haven't studied. This fact is absent from the surgical gestalt, but is knowable. The fact that should be in a surgery textbook chapter is that the spasticity probably does go away with anesthesia, but patients with cerebral palsy also often have muscle contractures, joint dislocations and scoliosis [26], which can make positioning a challenge.

I have reviewed this dearth of accommodation, both in the physical space of surgery as well as within its overall gestalt elsewhere [27]. It is useful to think about surgery very broadly when considering its relationship with disability: its "gestalt". The surgical gestalt can be characterized as the comprehensive knowledge and practice of surgery. It is gestaltic because it is an assemblage of objects, humans, a built environment integrated with knowledge and political power that is impossible to reduce to its constituent parts. It is gestaltic, too, because it captures a current, contemporary window onto the whole of surgery—it is the surgery of today that is of interest. In addition to the knowledge that is found in textbooks, it includes the subject matter of certifying examinations and "in-service training" examinations of the American Board of Surgery, the built environment in which surgery takes place, the medical equipment that is used, the devices, the entire corpus of research in surgery and the practice that then supervenes on this underlying knowledge and physical structure. It is surgery, broadly conceived. The gestalt here is an environment and a practice much like Lifchez's architecture.

This physical and cultural unwillingness to accommodate disabled patients in surgery might be suggested to have meaning beyond just being simply conservative about our practice. It might be interpreted that since much is now known about disability, surgery is making a positive statement to actively exclude the disabled and keep them as an object rather than incorporating disability into the gestalt. Could it be that the identity of surgeons heavily rests on the medical model of disability—the one that considers the disability to be inherent in the impairment itself? Surgeons can do better than that—the disability concept should be re-invented in surgery.

An argument from justice may not be enough, though. Another way to consider the role of people with disabilities in the surgical workforce is the way that incorporating them into it might impact the ways that the surgical gestalt accommodates people with disabilities—both in its physical frameworks as well as in its knowledge, social and cultural environments.

Dhurv Khullar has presented strong utilitarian arguments for why people with disabilities should be included in the medical profession. Khullar's thesis is that the profession will be better if people with disabilities become physicians. Khullar describes the story of a deaf physician, named Dr. C. Lee Cohen who has a disorder that causes her to have hearing loss in both ears, who uses technology to help her examine patients and learn from lectures. Cohen tells Khullar,

> I'm better at communicating with older patients who have hearing loss… From my experience, I know that when you can't hear well, your brain parses words and syllables in a certain way. Instead of asking people to repeat themselves, I ask them to rephrase themselves. So when my patients are hard of hearing, I know which sounds they'll have trouble with. I rephrase so they can understand [28].

Khullar also invokes the words of a paraplegic physician named Gregory Snyder who sustained a spinal cord injury as a medical student and now uses a wheelchair. Dr. Snyder told Khullar, "It reminds us that at some point we'll all be patients…And perhaps, when we least expect it." [28]

One temptation, here, is to argue that more people with disabilities should be incorporated into the surgical workforce since "they will take care of their own." This assertion, in itself is unjust since physicians should have the right to treat any population they wish and who they treat should not be necessarily linked to their own identity. Any increase in diversity is good for organizations, including surgery. It seems that a more diverse surgical workforce will be more resistant to the forces of racism, sexism and other insidious ideologies that might try to infect surgery.

Scott Page, professor of complex systems, political science and economics at the University Michigan has done some elegant modeling of diverse groups, especially noting the abilities of diverse groups. In his book, *The Difference: How the Power of Diversity Creates Better Groups, Firms, Schools and Societies*, Page puts forth a robust analysis that culminates in three theorems that suggest that diverse groups are better. The Diversity Trumps Ability Theorem says that a randomly selected collection of problem solvers "outperforms a collection of the best individual problem solvers." [29] Work like this suggest that, as Page puts it, "When picking two hundred employees from a pool of thousands, provided the people are all smart, we should keep the theorem in mind and not necessarily rank people by some crude ability score and pick the best. We should seek out difference." [30]

Page's *Diversity Prediction Theorem* suggests that, when it comes to prediction, the accuracy of crowds that are diverse is better than those that are not diverse. His *Crowds Beat Averages Law* states that that accuracy of a crowd's prediction cannot be worse than the average accuracy of each of its members, and the degree to which the crowd "outpredicts" its average member increases as the crowd increases in diversity [31]. Though surgery requires much more than simple prediction, it seems that the utility of diversity itself should be valued and that a way to increase diversity in the surgical workforce is to incorporate more people with disabilities into its ranks.

How can surgery increase the diversity of its workforce? The first step is simply to study more fully the idea that it is hard to achieve any of the justice afforded by the ADA in the match as it currently stands. This could be achieved through both theoretical (as I have done here) and empirical methods.

A task force on "reasonable accommodation" could be created as a mode of exploring the idea that increasing the diversity of the surgical workforce in this direction has value for surgery overall. The "We Are SAGES" task force of the Society of American Gastrointestinal and Endoscopic Surgeons was created in 2017 to investigate this very thing [32]. Though disability was not primary in the agenda for the task force, it does seem as though this task force could serve as a model for future work that is so focused on disability.

## 12.7 A Mutual Transformation

The philosopher of disability, Tobin Siebers has put forth an idea that has great potential value when thinking about how surgery might interact with disability. The "theory of mutual transformation" takes a close look at the way that the physical can transform the social and how that balances against the social transforming the physical. The notion of the physical transforming the social will be immediately evident for most readers—a disabled body might not fit into the physical environment, as in the case of the patient with cerebral palsy above. The converse is not as evident. Siebers brings it about through an example by Iris Marion Young. In Young's, "On Female Body Experience: "Throwing Like a Girl", she points out that such a throwing style is not rooted in any physical difference between boys and girls." Instead, girls are "physically handicapped" because they live out an existence that is assigned to them by society [33]. Sieber's point is that such an understanding of the way that physical and social forces interact can be the source of insight.

Expanding the surgical workforce in the direction of disability has the potential to be dramatically transformative of the way that the surgical gestalt understands disability (an example of the physical transforming the social). Similarly, a shift in the way that the surgical gestalt understands disability has the power to transform the way that medical students with disabilities might be accommodated in surgical training programs and just how the curative impulse is molded when it comes to bodies with disabilities.

Opening surgery to the idea of incorporating people with disabilities into its workforce intentionally has the potential to be as transformative as opening its gestalt to accommodate patients with disabilities, and even the very curative impulse itself. This is a transformation that should happen in surgery.

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