VIEWPOINT

# Supporting Black voices in urology

*Tracy M. Downs, Ekene Enemchukwu, Cheryl T. Lee, Kelvin A. Moses, Yaw A. Nyame, Isaac J. Powell, Randy Vince, Heinric Williams, Shenelle Wilson and Samuel L. Washington*

At *Nature Reviews Urology*, we have pledged to strive towards improving diversity in our field. As a step towards this goal, this Viewpoint presents the experiences of 10 Black urologists. Their stories illustrate the importance of perseverance and emphasize the essential role of community and mentorship to raise up our peers and colleagues, to support and encourage Black urologists and lead to a more diverse field of urology in the future.

*What made you choose urology?*

**Tracy M. Downs.** During medical school I was part of the Student National Medical Association (SNMA), which is predominantly an African American Medical Student Association. Early in my medical school years, two African American male students (Dr. King Morris and Dr. Carl Walker) who I knew from SNMA in consecutive years had selected urology as their specialty. Because I knew them well and we came from the same racial/ethnic cultural background, I made sure that I selected urology as one of the surgical subspecialties during my surgery clerkship rotation. My first clinical rotation was urology, and I had a great mentor, Dr. Michael McCarthy (known as 'The Plumber') who immediately took me under his wing. Dr. McCarthy had the most influence on my medical school years, which led to me being able to match into such a competitive field as urology. I enjoyed urology because I liked taking care of older individuals and enjoy the mix of surgery and medical care, which enables you to see your patients more frequently and develop long-term relationships and friendships with your patients.

**Ekene Enemchukwu.** I stumbled upon urology during the final months of my third year in medical school. Since high school, I knew I wanted to be a surgeon. I was encouraged to consider paediatrics, which is an important field, but I always came back to surgery. During the first year of medical school, I narrowed it down to ENT. After I completed my ENT rotation, I decided that it was not my calling after all. Disappointed, I started my urology elective the next day. One day into my rotation, I was intrigued by the breadth and depth of surgical procedures, the diverse patient population and the cutting-edge technology being utilized in the field. During my 2-week rotation, I worked with Drs. Culley Carson III, Raj Pruthi and Eric Wallen, at the University of North Carolina at Chapel Hill, who took me under their wings and made me feel both welcomed and included. In the process, they convinced me that urology was my calling. The rest is history.

**Kelvin A. Moses.** When I started medical school, I initially planned to go into cardiothoracic surgery. I had participated in the Michael DeBakey Summer Surgical programme at the Baylor College of Medicine when I was in college, under the mentorship of Dr. Raphael Espada. I was fortunate to enter the MD–PhD programme at Baylor, at which time I joined a lab that focused on transcription factors important for cardiovascular development. Early in my lab experience, Tropical Storm Allison hit Houston and flooded the animal facility and knocked out power to the school. I lost all my animals and almost everything that had been in −80° degree freezers or incubators. In the subsequent months of recovery, I began a new project with a different gene that turned out to be a model for precancerous growth in the prostate. Simultaneously, I had several friends who went into urology and told me how much they loved the variety of the field. Lastly, my mentor told me "there are no Black cardiothoracic surgeons in Texas", and he was very discouraging of me entering the field. Once I returned to medical school, I rotated on orthopaedic surgery, which I liked but didn't love, and then urology. In fact, the first cases I saw in urology were paediatric cases. Later, I scrubbed into a radical cystectomy, and I was hooked. All throughout graduate school and then medical school, I also gave men's health talks at various churches and civic organizations and the discussion invariably migrated to prostate cancer in Black men, which sparked my continued interest in prostate cancer disparities and ways of eliminating them.

**Yaw A. Nyame.** Late in my third year of medical school, I recognized that I wanted to become a surgeon (FIG. 1). I really enjoyed abdominal and pelvic anatomy, but wasn't sure which surgical subspecialty was best for me. Ultimately, I became interested in urology because three of my close medical school peers (from an intramural soccer team) had matched in the specialty. They were smart, driven and compassionate people, and their interest piqued my own interest in the field. Plus, I had rotated on urology for a month-long ambulatory surgery rotation as a medical student and had enjoyed meeting the urology attendings and trainees. I was introduced to Drs. Robert Brannigan and Christopher Gonzalez, by a classmate and friend, and they directed me to Dr. Adam Murphy (a Black former resident and then newly minted Assistant Professor). I was very lucky because all three men supported my application in their own ways, with Dr. Murphy serving as a research mentor and collaborator who exposed me to high-quality research and helped me navigate the application process and the rigour and challenges of residency training.

**Cheryl T. Lee.** My path to urology was not a straight line. As a young child, I was very interested in psychology and then psychiatry. After starting medical school, I was fascinated by physical medicine and ultimately gravitated towards a career in hand surgery. I never rotated on urology as

**The contributors**

**Tracy M. Downs**
Dr. Downs is a Professor of Urology at the University of Wisconsin School of Medicine and Public Health (UW SMPH), specializing in the surgical treatment of urological cancers. Dr. Downs is the Associate Dean of Diversity and Multicultural Affairs at UW SMPH. From 2016 to 2020, he served as the director of Centennial Scholars, an institutionally funded programme to support the career development of underrepresented faculty.

**Ekene Enemchukwu**
Dr. Enemchukwu is Assistant Professor of Urology at Stanford University School of Medicine, where she also serves as Director of Urology at Stanford Pelvic Health Center and Director of Diversity, Equity and Inclusion for the Department of Urology. Her research interests are in the areas of refractory overactive bladder in vulnerable and underserved patient populations. You can find her on Twitter: @DrEnemchukwu.

**Cheryl T. Lee**
Dr. Lee is Professor and Chair of the Department of Urology at The Ohio State University Wexner Medical Center where she holds the Dorothy M. Davis Endowed Chair in Cancer Research. She is also the Vice President of the OSU Physicians and Faculty Group Practice and a Trustee of the American Board of Urology. Her professional focus is dedicated to improving the care of patients with bladder cancer through advocacy, education and research.

**Kelvin A. Moses**
Dr. Moses is Associate Professor of Urology at Vanderbilt University Medical Center, Director of the Urologic Oncology Fellowship, and director of the Comprehensive Prostate Cancer clinic. His clinical practice focuses on advanced prostate, renal, penile, and testicular cancer and his research is focused on addressing health disparities in urological cancers, determining the role of health literacy in patient interactions with the health-care system, and optimal care for patients with metastatic and/or castration-resistant prostate cancer.

**Yaw A. Nyame**
Dr. Nyame is a surgeon, researcher, educator, and patient advocate who specializes in urologic oncology and urology. He completed a Society of Urologic Oncology accredited fellowship at the University of Washington and joined the faculty upon the completion of his training. His clinical interests include open and minimally invasive kidney, prostate, bladder and testicular cancer surgeries and his research focuses on health-care disparities in urological cancers, in particular the use of a patient-centred research approach to improve health services, clinical trials and molecular epigenomic studies as they related to health inequities in prostate cancer.

**Isaac J. Powell**
Dr. Powell is a Professor at the Department of Urology at Wayne State University and Karmanos Cancer Institute. Dr. Powell's clinical interests include urologic oncology and cancer genetics and his research focuses on the many ways that prostate cancer impacts African American men in comparison to other ethnic groups. He was principal investigator of the African American Hereditary Prostate Cancer (AAHPC) study.

**Randy Vince**
Dr. Vince developed a passion for urologic oncology, particularly renal cell carcinoma, after his grandmother's passing, which ultimately led him to the University of Michigan for a urologic oncology fellowship. His research interests include using genomic platforms to enhance the diagnostic and prognostic data for clinicians and patients. Additionally, he aims to use genomic panels to highlight the impact of systemic racism, not racial biology, on disparities in cancer outcomes.

**Samuel L. Washington**
Dr. Washington is an Assistant Professor at the UCSF Department of Urology, having previously completed his urologic oncology fellowship and a Masters in Clinical Research at UCSF.

Dr. Washington's primary research focus is health-care disparities in patients with genitourinary malignancies, particularly clinically localized prostate cancer and is also examining how differences in treatment strategies based on race and socioeconomic factors impact survival outcomes for patients diagnosed with bladder cancer.

**Heinrich Williams**
Dr. Williams is a specialist in urologic oncology and surgeon–scientist at Geisinger Medical Center and a Clinical Associate Professor at the Geisinger Commonwealth School of Medicine. His research interests include understanding the role of heat shock response in genitourinary malignancies, developing cancer-specific biomarkers in urological malignancies, elucidating the clinical implications of germline mutations in cancers, and identifying genomic biomarkers of racial and health disparities in renal, bladder and prostate cancer.

**Shenelle Wilson**
Dr. Wilson is in private practice in Atlanta at Georgia Urology and is the founder of Urology Unbound, a non-profit organization dedicated to increasing the number of Black urologists. Dr. Wilson graduated magna cum laude from Morehouse School of Medicine with her MD after first obtaining her Bachelor's in nursing from La Universidad Adventista de las Antillas in Puerto Rico.

a medical student. During my intern year at the University of Michigan I was finally exposed to urology and had the fortune to work with Edward McGuire (then Chief of Urology), Harris Foster (then my chief resident, now Professor of Urology at Yale) and Ann Oldendorf (another chief resident at the time, later a faculty member at the University of Michigan). As many medical students espouse today, it was truly these role models and the breath of surgery that attracted me to the field. During this time, I also became acquainted with a complex surgery (radical cystectomy), which was frequently performed by Dr. H. Barton Grossman, a leader in urologic oncology, who would later become an important research and clinical mentor for me. The rest is history.

**Randy Vince.** Growing up, I saw many of my family members and community members deal with conditions such as hypertension, diabetes and chronic kidney disease. These exposures influenced me greatly and, upon entering medical school, my mindset was geared towards specializing in internal medicine and pursuing a fellowship in nephrology. My goal was to obtain training that would enable me to best serve the Black community. In my mind, what better way to accomplish this goal than to learn how to treat diseases that overwhelmingly impact Black communities?

This plan for my career, and, in part, my life, suddenly changed during my second year of medical school, when I lost my grandmother to metastatic renal cell carcinoma (RCC). Before entering medical school, a CT scan identified a renal mass that extended into the renal vein on my grandmother's right kidney. Instead of being offered surgery, her doctor placed her on a tyrosine kinase inhibitor, in an effort to 'shrink her tumour' to make the operation easier. Needless to say, this did not decrease her tumour burden and her disease progressed. Shortly after her death, I began to research the treatment options for RCC and realized that early detection and surgery are the best options and that urologists perform these surgeries. At that time, I dedicated myself to learning how to operate on kidney tumours and to potentially giving patients more time with their family members than I had with my grandmother (FIG. 1).

**Heinric Williams.** Urology was not my initial career choice; I was interested in general surgery with the plan to do surgical oncology. However, that changed on the day I was to apply for general surgery residency. First, on my way to the assigned computer lab to enter my programme choices, I was stopped by a fellow classmate, Dr. Alexander Rose. He questioned my decision to do general surgery and recommended applying for a surgical subspecialty. Trusting his objective assessment of me, I decided to reconsider my choice. Later that morning, I ran into Dr. Gunter Deppe, a gynaecology oncologist who was one of my mentors. He agreed that I was better suited to a surgical subspecialty and recommended urology. Except for my father having a urological procedure during my second year of medical school, I had no prior exposure to urology. That same afternoon, I had a scheduled meeting with the Director of International Studies to sign off on my international fourth year course electives. That person turned out to be the Chairman of Urology, Dr. Edson Pontes. In his office, I noticed a photo of President Francois Mitterrand of France, who had died years earlier from prostate cancer. I asked him about the significance of the photo. He was particularly intrigued that I also knew President Mitterrand and after learning about my background, he asked me about my plans for residency. I told him I was interested in urology and he briefly shared what it was like to be a urologist. Then, he introduced me to Dr. Ajay Singla, the programme director. During my brief interview with him, he suggested that I talk to Dr. Isaac Powell, whose research interest was in improving prostate cancer outcomes in African American men. An impromptu 5-minute appointment turned into a 2-hour meeting where he shared his own experience as a clinician scientist in urology. His experience exemplified the career I had envisioned for myself. Together, we charted a plan for me to also become a clinician scientist in urology. At the end of our discussion, I felt compelled to tell him about all the preceding events that led me to his door. He simply replied: "nothing happens by chance; this was divine intervention!"

**Shenelle Wilson.** I worked in health care as a nurse for 7 years before becoming a physician (FIG. 1). During that time, I was able to observe and interact with many medical specialties and was most drawn to the breadth and scope of urology. I also enjoy helping people discuss sexual and voiding issues that are usually thought of as taboo and helping them feel comfortable with their bodies and sexuality.

**Samuel L. Washington.** I first learned about urology during my second year of medical school. At that time I hoped to pursue cardiothoracic surgery, but two small group sessions led by two urologists on faculty (one on erectile dysfunction and one on paediatric genitourinary malformations) piqued my interest. Both were incredibly knowledgeable, approachable and open to mentoring interested medical students. After reaching out to express my interest, they helped set up opportunities to shadow residents as well as get involved in research. This early exposure to the culture of urology at my institution and the types of research opportunities available in the field drew me to a career in urology (FIG. 1).

**Q** *Can you describe a bit about your career so far?*

**T.M.D.** My career in urology has been very fulfilling. As I was finishing up my residency in urology, I decided to pursue a fellowship in urologic oncology, as I had a strong interest in prostate cancer and studying why health disparities were worse for African American men. In the first 5 years, as an attending, my clinical and research focus was primarily on prostate cancer. In 2010, I began to focus on patients diagnosed with bladder cancer. I enjoy taking care of patients with bladder cancer, as those with non-muscle invasive bladder cancer have several routine follow-up visits, which enables me to develop a rapport with them as each patient and I both develop a deep trust in one another. For patients with more advanced or muscle-invasive bladder cancer, I enjoy the reconstructive surgery and the challenge plus responsibility of getting some of the sickest patients through very complex surgery.

In 2014, I began to expand my role within our School of Medicine and Public Health, as I took on the role of Associate Dean of Diversity and Multicultural Affairs. In many ways, this role enables me to come full circle. As an aspiring medical student myself, I definitely benefited from minority and underrepresented minority (URM) faculty members taking time to be on admissions committees and to recruit and advocate for URM medical students for acceptance into their respective medical schools. Now I get to play the same role by advocating for students similar to me who may not have looked the best or brightest on paper, but who came from challenging backgrounds, were hardworking and have such high potential to impact the field of medicine by reducing health-care disparities and by being role models for the next generation of aspiring medical students.

**E.E.** My career has been a rich experience, from medical school at UNC Chapel Hill, residency at Vanderbilt to fellowship at

Fig. 1 | **Some of our contributors.** From left: Dr. Yaw A. Nyame, Dr. Shenelle Wilson, Dr. Randy Vince and Dr. Samuel L. Washington. Photo of Dr. Nyame courtesy of Gavin W. Sisk (University of Washington Health Sciences Academic Services and Facilities); photo of Dr. Wilson courtesy of Harold Schoeder; photos of Dr. Vince and Dr. Washington provided by the authors themselves.

NYU. As with anything worth doing, it involved blood, sweat and tears and has been worth every moment. Now as an Assistant Professor of Urology at Stanford University School of Medicine, I love teaching medical students, residents and fellows, improving the quality of life for my patients, teaching my colleagues about strategies for achieving health equity and submitting that manuscript after many, many drafts and revisions. On the other hand, it has been a career of often being the only 'Black one' — as a resident, as a fellow and as faculty. There is an unspoken pressure to be perfect, polished and unshakeable that comes with that position and an inherent loneliness. I am sure many women in urology who have experienced and still experience this can relate. But with that said, I have always had amazing colleagues, co-residents, co-fellows, attendings and mentors, the vast majority of whom have gone the extra mile to make me feel included. However, I have lived and worked in every corner of the USA and despite my white coat, I am still often mistaken for the janitorial services, food and beverage services, the unit clerk and patient family in the hospital — everything but a doctor. Despite this, I have learned that I must present my authentic self every day to my patients, colleagues and residents. I tried straightening my hair and hiding who I truly am, and I was still mistaken for everything but a doctor. I want things to be different for future generations of women and URM in medicine. Improving diversity in medicine and normalizing the role of women and people of colour as doctors and surgeons are the first steps.

**C.T.L.** My career in urology has been a story of self-determination, opportunity, mentorship and discovery. During medical school my views of medical practice were a bit limited and I had little understanding of a career in academic medicine. During residency, I was intrigued by urologic oncology and translational research. I was fortunate to work with individuals like Bart Grossman, James Montie, John Konnak, David Bloom and Robert Moyad at the University of Michigan, who all encouraged me to explore research, pursue academics, and seek out a fellowship in urologic oncology. After residency, I undertook fellowship training at Memorial Sloan–Kettering Cancer Center and worked with a team of dedicated uro-oncologists including Drs. Harry Herr, Paul Russo, Joel Sheinfeld, Guido Dalbagni, Machele Donat and Peter Scardino. I returned to the University of Michigan, where I spent 16 years on faculty rising in promotional ranks while engaged in complex clinical care of patients with high-risk bladder cancer, clinical research, education of residents and fellows, and medical school administration. I later moved to The Ohio State University to chair the Department of Urology. Once again, I've had a great opportunity to collaborate with and learn from talented individuals to advance the mission and vision of my department and also train future leaders in urology.

**K.A.M.** I completed my general surgery internship and urology residency at Emory University in Atlanta, Georgia. I then completed a fellowship in urologic oncology at Memorial Sloan–Kettering Cancer Center, where I was honoured to serve as the Chief Administrative Fellow during my last 6 months. My first position was as Chief of Urology at the Augusta VA Medical Center, and Assistant Professor of Surgery/Urology at the Medical College of Georgia. I was there for 2 years, after which I pursued an opportunity to go to Vanderbilt University Medical Center in Nashville, TN. For the first 4 years, I was Chief of Urology at Nashville General Hospital at Meharry Medical College, where I did general and oncologic urology. I was also developing a practice in advanced prostate cancer at Vanderbilt. I transitioned to VUMC full time 2 years ago, where I have a clinical practice focused on advanced prostate, kidney, testis and penile cancer, and a research focus on disparities in prostate cancer, health literacy and cancer outcomes, and clinical trials in prostate and kidney cancer.

I have been honoured to teach, and learn from, students, residents and fellows throughout my career. Most of the work I've published has been as a mentor to trainees. I have also placed an emphasis on the recruitment and retention of Black and women residents in urology to help diversify an otherwise homogeneous field.

**I.J.P.** Black people are subject to an important barrier of perceived racial inferiority driven by white racism that undermines our intellectual achievement and, therefore, creates a lack of self-esteem that blocks our drive to learn and enable social and economic mobility. In elementary school, I had the highest score on our national chemistry examination in our class of mostly white people. I asked my white teacher about attending college; he suggested that I get a job in the laboratory in the steel mill factory. Based on the encouragement from my parents, I ignored his suggestion but I have never forgotten that experience. This was my first exposure to explicit racism!

In the 1960s, when I attended medical school there were rumours of quotas of two Black students per medical class. At Indiana University Medical school, which was the largest medical school in the country at that time, there were only 7 out of 800 (less than 1%) students who were Black; this was the norm at that time. After affirmative action the percentage went up to 7%. That percentage has now decreased since affirmative action has been abandoned. When I went into urology, there were 35 Black urologists in the country. Now there are over 246 out of 12,300 (2%)[1]. So there have been some improvements, but clearly not enough.

My career after becoming an urologist began when I met my wife. When we met she was completing her PhD in human genetics at the University of Michigan. I was always interested in genetics but attending national meetings with her in the 1980s and her mentorship in genetics revealed the relationship of genetics and cancer, in particular, bladder and prostate cancer. From there I collaborated with laboratories and pursued translational research. Today I have well over 100 publications of clinical and translational research evaluating racial disparity. I say this so that other African American people can realize that they too can accomplish such goals if they stay focused and disciplined.

**Y.A.N.** I developed my interest in urologic oncology as a medical student at Northwestern University, and further honed in on the subspecialty as a resident at the Cleveland Clinic. I was attracted to the ability to offer definitive therapies to serious diseases and the scientific rigour of the innovations and practices for managing oncologic patients in urology. However, it was the persistence and magnitude of prostate cancer disparities that kept me so closely focused on a career as an academic urologic oncologist. Every time I saw the SEER cancer mortality curve, I would ask myself how could Black men have a twofold higher death rate than other men in the USA that persisted through 4–5 decades of documented data and not change. I am now an Assistant Professor of Urology at the University of Washington, where I recently completed a Society of Urologic Oncology fellowship and served as a post-doctorate fellow at the Fred Hutchinson Cancer Research Center. My clinical interest is in complex open and robotic surgery, and I am building a research programme focused on

health disparities in prostate cancer and other urological malignancies.

**R.V.** I attended Louisiana State University Health Sciences Center in Shreveport, LA, for medical school, after which I completed my residency at the Virginia Commonwealth University Health System. Currently, I am a fellow in urologic oncology at the University of Michigan. I chose Michigan for fellowship because the faculty's culture and supportive nature is the exact opposite of many discouraging experiences I've endured in the pursuit of a medical career. My experiences during medical training — and even before entering medical school — made me feel as if I were in a fight to prove the naysayers wrong. Before medical school, undergraduate professors refused to write me letters of recommendation, stating that I wasn't a good enough student to complete medical school. During medical school, physicians discouraged me from pursuing urology. Some said, "urology is competitive and you're no smarter than the average kid here". While in residency, when asking faculty for suggestions to better my in-service scores, I heard, "well, everyone can't be in the 80th or 90th percentile, some people need to be happy with being average".

In contrast to these past experiences, my current support system inspires and motivates me to continue growing personally and to reach back to the younger generation of Black and URM students and encourage them to pursue their goals. Ultimately, my goal is to inform them that they are absolutely good enough, and not to get discouraged by the words of doubters who have not walked their path.

**H.W.** During my fourth year of urology residency, I decided that I wanted to be a surgeon–scientist. This led to a fellowship at the National Cancer Institute with Dr. Marston Linehan where I did primarily basic science research in bladder cancer. Wanting to build on that, I sought out a surgeon–scientist position that would enable me to continue basic science research. Therefore, I accepted a hospital employed position that provided protected research time, internal funding support, a basic science lab as well as a large clinical volume of urological cancer cases. This rewarding opportunity allowed me to conduct both basic science and translational research, develop a departmental urologic oncology biorepository, conduct multiple clinical trials and, most importantly, care for patients with urological cancer. However, within the past 2 years, my research efforts have been curtailed owing to the institution's changing economic environment and a shift away from supporting basic science research. Nevertheless, I continue to be active in medical student and resident education, host an annual medical student summer research programme, supervise several clinical trials, partner with external collaborators in the areas of racial disparities in urological cancers, serve as a reviewer for several urology and cancer peer-reviewed journals and belong to a number of urological and cancer medical societies.

**S.W.** I just completed a 2-year fellowship in female pelvic medicine and reconstructive surgery. I had always planned to go into academic medicine, but became discouraged as I've observed that most academic institutions are not inclusive or supportive of their URM faculty. Once I realized that I would not flourish in the current academic environment, I began to learn more about the other types of practices. I was able to find Georgia Urology, a large urology group private practice in Atlanta that has a robust research department and is supportive of my desire to work with medical students and residents. My driving desire to pursue academic medicine was so that I would be in a position to mentor and sponsor Black students. With that drive as strong as ever, I recently started Urology Unbound, a non-profit organization that aims to increase the number of Black urologists with the greater goal of eliminating existing health inequities for Black people. At this time, the non-profit organization has a thriving urology interest group that provides educational and mentorship opportunities to Black and URM (including Latinx, US Indigenous and LGBTQ) medical students that we hope to soon open up to pre-medical students. We also have a fellowship programme for Black medical students and urology trainees that provides additional intentional support. I've also become involved with the R. Frank Jones Urological Society and serve as adjunct clinical faculty at my alma mater, Morehouse School of Medicine.

**S.L.W.** After deciding on urology I spent much of my time learning about clinical research and biostatistics. Starting in medical school, many of my projects focused on management and outcomes for patients with prostate cancer. During urology residency and urologic oncology fellowship, I continued to do research focusing on disparities research in urology, culminating in my enrolment in a graduate programme focused on clinical research to better understand how to apply biostatistical analyses and epidemiological concepts to my work. This programme highlighted how disparities research in urology is often limited to broad, general comparisons between racial groups but rarely dives deeper. This discrepancy helped me decide to complete a Master's degree in Clinical Research to learn conceptual frameworks and biostatistical methodologies to better examine the impact of racial disparities on management and outcomes for individuals with urological cancers. As an Assistant Professor within the Department of Urology at UCSF, I now focus my research on highlighting the multilevel factors that contribute to health-care disparities and identifying actionable targets for interventions to reduce health-care disparities to move our field forwards.

**Q** *Who, or what, has helped support you through your career?*

**T.M.D.** No person is an island, regardless of how much any of us try to say that we are 'self-made'.

Along my journey through medical school, residency, fellowship and now as an attending, I have really benefited from a deep faith and also individuals who have come alongside me and believed in me at moments when I didn't have the self-confidence or believe in myself.

My brother and I were primarily raised by our mom, Shirley Downs, and she just had an enormous belief that things would work out as they should and a really big belief in me. I also benefited from a brother who had completed professional school before I had (law school) who provided me with a glimpse into the rigour and emotional ups and downs that were normal for any student in professional school. In both medical school and residency, I not only had friends and colleagues in my classes and in the field of urology, but I also had an affinity group of other African American students and residents whom I could confide in when things were challenging and who also reaffirmed that I did indeed belong and would make an impact in the field of medicine. As an attending, I have benefited from working with everyone from amazing medical assistants and X-ray technicians to knowledgeable and dedicated nurse practitioners and physician assistants. It wouldn't be fair to single out all of the amazing attendings that I have worked with over the years, but I have truly taken away something from each one that has made me a better person and physician.

**E.E.** My family always taught me that I can do and be whatever I want to be as long as I work hard and that almost anything is possible if you take it one step at a time. But what they failed to mention was how hard it would be! But they were there every step of the way to support me through the lows and celebrate my highs. I have also been blessed to have many amazing mentors, including Drs. Sam Chang, Michael Cookson, Melissa Kaufman, Victor Nitti, Joseph Smith and many, many more, who have supported and sponsored me along the way. However, I think my single largest influence would be the late Larry Keith. He was the Assistant Dean for Admissions and Associate Director of the Office of Educational Development at the University of North Carolina at Chapel Hill (UNC). He was a transformative mentor who taught me to believe in myself during those final years of medical school when I started to doubt myself. He encouraged me to work on my self-development because if I did not believe in myself, no one else would. Without a doubt, I would not be where I am today without his mentorship. He helped me build the necessary foundation needed to be successful in residency, fellowship and beyond. That mentorship is priceless.

**C.T.L.** Mentorship and sponsorship have been critical to my success. I have had the great opportunity to identify and attract mentors inside and outside of my home urology department, my academic institution and my field. These mentors have been diverse in gender, race, religion, academic specialty, national origin and expertise. At an early point in my career I was offered leadership training, which opened my horizons to many possibilities for my professional career. One of my most important mentors, who I met as an Associate Professor, Dr. Margaret Gyetko, offered great advice: "If anyone offers to develop your talents … don't refuse!" She showed me the true art of sponsorship and how to really stretch my professional interests, talents and ambitions. I also believe that being prepared for the unexpected opportunity was key to my success. Your mentors can help you navigate the academic waters, but they must see your potential and the platform that can be developed.

**K.A.M.** Certainly, family support has been very important to me, especially during trying times of residency. I met my wife while I was in fellowship in New York, and she has been my rock. Through several moves, a change in career path, and many trips around the world, she has been by my side as a supporter and motivator. As far as professional mentors go, I can count several, including Dr. Willie Underwood, Dr. David Roth, Dr. Fray Marshall, Dr. Viraj Master, Dr. Charlotte Massad, Dr. Joel Sheinfeld, Dr. Harry Herr, Dr. Machele Donat and my current Chairman, Dr. David Penson. They all have played tremendous roles in my professional and personal development.

**Y.A.N.** The list of people who have supported my career is extremely long and includes Dr. Eric Klein, Dr. Manoj Monga, Dr. John Gore, Dr. Daniel Lin, Dr. Jonathan Wright, Dr. Adam Murphy, Dr. Robert Brannigan and Dr. Gonzalez, just to name a few. The truth is that success as an academician requires support from a wide range of people that include your peers (that is, fellow medical students, co-residents and co-fellows), mentors (more senior trainees, junior faculty, mid-career faculty, senior faculty and leadership) and benevolent bystanders. They all create opportunities for you to achieve your goals as a clinician and a researcher. I try my best to thank many of the people who have been part of this team every chance I have. I am also incredibly lucky to have had support from my family, especially my parents (a biochemist and a registered nurse) who both understood how to navigate the landscape of medicine and academia.

**R.V.** By far, my family has been my most significant support system. I'm currently in a profession nobody in my family has ever pursued. The constant reminders of how proud of me they are and where we have come from keep me hungry and humble. These reminders come in a variety of ways, such as encouraging phone calls or texts and random cards expressing their love for me. Outside of my family's kind acts, I've found support and inspiration in small acts from people who might never know how impactful their actions were. An example is Dr. Cheryl Lee, who took the time to speak with me for over an hour, even though she had never met me. I had questions about the fellowship process, and even with all that she had on her schedule, she still took the time to speak with me and give me honest advice. Acts like this and the continued support from fellowship mentors like Ganesh Palapattu, Todd Morgan, Simpa Salami and David Miller help me continue to craft my career in a rewarding manner.

**H.W.** Support comes in several forms. I rely on my attendings from my urology residency and fellowship as well as relationships I have developed through membership in several urological societies for professional support. Also, I have found many of my urology residency and fellowship colleagues, other physician colleagues and work partners essential for emotional support and encouragement. However, achieving the necessary work–life balance as a physician, educator and researcher comes down to my circle of family, friends and co-workers who know me well and care about my well-being.

**S.W.** I was supported by multiple Black urologists while I was a residency applicant. Unfortunately, I did not do my part to maintain those relationships. Towards the end of my training, I experienced a lot of difficulties that prompted me to reach back out to my former faculty attending, Dr. Kelvin Moses, who immediately resumed mentoring me. He also connected me to Dr. Willie Underwood, who has become an amazing mentor to me as well. Their willingness and eagerness to help me during a very difficult time made me realize that I had not adequately tapped into the Black urology community. Since then, I've got to know so many supportive urologists that I cannot list them all here! Even though it took me a long while to reconnect with my urology mentors, throughout residency and fellowship I developed strong relationships with many Black attendings and residents in other specialties.

**S.L.W.** Support throughout my career has come from many sources and in many forms, which I think is important. My wife and family have been sources of immeasurable support, patience and perspective throughout my training. Within medicine, I have been fortunate to have mentors within urology, including Dr. Peter Carroll, Dr. Sima Porten, Dr. Kirsten Greene and Dr. Benjamin Breyer, and several outside of urology, including Dr. Nynikka Palmer and Dr. Rena Pasick, who took an interest in my growth and development over time. Each gave me invaluable insight and advice, and served as sponsors when new opportunities arose. My clinical mentors were exemplary models of compassionate patient care while their support also led to many fruitful collaborations in terms of research projects, publications and grants. Each has also helped support me from a personal standpoint, including very sage advice about maintaining a sustainable level of work–life integration without compromising valuable time with my family. Overall, the supportive and collaborative environment in which I have trained has been a strong driving force

for my continued learning and growth in my career as an academic surgeon and clinical researcher.

*What can be done to increase the number of Black urologists?*

**T.M.D.** We need a consistent and dedicated approach at multiple levels. First, we need early urology mentorship programmes to identify high-achieving Black students while they are in undergraduate studies (junior year). Early access and career exposure to urology plus mentorship in this group of individuals would shape the objectives of those students entering medical school, as they would hopefully already have an affinity with urology and would have a higher likelihood of selecting urology for their career choice. A high percentage of Black medical students who are interested in surgical fields choose general surgery or obstetrics and gynaecology — we need to meet these students early in their career selection and provide early exposure to urology. Second, there must be a concerted effort to recruit from Historically Black Colleges and University (HBCU) Medical Schools plus Non-HBCU schools that are in the top 10% of Black MD graduates (these data are available from the Association of American Medical Colleges (AAMC) annual reports). We need to work with the Residency Review Committee to establish a policy that doesn't penalize urology trainee programmes for matching students who might not be the best test takers, because programmes are rightfully worried about certain individuals struggling with the board certifying examinations, as this would put their programme at risk of being placed on probation. Finally, we need to establish a comprehensive strategy in connection with a urology organization similar to the breast cancer foundation Susan G. Komen, which has worked with the American Society of Clinical Oncology to increase the number of URM students going into medical oncology. Something similar might be considered with the Prostate Cancer Foundation or the American Urological Association (AUA).

**E.E.** First, our governing bodies, subspeciality organizations and residency programmes have to see the value in increasing URMs in urology and agree that it should be an important goal. There is precedence for this: our field recognized the value in increasing the numbers of women in urology. In 1995, just 56 of 1,339 urology residents (4.2%) and 97 of 8,227 board-certified urologists (1.2%) were women[2]. According to the 2019 AUA census, today, 1,286 of 13,044 practising urologists (9.9%) and 29% of urology residents are women[3]. Although it has been a slow process and more work is needed to improve the number of women in urology, today we can see progress.

Next, we must diversify our urology faculty and leadership, and incorporate formal diversity, equity and inclusion training into our urology residency curriculums. A recent publication[4] outlines an excellent argument for increasing diversity and equity in urology leadership, and strategies to improve this by addressing implicit bias and intentionally improving the quality of mentorship and sponsorship. The same argument and strategies apply for women and URMs in urology.

Next, we must address the 'leaky pipeline'. In order to prepare medical students to be competitive applicants, we have to make a commitment to creating clinical shadowing, research and mentorship opportunities early on in the medical school experience. Historically, women and minority medical students have been discouraged from going into surgical fields[5]. Today, I think we all agree that there is a need to encourage talented students to pursue surgical careers. Through partnerships with local urology residency programmes, medical schools, the SNMA and the Latino Medical Student Association, an effective formal mentorship programme is possible. Great examples are the University of North Carolina's Office of Scholastic Enrichment and Equity and Stanford's Center of Excellence Diversity in Medical Education. However, in order to produce URM medical students, the 'leaks' in the medical school pipeline must also be addressed. Partnerships with HBCUs and our local university's URM student associations are good targets. As an undergraduate student at Duke University, I attended the Medical Education Development programme at the University of North Carolina at Chapel Hill. As stated earlier, this was where I met the most influential mentor of my medical career. So, through active recruitment and mentorship of talented URM students, we can start to address this gap.

Finally, this pipeline repair must reach further back than college and medical school. It really must reach students in middle schools and high schools. The Stanford Summer Math and Science Honors–Medical Education Development high school summer programme is one such initiative. I love that it gives our residents, fellows and attendings an opportunity to introduce scientific careers to URM and low-income students.

**C.T.L.** Programme Directors, along with Chairs and Chiefs of Urology, have long sought a clear and reproducible method of selecting resident candidates who will become successful residents and practising urologists. Unfortunately, the criteria used to define these candidates have been relegated to performance on standardized tests, admission to honour societies such as Alpha Omega Alpha (AOA), the attainment of honour grades in key medical school electives and the ability to obtain favourable letters of recommendation from leading urologists around the country (often necessitating 4-week away rotations). For many reasons, success across these areas can be more challenging to attain for low-resource students, who are disproportionately individuals of colour. Moreover, elements of a candidate's medical school performance are subject to implicit and explicit bias. Candidate selections for honorific societies are often made by committees that lack diversity and a consistent acknowledgement of the complex professional pathway that many URM students have undertaken. A re-examination of traditional selection criteria might increase the pipeline of eligible candidates for urology.

One procedural change that will force a critical review of our evaluation of resident applicants is the move by the United States Medical Licensing Examination (USMLE) to change score reporting for Step 1 from a three-digit numerical score to a pass or fail outcome. This approach will challenge programme directors to identify other objective and subjective assessment tools that will hopefully expand our pipeline of talented, underrepresented applicants, including women.

Still, the field of Urology needs to compete more aggressively with other specialties to attract the most talented Black medical students. Greater outreach to first-year and second-year medical students is critical. Candidates need to see themselves as active practitioners, researchers, educators and leaders in urology. Having diverse, thriving and leading Black urologists provides role models for candidates, opportunities for mentorship and sponsorship, and the downstream benefits of a 'critical mass'.

Our major specialty organizations can add to these efforts in the following ways. First, within our field, our largest specialty society, the AUA, should develop strategic collaborations through research, education

and advocacy initiatives with the SNMA, the largest organization of Black medical students.

Next, in association with urology programmes, the Society of Academic Urology should support and promote training, shadowing and research opportunities for Black and other underrepresented students interested in urology. Third, individual academic institutions often have local travel stipends for underrepresented students through diversity, equity and inclusion initiatives. Urology programmes should inquire about such resources and broadly promote them to medical student groups, such as the SNMA, to encourage student interest. Fourth, our specialty and subspecialty societies must ensure that underrepresented urologists (persons of colour and women) are visible at the podium of national and regional meetings. Our future leaders of urology — our trainees — are watching and will benefit from these role models, as will our majority members who will gain exposure to diverse perspectives, potentially broadening our understanding of problems faced in our field. Finally, the Urology Care Foundation should consider seeking philanthropic funds to directly support Black and other URM students. A partnership with the National Medical Association's R. Frank Jones Society could facilitate and accelerate the identification of talented students.

**K.A.M.** The most important thing to do is actually recognize that there is a problem and then take serious, concrete actions to remedy it. Exposure to urology is important, as not all students rotate on our service. Mentorship is also critical. Because there are so few Black academic urologists, it cannot just be on us to recruit, promote and amplify promising Black students. It is one of my greatest frustrations to see urologists create entire careers discussing disparities among Black populations, yet they have never trained a Black urologist or gone into the community about which they have written to help reduce these disparities.

**I.J.P.** To begin with, 300 years of slavery of Black people in this country, who were denied the opportunity to read and write, created an illiterate society of Black people at that time. In fact, if Black people attempted to learn to read and write they were severely punished. "If you cannot read, you cannot learn" is a quote among many educational experts. This denial of education was not done by accident, but was an effort to maintain power and cheap labour. Then you add 100 years of a separate and unequal public educational system, and you continue to maintain the power among the privileged white society, in which Black people are, therefore, unable to equalize the playing field. Thus, we remain behind academically. That was and is the plan of institutional racism. Now you ask why there is a lack of Black doctors in urology: we cannot compete at a high level of education to become urologists or doctors of any discipline as a result of 400 years of institutional racism. Today only 2% of urologists are Black, so a few have been able to penetrate the barriers that restrain us. So what can be done to increase the number of Black urologists? When I began my career, there were no Black urology role models or mentors; I was on my own. We must change this in order to increase the numbers. We need to develop programmes in the Black communities that have Black medical societies who can provide role models and support mentoring programmes that will encourage Black students to pursue the medical profession in general and subspecialties including urology.

**Y.A.N.** We have to do better at improving the recruitment of URMs at all levels of urology. Often we look at this as a pipeline issue and state we need to get more Black medical students interested in urology, or we need more Black college students to go to medical school. However, the truth is that we also need to increase representation among academic faculties and these faculty members need to be seen succeeding and rising up the ranks at their institutions and in the field. The most powerful attractant to the field remains role models that an individual can identify with. This is especially true for students underrepresented in medicine who are seeking validation that they can overcome any barriers that may exist in addition to rigors of surgical training. For me, it was seeing a young Dr. Adam Murphy with an academic appointment at a premier medical school and urology department with grant funding that lit the fuse. Seeing his successes made a career as an academic urologist seem feasible to me and inspired me to not only pursue the field but to aspire to succeed as an academic urologic oncologist.

**R.V.** To increase the number of Black urologists, we need to solve two main problems. First, we must address the issue of decreasing numbers of Black students entering college after high school graduation. According to the Department of Labor and Statistics, the rate of Black students, who are recent high school graduates between 18 and 24 years of age, entering college has decreased from 55.6% in 1993 to 50.7% in 2019 (REF.[6]). Efforts to develop programmes that extend into elementary and secondary schools to help encourage matriculation to college will inevitably lead to an increase in the number of Black students exposed to and interested in medicine.

Second, we must also increase the number of Black medical students exposed to urology. A substantial proportion of Black medical students attend medical schools attached to HBCUs. To my knowledge, none of the HBCU medical schools offers residency programmes in urology. The absence of affiliated residency programmes limits medical students' exposure to urology, and the absence of a home programme also makes it more competitive to match into urology. I believe organizations such as the American Board of Urology and the AUA can and should develop partnerships with HBCU medical schools to establish urology residencies at these institutions. Undoubtedly this will attract more Black students to the field of urology. This is an immediately actionable change that we can accomplish within the coming years if this issue receives the urgent attention it deserves.

**H.W.** First, we need to define the problem. In the past 5 years, using data from the AAMC, Black students accounted for a low of 17/493 (3.4%) applicants to urology in 2016 to a high of 27/466 (5.8%) applicants in 2019 (REF.[7]). However, when one looks at the denominator, that is, the pool of Black medical students to choose from, the main reason becomes apparent: for the 2018–2019 calendar year, only 7.1% (1,540/21,614) of matriculants to US medical schools were Black[8]. This is the current state of affairs despite efforts by the AAMC's Project 3,000 by 2000, which was developed in 1991 and was aimed at increasing the number of URM students matriculating annually to 3,000 by the year 2000 (REF.[9]). The core strategy of this programme was to establish durable, minority-focused partnerships between academic medical institutions with 'feeder' colleges and K-12 school systems involved in preparing potential URM applicants for careers in medicine[10]. In addition, the Sullivan Commission on Diversity in the Healthcare Workforce[11] that launched in 2003 and a directive from the Institute of Medicine in 2004 with their report *In the Nation's Compelling Interest: Ensuring Diversity in the*

*Health-Care Workforce*[12] were both aimed at increasing diversity in the health-care sector. The compelling reasons to increase diversity among health-care professionals include improved access to care for racial and ethnic minority patients, greater patient choice and satisfaction, better patient–provider communication and better health outcomes.

It has taken decades to make only modest gains in increasing the number of URMs in medical school, whereas only 8 years elapsed from President John F. Kennedy's challenge to Congress on 25 May 1961 to Neil Armstrong landing on the moon on 20 July 1969. Like the steps taken to achieve that historic feat, the challenge of putting a man on the moon was solved systematically with the collective support of government, private sector and the public. Likewise, the reasons for poor enrolment of Black students in medical school are complex and multifactorial, but they are known and solvable[13–15]. This is exemplified by model pipeline medical training programmes such as that of Harvard Medical School.

Attracting medical students to urology appears to be based on several factors such as being part of a large medical school class size and the school having a urology programme with a charismatic chairman, large faculty and strong mentorship from the urology faculty[16]. My own experience corroborated these findings, as my medical school class consisted of 239 students and the medical school had a urology programme led by the charismatic Dr. Pontes, with 14 academic and affiliated faculty; the strong mentorship from Dr. Powell cinched my decision to choose urology as a career.

**S.W.** Medical schools and residency programmes must be intentional in their recruitment, retention and promotion of Black people. Only once that happens can lasting change occur. For example, if residency programmes want to recruit a Black resident, they should interview all Black students who apply to the programme. This will prevent Black applicants from being weeded out of the selection process by factors that have already been exposed in the literature, such as biased lower USMLE scores[17], poor clinical rotation evaluations[18] and AOA membership[19]. These same factors should also be eliminated from the final ranking process for the same rationale. Furthermore, more formal residency-sponsored pipeline programmes are needed to expose students to the field, provide mentored research and expose urology residency programmes to interested Black students.

**S.L.W.** This is a very timely question given the current dialogue about structural racism and barriers to equity that exist in the USA. The current low number of Black urologists in the workforce, which is less than 3% based on AUA Census data[1,20], is the result of several factors in a leaky pipeline that starts well before medical school. The current system, both within medicine and society as a whole, rewards accomplishments and merit using very focused and narrow definitions that indirectly create an overemphasis on wealth, social class and privilege as proxies for talent and effort. These are by no means mutually exclusive concepts, but failing to consider how individuals overcome difficult circumstances and adversity, what access to resources (or lack thereof) were available, and what aspects of their lives might have led to success or failure in academic endeavours creates an inequitable environment for many. Unfortunately, a holistic approach to determine 'who gets in the door' is both labour intensive and more complex than relying on 'objective' data, such as test scores and number of publications, despite a clear association of these metrics with success after medical training. Early exposure, mentorship and equitable evaluations can promote and support Black trainees who are intelligent, capable and resilient but hindered by the biases inherent to the current processes.

**Q** *What programmes, initiatives, or advice would you pass to Black students interested in a career in medicine or Black medical students interested in urology?*

**T.M.D.** First, I would always encourage all students to continue to believe in themselves. Some interesting data suggest that of all racial and/or ethnic groups, the one group that is more likely to take the Medical College Admission Test and not apply to medical school are African American students. What I take from this observation is that many of these students didn't reach out to qualified admissions experts to find out if they were competitive or how they could increase their competitiveness for medical school. So my take-home message in this case is don't count yourself out. The same steps for matching into the field of urology should be taken. Find a mentor who aligns your success of matching into urology with their success; you want someone who is pulling for you and for whom it really matters that you are successful in getting into the field of urology. Now, your mentor might recommend that you take an additional year off for extra research or dedicated time for one of the USMLE exams if that isn't your strong suit. Be patient, listen and trust their advice.

**E.E.** Owing to COVID-19, many US residency programmes have substantially improved their social media presence through Twitter, Instagram, YouTube, departmental websites and virtual town halls. I encourage students to follow programmes on Twitter and Instagram, take the opportunity to connect with residents and faculty in those programmes, and also be the first to hear about research, mentoring and other opportunities. I recommend joining the R. Frank Jones Urological Society Interest Group and connecting with the UnderRepresented Trainees Entering Residency (UReTER) programme to be paired with a urology resident mentor — mentorship is key!

**C.T.L.** Urology is a wonderful field that touches most individuals. The spectrum of care that we deliver across a varied range of populations is tremendous. Our field has the ability to impact critical elements of an individual's health that directly affect quality of life. Our practitioners should reflect our patient population and our trainees. The increasingly diverse population in the USA demands greater diversity in our workforce.

To Black medical students: apart from committing yourself to academic excellence, you should enquire about rotating on a urology service, perhaps during an elective rotation, if it is not a required rotation. You must also be proactive. Early in medical school, shadow a urologist if you have even a vague interest in surgery. This will give you more time to learn about the field and build your academic credentials to be competitive for an early match. You should seek out connections in the National Medical Association. Many Black urologists are generous with their professional stories and can help you navigate your interests in a variety of specialties. The R. Frank Jones Urological Society has historically supported medical student travel to present scientific research at the annual meeting of the National Medical Association. In addition, Black students can enquire about travel scholarships at institutions of interest for away rotations or summer research experiences and might even be able to educate potential mentors about the existence of these resources.

Black students must appreciate that, through your experiences, you can offer a unique approach to clinical, educational and research problems in the field. Do not

presume that you will not be a competitive candidate for urology residency. Speak with a variety of individuals to understand the strengths and weaknesses in your application. Consider a path to overcoming areas of challenge. Develop your personal mission and vision. Be prepared to tell your story in a way that demonstrates your commitment to these important guiding principles. Increase your visibility through participation in virtual town halls, institutional information sessions and meetings sponsored by urology specialty societies such as the Society of Academic Urology. Finally, follow urological specialty and subspecialty organizations on social media to learn about important and contemporary topics of discussion.

**K.A.M.** Seek out a mentor (who doesn't necessarily have to look like you, but has to be committed to your success), gain as much clinical and research experience as possible — consider taking a year off for research, especially if you come from a smaller programme or a school without a urology service, connect with the R. Frank Jones Urologic Society and be your own best advocate as you progress in your training.

**Y.A.N.** The R. Frank Jones Urological Society is an excellent resource and community for Black medical students to explore resources and mentorship. Find good mentors at your institutions, and build a diverse mentorship team of trainees and faculty. Our field is full of incredible people who are committed to supporting students interested in the field, but those folks cannot support you or help you if you don't ask them for their support. Ask for and demand candid feedback from people you work with both clinically and in research. Be accountable, be candid, and work hard! Lastly, we are all connected through email and social media. It might feel awkward or present challenges, but the digital age presents unique opportunities for students to build their networks.

**I.J.P.** Recently I was asked by the Dean of our medical school to help develop a programme in our undergraduate school and to be a role model and mentor Black students in the direction of medicine. Of course I agreed. My advice to them will be self-motivation, self-discipline, perseverance, positive attitude and hard work in the sciences and mathematics. Specifically, knowledge of computer science, statistics, biology and genetics has become increasingly important. I will encourage them to pursue academic medicine, because that's where important medical decisions are made that impact the Black community, especially cardiovascular disease and urological, breast, colon and lung cancers. Of course, as I am a urologist, I will stress urological cancer, especially prostate cancer. Among those who are interested, I would encourage medical research, specifically translational research. Follow-up of mentees by mentors is important. It lets the students know that someone cares about their success!

**H.W.** For Black students interested in a career in medicine or health care, there are many pipeline programmes for students from elementary school to medical school and beyond across the country. Using Wayne State University as an example, there are local, state and national programmes for K-12 (Future Docs, Reach out to Youth, $C^2$ pipeline, Wayne-Med Direct, Michigan GEAR UP, Upward Bound), undergraduates (HIGH programme, Louis Stokes Alliance for Minority Participation, McNair Scholars programme, ReBUILD Detroit, Wayne Med-Direct) and graduate students (multiple fellowships and a post-baccalaureate programme).

For medical students with specific medical specialty interests, participation in local specialty interest groups provides excellent resources and mentorship opportunities. Becoming members of national organizations such as the American Medical Student Association or the medical student section of the American Medical Association provide phenomenal career development, networking, leadership and mentorship opportunities that will pay dividends well beyond your time in medical school. For Black and other minority medical students, the SNMA serves a similar purpose, with programmes and mentors that share your social and cultural backgrounds.

For medical students with an interest in cancer research or physician scientist career, the Continuing Umbrella of Research Experiences programme through the Center to Reduce Health Disparities at the National Institutes of Health offers several training and career development opportunities geared towards increasing diversity in the cancer health disparities research workforce. This programme is not specific to medical students but for anyone from middle school all the way to mid-career scientists and physicians with an interest in cancer research.

For Black students (high school to college) with an interest in urology, the R. Frank Jones Urological Society provides mentorship, networking events and career development support through programmes at the National Medical Association and AUA annual meetings.

**S.W.** I would remind medical students that they are their own best advocate. Networking is difficult and does not come naturally to most people. It only gets better the more you do it, but it is important to practice. As I mentioned before, my non-profit organization recently started both the R Frank Jones Urology Interest Group and the Urology Unbound Fellowship to introduce Black and URM students to the field of urology while also providing networking, research and mentoring services. Interested students can reach out to us on Twitter and Instagram.

**S.L.W.** Black students interested in medicine or urology should seek out shadowing, mentoring or even a few words of advice whenever possible, but this should not be your burden to bear. In the past I've been told that the low numbers of Black urologists is a 'pipeline problem' that is beyond the scope of a single institution or department, almost as a way of absolving the institution of any responsibility or need for action. These are not the places that have your growth and development in mind.

Programmes are available at all levels (local, regional and national) that provide guidance and opportunities, particularly when mentorship and other opportunities might not be easily identified at your home institution. For example, the SNMA is a national organization that supports students and provides numerous opportunities. The R. Frank Jones Urological Society is another organization that comprises Black physicians, residents and fellows, and students interested in urology, which provides a safe community of support, mentorship and sponsorship. Lastly, within the UCSF, one such programme is the resident-led UReTER initiative, which is focused on mentorship for URM students interested in urology. This programme was created by our residents and is centred on supporting mentoring relationships between current urology residents and students interested in urology. It is complementary to additional department programmes currently in development that focus on encouraging medical students from diverse and underrepresented backgrounds to gain exposure to UCSF Urology via participation in clinical rotations, focused mentorship and research development to prepare students

for acceptance into an accredited urology residency programme.

Lastly, look for institutions and organizations that actively create an inclusive environment of excellent people from diverse backgrounds rather than simply promote diversity as a metric to be met. Look to see how diversity in the residents and faculty at the institution reflects the ideal training environment that you have in mind. This is one example of how leadership in departments can exemplify the idea that we are tasked with training future leaders in the field who also reflect the population they serve.

**R.V.** As highlighted in my previous response, I am a staunch proponent of pipeline programmes and mentorship. I believe these two initiatives have a synergistic effect. Although we can tackle structural issues via the establishment of longitudinal pipeline programmes, my own experiences also highlight the importance of mentorship. Mentorship can serve various important functions, including early exposure to medicine and urology, recognition and celebration of achievements, and supportive counselling during troubling times that can lead to self-doubt.

To explain the importance of mentorship it is important to recognize that many Black students are never exposed to a career in medicine, nor do they have the proper mentorship to help guide them along this path. Suppose you have to choose between two paths, one towards becoming a physician and one towards another field that many people in your community have taken. When making this decision, if a student has neither exposure to physicians nor mentorship to help guide them, the pathway towards a career in medicine might remain dark from a lack of enlightenment. It is easy to see why many students stray away from the dark and unknown path of becoming a physician.

In terms of supportive mentorship, it is also important for Black students and medical students to hear the following: you are every bit as talented as anyone else. Don't let anyone tell you otherwise. Believe in yourself and know that I believe in you. Your hard work, grit, and drive will propel you to achieve things you didn't think were possible to obtain. Continue to push towards your goals and have faith in yourself. The time for change is now!

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**Competing interests**
S.W. declares that she is the founder of Urology Unbound. The other authors declare no competing interests.

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