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SATURDAY, APRIL 9, 2022

ADVISOR BIOS

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2022 Advisor Profiles

RONALD A. ARKY
Medical Educator, Endocrinologist - Brigham and Women's Hospital
Inaugural Advisory Dean, F.W. Peabody Society
Co-Director, Medical Student Performance Evaluation Program
Daniel D. Federman Distinguished Professor of Medicine and Medical Education
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Birthplace: New Brunswick, New Jersey
Degrees: BA – Cornell University; MD – Weill Cornell Medical College
Professional Fields of Interest: Medical student education (especially clinical education)
Future Development in Field: Better alignment of clinical education with clinical practice.
Qualities Needed for Success: Good basic understanding of physiology and molecular biology; judgment about how to use that knowledge for betterment of patients; always willing to learn
Personal Mentors: I had role models more than I had mentors. They were respected human beings.
Best Advice ever Given: Follow the path you find most enjoyable and most compatible with your personality and with your goals in life.
Change in Choice of Career: I changed from being a physician-administrator to being an educator.
Best Career Experience: Working with medical students as a Master of the Peabody Academic Society at Harvard Medical School. It gave me the opportunity to watch young medical students mature, develop, and succeed in their careers.
Worst Career Experience: Battling with a hospital's Board of Trustees about their responsibilities to the community they served.
Dealing with Discouragement: I realize that life has its ups and downs. Downs are usually followed by rewards and pleasant periods.
Advice to Students Thinking about Biomedical Careers: There are endless opportunities in the biomedical field. Select an area that seems most challenging to you, be persistent, and expect that there will be good times and bad times.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Lack of sufficient number of role models; high cost of education; inadequate scholarship and support money.
Other Interests: Classical music and basketball
Additional Comments: One of my greatest professional rewards has been to observe the successes of students I have met through BSCP over these many years

MARKTUS ATANGA
Senior Data Scientist
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Birthplace: Ghana
Degrees: BS (chemical engineering) – Kwame Nkrumah University of Science and Technology, Ghana; MS (chemical engineering) – Missouri University of Science and Technology; MS candidate (data science) – Johns Hopkins University
Professional Fields of Interest: Data science, chemical engineering, aerothermodynamics
Future Developments in Field: In aerospace, there will be more supersonic jets, hybrid electric jet engines, and jet engines fueled by solar energy or other environmentally friendly energies. The capability to provide in-flight diagnostics to pilots will be very important.
Qualities Needed for Success: Resilience, persistence, and an ability to look at things with a different perspective. The problems that we are tackling in my field are not easy to solve - without these qualities, you may come to question yourself and your abilities.
Personal Mentors: The mentors I have had have helped me to shape my future. The best mentors have two main qualities: first, dedication to my success – no matter how busy they are they are willing to take the time to answer my questions and guide me; second, experience at mentoring.
Best Advice ever Given: Keep pushing, no matter what. If you don't give up, you can make it.
Change in Choice of Career: I had been working as a chemical engineer and was approached with an offer to move into

aerospace. It was something that I knew very little about. However, I realized that I would be working with incredibly bright people, and was excited about the opportunity. I also realized that the training I received in school did not give me the answers to problems but rather taught me how to think about a problem, and that could be used even in an area where I knew very little.
Best Career Experience: Finding the thing that makes your customers happy. It is what keeps me working and searching for answers.
Worst Career Experience: In the course of my career, I have been asked to switch positions and the type of engineering work that I do. It can be difficult when I have to take on a new role that I have little experience with and need to learn each time anew what to do.
Dealing with Discouragement: I take time to myself to be quiet, meditate, and reflect on how to handle the situation. I seek out advice from people who can guide me.
Advice to Students Thinking about Biomedical Careers: Choose something that you are passionate about, that you are going to enjoy doing, and that will fulfill you.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Minority students often come from backgrounds where they don't get exposure to the sciences, don't have role models to look up to who have established a career in the sciences, and feel like they are the only one in the classroom who looks like them. Therefore they may feel that engineering or the sciences is not for them. It is important to get out of that mindset and understand that anyone can succeed in the sciences.
Other Interests: Soccer, exercise, trading in the stock market, and more recently reading something other than science books.
Additional Comments: Every day when you wake up, think about what you want to be. It will change the way you approach that day.

SHANNON T. BAILEY
Associate Director - CDx Development Operations
Foundation Medicine, Inc.
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Birthplace: Philadelphia, Pennsylvania
Degrees: BS (biology) – Pennsylvania State University; MS (cellular and molecular physiology), MPhil (cellular and molecular physiology) and PhD (cellular and molecular physiology) – Yale University
Professional Fields of Interest: Cancer genetics and genomics
Future Developments in Field: Personalized medicine, which involves the use of sequencing technology for patients.
Qualities Needed for Success: Be focused, find a mentor, and start charting out your path early.
Personal Mentors: Look for mentors who are accomplished in their field and willing to invest time in building a relationship with you.
Best Advice ever Given: Put your best foot forward. Whenever I need to make a leap, I always have that in mind.
Change in Choice of Career: Despite my initial laser focus on being in academia, I decided to go into industry.
Best Career Experience: As a technician at the University of Pennsylvania, I was involved in a manuscript that was high profile. It was exciting to see our article referenced by all major news outlets and even Men's Health magazine.
Worst Career Experience: Overcoming tension with a PhD advisor.
Dealing with Discouragement: Take a break, regroup, and press on.
Advice to Students Thinking about Biomedical Careers: Be a sponge and learn as much as you can at the very beginning. Don't shy away from different projects. Be a science nerd.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: I think there will always be microagressions to deal with.
Other Interests: Marathon running, travel, and learning languages

BENITA BAMGBADE
Assistant Professor
Department of Pharmacy and Health Systems Sciences
Bouvé College of Health Sciences - Northeastern University
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Birthplace: I am from Houston, Texas, by way of Nigeria.
Degrees: PharmD and PhD (pharmaceutical sciences) - University of Texas Austin

Professional Fields of Interest: Pharmacy, mental health, health disparities, education
Future Developments in Field: There's a push at the national level for pharmacists to be recognized as health care providers. Provider status would allow pharmacists to get reimbursed for services that they are clinically trained to provide, which would incentivize employers to give them more opportunities to fully utilize their clinical knowledge.
Qualities Needed for Success: It's important to find something you're interested in or passionate about. You don't have to be the smartest or have a 4.0 GPA; you need determination and passion as a foundation.
Personal Mentors: Look for a mentor who actually wants to be a mentor. A mentor should care about you not just in reference to your work or academic pursuits, but also as a whole person. Good mentors make time for their mentees, are always available if needed, and approach mentoring to meet you where you are.
Best Advice ever Given: When you're making career/life decisions, don't always tie your decisions to money. You need money to live, but there are things that you can't put a monetary value on, such as peace of mind or being fulfilled. If you follow your passion, success will eventually come with it.
Change in Choice of Career: In high school, I was interested in a career in medicine. After volunteering at a county hospital, I decided to pursue pharmacy. I started pharmacy school thinking that I wanted to be a pediatric respiratory pharmacist, but I also kept an open mind and participated in various activities including volunteering, research, student organizations and mentoring. When I graduated with my PharmD, I looked back and realized all of the things I enjoyed in school (research, mentoring students, serving in student organizations) were similar to what professors do in academic settings. This led me to pursue a PhD.
Best Career Experience: My dissertation project was an intervention focused on promoting depression help seeking among African-American college students. As part of this project, participants were screened for depression. When we followed up with them, some of the students who screened positive for depression had sought help or professional counseling. It was great knowing that we had a positive impact on them and had hopefully changed their lives for the better. My other best career experience was walking up to my office on the first day of my current job and seeing my name on the plaque outside of my door, "Dr. Benita Bamgbade." It was amazing realizing that THIS is what I have been working so hard for!
Worst Career Experience: The transition between being a PharmD student to being the pharmacist in the pharmacy (aka the person responsible for everything) was kind of a shock. During my first shift being the only pharmacist, and an inexperienced one at that, the workflow did not go as planned. Though the pharmacy had closed at 9 pm, the condition was such a mess that I stayed there until about 11:30 pm getting everything straightened out. After this experience, I felt like the worst pharmacist ever, but after talking to colleagues and mentors I realized it was normal and, like most things in life, I just needed some practice. After a month or so, I had found my groove.
Dealing with Discouragement: First, acknowledge it, accept it, and allow yourself to feel your feelings. You can unplug, do something you enjoy, or talk to someone you trust. However, be careful not to sit in your feelings for too long before picking yourself up and moving on. That's the key: moving on and moving forward.
Advice to Students Thinking about Biomedical Careers: Continue being involved in organizations and events like BSCP, and try to get experience through volunteering or shadowing someone in your desired field. If you're interested in pharmacy, the Student National Pharmaceutical Association (SNPhA) is a great place to meet other students in pharmacy programs and to get insight on pharmacy school and the application process. SNPhA is open to high school and pre-pharmacy college students. Also, stay on top of your school work, study for standardized exams, and foster relationships with people who can write amazing letters of recommendation. Find ways to build relationships with your professors by going to office hours or participating in research projects.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Just being a minority student in the sciences can be challenging because there are not many of us. You may be on the outside of some social networks or groups, but don't let that be a hindrance. There might be only a few minority students at your school, but if you participate in national meetings/conventions, you will find other people that look like you and have similar experiences to your own. These challenges can be overcome.
Other Interests: I enjoy cardio kickboxing (the fun dance party kind of kickboxing), cooking, watching TV and dancing to afrobeats music. I also love all things Beyoncé. I'm not sure if that counts as a hobby, but Beyoncé is all things fabulous.

SOPHIA BARDEHLE

Principal Scientist in Vivo Pharmacology
Cerevel Therapeutics
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Birthplace: Dresden, Germany
Degrees: BS (molecular biotechnology) - Heidelberg University; MSc (molecular medicine) – Humboldt University of Berlin; PhD (neuroscience) – Ludwig-Maximilian-University of Munich
Professional Fields of Interest: Neuroscience, drug discovery, imaging

Future Developments in Field: Novel therapies for neurodegenerative and -psychiatric disorders.
Qualities Needed for Success: Passion and curiosity for discovery research, flexibility, innovative and critical thinking, be a team player
Personal Mentors: The best mentors are those that challenge you, get you out of your comfort zone, give open and critical feedback but are also supportive, and help build your network, connect you with people of interest to your career, and generally give advice helpful to you career trajectory. Most importantly, a mentor must be available and willing to listen.
Best Advice ever Given: Don't be humble. Keep your eyes and your mind open to exploring new areas.
Change in Choice of Career: My career path into drug discovery has been a gradual development from basic research in cell biology in academia to translational, biomedical research in industry. The biggest change along this path was about five years ago when I moved from academia to pharmaceutical industry.
Best Career Experience: I enjoy my current role in Biology Discovery; collaborating, leading and working with cross-functional, interdisciplinary teams to help advance and progress drug discovery. I also enjoy developing new research models and workflows that are crucial for preclinical development of new therapies.
Worst Career Experience: It can be challenging to lead without authority, particularly in a niche area within a big pharmaceutical company.
Dealing with Discouragement: Troubleshooting is a BIG part of drug development and research. You must learn to be patient, handle frustrations, and find solutions collaboratively. Establishing and maintaining a healthy work-life balance by accepting personal limits, learning to say NO, and setting boundaries, is important to maintaining productivity and efficiency for the long-term.
Advice to Students Thinking about Biomedical Careers: Follow what you are most passionate about. Skills can be learned but curiosity can't be taught. Be flexible and curious, able to learn on the job, collaborative, and able to work well within cross-functional teams.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: As an international scientist, I have been fortunate to have worked in diverse research settings. Funding for college and access to top-ranked research institutions can be a tough challenge for minority students. Initiatives for diversity programs, e.g. internships and Co-Op positions create excellent opportunities for minority students to explore scientific careers and research settings. To contribute and support inclusive research environments for all students, I am proud to be a mentor in the summer internship program at Cerevel this year.
Other Interests: Outdoor activities, Yoga, biking, hiking, camping, traveling
Additional Comments: Start building your professional network as soon as possible, not just when you are ready to begin your career. Take advantage of any networking opportunities. Reach out to professionals for brief informational interviews to learn about their role, attend local symposia/conferences, and self-reflect on what you do or don't like. Building relationships with multiple mentors in different fields/institutions/levels helps diversify perspectives and advice.

WANDA D. BARFIELD

Director, Division of Reproductive Health
National Center for Chronic Disease Prevention and Health Promotion
Centers for Disease Control and Prevention
Assistant Surgeon General, United States Public Health Service (Retired)
Adjunct Assistant Professor – Emory University School of Medicine
Professor of Pediatrics – Uniformed Services University of the Health Sciences
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Birthplace: I was born in Charleston, South Carolina. I grew up in North Carolina, New Jersey, Hawaii, and Southern California.
Degrees: BS – University of California Irvine; MD – Harvard Medical School; MPH – Harvard T.H. Chan School of Public Health
Professional Fields of Interest: Neonatal – perinatal medicine, public health, racial disparities in reproductive, maternal, and infant health and perinatal outcomes
Future Development in Field: Understanding the underlying causes of racial disparities in maternal health and how social determinants of health, as well as access to technological advances, affect care, and drive disparities in maternal and infant outcomes.
Qualities Needed for Success: Persistence, patience, balance, and good mentors
Personal Mentors: My mother and father are my first and most important mentors. Mentors don't have to be experts in science but should want to help you succeed in whatever you pursue. Dr. Paul Wise, a professional mentor of mine, was interested in my success as a medical student researcher and was a brilliant and visionary teacher.
Best Advice ever Given: From the Bible: Philippians 4:13 – *"I can do all things through Christ which strengthens me."*

Change in Choice of Career: After working in clinical neonatology for 7 years, I made a change from primarily clinical care to population-based public health research. Although I do a small amount of clinical work, I transitioned from caring for the individual needs of newborns and families to caring for populations of mothers and infants on the state, national, and global levels.
Best Career Experience: 1) An early best career experience was being a tutor at the University of California Irvine. I was a biological science major and had the opportunity to teach minority students from elementary school to college in math and general chemistry. I was able to give back to others, while at the same time making myself a stronger science major. 2) While in the Army, I was lead medical officer with the Multi-National Force and Observers (MFO) in Sinai, Egypt and responsible for the care of soldiers from 12 contingent nations. Through this experience, I realized the world is very brown; people of color are doing work all over the world. In the Army itself, I had the opportunity to see true workforce diversity as 20-30% of the healthcare personnel, including nurses, physicians, dentists, pharmacists, and technicians, are African American. I also learned firsthand about the history of medicine by African people. 3) Working for the Centers for Disease Control and Prevention (CDC) in the Epidemic Intelligence Service and beyond. We assisted the NYC Health Department after the September 11, 2001 terrorist attack, provided care to medical evacuees of hurricanes Rita and Katrina, and helped develop CDC national clinical guidance on infection control for post-partum women and newborn infants with suspected/confirmed novel H1N1 influenza. In 2015 we helped to understand the implications of Ebola Virus Disease for pregnant and postpartum women, and in 2016 and 2017 we were part of the emergency response to Zika. Now I am leading a national effort to eliminate maternal mortality and its disparities in the United States, and helping to prevent adverse effects of SARS-CoV2 infection and COVID-19 disease on pregnant women and their infants. It is truly an honor to work on such important topics.
Worst Career Experience: Not every experience has been easy but it has helped me to grow. An experience with a terrible supervisor turned me into a better leader by understanding what I would not do to others. I ended up gaining great leadership skills and experience and within a year I was promoted and became *their* boss.
Dealing with Discouragement: I pray. I talk with mentors and close family members. I analyze what the discouragement is about. The issue may not be me; it may be the situation (i.e., a person). You can sometimes turn it around.
Advice to Students Thinking about Biomedical Careers: Study hard and remain focused, particularly at the beginning of your career path. To be good at anything, you need to work at it, and practice, practice, practice. Today, students need a well-rounded education to be able to discern information from many different sources.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Competing pressures – competing interests and distractions (i.e., social activities, new interests). Opportunities are scarcer with the reversal of affirmative action. The cost of education may seem daunting, but don't be discouraged; there are opportunities to earn money while learning (e.g. tutor, resident assistant).
Other Interests: Scuba diving, skiing, art framing, and discovering the world with my husband and through the eyes of my two sons.
Additional Comments: Whatever students learn from this program, they too can be advisors to younger students, colleagues, friends and family. Pass it on.

JABBAR R. BENNETT
Vice President and Chief Diversity Officer
Professor of Medicine, College of Human Medicine
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Birthplace: Winston-Salem, North Carolina
Degrees: BS (biology with Spanish minor) – North Carolina Agricultural and Technical State University; PhD (biomedical sciences) – Meharry Medical College
Professional Fields of Interest: Diversity, equity, inclusion, and leadership and career development. My previous research was in cell and molecular biology, and parasitology.
Future Developments in Field: There are unprecedented opportunities for members of underrepresented groups to pursue graduate and medical education, and excel in careers in the biomedical sciences and health professions.
Qualities Needed for Success: Determination, hard work, perseverance, and internal motivation. Research is ninety percent failure and ten percent success, so being internally motivated and optimistic are critical.
Personal Mentors: I have been fortunate to have had many mentors throughout my training and career. I can confide in them and discuss my personal and professional career opportunities and challenges. They help me make informed decisions and hold me accountable. These mentors believe in me and continue to nurture me.
Best Advice ever Given: The best advice I ever received about my career came from my mother. She told me that peace of mind is worth more than anything in the world. Be sure that you are passionate about the work you do and the career you choose. Your passion will drive your persistence, which will lead to your success.

Change in Choice of Career: Realize that all skills are transferable. Identify and maximize your own unique gifts to promote personal and professional fulfillment.
Best Career Experience: Any day that I can help someone more fully articulate and realize their personal and/or professional vision.
Worst Career Experience: Graduate school was a wonderful and exciting, yet extremely stressful, time.
Dealing with Discouragement: It makes me stronger and promotes self-reflection. I try to use the situation as motivation for change.
Advice to Students Thinking about Biomedical Careers: Focus, persevere, and network.
Issues Facing Minority Students Pursuing Careers in Biomedical Sciences: The paucity of role models, and lack of adequate, tailored support in graduate and medical training, which extends to postdoctoral training and junior faculty appointments.
Other Interests: Exercise, movies, music

KRISHNA BHANDARI
Senior Scientist
Takeda
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Birthplace: Nepal
Degrees: BS (microbiology) - Tribhuvan Vishwavidalaya, Nepal; BPharma (pharmacy) – Rajiv Gandhi University of Health Sciences, India; MS (pharmaceuticals) – Yeungnam University, South Korea; PhD (pharmaceutics) – University of Alberta, Canada
Professional Fields of Interest: Drug delivery and formulation development of small molecules, biologics and mRNA/siRNA
Future Developments in Field: The business of drug delivery will be greatly changed as a result of the emergency approval of mRNA vaccines (used by Pfizer and Moderna in the development of their COVID vaccines). Gene therapy will emerge as the future of medicine.
Qualities Needed for Success: In the earlier years of your career, technical skills and a solid scientific background are essential. After the first five years or so of your career, though, skills often not taught in school become more important – communication skills, the ability to collaborate, and leadership skills. These skills should be taught/self-learned in schools.
Personal Mentors: I did not really have formal mentorship. My mentors were mostly my supervisors. The better ones are those who are not only focused on the success of the project, but also interested in helping someone build their career by showing them the path. The road to success is much shorter when you have someone willing to show you the path.
Best Advice ever Given: Follow your heart. Don't take a job because of salary or geography, but because you love it.
Change in Choice of Career: My career path was very formed from the beginning. Although I initially believed I wanted to be a medical doctor, once I studied pharmacy, I knew that was my calling.
Best Career Experience: When the FDA gives approval to a drug you worked on. There are thousands of people working to develop one drug, and usually the individuals are unknown. But when a drug gets approved, you feel like you are part of a global community helping others.
Worst Career Experience: The opposite of the best experience – when you have worked hard and spent years working on a product which fails. In industry, often you are judged not on how hard you work but on whether the product you are working on succeeds and that can be difficult.
Dealing with Discouragement: I acknowledge that discouragement is part and parcel of the job and the industry in which I work, and accept that there will be failures.
Advice to Students Thinking about Biomedical Careers: Try to see the industry as a whole. There are thousands of different opportunities available; try to find specifically what you are good at and what you enjoy and then select your career based on that specificity.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: For minority students whom English is not their first language, communication and how we present the data can be a big obstacle. Disparity is another obstacle, especially for international students. There aren't as many job opportunities until you have proven yourself.
Other Interests: Gardening
Additional Comments: Don't apply for a job just for the sake of applying for a job. Apply for a job when you are ready for it.

RICHARD T. BORN
Professor, Department of Neurobiology
Harvard Medical School

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Birthplace: Madison, Wisconsin
Degrees: BA (chemistry) – DePauw University; MD – Harvard Medical School
Professional Fields of Interest: How the brain works, focusing on neural circuits that endow us with the ability to see
Future Developments in Field: It is a very exciting time. The most important change is that cellular biology and molecular biology are beginning to provide systems neuroscientists (like myself) with tools, such as genetically-engineered viruses and optically-gated ion channels, which allow us to manipulate neural circuits with increased precision.
Qualities Needed for Success: There is no one recipe, but curiosity and passion are critical. You have to be open to new ideas beyond what you learned in school. Being a good observer and having energy and determination are also very important.
Personal Mentors: I have had several key mentors, including David Hubel, Marge Livingstone, and Bill Newsome. Each of these people has taught me a great deal; much of it in ways difficult to put into words. A good mentor is someone who inspires you and teaches you how to think like a scientist. He or she also makes you aware of possibilities that you were not aware of before interacting with them.
Best Advice ever Given: "If you love something, never, never, never give up."
Change in Choice of Career: I thought I was going to become a doctor when I began college and I entered medical school certain that I would become an orthopedic surgeon. But I had always been very interested in the brain and this gradually came to the fore. I took a break for a year after my third year of medical school and did some research. I did go back and finish my medical degree but never practiced as a physician.
Best Career Experience: Taking the year off and working in a lab where I discovered my passion.
Worst Career Experience: Not getting a particular research grant early in my career.
Dealing with Discouragement: I try not to get my ego involved so that I can objectively see the reasons for a given failure. This allows me to use it as an opportunity to improve myself.
Advice to Students Thinking about Biomedical Careers: Try as many different areas as possible until you find your passion. If you love what you do, chances are you will be good at it and there is always work for the best people.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: A big one is the lack of representation but it really depends on the individual. You can still learn a tremendous amount from a good mentor who is interested in your career, regardless of whether you and your mentor are from the same ethnic background.
Other Interests: I love to read novels and cook. I am an active swimmer and bicyclist. My wife is a musician and we enjoy going to operas together.

ALEXY D. ARAUZ BOUDREAU

Associate Chief of Pediatrics for Primary Care, Massachusetts General Hospital
Director, Population Health Management, MGHfC
Medical Director, MGH/MGPO Medicaid Accountable Care Organization
Assistant Professor of Pediatrics, Harvard Medical School
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Birthplace: I was born in California and moved to San Salvador when I was 11 years old.
Degrees: BA (molecular biology and biochemistry) – Wesleyan University; MD – Harvard Medical School; MPH – Harvard T.H. Chan School of Public Health
Professional Fields of Interest: Pediatrics, population health management, primary care transformation, patient-centered medical home, child development, and health disparities
Future Developments in Field: Pediatric primary care will be structured to holistically influence children's development and lifelong health trajectory. Care will be coordinated among multiple systems that address children's wellbeing.
Qualities Needed for Success: You need to be patient with the health care system. Learn to work in interdisciplinary teams to apply different methodologies and perspectives to complicated problems.
Personal Mentors: Mentors offer guidance; help connect you with the right people, network in your field, and open doors; and help with collaboration.
Best Advice ever Given: You have to listen to your heart. Know what you can change and when you need to partner with others to affect change.
Change in Choice of Career: It has been the best experience to follow my passion and shift from primary research and patient care to health care innovation, administration, and patient care.
Best Career Experience: The Commonwealth Fund Fellowship in Minority Health Policy at Harvard was a great opportunity for me. This program opened my eyes to public health and population health management. On a daily basis, I enjoy being with children, especially with underserved children.

Worst Career Experience: I think the worst week of my career was when a big grant was due and my daughter had gastroenteritis. This was followed by being unable to change the "system" quick enough to have providers feel I was on their side.
Dealing with Discouragement: I have a very strong faith, which helps me when I feel down. Physical activity, such as running, also helps me. My mentors and my family are always there for emotional support.
Advice to Students Thinking about Biomedical Careers: It is a very rewarding career. You feel that you contribute to society even in a small way, but you know that you also help the big picture.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Exposure and opportunity. Many public schools attended by minority students throughout the US are under resourced. Negative messages throughout society, such as "you are not smart enough," or "you don't have the financial means for higher education," are very discouraging. Most minority students are the first generation to apply to college and have difficulty being understood by their home support systems.
Other Interests: My daughters are the joy of my life. I love to play, paint, color, and read with them. They are growing fast; watching them blossom into their own persons is exciting and at the same time feels like my heart is out in the world three times over.

MARGARET R. BROWN
Psychiatric - Mental Health Clinical Nurse Specialist
All Care Wellness Institute, LLC
Former President, New England Regional Black Nurses Association

Birthplace: Dublin, Georgia
Degrees: BS (nursing) and MS (nursing) – Northeastern University
Professional Fields of Interest: Nursing: psychiatric mental health
Future Development in Field: Major developments in nursing informatics and technology, such as genetic testing, will enhance the practice. New drug interventions, side effects of medications, ways of monitoring the health status of the individual, and the increased utilization of computer systems, will continue to advance the science and practice of nursing.
Qualities Needed for Success: You have to be realistic and show your human side. Nursing is a very fast-paced job, and this can cause you to miss a lot of the human touch. Nurses must demonstrate empathy and understanding every day; these are the essence of nursing.
Personal Mentors: Mentors are not just important to your career, but your whole life. My lifelong mentor is Dr. E. Lorraine Baugh. She is an exceptional nurse leader and entrepreneur. As part of her practice, she was able to demonstrate how to develop and improve the health status of a community.
Best Advice ever Given: Do not aim just for a diploma or an associate degree; pursue and achieve the highest educational level possible in nursing.
Change in Choice of Career: I wanted to be a nurse since the eighth grade.
Best Career Experience: Working as a community nurse and caring for patients from birth to death.
Worst Career Experience: I cannot remember having one. I never choose to have a negative experience. I always look for the positive element in every experience.
Dealing with Discouragement: I don't allow the issues to be discouraging, and I was always able to move forward with excellent advice and spiritual support. The most challenging job I ever had was at the Department of Mental Health. I worked very hard and I think my patients were happy with me as their nurse.
Advice to Students Thinking about Biomedical Careers: There is a great need in this profession. We are getting older and we want the next generation to take care of us. I continue to encourage young people to move forward, use available resources, understand their weaknesses, and work on them. I would strongly recommend getting your degree before starting a family.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Funding is a major issue, especially for middle class families. Education is important, but it comes with a high cost. We need to educate families on how to plan and prepare students to apply to college and support them through the college experience.
Other Interests: I love to sing and began singing at six years of age. I am actively involved with the Health Ministry at my church. I love to travel the world.

KIM A. BULLOCK
Medical Director, Providence Urgent Care (UC) Center
Washington, DC
Director, Community Health Division and Community Health Leadership Development Fellowship

Associate Director, Community-based Learning Course
Director, 4th Year Family Medicine/Emergency Medicine Electives
Clinical Associate Professor, Department of Family Medicine
Georgetown University School of Medicine
Washington, D.C.

Birthplace: Boston, Massachusetts
Degrees: BA (history of science and medicine) - Yale University; MD - University of Michigan Medical School
Professional Fields of Interest: Emergency medicine and family medicine
Future Developments in Field: Family physicians have been in demand as more controversy and consumer displeasure has surfaced with regards to managed care. Family physicians, who can provide a breadth of services for families, and by extension communities, serve as leaders in the health care field. Family physicians are the pillars in our community for the direction of health care services, public health, and health policy. Emergency physicians are part of the first responder teams in our communities and for our nation. Particularly in light of the recent pandemic, emergency providers have provided the critical initial identification of COVID-19, treatment for those who require admission and stabilization. They also serve as a safety net for the under-insured and the uninsured. Urgent Care Centers provide an important role between the hospital and the physician's office. They see a wide range of patients, including emergencies.
Qualities Needed for Success: Diversity, breath of knowledge, flexibility, and resilience in the face of changing economy and changing health care practices
Personal Mentors: My elementary and high school tutor, Mr. Perry. He provided me with the skills to succeed in the basic courses, classical disciplines, and health sciences.
Best Advice ever Given: Never give up in the face of adversity. Use this as an opportunity for a new adventure.
Change in Choice of Career: Initially, I focused on a career as a classical pianist.
Best Career Experience: Developing my interest in classical piano: Even though I did not pursue this as a career, the relaxation and strength derived from classical music are incredible.
Worst Career Experience: Writing a Book
Dealing with Discouragement: The best way to respond to discouragement is to draw upon friends, family, and faith. Without spiritual fortitude, it is hard to see beyond darkness.
Advice to Students Thinking about Biomedical Careers: Remember that there will be disappointments and some failures but always an opportunity to try again. Always plan for contingencies.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: The polarized political climate and its impact on medical education, the increasing conservatism and reactionary white privilege, and the need to teach tolerance and inclusion in the face of difference as it relates to ethnicity, religion, sexual identity, etc.
Other Interests: Classical music, a good book, and beautiful sunsets

SHARLAY BUTLER

Attending Physician, Division of General Obstetrics and Gynecology Specialists
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Brigham & Women's Hospital
Instructor - Harvard Medical School

Birthplace: El Paso, Texas
Degrees: BS (biology) – Midland University, Nebraska; MD – University of Washington School of Medicine; MPH – University of Pittsburgh Graduate School of Public Health
Professional Fields of Interest: Reproductive infectious diseases, HIV in pregnancy, medical education, caring for women of color, implementation science
Future Developments in Field: More focus will be given to maternal mortality rates, particularly among women of color, and how institutional practices and social and cultural attitudes contribute to negative health outcomes.
Qualities Needed for Success: Resiliency, tenacity, a strong sense of advocacy, compassion
Personal Mentors: I have had different mentors for different aspects of both my professional and personal life. A good mentor is someone who is willing to meet with you, take the time to get to know you and your plans, and be honest with you. Having at least one mentor who looks like you or has had similar experiences growing up is important.
Best Advice ever Given: "Trust- but verify"
Change in Choice of Career: Actually, I haven't had a change in career. I just started! I had different interests in medicine and different interests in OB/GYN subspecialties, but still pursued a career in OBGYN.
Best Career Experience: Working at Cook County Hospital in Chicago, teaching medical students and residents.

Worst Career Experience: Being told by the establishment that I am not good enough, despite having earned the right to be in the place that I was in.
Dealing with Discouragement: I talk with my friend groups from medical school and from other areas of my life, and they help me remember how resilient I am. I draw strength from their support and from the support of my husband, who is my rock. I also remind myself that tomorrow is another day, and that helps to get me through the discouragement.
Advice to Students Thinking about Biomedical Careers: The field is so broad and diverse; there are many different ways to help people. Talk to lots of people, hone in on the particular field you are interested in, focus on why you are interested in that particular field, and once you can articulate to yourself the reasons for your interest, hold onto it and know that you belong.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Some of the barriers for minority students include MCAT scores, having appropriate mentors early in the process of exploring biomedical fields, and knowing the timeline for applying to and getting into medical school. The culture and values of medical training can be different from what you have experienced before, more so if you come from a background where you don't personally know people who have been through the process and can help groom you. Code switching, imposter syndrome, isolation – are all things experienced by minority students.
Other Interests: I am a new mother of a two-year-old, and spend a lot of time with her and my husband. I also enjoy playing and watching basketball.
Additional Comments: I want to share some quotes that motivate me. 1) "Everybody is a genius. But if you judge a fish by its ability to climb a tree, it will live its whole love believing that it is stupid"; and 2) from Maya Angelou, "I come as one but I stand as ten thousand," and "Your crown has been bought and paid for. All you got to do is put it on your head and wear it."

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Birthplace: Baton Rouge, Louisiana
Degrees: BA (chemistry) and MS (biotechnology) – Johns Hopkins University; PhD (biomedical sciences) – MD Anderson-University of Texas Health Graduate School
Professional Fields of Interest: Cellular immunology, clinical trials
Future Developments in Field: We need to re-think the biomedical ecosystem and highlight the importance of entrepreneurship, especially for those from underrepresented communities. Individuals in academia, government, and industry need to help students understand all the ways biomedical research can be advanced. We are in a unique position to generate the most effective and impactful therapies for patients afflicted with debilitating conditions and need to be more deliberate in educating those entering the scientific workforce so they are prepared.
Qualities Needed for Success: Passion, persistence, and fundamental understanding of biological processes
Personal Mentors: I have been privileged to have numerous mentors, sponsors, and advocates along my journey. It helped me appreciate the importance of not relying on one person or perspective to move your career forward. Seek out multiple mentors, each providing something that speaks to different aspects of your life: personal, professional, emotional, etc. You have to know yourself to seek out relevant mentors that meet your needs. As you evolve, your needs will as well, and your mentors should change. Select people who have networks to connect you in areas where they are less familiar.
Best Advice ever Given: Be yourself and you will never have to remember how to act.
Change in Choice of Career: I went to a high school for medical professions and expected to be a physician. For me, it was about finding my unique contribution within the biomedical ecosystem. After graduating from college, all my friends went into medicine. I wasn't ready to admit my passion for research. Ultimately, I embraced my love for biomedical research and now contribute to medicine through clinical research.
Best Career Experience: There have been many, each providing a new set of skills. The day I realized my passion for biomedical research and the unique qualities I contribute to clinical research was pivotal.
Worst Career Experience: Expecting support when I decided to switch paths and sectors. Not many people embraced my decision to focus on biomedical research, nor my transitions from academia to government and subsequently to biopharma/industry. I have never regretted my decisions, although it changed the dynamics of many relationships.
Dealing with Discouragement: I really like the outdoors. I zip line or spend time on the water to recharge from a difficult situation. I see every experience as a lesson to be learned - some will not be enjoyable.
Advice to Students Thinking about Biomedical Careers: Make a list of what you do well and what you do (or don't) enjoy. The best career choice for you may come out of this simple exercise. If you like puzzles, science is where you want to be. What is most important about a science career is doing it for the right reasons. Don't do anything to impress your friends or make your parents proud. It has to be something that you want.

Issues Facing Minority Students Pursuing Careers in Biomedical Science: There are three big areas: First, feeling isolated – expect to be the only one, or one of a few as your career progresses. Second, science culture is very different for many minority students. We're raised to be independent. Science is the exact opposite. It's supposed to be collaborative and team-oriented. Third, there are dynamics involved with science. The best opportunities happen when you're not in the room. Understanding these dynamics takes time, and it is critical to have access to the best opportunities to ensure a successful career. Be clear about what you want so that your name will be mentioned when an opportunity arises.
Other Interests: Making the seemingly impossible into a reality.

MORGAN CELISTAN
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Birthplace: California
Degrees: BA (psychology) – Princeton University; DMD – Case Western University School of Dental Medicine; MMSc candidate – Harvard School of Dental Medicine
Professional Fields of Interest: Endodontics, pain management, diversity, interprofessional collaboration
Future Developments in Field: From a technological perspective, we will likely see more guided microsurgeries in the future, making harder procedures more predictable. In terms of diversification, we are working hard to ensure a broadening of talent in the field of dentistry and the specialty of endodontics specifically.
Qualities Needed for Success: Empathy, patience, willingness to commit to your craft, good communication skills
Personal Mentors: I had two great mentors in dental school. A good mentor is invested in you, is willing to give you advice and share their experiences (both the successes and failures), and helps expand your network through professional connections both within and outside your field of interest.
Best Advice ever Given: Don't give up! Do your best until you get to where you want to be.
Change in Choice of Career: For the first two years of my undergraduate studies, I was planning to go into medicine. I switched to dentistry because I thought it better suited my talents, my career goals, and my lifestyle choices.
Best Career Experience: Working with patients and collaborating with professionals in other fields.
Worst Career Experience: There are many hiccups throughout the course of education. It's worth it in the end because these can all be used as experiences from which to grow and learn.
Dealing with Discouragement: I take a step back and think about how I can grow moving forward.
Advice to Students Thinking about Biomedical Careers: Try to shadow professionals in the field that you are interested in. Talk to people who have been through what you are going through and learn from their successes and failures. Don't be afraid to try new and different things--you never know what might be worth your while.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Minority students can have greater financial concerns and therefore have the burden of incurring significant loans. It can also be difficult to find mentors who have experienced what you are experiencing and who can serve as a support system.
Other Interests: Traveling, caring for my plants, needlework, crafting, watching movies
Additional Comments: Find mentors! You might find it hard to make the first move, but don't be afraid to reach out and connect with any potential resources. Even if that person can't help you, they may be able to connect you with someone else who can.

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Birthplace: Taipei, Taiwan
Degrees: MD – National Taiwan University Medical School; MPH (health care management and policy) – Harvard T.H. Chan School of Public Health
Professional Fields of Interest: General medicine, biopharmaceuticals, innovation, venture capital
Future Developments in Field: The rapid development of cell and gene therapies facilitated by a growing number of gene editing technologies.
Qualities Needed for Success: Dedication, hardworking, curiosity
Personal Mentors: Look for someone who is a few years ahead of you on the career track of your interest, who has experience and is well respected, and who will help you look to the future of your career and provide advice on how to get

there. Recently, I have had mentors who have helped opened my eyes to the possibility of a career in the business side of biotech.
Best Advice ever Given: When I was looking to change the course of my career, I received the advice from one of my mentors to be patient, build up relevant experience in the field of my interest, and try and differentiate myself from the pack. This advice helped me to think strategically about what I needed to do to build up my experience so that I could transition to the career change I was seeking.
Change in Choice of Career: I have changed directions several times during the course of my career, but have always focused on the same interface between basic scientific research and the practical application. I'm interested in turning ideas into products that help people. I have practiced medicine, been in academia, served as a consultant for small biotech startups, been a venture capitalist, and I am now a leader in corporate innovation within a bigger pharmaceutical company.
Best Career Experience: What I am doing right now really excites me. I am helping to launch a new MD/PhD program at Vertex that will help young physician scientists develop a career in industry.
Worst Career Experience: There was a period of time when I wasn't sure where to apply the skills I learned from school; I was experimenting with different roles but not getting a lot of guidance. Having experienced the struggle, I want to talk to young students who may be facing the same challenge of trying to figure out what they want, and help them to find an entry point to wherever it is they think they may want to go.
Dealing with Discouragement: Having a support network of family and friends, a mentor willing to provide constructive feedback, and a hobby, all help to deal with discouragement.
Advice to Students Thinking about Biomedical Careers: Know what you want to do, understand what you are good at, and reach out to mentors to help you get there.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: There are unique challenges facing immigrant Asian-American students, like myself. Good grades are not enough; rather you must network, promote yourself, find mentors who will help you advance, and work hard not to get stuck in your comfort zone. African-American and Latino students also face challenges as evidenced by low representation in STEM careers. My colleagues and I are working to create educational and career opportunities to help address their challenges.
Other Interests: Gardening, skiing, traveling, movies

LESLEY M. CHAPMAN HANNAH
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Former BSCP Student and 2014 Hope Scholarship Recipient

Birthplace: New Bern, North Carolina
Degrees: BS (biology) - Duke University; PhD (translational biomedical science) - University of Rochester School of Medicine and Dentistry; MS candidate (statistics) – American University
Professional Fields of Interest: Genomics, bioinformatics, computational biology, data science, personalized medicine
Future Developments in Field: Using data science tools to understand the risk of cancer development.
Qualities Needed for Success: Persistence is the biggest key to success. Also, be open to branching out into other research areas.
Personal Mentors: The best mentors are good teachers and very knowledgeable in their field. Keep an open mind and consider mentors who care to teach and will give a positive introduction to their field of research.
Best Advice ever Given: In a small seminar class, one of my professors asked us how we could develop the next wave of addressing a major research problem, such as finding a cure for cancer. We threw out the most advanced-sounding research tools available at the time; however, what he was actually asking for was the next best concept. Technology may sound impressive, but it is limited - a good scientific strategy can take you a long way.
Change in Choice of Career: I focused on wet-lab malaria research for several years, starting as an undergrad, but I am now working on genomics and computational biology to develop better strategies for predicting cancer risk.
Best Career Experience: I'm currently doing what I love - getting a chance to integrate fields in which I'm very interested.
Worst Career Experience: It was difficult to see a lot of researchers lose funding and leave the field over the past few years.
Dealing with Discouragement: First, I try to take a break from whatever is frustrating me, and then I reorient my thinking towards the discouraging challenge.
Advice to Students Thinking about Biomedical Careers: Get as much exposure to your field of interest as possible, so you can find out if it's a good fit early on.

Issues Facing Minority Students Pursuing Careers in Biomedical Science: Being underestimated is one of the biggest difficulties. In a field where collaborations are a key to success, being underestimated may pose a challenge in forming these connections.
Other Interests: Cooking and traveling

PREETA CHIDAMBARAN

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Birthplace: India
Degrees: MBBS – Mahatma Gandhi Institute of Medical Sciences, India; MPH (healthcare management and policy) – Harvard T.H. Chan School of Public Health
Professional Fields of Interest: Quality improvement, team-based care, patient engagement, and health policy
Future Developments in Field: Health IT has huge potential for improving health care through innovative solutions, and for improving patient-provider interactions and communication.
Qualities Needed for Success: Diligence, perseverance, desire to achieve, willingness to learn
Personal Mentors: My mentors played a key role in my professional life and personal life. They helped me make the right decisions in my career during difficult periods. Overall, they supported me and believed in me.
Best Advice ever Given: Focus on your vision and keep working hard. Don't be put down by any initial hurdles/challenges.
Change in Choice of Career: I was always interested in medicine, not just as a clinical science but the whole spectrum ranging from prevention, education, and the role of social and cultural factors. I am interested in medicine at both the patient level and its impact at the larger population level.
Best Career Experience: Combining clinical medicine with academic teaching, health policy work, and entrepreneurship in health care.
Worst Career Experience: There is no particular worst experience I can think of but there have been some tough moments occasionally, and I think the best you can do is to learn valuable lessons from such experiences.
Dealing with Discouragement: I am a fighter; I never give up. I try not to take things personally. If you can look at things rationally, you start to understand better. If it does not work one way, I try another approach and try not to make the same mistakes again.
Advice to Students Thinking about Biomedical Careers: Very few careers can give you the opportunity to combine technology and science, and to be able to make a difference in people's lives. The biomedical field is one of them.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Minority students continue to face many challenges in their career path. Having a mentor and support network is very helpful.

FADIE T. COLEMAN

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Former BSCP Student

Birthplace: East Orange, New Jersey
Degrees: BA (biology and English literature) – Boston University; MA (biology) – Harvard University; PhD (microbiology) – Boston University School of Medicine
Professional Fields of Interest: Basic science research: Infectious diseases (particularly in lung infections) and host-pathogen interactions; education research: interventions that focus on recruitment, success, and retention of underrepresented students in the biomedical field.
Future Developments in Field: In microbiology research, I see us getting better at studying host-pathogen interactions, i.e., understanding the unique ways in which pathogens manipulate the host and how the host functions to elicit an effective immune response. In education research, there is a great deal of buzz around diversifying the academy and making higher

education accessible to everyone (underrepresented groups, first generation, female, etc.) at every level. There is still a lot more work to do but the interest is growing and we are beginning to communicate better about what needs to be done.
Qualities Needed for Success: Knowing how to appreciate the gifts/talents of the individuals around us; and knowing how to work together to accomplish a shared goal.
Personal Mentors: Mentors are not born "out of thin air." Rather it is an evolving process between mentees and mentors; the benefits of the relationship develop with feedback, experience, and a willingness to adapt, change, and grow as the needs of the mentee changes. A great mentor will use their experience to help you see the great things in you that you might not see yourself. One of my most influential mentors told me that they saw a successful scientist in me. That encouraged me to go further in science. Look for someone who not only believes in you, but helps you believe in yourself.
Best Advice ever Given: Approach everything you do in life with passion. If I put my mind to a task and do it with passion, I will not only succeed but also exceed expectations.
Change in Choice of Career: Although it might appear that I have changed career paths from science research to science education, I really have not. I have always had a master plan and have been strategic about pursuing both paths. At different points in my career, I obtained the additional education and training that I needed to better understand the science in the lab and to better teach and serve students in the classroom, and now my career is a marriage of the two.
Best Career Experience: The part of my job that brings me the greatest satisfaction is helping students reach that "ah-ha" moment, whether it is about the material being taught or about themselves. When students come to me to ask for recommendations and they explain to me why they are ready for the next stage in their career, and can appreciate for themselves what they have accomplished and recognize their own achievements - it lets me know that I have helped them along the path to realizing their potential.
Worst Career Experience: When I am forced to accept mediocrity from a student. When a student tells me, "do I really have to know this," and are concerned more with the grade than with embracing the challenge of learning and thinking critically, that is disappointing to me.
Dealing with Discouragement: I have faced many challenges in my personal life. I have learned from those experiences that I can't allow the circumstances to dictate the outcome. It is not what happens to you, but how you respond to it that is important. Instead of dwelling on the negative, when life tosses me lemons I try to figure out how to turn those lemons into really good tasting lemonade.
Advice to Students Thinking about Biomedical Careers: Prepare to work hard; the sciences require you to have a command of the material and to be able to articulate a solid understanding of the material. Prepare to do a lot of self-discovery: how to learn, how to study, what conditions will help you to reach your potential, understanding and knowing that you always have something to contribute. Everyone has a place at the table – if you are willing to work hard and put in the time.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Many minority students experience issues with belonging. Mentoring is an important vehicle by which the talents of young scientists, technicians, engineers, and mathematicians are developed; and it's critical to the process of training tomorrow's workforce. However, mentoring is not an egalitarian system that is experienced by all. It can be lonely when there are few role models who can really relate to some of the challenges you may face and help you navigate academia. This lack of mentorship and appreciation for diverse experiences can be discouraging to some and cause them to quit. I hope to share with all students that they can succeed. It is important to communicate to students that they belong, can be a part of the science community, and can contribute to the forward progression of science.
Other Interests: I like to write (I especially enjoy writing about the everyday experience from different vantage points). I enjoy reading, and watching theatre productions which I go to as often as possible. I am an "artsy craftsy" person, and so enjoy doing anything with my hands like knitting, building things, baking.
Additional Comments: The path to a biomedical career can be challenging at times, but you do not have to walk that path alone or work out the challenges by yourself. There are people who are willing to support you and help you succeed. Seek them out. Always have a good support system, and keep a look out for good mentors. They are the people who are willing to help you move forward in your career, in life. They help to build a greater sense of community.

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Birthplace: Rio Piedras, Puerto Rico

Degrees: BS (biology) – University of Puerto Rico Cayey; PhD (neuroscience) – Tufts University Sackler School of Graduate Biomedical Sciences
Professional Fields of Interest: Health policy, neuroscience, regulatory affairs, industry
Qualities Needed for Success: Perseverance
Personal Mentors: First you need to figure out what your needs are as a mentee. Different mentors serve people differently. Overall, you want someone who believes in your potential and is willing to invest time on your growth. When someone is invested in your success, they will provide the valuable perspective, resources and connections to help you achieve your goals.
Best Advice ever Given: Be fearless.
Best Career Experience: My current role. Through my company, I have the opportunity to work with different biopharmaceutical partners to shape and advance patient-centered efforts and strategic alliances that improve patient outcomes. I love that I get to leverage my scientific background and experiences to optimize the development of new therapies by combining patient data-driven insights with innovative community-centered initiatives.
Worst Career Experience: I have had overall positive career experiences. However, I have sometimes experienced microaggressions and unwelcoming or challenging environments, especially early on in my schooling and later on as I moved into leadership roles.
Dealing with Discouragement: When dealing with discouraging situations or environments, it is really important to just be kind to yourself and seek support from your network or community. Always know that your path and purpose are much greater than any one roadblock or obstacle.
Advice to Students Thinking about Biomedical Careers: Go for it! There's a world of possibilities for you in the biomedical sciences. Early on, prioritize hands-on experiences and networking with people following different biomedical career paths. Doing so will help you determine the best direction for you, and set you on a path for success.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Having to navigate unwelcoming spaces, microaggressions, or just being "the only one in the room", can make minority students feel very isolated. It is very easy to feel like you don't belong. Along their journey, it is very important for minority students to have a community of people to turn to for support.
Other Interests: Food, art, and baking (there is a lot of science in baking)

ELIANE CORTEZ
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Foundation Medicine, Inc.
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Birthplace: Cape Verde
Degrees: Undergraduate degree (microbiology and genetics) and MSc (molecular biology and genetics) - University of Lisbon, Portugal; PhD (medical science) - Lund University and Karolinska Institutet, Sweden
Professional Fields of Interest: Cancer genomics and personalized oncology, medical education/communication, cancer disparities, mentoring/teaching
Future Developments in Field: Advances in new and more effective targeted therapies; early detection of cancer with liquid biopsies; new treatment strategies in cancer immunotherapy
Qualities Needed for Success: Perseverance, resilience, curiosity and a collaborative spirit. In research, we often have to deal with negative results, but it is crucial to be persistent and not give up. Another extremely important quality is being able to stand up and advocate for yourself and others.
Personal Mentors: Look for someone who is willing to teach, is open to discussions, and is present and engaged; someone that guides you but also gives you freedom and encourages your independence as a researcher/scientist; someone who is open-minded and fosters a good and collaborative environment in a group.
Best Advice ever Given: Don't be afraid to fail! It's a big part of the journey.
Change in Choice of Career: Having spent almost 10 years doing lab research, I wanted to move away from the bench and do work that has a more immediate impact on patients' health and lives. Therefore, I currently work as a clinical genomics scientist helping doctors understand the biological and therapeutic implications of different gene alterations found in their patient's cancers.
Best Career Experience: My PhD was my best professional experience so far. I grew and learned the most during that period, and I had an exceptional supervisor, great colleagues that became good friends, and an excellent lab environment.
Worst Career Experience: Pursuing my master's degree felt like the opposite of my PhD experience. My supervisor was unsupportive and made me question my capabilities and whether I wanted to continue doing research.

Dealing with Discouragement: During my time in the lab, I have learned not to take failure or bad results too personally - there will always be good days and bad days at work. Pay attention to the feedback that you get to help you assess your strengths, determine areas that need improvement, and progress. I try to focus on the things that I can control.
Advice to Students Thinking about Biomedical Careers: Try to gain experience in advance, either through volunteering or internships. What you learn in school and what you end up doing after graduation are very different things. It's a great way to understand what types of activities and roles you are more interested in. There are several opportunities in biomedicine as a field in general: laboratory research, clinical practice, teaching, communication, project management, consulting, etc. Network regularly and talk to people with jobs in science that you want to know more about. Biomedicine is always evolving. You are constantly learning and being exposed to other people's work so it's important to keep up to date with literature that is relevant for your field of study. Find mentors that will help you navigate the different stages of your career.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Minority researchers are, unfortunately, very underrepresented in science. I think there is a problem along the pipeline with limited access, lack of encouragement, and how science is taught in school. We should reach out to elementary and secondary school students to encourage interest in STEM early on. Towards this end, I volunteered a few years ago with the Massachusetts General Hospital and James P. Timilty School for the Science Fair Mentoring Program. The goal of this program is to stimulate a long-term interest in science among minority students.
Other Interests: Sports, especially yoga. I also enjoy reading, trying food from different countries, traveling to new places, and spending time with my family and friends.

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Birthplace: Oakland, California
Degrees: BS (molecular biology) – University of California, Los Angeles; PhD (biomedical sciences) – University of Massachusetts Chan Medical School
Professional Fields of Interest: Cancer biology, cancer research
Future Developments in Field: Personalized therapies, therapies for diseases and cancers affecting smaller percentages of people
Qualities Needed for Success: Attention to detail, forward thinking, open mindedness, dedication, willingness to put in the hard work
Personal Mentors: There are two different kinds of mentors; personal cheerleaders and those who help advance your career. For personal cheerleaders, look for those who will support you on a personal level, regardless of what is happening in your professional life. For mentors who help advance your career, you do not need someone who is in the same field that you are pursuing but a mentor should have an idea of what is needed to succeed in the path that you are choosing; should be knowledgeable; and should have their own network of connections to introduce you to.
Best Advice ever Given: Stop second guessing yourself and focus.
Change in Choice of Career: I started out in academia with interests in research and teaching. I ended up in the biotech industry.
Best Career Experience: Where I am now. I am able to use the training that I gained from previous experiences to help me drive the current project I am working on, be productive, and take great interest in what I am doing.
Worst Career Experience: I am an introvert and networking is always a challenge, despite its importance to my career.
Dealing with Discouragement: I take a step back, assess what the problem is and why I am feeling discouraged, and then figure out how I can fix it or get advice as to how to fix it. I also try to focus on something positive or some success that I have achieved to make me feel better and help me to reset.
Advice to Students Thinking about Biomedical Careers: Try to get exposure to a lab environment as early as you can, find a mentor, and stay in tune with the field you are interested in by reading articles and keeping up on current happenings.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Imposter syndrome and the feeling that you have to do more to prove you belong. It will be easier to navigate if you have a strong support system.
Other Interests: Spending time with my children.
Additional Comments: I was a single parent during undergraduate and graduate school. I understand how difficult it is to balance a career path with a life path and am happy to discuss those challenges.

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Former BSCP Student and 2011 Hope Scholarship Recipient

Birthplace: Washington, DC
Degrees: BS (biology) – Hampton University; MPH (epidemiology) – New York Medical College; PhD (clinical and population health research) – University of Massachusetts Medical School
Professional Fields of Interest: Minority health, health disparities/equity, health promotion, health literacy, and behavioral change
Future Developments in Field: Using mixed-method research to develop lifestyle and behavioral interventions
Qualities Needed for Success: Persistence in the pursuit of your goals
Personal Mentors: Mentors should position you for success and support you as you work towards your goals. My mentors have been a constant presence in my life and are always available to provide guidance and endless support.
Best Advice ever Given: Don't be discouraged by criticism; use every comment as a growth opportunity or as a testament to your strength and resilience.
Change in Choice of Career: I transitioned from the healthcare consulting industry to an academic position. Transitioning to academia was an excellent opportunity to gain new skills and experiences, serving as an administrator and instructor for the Doctor of Public Health program. It was also an opportunity to resume the activities that I enjoyed the most about academia - writing manuscripts and developing research projects.
Best Career Experience: My best career experience was working in clinical research. It gave me an opportunity to learn about monitoring and managing clinical trials. Most importantly, the role heightened my awareness of health disparities and provided opportunities to examine health disparities in clinical research.
Worst Career Experience: My worst career experience was staying in a position with very few opportunities to conduct public health research or evaluation, in an environment that I quickly realized was not a good fit. From that experience, I learned the importance of pursuing a career aligned with your interests which provides growth opportunities, and never being afraid to walk away from a situation that is not a good fit.
Dealing with Discouragement: When I feel discouraged, I typically call my family and friends to discuss the challenges I am facing and possible solutions.
Advice to Students Thinking about Biomedical Careers: Accept every opportunity to learn a new skill, technique, or software. Have a vast network of individuals that will mentor and support you as you pursue your career.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Feeling that your voice, opinions, and insights are not heard or valued.
Other Interests: Traveling with friends and family, painting, and baking

NADIA CUMBAL
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Birthplace: Quito, Ecuador
Degrees: BS (biotechnology) - Escuela Politécnica del Ejército. Quito, Ecuador; PhD (molecular and systems biology) – Dartmouth College
Professional Fields of Interest: Molecular biology, RNA biology
Future Developments in Field: The implementation of RNA for purposes other than the development of vaccines; a wider use of RNA, not just mRNA, in therapeutics; and with continuously improved delivery methods, the application in a wide range of disease/tissues.
Qualities Needed for Success: Perseverance, empathy, grit
Personal Mentors: Some of the mentors that I have had experience with have been hands off, which has not been helpful. I would advise you to find a mentor who is in the field of research of your interest and is invested in helping your career.
Best Advice ever Given: In science, there are many points throughout your career when things can get frustrating, but it is temporary. There's always a solution. Also, have a hobby outside of science. Take care of your mental health
Change in Choice of Career: I have switched from academia to industry, and changed my focus from molecular biology to RNA chemistry, but haven't had any major shifts in my career.

Best Career Experience: My current job at Intellia. It offers me an opportunity to work collaboratively, and I have mentors who are involved with my career development and believe in my potential.
Worst Career Experience: Before starting my PhD, I had an unsatisfying mentorship experience with someone who was very hands off, and did not treat me with respect.
Dealing with Discouragement: I sit with the feelings a bit, experience the emotions, and then I make a plan and move on.
Advice to Students Thinking about Biomedical Careers: Find a mentor who is invested in giving you guidance, and helping you become the best scientist you can be.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: 1) A lack of role models. There is no one who looks like you, and therefore you may feel that you are not being taken seriously, that you need to constantly prove yourself, and work extra hard to have your talents recognized. 2) Because of the cultural environment in which you grew up, your family may not understand or appreciate the PhD path, which can affect how you feel about your career. 3) You may face additional challenges in getting into good schools, achieving high grades, and being taken seriously.
Other Interests: Spending time with my dog, hiking
Additional Comments: Find a good mentor to help you. You are not destined to fail if you don't have a good mentor, but it will make your path a bit more enjoyable.

YASAMAN DAMESTANI
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Birthplace: Iran
Degrees: BS (biomedical engineering) – University of California, Davis, PhD (bioengineering) - University of California, Riverside
Professional Fields of Interest: Digital medicine
Future Developments in Field: Personalized medicine; decentralized clinical studies where more people from underserved populations and more widely diverse populations will be part of developing new therapeutics leading to improved success in health care.
Qualities Needed for Success: Having a patient-centric focus, putting the needs of the patient before all else, the ability to look at the big picture, and being a liaison between the technical and medical field
Personal Mentors: A good mentor should primarily be someone whose advice you can trust and believe in. They should also be a good listener. Seek out mentors who are in your field with experience in the direction or target career trajectory and who can give a holistic picture of the opportunities available. Try to have a team of mentors from different backgrounds, so that you can receive a wide range of advice.
Best Advice ever Given: Believe in myself.
Change in Choice of Career: During graduate school, I pursued my interest in biomaterials, optical therapy, and imaging. After graduate school, I wanted to more directly help patients by leveraging my skillset so I switched to drug-delivery devices, and explored different functions including device quality, support of commercial products, and development of new products. More recently, I have switched my focus to digital medicine to identify and implement new ways to leverage data and technology in global clinical studies. My goal is to accelerate the measurement of progression or recovery so that we can provide affordable novel medications to patients faster.
Best Career Experience: My current job. I am working with a leader who gives clear direction and whose vision aligns with mine, and with a great team of highly motivated and dedicated individuals.
Worst Career Experience: A situation where the management provided little clarity on what was expected of me and how my contribution to day-to-day activities fit within the bigger picture. I have found that, when looking for a job, the leadership team, direct manager, and people you will work with are a lot more important to your choice than the company, job title, and compensation.
Dealing with Discouragement: I have faced quite a bit of sexism. Often, I have been in situations where I could do a lot more than the management believed I was capable of. Being part of a strong peer support group, a group that empowers women and minorities, has been important to me to help deal with that form of discouragement. Staying in touch with a community of people with similar experiences and hearing stories of perseverance is inspiring and empowering.
Advice to Students Thinking about Biomedical Careers: Keep an open mind about the possibilities and maintain a connection to trends in the biomedical field. The field is rapidly growing and changing, and the topics and technologies you are studying in school now may be completely different than how things will work in five years from now.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Minority students face additional obstacles in applying for jobs because of systemic racism and bias. They must do their best to choose an inclusive workplace where they can thrive. Additionally, practice interviewing with your mentors, use whatever resources are available to create a solid

resume, and make sure you have an online presence. Then, once you have gotten the job, there are increased obstacles in staying in the job. Learn how to screen workplaces for biased and toxic cultures through, for example, informational interviews with current minority employees. Acquiring the skills necessary to advocate for yourself and maintain your mental health is necessary to thrive in the workplace.
Other Interests: Reading, traveling, yoga

CARMON DAVIS

Attending Physician, Primary Care Center at Longwood
Boston Children's Hospital
Assistant Professor of Pediatrics – Harvard Medical School
President -- Harvard T.H. Chan School of Public Health Alumni Association (2019-2021)
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Birthplace: Fort Riley, Kansas. I grew up in several different states within the US and in parts of Asia and Africa as a U.S. Army dependent. I claim San Diego, California as my home.
Degrees: BS (nursing) – San Diego State University; MS (pediatric nurse practitioner) – Yale University; MD – Harvard Medical School; MPH (public management and community health) – Harvard T.H. Chan School of Public Health; MBA – Boston College
Professional Fields of Interest: General pediatrics, health care quality, health care management, public health
Future Developments in Field: The use of technology and its interface with the practice of medicine.
Qualities Needed for Success: Confidence, perseverance, and vision
Personal Mentors: My parents: They were always my greatest supporters. Dr. Joan Reede has been of great assistance in helping me assess my career and in providing networking opportunities. I have had several advisors who helped me along the way and physicians of color who inspired me.
Best Advice ever Given: Treat everyone fairly and try to help as many people as you can.
Change in Choice of Career: I've always been interested in children's health. In medical school, I became interested in health policy and quality of care.
Best Career Experience: Attending Harvard Medical School - it offered exposure to phenomenal experiences, professors, people, and peers.
Worst Career Experience: I have been pretty lucky thus far.
Dealing with Discouragement: I reflect on whatever the issue is and I put it aside. I work on improving the situation but I don't dwell on it. I have support from family, friends, and church.
Advice to Students Thinking about Biomedical Careers: Study hard and keep your mind open to new experiences and opportunities. The biomedical field is wonderful and very rewarding.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Seek out multiple advisors and mentors who may help you during your career.
Other Interests: I enjoy the fine arts, specifically classical music and museums. I volunteer my time serving the homeless neighbors in my community, and other organizations.

DENNISE A. DE JESÚS-DÍAZ

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Former BSCP Student and 2010 Hope Scholarship Recipient

Birthplace: Aibonito, Puerto Rico
Degrees: BS (biology) – University of Puerto Rico at Cayey; PhD (molecular microbiology) – Tufts University Sackler School of Graduate Biomedical Sciences
Professional Fields of Interest: Oncology and infectious diseases
Future Developments in Field: Personalized medicine will have a big impact on disease diagnosis and treatments.
Qualities Needed for Success: Perseverance, open mindedness, willingness to learn, a positive attitude
Personal Mentors: Look for mentors with whom you are comfortable talking. A good mentor will guide you to make your own decisions and not be afraid to provide feedback. In addition, I have found that having a group of friends with similar career aspirations to be key in discussing my professional options.

Best Advice ever Given: Go for it! There have been many instances where I have been in doubt about pursuing a goal. For instance, between graduate school and postdoc, I had a lot of doubts about switching disciplines and one of my mentors said "just do it, you'll be fine." I needed that push and reassurance.
Change in Choice of Career: Early in my career I was convinced that I wanted to be a microbiology professor with my own lab. I felt it was my duty to give back through those channels. However, a mentor whom I mentioned this idea to made me realize that we all can give back from different places. At the time, I had been presented with the opportunity to lead the operations of an oncology therapeutics company and everything was going to be new to me. I knew how to do science, but didn't know how to run a company. However, I knew that I was ready for a change, and I accepted the offer. Today, I use my scientific background to help establish our company's strategy and to develop new initiatives for a multidisciplinary team and really enjoy what I do.
Best Career Experience: A rewarding time in my career was when I was able to use my background and experiences as a Latina and as a scientist to help patients understand how the disease we were studying in our lab was affecting them, and how our research was moving towards coming up with new treatments for them.
Worst Career Experience: Right after I joined my first postdoctoral lab, I discovered that the principal investigator had decided to move the lab to a new city without telling me. I realized that decisions regarding my future were being made by others without my knowledge. It was a stressful time because I was starting in a new organization and didn't want to burn any bridges, but it was taking a personal toll. After talking with multiple individuals within the organization and analyzing my options, I made the decision to leave the lab and pursue other opportunities. What once was a bad experience, turned out to be one of be the best career decisions.
Dealing with Discouragement: When encountered with discouragement, I try to look for a different perspective by turning to others for advice or taking time for self-awareness and reflection.
Advice to Students Thinking about Biomedical Careers: Be patient and pro-active. Look for guidance, new opportunities, and remain true to yourself. It is okay not to know everything about a particular discipline - use your curiosity to discover those answers and come up with new ideas.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: It can be difficult to take an opportunity that is far away from family, friends, or within a different culture - especially when there are no role models, or you are the first in your family to try it.
Other Interests: I'm interested in all things related to my homeland Puerto Rico, trying new foods, playing tennis with my husband, and taking long walks with my dog.

DENNIS A. DEAN II
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BSCP Board Member and Former BSCP Student

Birthplace: New York, New York
Degrees: BS (computer science) – State University of New York; MS (computer science), PhD (biomedical engineering and biotechnology) – University of Massachusetts Lowell; Postdoctoral Fellowship (sleep epidemiology and sleep and cardiovascular medicine) - Brigham and Women's Hospital Harvard Medical School
Professional Fields of Interest: Methods for large-scale genomic analysis; large-scale phenotype and genotype association studies; large-scale analysis of preclinical-drug treatment data
Future Developments in Field: Genomics will be an integral part of health assessment, diagnosis, and treatment.
Qualities Needed for Success: Curiosity, determination, and inquisitiveness. Question underlying principles when moving forward into new areas of research.
Personal Mentors: This person should show a genuine interest in your development.
Best Advice ever Given: When faced with being in competitive environments, I was encouraged to ask questions and learn from others. In research, sometimes we want to do things alone, but it's okay to say, "I don't know this," and reach out to others for help. Some fail to realize that turning to others is a very important part of the process.
Change in Choice of Career: My career path has not been straightforward. I was open-minded and willing to listen to advisors and mentors along my journey. I found that coupling education with professional development was really helpful. I did most of my Masters and PhD degrees while working. I completed a postdoctoral fellowship that demonstrated that I can contribute productively to a new field. I embraced the greater challenges and opportunities by entering industry after completing the Insight Health Data Fellowship during my postdoctoral fellowship.

Best Career Experience: Going to see a shuttle launch in the middle of the night. I was able to get as close to the shuttle as they let people get. There was dead silence when the lights went off, and the sound was so unreal and overwhelming. Sometimes, in science, amazing opportunities that you can't even imagine present themselves to you. Another experience that is related to mentoring: I have two young girls, and I have made so many connections that enable me to give them wonderful opportunities. If they want to meet a physicist, they can meet one. If they want to meet a chemist, they can meet one. Networking and knowing lots of different people not only helps you professionally, but personally as well. Another highlight of my career is traveling alongside my mentees' path as they enthusiastically apply, get in, and graduate from graduate school. Recently, a mentee of mine published her first paper. It is great to see my mentee's two-year process end with success.
Worst Career Experience: People don't want to talk about academic honesty and people cutting steps. It is very troubling that there are not open conversations about this. There are many ways to talk about the subject, and it should not be taboo to talk about issues.
Dealing with Discouragement: It's important to have balance and priorities. Having structure and setting boundaries are important, but understand that these boundaries will be pushed and challenged in all academic environments. To deal with challenges, I talk with my wife regularly for support. I also turn to colleagues outside of my discipline. Staying fit helps. I practice yoga daily; that gives me an opportunity to detach for a short period every day.
Advice to Students Thinking about Biomedical Careers: Science is rooted in how you learn. Every subject is important. Very often you have this idea that you are going to be an expert in something, but the world is increasingly interdisciplinary, so apply yourself to every subject – even the ones that you don't like as much. Learning how to deal with things you don't like is really important and will help you in science.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: The rules of navigating the system may be harder for minority students. For instance, the "rules" of the Harvard/MIT system and overall environment are not well stated, and it's easy to make a mistake. If you come from a family with four generations of scientists who went to school at MIT, it's much easier to navigate the system because you have people who can help you. The cultural problem is big because it affects your trajectory upward. Unlike twenty years ago, there are really good minority students in schools everywhere, but finances are really driving things. If you come from a family with less money and fewer resources, everything becomes harder.
Other Interests: Karate (I am a second-degree black belt), swimming, and spending time doing science experiments with my two daughters. Our family loves to dance. We teach our girls gymnastics and ballroom dancing. Everyone in my life knows I stop once a day to do yoga.

WAYNE L. DEBEATHAM

Urologic Hospitalist
Phelps Memorial Hospital/Northwell Health

Former BSCP Student and 2004 Hope Scholarship Recipient

Birthplace: Hartford, Connecticut
Degrees: AB (biochemistry and molecular biology) – Dartmouth College; MD – University of Connecticut School of Medicine
Professional Fields of Interest: Minorities in the sciences, healthcare disparities, technology in medicine, health literacy
Future Developments in Field: In health literacy, the continued evolution of the way healthcare providers reach patients at their level and the continued recognition that there is a real problem in health disparities. Technology will continue to advance, and we will need to learn how to control it. How will we provide care? How do we keep pace with advances in consumer and medical technology? Will we reach a tipping point where the logistics and administration of medicine surpasses the actual practice of it?
Qualities Needed for Success: A strong work ethic and perseverance (wash, rinse, repeat). Balanced temperament, good manners, and compassion will get you pretty far, too.
Personal Mentors: A number of individuals have mentored me during various stages of my career. Keep your mind open, sometimes you can be surprised at what you can get from people who have had different experiences.
Best Advice ever Given: Sometimes you have talents in multiple fields, but it's in putting them together that you may come up with something you never imagined.
Change in Choice of Career: My journey has been a circuitous one, however despite the absence of a direct course, I don't regret anything because of the different skills I've acquired and the mentors and friends I picked up along the way. Through the process, I've become more resilient to adversity and a more compassionate and well-rounded physician.
Best Career Experience: I appreciated my post graduate year-2 at Grady Memorial Hospital. I had non-stop exposure to some incredibly ill post-surgical patients and complex trauma in a busy hospital. While it was stressful, I learned to overcome

my fear of sick people, gained insight into managing an underserved population, and learned how to manage my time and organize myself.

Worst Career Experience: I try to be optimistic and to have "quarterback amnesia," as I have learned that focusing on the negatives can hold you back. Even on bad days, I learn something. Dose of medication wrong? Read up on it. Missed a critical lab value? Find the flaw in your process and correct it. Even a dead-end job can motivate you to work harder. A demanding job can teach you about time management. An oppressive work environment can teach you about patience and "equanimity under duress." You can observe systems, and how they work or don't work. You can learn about what makes people tick. Most importantly, you can learn about what makes you tick in the process.

Dealing with Discouragement: I know who I am and where I come from. At the end of the day, no matter what people say, they can't take that away from you. Find a resource who can help shepherd you in the dark times. It can be family, a partner, or a friend. Sometimes a different perspective can help you make sense of it. Sometimes, you don't have to hold it all in.

Advice to Students Thinking about Biomedical Careers: Remember that the sciences are vast. If you find something that truly intrigues you, go with it. Sometimes, deviating from the standard track can create paths and career fields that you never imagined. A good communicator could make a career as a health educator or medical reporter. An artist could be a medical illustrator (you could be the next Frank Netter!). Don't be afraid to dig below the surface. As the adage goes, "shoot for the moon, and even if you miss, you may end up among the stars."

Issues Facing Minority Students Pursuing Careers in Biomedical Science: Many of the people ahead of you might not look like you. Many people may discount you based on where you come from and, as cliché as it may sound, people may make assumptions of your role based solely on what's in your genes and not in your head. If it's in your heart, do it anyway. Mentors can come in all shapes and sizes, genders, or colors. I was the first in my family to go to college much less medical school. My family didn't have a road map. So, I had to do a lot of homework, and I sought advice from many mentors. And I worked hard. There are always hurdles, but I think if you focus on what is or is not fair, you're going to wind up fighting a losing battle.

Other Interests: I'm an avid musician (when I have free time). I enjoy technology, sci-fi, and good books; and I love spending time with my family.

FATMA DEDEOGLU

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Boston Children's Hospital
Associate Professor in Pediatrics – Harvard Medical School
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Birthplace: Istanbul, Turkey

Degrees: MD – Istanbul University School of Medicine, Turkey

Professional Fields of Interest: Pediatric rheumatology, auto-inflammatory disease, clinical research in auto-inflammatory diseases, patient advocacy

Future Developments in Field: Rheumatology is an extremely fast-paced field, dealing with autoimmune and auto-inflammatory conditions which primarily stem from immune system dysregulation due to complex interactions among genes and environmental factors. Many times our patients are puzzling, requiring a detective approach since many aspects in this field are very new. It is an experimental field; I can foresee much progress and development in the future of rheumatology.

Qualities Needed for Success: You must like it and NOT be in it for the money. Medicine is a passion, and for those of us who love it, it's more like a hobby than a job.

Best Advice ever Given: You need to balance your life: work, family, friends, etc. It's OK to tip the balance sometimes and focus mainly on one aspect, but if it's continuously out of balance you'll miss out on many of the things that life has to offer.

Change in Choice of Career: I have changed a bit but my main focus remains the same. Once my career was very lab-focused, but I missed interacting with the patients, so I wanted to add that aspect back into my job.

Best Career Experience: When your hard work is acknowledged

Worst Career Experience: Times when I didn't have a mentor to guide me; I struggled a bit more.

Dealing with Discouragement: Believing in myself and working harder. I focus on taking care of myself by exercising, dancing, and doing yoga. By focusing on my physical and mental health my mind finds clarity.

Advice to Students Thinking about Biomedical Careers: The field is so exciting, go for it. I love what I do each and every day.

Issues Facing Minority Students Pursuing Careers in Biomedical Science: I can speak first hand that it can be difficult if English is not your first language. Your accent, in particular, may make you feel uncomfortable when speaking to groups. You

may also feel as if you don't seem as smart as your peers. Just be yourself, and eventually both you and they will realize that you're not much different.
Other Interests: Traveling, ballroom dancing, diving, cooking, and spending time with my kids, family and friends

ELODI J. DIELUBANZA
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Birthplace: Los Angeles, California
Degrees: BA (biological sciences) – Columbia University; MD – David Geffen School of Medicine at University of California Los Angeles
Professional Fields of Interest: Female pelvic medicine and reconstructive surgery (to help with pelvic organ prolapse, incontinence, voiding dysfunction).
Future Developments in Field: As our population ages, there will be many more women seeking treatment for urological issues. It is a growing field for physicians, especially women.
Qualities Needed for Success: Patience, flexibility, and adaptability. You must love what you do. You have to balance the professionalism, efficiency, and accountability expected from you as a physician, with empathy and friendship. Many physicians burn out trying to navigate the conflicting urges to be a professional service provider while also being a confidant and friend.
Personal Mentors: Any good mentor should also be a mentee. They should understand the importance of mentorship from all sides. A good mentor should be available. It is not necessary that a mentor be in the same field as you. Anyone in the medical profession can provide insight and direction and help you navigate the culture.
Best Advice ever Given: Be malleable and learn early on how to accept criticism. Although receiving criticism can feel like a dismissal of your work or your value, accept it as constructive, use it to move forward, and don't let it erode your confidence in yourself.
Change in Choice of Career: I always thought I wanted to be an obstetrician. I had a mentor who was an OB/GYN. However, in medical school I realized it was not a good match for me and found myself liking urology instead. What I do now does have some connection to women's health, so I did not stray as far as I might have thought.
Best Career Experience: My entire training process, from medical school through practice, has been a great experience for me. I have changed and learned a lot about myself and medicine through the process. I learned that it is important to adapt and accept criticism, and that mastery of a particular field takes a long time.
Worst Career Experience: While I was training, a fellow resident in vascular surgery who was a very bright, accomplished, and celebrated individual, took his own life. That was very hard.
Dealing with Discouragement: I make sure I have a support system composed of people with whom I can identify and who can act as a sounding board for me. People in your support system don't have to be exactly like you for you to identify with them; they just need to be going through the same thing. The support group that was particularly helpful to me was my study group in medical school. Each of us came from a different cultural background, but we were all from the same economic background. It was very helpful to have folks who could relate to the specific challenges of navigating limited financial resources and medical school. They were my relatable cheering squad. We pushed each other through a number of challenges.
Advice to Students Thinking about Biomedical Careers: Any career in the biomedical sciences is really great, but especially medicine. It forces you to interact with patients who are different from you. You have to ignore those differences in order to focus on the most important thing, their health. It teaches you to be open-minded and forces you out of your comfort zone.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Medicine is often like a family business; many medical students have family members who have already gone through the process and can show them the ropes and help them find mentorships and opportunities. That is often not the case with minorities. Often minority students are dealing with financial disadvantages and a lack of familiarity with the culture of medicine. Minorities in the medical profession face racial bias, sometimes overt and sometimes not. I had a patient refuse my care because I am black, and in the hospital while wearing a white coat I was asked by a patient to remove their dinner tray.
Other Interests: Traveling, reading fiction, cooking. I also enjoy art and am an amateur photographer.

QING FANG
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Regeneron Pharmaceuticals
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Birthplace: Wuhan, China
Degrees: MD – Tongji Medical College, Wuhan, China; PhD (human genetics) – University of Michigan
Professional Fields of Interest: Genetics, genetic research
Future Developments in Field: New and exciting ways to use gene editing to develop treatments for human diseases.
Qualities Needed for Success: Persistence and passion. Research is not easy. In order to be able to consistently face failure and frustration, you have to keep trying and love what you do.
Personal Mentors: The mentor I had while doing my PhD at the University of Michigan has been impactful to my career. She was always encouraging, helped me to look at the positive, taught me to think outside the box, and to approach problems in unique ways. I would advise students to look for mentors who are inspiring, but also encouraging of you, no matter what you are facing.
Best Advice ever Given: Never limit yourself.
Change in Choice of Career: I went to medical school in China and practiced as a physician there for several years. When I moved to the United States, it was to pursue my PhD. I switched from a clinical physician to a research scientist. I further changed my career path when I moved from academia to industry.
Best Career Experience: I don't have one particular best experience, but rather am grateful for the experiences and expertise that I have been able to develop over time that allowed me to successfully adapt to changing environments, career paths, and goals.
Worst Career Experience: The latter part of my postdoc was challenging and stressful. I knew I had to make a choice about what direction my career path was to take. It was a time of introspection, and I was nervous about whether the choices I would be making would be good for my career development and my future.
Dealing with Discouragement: I feel frustrated at first, but then I look for a way to calm my emotions by stepping away from work, exercising, spending time with my children. After that, I can think about where the discouragement came from, find the positive points in a negative environment, and start to turn the discouragement around.
Advice to Students Thinking about Biomedical Careers: There are lots of different opportunities in this field. Think widely, keep an open mind, don't be afraid to take advantage of any opportunities provided, and don't limit your choices.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: There continues to be racial and gender biases in both job opportunities and in the awarding of grants and funding. We need to ensure there is more equal opportunity in those areas.
Other Interests: I enjoy reading historical books, watching documentaries on history, and hiking.

TAWANA FEIMSTER
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MPH Candidate, Health Policy -Harvard T. H. Chan School of Public Health
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Birthplace: Statesville, North Carolina
Degrees: BS (dental hygiene) – University of North Carolina at Chapel Hill; DDS – Howard University College of Dentistry; MSc (biomedical sciences) and certificate in Endodontics – University of Maryland, Baltimore; MPH candidate – Harvard T.H. Chan School of Public Health
Professional Fields of Interest: Endodontics, public health
Future Developments in Field: In dentistry, many private practices are being bought out by corporations. In public health, the pandemic has changed the way we view public health in many ways.
Qualities Needed for Success: Dedication, determination, discipline, and a passion for helping people
Personal Mentors: A good mentor will be accessible, relatable, and knowledgeable about the field you are interested in.
Best Advice ever Given: Never be afraid of taking a chance, because life is a chance. Live life.
Change in Choice of Career: I am currently pivoting from within the dental field and going into public health so that I can have more of an impact at the population level of health and public health rather than at the community level.
Best Career Experience: My best career experience was the period when I was an assistant professor at my alma mater and when I opened my first endodontic practice, as it helped to develop the leadership skills that I would need throughout my career.
Worst Career Experience: Being a professor was also my most challenging experience as the work demands were greater

than I expected.
Dealing with Discouragement: I see it as one's personal opinion, and I don't allow it to deter me.
Advice to Students Thinking about Biomedical Careers: This career is self-fulfilling. There is an urgent need for more students to enroll in biomedical sciences.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Access to information, access to resources, lack of preparation
Other Interests: I love to paint, cycle, read, and travel.
Additional Comments: Make sure you have a mentor that has knowledge of the space in which you want to grow.

JAMES FELLS, SR.
Associate Principal Scientist
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Birthplace: Little Rock, Arkansas
Degrees: BS (chemistry), MS (organic chemistry), and PhD (organic /computational chemistry) - University of Memphis
Professional Fields of Interest: Computer-aided drug discovery, pharmaceutical science, medicinal chemistry
Future Developments in Field: More collaborations across both large and small pharmaceutical companies. As drug discovery becomes more and more challenging, the industry will likely see even greater collaboration across companies taking advantage of all the information and data out there.
Qualities Needed for Success: Flexibility, the ability to adapt to different circumstances, and the desire to continue to learn and improve.
Personal Mentors: My first mentor was not even in the field of biomedical science, but rather was the Dean of the College of Arts. He taught me how to be successful, but most importantly, kept in contact with me throughout my academic career from a freshman at college all the way through postdoc. He was in touch with me regularly, not just once a year or at an annually scheduled conference. The best quality in a mentor is the ability to create an environment where the mentee can be comfortable enough to ask questions, and be able to help the mentee move to where he or she wants to go in their career.
Best Advice ever Given: "Most important decisions about you are made without you in the room." This helped me to think about what my work demonstrates and what people will say. If you take pride in your name then you take pride in everything you do.
Change in Choice of Career: I never really changed directions. My issues were getting there and understanding how to navigate the landscape. I was fortunate to find minority programs that helped me get to my current position.
Best Career Experience: During my postdoc, I went to a conference held by the Office of Research Integrity. It was very powerful to learn how important it is to have integrity in your research; there is less opportunity for your data to get questioned and have doubts of others impact the results of your research.
Worst Career Experience: As a postdoc, I went into a lab before exploring all my opportunities and it was nothing like what I expected. For those 2 years, I questioned why I had gotten my PhD. I felt like I did not own my own experience but was forced into it. I did not feel empowered.
Dealing with Discouragement: I enjoy spending time with my family, which helps me to put things in perspective. The most important thing is to put some separation between my job and my personal life, and to make sure I have some time on my own to think. I spend time outdoors, run, bowl, and lift weights.
Advice to Students Thinking about Biomedical Careers: Make sure you learn how to empower yourself and put yourself into situations where you have more control over your path. Identify opportunities for independent funding and additional training, and create an individual development plan – this is true at any stage. Always remember when you are on an interview that you are also interviewing them.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: There are fewer labs and fewer opportunities where people look like you, and therefore it may not be as comfortable for you. I would challenge any student to get comfortable having difficult conversations, not only about your research, but about life.
Other Interests: Bowling, running, football, and trying out new foods, especially barbeque.
Additional Comments: I would encourage students thinking of a biomedical career to get as much experience as they can in a lab by doing research or internships. Also, find people with whom to network and make those connections early.

TOBY FERGUSON
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Neurology Research and Early Clinical Development
Biogen

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Birthplace: Pittsburgh, Pennsylvania
Degrees: BS (cell biology) – University of Florida; MD, PhD (neuroscience) – University of Florida College of Medicine
Professional Fields of Interest: Neuroscience and neurology
Future Developments in Field: We will transition from being unable to treat inherited neurologic diseases, such as some forms of Parkinson's and Alzheimer's, to being on the cusp of developing new treatments.
Qualities Needed for Success: Interest for and love of science, curiosity, persistence, and willingness to tolerate failure
Personal Mentors: Find someone who is skilled in areas that you are interested in, and who is also able and willing to teach you. You must feel comfortable working together with your mentors and receiving constructive criticism from them.
Best Advice ever Given: Do something that you love.
Change in Choice of Career: Although I enjoyed neuroscience during my undergraduate coursework, I didn't always know that I wanted to be in this field. When I realized my love for medical neuroscience, it led me to pursue my PhD and ultimately pursue a research-driven career.
Best Career Experience: As a doctor, my best experiences are those instances when I'm able to diagnose an unusual condition that other people haven't been able to diagnose. As a scientist, it is when I get to look at important, novel data that no one else in the world has seen.
Worst Career Experience: Giving patients devastating news. I had to diagnose a twenty-five-year-old man with ALS. You never really get used to experiences like these.
Dealing with Discouragement: I take a little break, whether it involves doing something with my kids, or going for a run or a hike.
Advice to Students Thinking about Biomedical Careers: Figure out what really intrigues you, then figure out who is doing what you want to do, and learn from that person.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: A lack of role models for both women and minorities. There are many daily life issues that come with being a minority, and some mentors can't really address those issues. That makes it a bit harder. Some minority students must make do with the mentors they have, or search for one that matches their specific needs.
Other Interests: Hiking, camping, running, being with my children, and arranging family trips to look at fossils

RAINA FICHOROVA

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Director, Laboratory of Genital Tract Biology,
Vice Chair for Research
The Walter Channing MD Distinguished Chair in Obstetrics and Gynecology
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Birthplace: Bulgaria
Degrees: MD and PhD – Medical University of Sofia, Bulgaria
Professional Fields of Interest: Inflammation and reproductive immunology, with a focus on mechanisms of host-microbe interactions, resistance to infections and cancer, and reproductive outcomes.
Future Developments in Field: With the rapid development of technologies, big data bioinformatics, artificial intelligence, and a better ability to conduct global research across borders, I see the future of my field in the establishment of strong interdisciplinary international teams that can translate basic science into equitable clinical practice and the bedside experience into solution-oriented science. Progress will require using combined expertise in all clinical aspects of women's health – including endocrinology, microbiology, immunology, nutrition, aging, etc.
Qualities Needed for Success: Perpetual education, high ethical standards, hard work, excellent communication skills, and the ability to collaborate respectfully and to nurture relationships with mentors, peers, and students.
Personal Mentors: I have had and still have wonderful mentors who care about my success and guide me in both content and career aspects of my work. My PhD thesis advisor, department chairman, and one of the founders of the International Society of Reproductive Immunology, was also my science mentor during my undergraduate years in medical school. We remained in touch until he passed away in 2010. He had an MD and DSc in immunology and a degree in physics. From him, I learned the ABCs of research and how rewarding it is to apply bench work to a clinical problem. In my early postdoc years, I worked with a productive Bulgarian female senior scientist who had a remarkable career; she still is a great role model to me. Since I obtained my faculty position at Brigham and Women's Hospital, my department chairman, Dr. Robert Barbieri, has

mentored me for more than ten years. He believed in my potential, supported me with regular career meetings and advice, helped me stay focused on high-impact translational research, and taught me to set priorities in my career development.
Best Advice ever Given: You don't have to win every battle to win the war.
Change in Choice of Career: I started my career as a practicing clinician and a few years later I went back to school for a PhD. This was not a surprising turn because I did research for five years while in medical school. I knew before I graduated that I wanted to apply my medical knowledge and experience to solving major clinical puzzles. My parents also contributed to my career choices. They were both clinicians with top executive positions (my father was department chairman and my mother was chief of a polyclinic establishment) and my father was a PhD and professor of orthopedic surgery with numerous publications and inventions. They always encouraged my interest in basic and clinical science.
Best Career Experience: My career trajectory has been successful and consistently upward for over two decades. I founded my own lab as an independent research division in 2002 and since then have conducted research with 100% extramural support. The most rewarding part of my career has been sharing my own experience and knowledge through teaching and mentoring.
Worst Career Experience: Transitioning to an independent research career in this country was a difficult experience. My first job was with a PI who was running her lab by inviting international scientists for a year or two and was not used to making any commitment to mentoring or advancing the careers of her research staff. She was very well established and very well-funded, but for more than ten years she had several PhD scientists in her lab who did not advance to any faculty position. When I came on board as a junior investigator and asked her to mentor me, she told me that I didn't need a mentor because I could be a mentor myself. She advised me against pursuing many of my goals and said I would never make it in the complicated NIH funding system. My achievements ultimately proved her wrong, but I did feel as if I was sailing against the wind for a while.
Dealing with Discouragement: In my professional life I try to stay away from emotional reactions. I try to understand the rationale or motivation behind any act of discouragement I encounter. Then I carefully think about what would be in the best interest of my goals moving forward. I don't make any rush decisions. Instead, I consult with my mentors and other people who have experience and expertise.
Advice to Students Thinking about Biomedical Careers: Maintain a network of good mentors in every step of your career and believe in yourself. Keep in touch with your mentors not only in bad times, but also in good times. Happiness comes to those who have the courage to aspire to it.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: It's extremely crucial for young people to have good navigational skills and support networks so that they can fully utilize opportunities for summer research and scholarships while still in school. Having multiple mentors and sponsors is critical. Work hard to gain as much experience as possible before you graduate and enter the job market.
Other Interests: Hiking in the mountains, biking, fishing, painting, reading science fiction, and spending time with my family.
Additional Comments: I wish there were more programs like this one to help young people to establish relationships with mentors. I hope our mentees will become mentors themselves. Good luck!

RUTH A. FRANKLIN
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Immunology Department, Harvard Medical School
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Birthplace: Denver, Colorado
Degrees: BA (biology) – Bowdoin College; PhD (immunology and microbial pathogenesis) – Weill Cornell Graduate School of Medical Sciences
Professional Fields of Interest: Immunology, cell biology, tissue biology
Future Developments in Field: Cell-to-cell communication (understanding how different cell types interact and communicate with each other).
Qualities Needed for Success: Hard work, creativity, the ability to collaborate, and self-confidence.
Personal Mentors: The reason I am where I am today is because of the mentors I have had. My undergraduate mentor got me excited about doing bench science. My graduate school mentor taught me how to think about science and be meticulous in my experiments. My postdoc mentor is the reason I stayed in academia. Look for mentors who will provide you with "unconditional support," who will believe in you and stand by you even if you doubt yourself and don't know which direction to go in, and who will be open to helping you discover not just the path that they followed, but the path you want to take.
Best Advice ever Given: The most important thing for success is to find a working environment where you feel comfortable, supported, and where you can grow.
Change in Choice of Career: I haven't had changes in my career. I figured out what I wanted to do and stuck with it.

Best Career Experience: Where I am right now, being surrounded by colleagues who are excited about science, open-minded, thoughtful, smart, and who love working together.
Worst Career Experience: Working in a toxic environment where I didn't feel supported.
Dealing with Discouragement: I don't dwell on it, but rather move on to my next goal.
Advice to Students Thinking about Biomedical Careers: Expect failure – it is part of science. To help you get through it, it is important to find a good mentor whom you can trust and go to for advice, and who will be honest with you and support you no matter what.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Minority representation in the sciences is not where it should be, especially in academia. While more recently institutions are making greater efforts to create environments more conducive for minorities to apply, it is not enough to ensure that minorities enter into the programs – rather they need the resources and support once they get there to help them thrive.
Other Interests: Cooking, baking, spending time with family.

STEVEN D. FREEDMAN

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Director, The Pancreas Center – Beth Israel Deaconess Medical Center
Professor of Medicine – Harvard Medical School
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Birthplace: Chelsea, Massachusetts
Degrees: BA (chemistry) – Boston University; PhD (cellular biology) – Yale University; MD – University of Connecticut
Professional Fields of Interest: Pancreatitis, pancreatic cancer, cystic fibrosis
Future Developments in Field: I am an active physician, teacher, hard-core basic science and clinical researcher, and administrator. This is a fabulous time to be a researcher or a doctor. There are so many new and exciting developments in both areas. To become a doctor is one of the great privileges offered to a human being. I find being able to care for patients and offer them groundbreaking treatments from my research are wonderful opportunities.
Qualities Needed for Success: 1) Enthusiasm: If you love it, you can do it. 2) The right toolbox: Training, education, and good schoolwork. 3) Finding a good mentor.
Personal Mentors: My mentor was George Palade, MD, while I was doing my PhD. He was so smart and at the same time very humble. He encouraged me to get a MD degree when I doubted. He not only guided me in my project but also guided me in my entire career and made it enjoyable for me.
Best Advice ever Given: 1) You should always do what you love doing. 2) The greatest pleasure comes from selfless acts of kindness.
Change in Choice of Career: I always wanted to be a scientist. My father was an administrator in a hospital and that made me interested in medicine. When I was doing my research with gastroenterologists, they took care of patients and also did research. I thought that was ideal to do both clinical and basic research.
Best Career Experience: I am one of the few doctors who do house visits. I allowed a patient to die in her home with her family in dignity.
Worst Career Experience: First time I submitted a NIH grant that was not funded.
Dealing with Discouragement: If you don't fail, you will never learn how to succeed. My philosophy is that if you do good work, it will all work out at the end.
Advice to Students Thinking about Biomedical Careers: Like any career, you should talk to people who are in different aspects of the field and shadow as many professionals as possible to see if this is your passion.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: First-hand exposure, having a proper career mentor starting in high school to help them get into college, and dealing with the high cost of education
Other Interests: I love Latin percussion and Afro-Cuban jazz. I also love sports.

SARAH GHEUENS

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Birthplace: Belgium
Degrees: MD – Free University of Brussels; MMSc – Harvard Medical School; PhD (medical sciences) – University of Antwerp
Professional Fields of Interest: Neurology, infectious disease, classical hematology, clinical trials, and benefit-risk

assessment
Future Developments in Field: From a drug-development perspective, I hope we will be able to treat devastating diseases.
Qualities Needed for Success: Flexibility and ability to follow your heart.
Personal Mentors: Try to pick up pearls of wisdom from all conversations. For a mentor, find someone who you click with and be open to being coached.
Best Advice ever Given: Do not be part of the problem, be part of the solution.
Change in Choice of Career: I moved around quite a bit to follow different opportunities. I always tried to open myself up to new educational experiences even if I thought my direct lab mentors would say "no." I would collect the energy to ask and I was surprised at how willing they were to allow me to try certain things. Never be afraid to ask to explore something you think might be of interest to you.
Best Career Experience: Transitioning to industry and being part of positive data read-outs
Worst Career Experience: Moving trans-atlantically with a newborn and two-year-old.
Dealing with Discouragement: I try to put things in perspective and remember that some things are out of my control.
Advice to Students Thinking about Biomedical Careers: Network and be eager to try new things.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Some foreign students may feel they need to prove they have the same level of training as someone who is trained locally.
Other Interests: Reading with my children, taking walks with my dog, and spending time with family.

GIORGIO GIATSIDIS

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Birthplace: Milano, Italy
Degrees: MD – San-Raffaele University, Milano, Italy; PhD - Padova University
Professional Fields of Interest: Surgery (reconstructive, plastic), tissue engineering, wound healing, regenerative medicine
Future Developments in Field: We have gained a lot of knowledge in bioengineering, but the use of this knowledge in patient care has historically been very limited. There is a disconnect between what is being done in labs and what is applied when working with patients. In the next few years/decades, there will be more leveraging of research and translating it into clinical use, whether with biomaterials, the use of stem cells, or any other approach. There will also be an increased ability to translate bench to clinic and create personalized treatments, such as 3D printing of tissue.
Qualities Needed for Success: Passion, resilience, empathy, and integrity are needed - and not just in the medical field.
Personal Mentors: Finding a mentor is always a balance - you want someone who has experience, but also someone who is available. You can achieve this balance with multiple mentors - a more senior one with experience, and a more junior one with more availability. Additionally, don't be confused between mentors and sponsors. A mentor is someone who will advise you, but sponsors will advocate for you. These may or may not be found in the same person.
Best Advice ever Given: Never give up! And look at the bigger picture - will this matter in 10, 20 years?
Change in Choice of Career: My career changes all the time! You have to (like with everything in life) be committed to a general plan, but also be open to smaller changes and unexpected opportunities. These opportunities might not be the ones you were planning to follow, but they can be life-changing in a positive way. For example, I wasn't interested in research at all until the end of medical school. I spent the summer in Boston doing research and it influenced the type of surgeon I wanted to be.
Best Career Experience: In the end it is not the achievements, titles, or publications that give you happiness, but it is the random days spent doing work that you enjoy that make a great career. When I am focusing on clinical care, the best part is the deep gratitude of patients; when I am focusing on research, I love mentoring and interacting with fellows and students.
Worst Career Experience: Difficult times can be common - this is where resilience and passion for your work come in. Careers in the sciences are a steep path full of obstacles, and you have to be ready to face them positively. When you see the small obstacles, always look at the big picture.
Dealing with Discouragement: In difficult times, I believe family should always come first. Although you should be passionate about your work, it is important that you *work to live*, and not make work the absolute goal of your life. Always look at the big picture - where do you want to be 20 years from now?
Advice to Students Thinking about Biomedical Careers: Biomedical science is a complex field that requires a lot of time and commitment. The best way to move through it quickly and smoothly is to be curious, proactive, and daring. Look for opportunities beyond what is directly in front of you.
Other Interests: I love traveling and sports. I ran two Boston marathons. I also love sailing and tennis.

MARK A. GOLDBERG

Hematologist/Oncologist
Brigham and Women's Hospital
Lecturer in Medicine (part-time) – Harvard Medical School
Member of the Boards of Directors for Blueprint Medicines Corporation, Immunogen Corporation, Idera Pharmaceuticals, Glycomimetics, Avacta Group, and Walden Biosciences
Member and Scientific Officer of the National Board of Directors of the American Cancer Society mark.goldberg41@gmail.com

Birthplace: I was born in Irvington, New Jersey. I moved to Miami, Florida at age nine.
Degrees: BA (biochemical sciences) – Harvard College; MD – Harvard Medical School, Harvard MIT Program in Health Sciences and Technology
Professional Fields of Interest: Clinical research/drug development in rare diseases, hematology, and oncology
Future Development in Field: There will be more rationally designed and targeted therapies, as well as more personalized medicine. There will also be more companion diagnostic tests that will determine therapeutic treatment. Harnessing the immune system will also allow for further major advances in therapies for cancer as well as for autoimmune diseases.
Qualities Needed for Success: As a physician in the biopharmaceutical industry, one needs technical expertise, interpersonal skills, a basic fund of knowledge, and the ability to analyze data. However, what really leads one to success are strong interpersonal and managerial skills, as well as strong verbal and written communication skills.
Personal Mentors: My father had a lot of common sense and taught me how to relate to, respect, and work with others. He imparted to me the importance of education. When I was in high school, I worked in the lab of a physician/scientist who showed me that physicians can also do research. That physician/scientist taught me by example the importance of being a good mentor and introduced me to my next mentor, also a hematologist and a physician/scientist. This mentor taught me a lot, looked after me, and helped me to develop and grow professionally throughout college, medical school, and ever since.
Best Advice ever Given: From my father, the golden rule, "Do unto others as you would have them do unto you."
Change in Choice of Career: I was full-time at Brigham and Women's Hospital and my mentors were physicians in academia. 25 years ago, I had the opportunity to go to Genzyme as a medical director and it was a big cultural change. I was focusing on developing new drug therapies for patients. It was the opportunity to learn more science and medicine, as well as business and law. I was, however, able to keep my academic appointment and to still see a few patients.
Best Career Experience: Leading a clinical development program that got drug approval by the FDA. It was wonderful to be part of making available to a patient population a new drug that would dramatically improve their lives.
Worst Career Experience: Many years ago, some of our clinical investigators weren't conducting our clinical trials as rigorously as required and I regret how I managed the situation with these academic investigators. I should have been more collaborative in how I approached it.
Dealing with Discouragement: I talk with my wife, try to understand why I'm discouraged, and try to change the situation.
Advice to Students Thinking about Biomedical Careers: It is hard work but it can be very rewarding if you truly enjoy it. Unfortunately, it can be difficult to know how much you will enjoy it until you learn as much as possible about what types of opportunities are available. The more you learn, the better informed you will be and will make better decisions. Speak with people in the field and attend sessions such as the BSCP Conference. Strong interpersonal skills and strong written and verbal communication skills are critically important.
Other Interests: I enjoy travel, bicycling, movies, and sports (watching and playing), and spending time with my wife and two sons.

GEOFFREY GONZALEZ

Customer Experience Manager
Thermo Fisher Scientific

Former BSCP Student

Birthplace: Peru
Degrees: BS (biological sciences) – National University of Trujillo, Peru; PhD (microbiology) – The Ohio State University, Columbus
Professional Fields of Interest: Biotechnology, scientific consulting, customer support, sales engagement, business development
Future Developments in Field: Next-generation sequencing and bioinformatics combined with artificial intelligence efforts will provide unprecedented advances for the diagnosis and treatment of complex diseases.
Qualities Needed for Success: Curiosity, perseverance, and proactivity. The knowledge you gain from a PhD is not enough to carry you; you must constantly be expanding your knowledge and use whatever resources are available to help you

advance.
Personal Mentors: It is most helpful if a mentor can actively help you develop a career plan, with a specific timeline and achievable action items that you need to take in order to reach your goals. As a mentor, I hope I can share my experiences and give mentees advice and perspectives that they may not have been able to achieve through their own explorations.
Best Advice ever Given: Every interaction you have with a customer is important. The customer wants to trust you and develop a relationship with you, so be aware of how you engage with them. If you don't know something, don't try and fake it. Admit that you don't know, but will try and find an answer and get back to them.
Change in Choice of Career: During my postdoc in Boston, I explored different career opportunities and did a lot of networking. There was a lot I did not know and I learned that my skills can be applicable in scientific consulting and pre sales engagements. Now, I have a much broader outlook.
Best Career Experience: Working to help customers achieve their goals. Since my work is client centric, I feel grateful that the work I do is quickly applicable to help customers solve their specific problems.
Worst Career Experience: I could not finish my first postdoc due to lack of funding. Although this was discouraging, it pushed me to explore other career opportunities.
Dealing with Discouragement: Discouragement occurs in every stage of your career. I deal with it by having a positive attitude towards critics. All feedback, even if it is negative, should be used to improve.
Advice to Students Thinking about Biomedical Careers: Always be an active learner. The field is constantly evolving and there are many ways to expand your knowledge. Keep growing, because otherwise you will feel isolated from the rest of your field.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Unfortunately, minority students may find a lack of people who will encourage them to pursue a career in science from an early age. Don't listen to people who tell you that a career in science is too hard. Go to other sources, find mentors who can help, and get as much education as possible. Block yourself off from negativity and work your way to success.
Other Interests: Swimming, biking, geography
Additional Comments: Try to listen to different points of view, especially for career advice. There is no unique path to achieve your goals. Different people may offer you different perspectives based on their own experiences.

CHETAN T. GOUTAR
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Birthplace: India
Degrees: BTech (chemical engineering) – National Institute of Technology, India; MS (environmental engineering) – University of Oklahoma; PhD (chemical and biological engineering) – University of British Columbia
Professional Fields of Interest: Biopharmaceutical development and manufacturing, biochemical engineering, mathematical modeling, systems biology
Future Developments in Field: Personalized medicine will become more important, and more impactful therapies for diseases like cancer will be developed. There will be a greater need for students who are fluent across multiple disciplines (for example, engineering and biology).
Qualities Needed for Success: Scientific expertise, being able to work on a team, understanding concepts from disciplines outside your expertise, and being open and adaptive to change
Personal Mentors: A good mentor is authentic; someone who leads by example. A good mentor will make time for his or her students, and tailor their interactions based on the needs of the student. In looking for a mentor, you should look for someone who has qualities that you admire.
Best Advice ever Given: Follow your passion. It's the only way to be your best and contribute to your full potential.
Change in Choice of Career: As an undergraduate student, I was fascinated by the ability of microbial cells to degrade toxic pollutants and consequently did graduate research work advancing this idea. I was subsequently presented an opportunity to apply my passion for working with living cells to the production of biopharmaceuticals, another very exciting proposition. I made this change while still being connected with my passion for the intersection of biology, mathematics, and societal impact.
Best Career Experience: Working for leaders who have given me space to be myself but were always there to help, support, and act as a sounding board when I needed them to be. Additionally, being on high performing teams and delivering amazing results is always exciting.
Worst Career Experience: Working with people who put themselves and their own interests above the team and the mission.
Dealing with Discouragement: I think about the patients for whom my colleagues and I work for every day. This puts the discouragement in perspective and the focus on what is really important – patients and their families.
Advice to Students Thinking about Biomedical Careers: Develop strong expertise in your core discipline but also develop

strong cross-disciplinary skills. Don't approach your career as just an opportunity to apply what you have learned in school, but rather appreciate what is at stake and know that what you are doing will make a difference in people's lives.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Unfortunately, today's corporate work place does not broadly reflect the population we serve. There are not enough role models for students of color across multiple levels of leadership. This can result in minority students feeling they must adapt in order to fit in, and in doing so can lose some of their priceless originality. Understanding these challenges will be important and working with a mentor both now, when they are students, and later when they enter the workplace, will be very beneficial.
Other Interests: Gardening, computer programming, technology (in general), my two kids
Additional Comments: BSCP and its programs provide a fantastic forum for minority students. Make the most of this opportunity. Connect with your mentor, but don't limit yourself to just the mentor which you are assigned. Seek out others who you may share interests with. Let us know if there is anything we can do better to help you

JACK V. GREINER

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Director, Clinical Eye Research of Boston
Clinical Associate Scientist
Schepens Eye Research Institute and Massachusetts Eye and Ear Infirmary
Associate Professor of Ophthalmology – Harvard Medical School
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Birthplace: Bethlehem, Pennsylvania
Degrees: AA (arts) – Valley Forge Military Academy; BA (psychology) – University of Vermont; MS (anatomy) – Purdue University; PhD (anatomy) – University of Toledo and the Medical University of Ohio; OD (optometry) – New England College of Optometry; DO (medicine) – Midwestern University, Chicago College of Osteopathic Medicine
Professional Fields of Interest: Ophthalmology, clinical and basic science research, cornea and external diseases of the eye, dry eye diseases
Future Developments in Field: These fields are expanding rapidly with advancements in the discovery of new treatments, procedures, and cures for various diseases.
Qualities Needed for Success: Dedication, commitment, hard work
Personal Mentors: Mentors should be positive role models, providing guidance, advice, and encouragement, as well as opportunities for hands-on experience and networking.
Best Advice ever Given: Work hard, and commit and dedicate yourself to your goal(s).
Change in Choice of Career: While my goal was always to become a physician, I first completed a Master's degree and PhD in anatomy; that became the foundation for a very productive research program.
Best Career Experience: Multidisciplinary collaborations that provide exciting new perspectives on clinical issues, ultimately leading to the discovery of new diseases, and the development of innovative and efficacious treatment options.
Worst Career Experience: Initially not being accepted to medical school after several attempts despite my graduate school research background.
Dealing with Discouragement: Having the ability to change directions to attain one's career goal and to attain goals within the profession. Learn that when a door closes, usually another will open with even greater opportunities in the endless fields of biomedical science and clinical medicine.
Advice to Students Thinking about Biomedical Careers: Find mentors who can guide and encourage you. Work hard and be persistent.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Financial obstacles and lack of mentors in the field.
Other Interests: Family

SARA J. GUEVARA

Board Certified Family Physician
Faculty Attending Physician - Glen Cove Family Medicine Residency Program at Northwell Health
Assistant Professor of Family Medicine - Hofstra School of Medicine
ResearchGate Profile: https://www.researchgate.net/profile/Sara-Guevara/research

Former BSCP Student and 2015 Hope Scholarship Recipient

Birthplace: Brooklyn, New York
Degrees: BS (human biology) – Brown University; MD – Warren Alpert Medical School of Brown University
Professional Fields of Interest: Family medicine, public health, immigrant health, quality improvement, health policy, and equity
Future Developments in Field: Personalized medicine and evidence-based treatments. Doctors are getting to know their patients more; listening to their stories and showing more empathy. Clinical trials and research are beginning to include more populations.
Qualities Needed for Success: Dedication and perseverance - it is a long journey and you must have passion to pursue your path despite challenges. Never give up - if something doesn't work, try again, be creative, and try new solutions. Resilience – you must be able to adapt to your environment, especially if you are the only one of your population group as you will likely be seen as representative of that population group. Effective communication skills - know when to advocate for yourself when you feel you are not being heard.
Personal Mentors: The key is to have a mentor at each stage of your career path. The best mentors are those who are accessible, with whom you can easily talk and ask questions. They should also know how to teach, be passionate about what they know, and be willing to share their knowledge.
Best Advice ever Given: If people tell you that you can't do something because you are different, you don't have to agree. You can be different. Be the exception. Be the first to start something new.
Change in Choice of Career: During college, I thought I wanted to be more involved with research and laboratory work, but I missed working with people, so I transitioned to clinical research. When I started medical school, I was interested in pediatrics. After two years I started working with adults and liked it. I then learned about family medicine, where I would be able to treat both adults and children.
Best Career Experience: Being able to apply the learning I have received to directly help or impact a patient's mental and physical health. Making a connection and building a rapport with a patient. It is an honor to provide care to underserved communities, communicate effectively with those communities, and make a difference.
Worst Career Experience: When I was applying to medical school, I had a mandatory advisor who was not supporting my decision to apply. This person only looked at part of my application and did not look at the whole package of experiences. At the same time, I had an accident and had to balance being a patient in the hospital while going through the application process. Although it was difficult being a patient at that time, I learned so much about the patient experience being on the other side of the bed. I think that experience has helped me to understand my patients better.
Dealing with Discouragement: I turn negative things into positive ones and analyze negative situations to help me grow. I have support groups outside of school. I spend time with my family. I play the violin in an orchestra and a mariachi group. I listen to music.
Advice to Students Thinking about Biomedical Careers: Be one hundred percent comfortable with being uncomfortable. Explore different ways of getting to your end point, i.e., gap years or doing research. Adapt to challenges and changes along your path. Be passionate about your ultimate goal; your passion will guide you through the highs and lows. Be organized throughout the application process. Make sure to keep good records and documents.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: When you are the only person from a certain community, there is an additional sense of responsibility to explain or clarify the culture of that group. There is an assumption that everyone from that community or culture acts a certain way, and you have to explain that there are differences, and not everybody from the same group is the same person. Alternatively, there is pressure to conform and adapt to mainstream community and culture. Strive to remain true to yourself and advocate for others.
Other Interests: Violin, music, landscape photography, space exploration, and hiking.

JESSICA ELIZABETH HABERER

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Birthplace: Louisville, Kentucky
Degrees: BS (biological sciences) – Stanford University; MD – Yale University; MS (health services research) – Stanford University
Professional Fields of Interest: Global health, medication adherence (mostly TB and HIV), research partnership equity, career development

Future Developments in Field: In medication adherence – there will be more objective measurement informed intervention, and the work being done now will expand to chronic illnesses beyond TB and HIV. In equity – there will be greater recognition of the need for institutional change in order to advance career development.
Qualities Needed for Success: A good mentor; hard work; clear goals for the short, medium and long term; intentionality to change as needed; and perseverance.
Personal Mentors: My best mentors were those who saw their success through my success. A good mentor-mentee relationship requires real commitment on both parts. A mentor should have the time to commit to promoting the interests of the mentee, make tools available for career development, find sponsorships and opportunities, help the mentee map out a plan for reaching their goals, and create an environment for success. There should be an understanding of goals, an alignment of interests, and a plan to accomplish goals. The mentor-mentee relationship can be mutually beneficial when goals are aligned.
Best Advice ever Given: Strive to make a contribution in whatever you do.
Change in Choice of Career: I have had many roles during the course of my career. I have weaved in and out among these different roles. I have done clinical work as a physician and policy work for foundations; I have worked domestically and abroad (working with the ministry of health); and I have done academic work and research.
Best Career Experience: My profession enables me to have amazing opportunities for rich and varied experiences. I have been able to meet many different people, both nationally and globally, and to experience the differences and similarities of many cultures. It is also a privilege to be a part of my patient's lives.
Worst Career Experience: There have been times when I have not felt valued. I am willing to work hard to achieve the task at hand, as long as I know that my contribution is appreciated. Situations in which my contribution was not valued led me to career changes. It is important to be open to change, and ready to pivot in your career, when that change is needed to achieve professional satisfaction.
Dealing with Discouragement: I always try to see problems as opportunities, and use the discouragement as an impetus to reframe and do things differently. I use the "GROW" model – Goals, Reality, Options, Way Forward – it provides me with the belief in myself and the agency to make changes in my situation so that I can become excited again about what I am doing.
Advice to Students Thinking about Biomedical Careers: Think about where your passions lie. Biomedical sciences is a hard field, and many barriers crop up along the way. Know that just about everything is possible if the motivation is there.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: I am not a minority so I don't have first-hand experience; however, I have thought a lot about how people are different and what obstacles can be present. There are often not enough role models for minorities. Although you don't necessarily need a mentor who is the same as you, it may be harder to work through differences with someone who doesn't understand what you are going through. We need to acknowledge that there may be specific challenges facing minorities, and intentionally make more opportunities available to them knowing that those barriers exist. It is not enough to just open the door, but we must help minority students find networking opportunities, community, and support systems.
Other Interests: Hanging out with my three kids, running, reading

MICHELLE R. J. HAMLET
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Former BSCP Student

Birthplace: Lynchburg, Virginia
Degrees: BSLA (French) - Georgetown University; MS (zoology) - Howard University; PhD (cell and developmental biology) - Harvard University
Professional Fields of Interest: Cell/developmental biology, symptom science, managing research cohort development
Future Developments in Field: Virtual enrollment in research studies and telehealth as primary means of healthcare
Qualities Needed for Success: Persistence, resilience, patience, and willingness to network
Personal Mentors: My mentors provide guidance and insight. They are of many ages and backgrounds.
Best Advice ever Given: When things get rough (and they will), step away for a moment (advice from my paternal grandmother).
Choice of Career: My undergraduate degree is in foreign languages and linguistics (French). I had no plans to pursue a career in languages but didn't think I was smart enough to do science. Fortunately a mentor thought otherwise and I had a career change in graduate school.

Best Career Experience: In graduate school, doing research at the Karolinska Institute in Stockholm, Sweden; at NIH, developing the first NIH Community College Day and working at the National Institute of Nursing Research.
Worst Career Experience: The PhD program was rough. It tested my self-confidence, forced me to face micro-aggressions and inherent biases, in addition to challenging courses and lab experiences. However, I took action to co-found an organization for underrepresented graduate students and postdocs. I got involved in BSCP. It changed everything.
Dealing with Discouragement: Step away, regroup, reach out to other people who are supportive of you, and then get back in the game.
Advice to Students Thinking about Biomedical Careers: Ask lots of questions. Keep up your written and verbal communication skills. Try different types and areas of science. Network, network, network.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: The numbers remain low in the field but the talent remains high. The current climate is opening up to the realities and impact of racism. Jump into that open space with renewed confidence in the critical skills you have to offer in STEM and in society at large.
Other Interests: Crocheting, knitting, and yarn, lots of yarn. Taking time to appreciate each moment of every day

DEBORAH HARMON HINES

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Birthplace: Memphis, Tennessee
Degrees: BS (biology) – LeMoyne-Owen College; PhD (human anatomy) – University of Tennessee
Professional Fields of Interest: Human anatomy; curriculum and program development; underrepresented and disadvantaged student admissions and retention into careers in biomedical research, biotechnology, and the health professions
Future Developments in Field: Sweeping changes in medicine, which I think will produce many opportunities for under-represented and disadvantaged students. Information technology has drastically changed the acquisition of information, making information accessible by all.
Personal Mentors: Dr. W.W. Gibson (deceased, LeMoyne College), Dr. Earl H. McClenney (deceased, St. Paul's College), Bishop John Walker (deceased, Diocesan Bishop of Washington, DC), Mattie Hopkins (deceased, teacher in Chicago Public Schools), Harry Mae Simons (deceased, Magnolia Elementary school principal, Memphis), Rev. Jarrette Atkins (deceased, Episcopal priest), and Jessie (deceased) and Callie Harmon (parents)
Best Advice ever Given: "If you don't know where you are going, you probably will not get there."
Change in Choice of Career: I was always interested in science even though girls were not supposed to do well in science or math. I wanted to do something in medicine but I realized that I did not like working with the ill.
Best Career Experience: The best experience is the reward of standing in front of a classroom and watching the look of realization that comes over students' faces when they understand what you're explaining. As long as I can do that, I'll be happy. I became an administrator to make the pathway straighter.
Worst Career Experience: Racism at an institutional level is always there. I'm constantly reminded that degrees don't afford me protection against that kind of racism.
Dealing with Discouragement: Don't take it personal and always do your best. Be polite. There is never a reason or excuse to be rude.
Advice to Students Thinking about Biomedical Careers: For any career, find out what you really like to do and then find someone to pay you to do it.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Remember you will have to be twice as good to get half as far.
Other Interests: Music and travel

LAUREN CHRISTINE HARSHMAN

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Birthplace: Abington, Pennsylvania
Degrees: BA (biology) – Cornell University; MD – The Chicago Medical School University of Health Sciences

Professional Fields of Interest: Drug development, medical oncology, specific expertise in the areas of kidney, prostate, and bladder cancers, and clinical research.
Future Developments in Field: Novel approaches to harnessing the immune system are at the forefront of drug development and have high potential to meaningfully advance therapeutic options available to cancer patients.
Qualities Needed for Success: Perseverance, humility, drive, a passion for what you do, respect for colleagues, and a team mentality. Whether you are involved in patient care or drug development, you will experience obstacles and failure. It is important to see each roadblock as a stepping stone to the next opportunity and learn from the tough experiences rather than ruminate on the missteps.
Personal Mentors: A mentor is essential at all stages of your career. Even more senior leaders can benefit from the advice of mentors or coaches. A mentor does not have to be in the same field as you. Key qualities of a good mentor are approachability, and someone who has time and is settled and secure enough in their career to provide opportunities and wisdom. Look to see the trajectory of previous mentees or seek their feedback about their experience.
Best Advice ever Given: Be able to say, "I don't know, I will get back to you." Ask questions—show your curiosity. Don't be afraid to voice a dissenting opinion backed by data and thought.
Change in Choice of Career: When I moved from academia and patient care to drug development, my move was prompted by looking at the long game—where did I want to be in ten years and what did that look like if I stayed on the same academic path. If your boss's job or her boss's job doesn't seem satisfying to you, that is a good sign to consider a change. For me, I was interested in the next challenge. There are so many options in a biomedical career. I encourage you to talk to as many people in the field as you can, hear their stories, and explore as many shadowing opportunities as you can.
Best Career Experience: During the first stage of my career in academia and clinical medicine, it was satisfying to be hand in hand with individual patients and help them on their cancer journey, even though that journey was often tough on the patients and their families. During the current research and drug development portion of my career, it is intellectually stimulating and exciting to take a drug from the idea stage to investigation in the clinic with the knowledge that if our drugs work, we could impact the lives of tens of thousands of people. In biotech, I love being part of a dynamic multifaceted team that can do just that.
Worst Career Experience: When the overall goals of what we are doing the job for, transforming clinical care and patient outcomes, are lost in pursuit of less meaningful objectives, bureaucracy, and competition among colleagues. Lessons learned from that experience are that it's important to choose your mentor and teammates wisely when you have the option to do so, and to recognize that it's ok to reassess the situation periodically and change directions if the balance is no longer benefiting your growth.
Dealing with Discouragement: I have a strong base of family and friends with whom I can talk to about discouraging situations. They allow me to take a step back and re-evaluate. Setbacks or sticky situations are part of any career and it is important to have a support group outside of work that can help you remember your core values and priorities, especially in a competitive field.
Advice to Students Thinking about Biomedical Careers: Network. Talk to the people who are doing the job you want to do, and the people who have done that job but left to pursue other careers. Listen to the pros and cons of the career path. Get exposure early on to the field you are interested in through internships or other short-term opportunities. A career in biomedical science requires a commitment of time and resources. If patient care is involved, there are many rewards of the patient-physician interaction, but the time commitment can also impact your social/family life that will require balance.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: If someone is interested in a biomedical science career but does not come from a family of doctors or with connections to the medical field, it can be hard to find the resources needed to learn about the field, how to navigate the admissions processes, conceptualize the financial burden, and appreciate what kind of life commitments may be required.
O**ther Interests:** Spending time outside with my family and dogs, cooking, reading, attempting to learn Spanish

THEO HILL
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Former BSCP Student and 2012 Hope Scholarship Recipient

Birthplace: Tyler, Texas
Degrees: BA (business communication) – University of Texas Arlington; Pre-health Post-baccalaureate – University of Pennsylvania; MD – Howard University College of Medicine; MBA - Cornell University Johnson School of Management; MS (healthcare leadership) - Weill Cornell Medical College
Professional Fields of Interest: Venture capitalism, commercialization of therapeutics, medical affairs

Future Developments in Field: There is a big push in the rare disease space for pharmaceutical companies to find treatments and therapeutic interventions to address the unmet needs of patients suffering with life-threatening diseases. The tools and technologies that will shape the future of translational medicine include gene editing, AI, machine learning, and deep learning.
Qualities Needed for Success: You have to believe in yourself and your dream even when no one else believes or understands. Fully devote yourself to the pursuit of your dreams - even when you fail. Be brave, diligent, persistent, humble, and relentless in your pursuit, and surround yourself with people who can infuse positive energy.
Personal Mentors: Find mentors who have career paths that are similar to what you want to pursue. You should strive to find mentors who are at your level, one year ahead, 5 years ahead, and/or established in their career. Develop a working relationship with each mentor and continue to foster that relationship over the years.
Best Advice ever Given: Do not ever give up – even if it takes a miracle. There is no plan B, only plan A. Be kind to yourself.
Change in Choice of Career: After graduating college with a degree in communication, I moved to New York City for a career opportunity in marketing. After years of marketing in NYC, I decided to pursue my childhood dream of becoming a physician. I was accepted to the post-baccalaureate program at the University of Pennsylvania where I completed my prerequisites for medical school, while working full time engaging in clinical research at the University of Pennsylvania School of Medicine. After completing my post-baccalaureate program, I was accepted to Howard University College of Medicine, and matched anesthesia residency at Beth Israel Deaconess Medical Center in Boston. It was after residency that I made another career change – I accepted a position at a pharmaceutical company and completed a dual degree MBA/MS in Healthcare Leadership at Cornell University. My career trajectory has allowed me to combine my background in business and medicine at Vertex where I am working to help bring the first ever gene editing cure for patients suffering with sickle cell disease.
Best Career Experience: Working each day to ensure that patients who are suffering with life-threatening diseases have therapeutic interventions to help them improve, and extend, their lives.
Worst Career Experience: I had a job as a teenager in Texas digging ditches for minimum wage which was $2.50 at the time.
Dealing with Discouragement: It's really important to develop positive self-talk and to have people who believe in you. Remember to have a balanced life, and do things that make you happy. Failure at some point is inevitable, but that is only the beginning of a new opportunity. Believe in yourself and something bigger than you; that combination will serve you well.
Advice to Students Thinking about Biomedical Careers: If you are thinking about a biomedical career, identify what you want to do, find a relevant internship, be passionate about it, and work as if you were getting paid a dream salary (even if you're working for free). Work hard to show your integrity and dedication. People will recognize that and help you to reach the next level.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: I think we all have to be cognizant of the culture in corporate or competitive academic environments. This is why it's so important to have mentors who can help you understand and successfully navigate those settings.
Other Interests: I like to exercise, read books, and spend quality time with friends and family. I also love traveling - my favorite trips are Egypt; Palawan, Philippines; and Florence, Italy.

FAYE HOLDER-NILES

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Former BSCP Student

Birthplace: Barbados
Degrees: BA (biology) – Wellesley College; MD – Dartmouth-Brown Program; MPH – Harvard T.H. Chan School of Public Health
Professional Fields of Interest: Pediatrics, primary care, community health, bioethics
Future Developments in Field: These past two years have been challenging for all, and particularly for communities of color, as we faced the COVID-19 pandemic. However, it has also strengthened our resolve to tackle some of the more difficult and ongoing health disparities for communities of color. As we embrace a renewed sense of vigor to support children and families in our local communities and to address the social determinants that impact their health and wellbeing, we are optimistic about the future impact of pediatrics and community health.
Qualities Needed for Success: Perseverance, persistence and hard work. Follow your passion and believe in your path.
Personal Mentors: Mentors can play an important role in your journey. Be open and flexible.
Best Advice ever Given: Be true to yourself.

Change in Choice of Career: Initially mostly clinical, but I have expanded my role in community health engagement by combining my interest in medicine, public health, and community health, including an expanded use of an ethical and moral framework to tackle the deep disparities in health care.
Best Career Experience: Working with patients' families.
Worst Career Experience: There will be disappointments along the way. Some of my most challenging experiences have ultimately been good lessons learned, opportunities for personal growth, and understanding of how to be true to myself.
Dealing with Discouragement: Stay positive and surround yourself with a strong support system: faith, family and friends. Always believe in yourself.
Advice to Students Thinking about Biomedical Careers: We need you! Aim high and follow your heart.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Identifying invested mentors and sponsors can be a challenge, so be sure to start early in your journey.
Other Interests: Spending family time with my husband and son.

SCOTT ALEXANDER HOLMES

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Birthplace: Halifax, Nova Scotia, Canada
Degrees: BS (kinesiology) - McMaster University; MS (kinesiology, sensorimotor neuroscience) - The University of Western Ontario; PhD (neuroscience, neurological rehabilitation) - McGill University
Professional Fields of Interest: Neuro rehabilitation, neurological imaging, pain management
Future Developments in Field: A greater reliance on computer science, machine learning, and Artificial Intelligence
Qualities Needed for Success: Good communication skills, the ability to collaborate, and a keen interest in a specialized area. Find your niche and remain determined to see it through.
Personal Mentors: A good mentor is knowledgeable in your field of interest, has time to mentor you, and is invested in your success. A good mentor will also find opportunities for you that will put you on a good trajectory towards your career goals.
Best Advice ever Given: Keep pushing forward; remain committed.
Change in Choice of Career: I originally wanted to be a physician. During my PhD program, I discovered I was more interested in research. It is better suited to my personality and skill set.
Best Career Experience: Getting involved with academic conferences. It helps me to network and to grow as a researcher.
Worst Career Experience: Working with people who are not ideal to work with or are detrimental to your goals.
Dealing with Discouragement: I think about the positive aspects of my career, and remind myself that, no matter what, I have accomplished a great deal.
Advice to Students Thinking about Biomedical Careers: Network as much as possible. Align yourself with the cutting edge of what is happening in your field and what will happen five years from now. Get involved with computer science.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Representation and finding good mentorship opportunities. Financial opportunities are also limited.
Other Interests: Training for and competing in triathlons. I am also a brewer.

LI-LI HSIAO

Director and Founder, Kidney Disease Screening and Awareness program (KDSAP)
Co-Associate Director, Harvard Summer Research Program in Kidney Medicine
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Birthplace: Taiwan
Degrees: BS (pharmacy) – Taipei Medical University, Taiwan; PhD (pathology and cell biology) – Thomas Jefferson University; MD – Thomas Jefferson University Medical College
Professional Fields of Interest: Chronic kidney disease (CKD), dialysis, IgA nephropathy, and herbal medicine-induced nephropathy. The Hsiao Laboratory has focused on translational approaches at the interface of molecular biology, cell biology, and functional genomics on CKD-related cardiovascular complications such as organ fibrosis, vascular pathophysiology, as well as mechanisms of cancer development, progression and treatment.

Future Developments in Field: I am the founder of the kidney disease screening and awareness program (KDSAP). KDSAP is a community-based free health screening program serving the underserved population. KDSAP aims to raise awareness and early detection of CKD by recruiting undergraduate students as volunteers. KDSAP has become a national movement in inspiring college students to be interested in kidney science and helps to combat current nephrology workforce deficits. Currently, KDSAP has 23 chapters nationwide. Ongoing data collection from these programs will provide a valuable resource for the study of CKD in underserved populations and the role of community health screening prevention programs.
Qualities Needed for Success: Decency, honesty, passion, compassion, perseverance, hard work, and being a team player.
Personal Mentors: Everyone needs mentor(s) at every stage of his/her life and career. Mentors lend ears, offer guidance, and are concerned with the best interests of their mentees. I have had mentors at every stage of my life. My PhD advisor, Dr. Theodore Tarashi, is one of the kindest, most understanding mentors I have ever had and has been a model to me for how to be a good mentor. At Harvard, I met another fantastic mentor, my advisor Dr. Steve Gullans, who taught me how to "think outside the box," be innovative, and creative.
Best Advice ever Given: "All men are equal; respect yourself and respect others" from my grandmother and parents.
Change in Choice of Career: After I graduated from college in Taiwan, I worked as a research assistant in the laboratory of Dr. Y.C. Lin, Chairman of the Biochemistry Department at National Taiwan University and became interested in bench research. Dr. Lin provided a research environment which allowed me to be an independent thinker and problem-solver, which inspired me to pursue a PhD in the U.S.
Best Career Experience: During my PhD studies, I was in a very nurturing, supportive environment. Every individual in the Department of Pathology & Cell Biology was incredibly kind and generous. When I worked as a postdoctoral fellow in a lab of 25 members under Dr. Jonui Uitto, Chairman of the Department of Dermatology at Thomas Jefferson University, I was in an environment that was open and collaborative, which made research fun. In addition, the lab members were diversified, from many different parts of the world, and had pure curiosity in science, which made learning and sharing easy.
Worst Career Experience: None.
Dealing with Discouragement: It is one's choice to make the worst experience into the most positive possible outcome.
Advice to Students Thinking about Biomedical Careers: Explore opportunities in basic and clinical laboratories, and listen to your heart.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Language barriers, sex/gender disparities, lack of mentors and role models
Other Interests: Antiques, good food, good books, travel, orchestra/opera, and hiking

JUAN C. IBLA
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Boston Children's Hospital
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Birthplace: Bogota, Colombia
Degrees: MD – Escuela Colombiana De Medicina, Colombia
Professional Fields of Interest: Pediatric anesthesia
Future Developments in Field: Understanding how drugs work in the developing child
Qualities Needed for Success: Dedication, passion, and focus
Personal Mentors: A mentor should be someone who is involved in a similar field, who is passionate about the field, and who has walked the same path that you are going to embark on.
Best Advice ever Given: Never give up, always look forward, and always believe you are able to accomplish your dreams.
Change in Choice of Career: My career path required a good amount of sacrifice and dedication. Medical training was rigorous, and required physical and mental discipline.
Best Career Experience: Working at Boston Children's Hospital
Worst Career Experience: It is difficult to see sick children go through complicated operations and how their families cope with the situation. There is a lot of pain and anxiety.
Dealing with Discouragement: The most important thing is to stay positive and always look on the bright side of things. I try to confront the situation and have a positive approach to difficult situations.
Advice to Students Thinking about Biomedical Careers: The biomedical field is very challenging and requires a lot of dedication. The most important thing is to bring passion. If you find your passion, you are likely to succeed.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Sometimes, we must prove beyond a reasonable standard that we are qualified to perform, even if we come from a different background.
Other Interests: Exercise and spending time with my family

SUSAN IRVIN

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Birthplace: Oxford, North Carolina
Degrees: BS (microbiology), PhD (virology) – North Carolina State University
Professional Fields of Interest: Microbiology, immunology, biology, human health
Future Developments in Field: The pandemic has focused attention on the pharmaceutical industry. It has helped to spotlight what scientists and medical professionals do, how they can work together to overcome a serious disease like Covid, and how they can generally help improve human health. We have learned that we need many more scientists and medical professionals to join in that effort in order for us to be successful.
Qualities Needed for Success: A scientific mind, creativity, organizational skills, communication skills, and perseverance. As a new scientist, you will fail a lot – that's okay. Process the failure, learn from the experience, and move on.
Personal Mentors: At Regeneron, there is a formal mentorship program. I have participated in both directions, as a mentor and a mentee. Qualities in a mentor that I look for include: someone who is working on something that I want to learn more about or has some quality that I lack or need to improve and who can help me to do that. As a mentee, I have always taken the initiative to seek out, reach out to, and develop relationships with people who I thought could help me. Personal motivation on the mentee's part is important as mentors will not always just come to you.
Best Advice ever Given: The safety message you hear on airplanes: "Put on your own oxygen mask before helping someone else."
Change in Choice of Career: I have known I wanted to be a virologist since I was in the ninth grade. I started out in academia, but wanted to move on from lab work to an office job in industry. It was difficult finding a position when I left academia, so I took a part-time contract position. That helped me to eventually land a permanent role at the company where I wanted to work. I am now in a position where I can use both my scientific skills and my project management skills.
Best Career Experience: The job I have now. I am able to pull different experiences and skills from different jobs, to help me try new things and move forward. You don't have to follow a straight path your entire career. Stay long enough in a job to learn something valuable, and move on when you want a bigger or different challenge.
Worst Career Experience: The toughest period of my career was when I decided to switch paths from academia to industry. I left a secure postdoc position for a short-term contract position. I had very little financial and career security. Although it was scary, I am glad that I did it, because I was able to move forward with my career choice as a result of that contract position.
Dealing with Discouragement: As I progressed in my career, I got better at dealing with discouragement. I learned to take a look at what discouraged me, assess it, then move on and distance myself from it.
Advice to Students Thinking about Biomedical Careers: Make a list of pros and cons – figure out what you like and don't like, what you still want to learn and what you are no longer interested in, what you are good at, what you want to be good at - this will help you to decide your career path. Build up your network. If you don't have a strong network to begin with (parents, siblings, family members, family friends, who are in the sciences), take the leap, reach out to people, make cold calls, and put effort into developing relationships.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: I am not a minority so cannot speak from personal experience, but suspect the obstacles faced by minorities are true for many career paths, not just biomedical sciences. I would like to hear from students about the issues they face so that I can help be part of the solution.
Other Interests: Exercise, running, volunteering (I help adults with disabilities and have been involved with Girls on the Run for ten years).

INYANG ISONG

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Birthplace: Lagos, Nigeria
Degrees: MD – University of Calabar, Nigeria; MPH (health policy and administration) – University of North Carolina, Chapel Hill; SM (clinical epidemiology), ScD (social and behavioral sciences) – Harvard T.H. Chan School of Public Health
Professional Fields of Interest: Pediatrics, social epidemiology, public health
Future Developments in Field: Personalized medicine, targeted therapies, and a deeper understanding of how patients' context impact their health.

Qualities Needed for Success: Dedication, compassion, and a desire to make people's lives better. The way care is delivered is important, especially when working with children.
Personal Mentors: I have had many mentors who were there for me emotionally, physically, and academically. They have all made me a better researcher and physician.
Best Advice ever Given: "Act as if what you do makes a difference – it does." - William James.
Change in Choice of Career: My career path is one that has evolved over the years, influenced by various people I have met at various seasons of my life. I did not always want to be a doctor, and only went into medicine at the urging of my parents. After graduation, I was not sure what I would specialize in, and was later drawn to pediatrics through a series of serendipitous events. After working as a pediatrician for several years, I was drawn to public health because it provided me the opportunity to engage with my community in a more meaningful way. After receiving my MPH degree, I was able to develop various community-based health programs in underserved communities in Chicago. My next position was as a policy specialist/medical officer with the US Department of Health and Human Services. This is when my interest in research really grew. I eventually moved to Boston to complete a master's degree in clinical epidemiology, as well as a health services research fellowship. I ultimately obtained a doctorate degree from the Harvard T.H. Chan School of Public Health in social and behavioral sciences. My ultimate goal is to combine my collective work, training, and academic experiences to improve design programs and design interventions that improve the quality of health care delivered to underserved families and their children.
Best Career Experience: Working at a faith-based community health center in Chicago. In those nine years I learned so much from my colleagues, patients and their families. I saw such resilience and dedication in the families, despite all the challenges they faced daily. They were truly determined to improve the health and economic outcomes of their community. It was a very rewarding time in my career.
Worst Career Experience: My three years of residency training. I would not call this period my worst career experience, but my most challenging. It was rigorous, very demanding, and often stress provoking. We worked long hours, often times with hardly any sleep. However, experiences like these are the ones that make you stronger and more resilient. I've never regretted going through the experience.
Dealing with Discouragement: Faith plays a huge part in my life. I rely on prayer and my faith for encouragement and strength. I also rely on my family and members of my church community as my support system, especially in tough times.
Advice to Students Thinking about Biomedical Careers: Choose a career in medicine for the right reasons. Make sure it is something that you are passionate about. Know who you are, your strengths, and the unique gifts you bring to the table. If you decide medicine is something you really want to do, go for it and never give up!
Issues Facing Minority Students Pursuing Careers in Biomedical Science: It could be tough to be one of only a few underrepresented minorities pursuing a career in the biomedical field. Without having role models or mentors, some students may find it challenging to navigate this field and succeed. It is really important to have mentors that can provide encouragement and support, so as to ensure a successful career.
Other Interests: Tennis, running, biking, listening to music, traveling, and being a part of my faith community

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Birthplace: Miami, Florida
Degrees: BHS (rehabilitation services) – University of Florida; MOT (occupational therapy) – Nova Southeastern University; PhD (special education in early childhood) – Walden University
Professional Fields of Interest: Occupational therapy, pediatrics, autism, assistive technology, early childhood
Future Developments in Field: More leveraging of technology and pharmacological advancements to improve function
Qualities Needed for Success: Approaching health and well-being in a holistic manner; having a strong scientific understanding of anatomy, physiology, psychology, and biomechanics; having an understanding of cognitive, social, and cultural factors
Personal Mentors: Look for mentors who are committed to building relationships and actively engaged in various aspects of the profession you are interested in.
Best Advice ever Given: Be true to yourself and always be a life-long learner.
Change in Choice of Career: I have transitioned from a career that was more heavily involved in clinical care to one that is more engaged in leadership, advocacy, and population level approaches to intervention.

Best Career Experience: Using my clinical skills to engage in community-based research and healthcare technology
Worst Career Experience: Encountering discriminatory practices from clients, coworkers, and managers
Dealing with Discouragement: I focus on self-care and then re-strategize.
Advice to Students Thinking about Biomedical Careers: The field is so broad and there are many avenues you can pursue. Find what aspect of the field most interests you and then align yourself and your career goals with that interest.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: There are still so many "firsts" and representation might matter but not be there. Be prepared to break barriers and embrace being the first!
Other Interests: Traveling, going to the beach
Additional Comments: Seek balance as you pursue your education, acknowledge your strengths, and strive to shine.

KAMILAH C. JACKSON
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Birthplace: Kingston, Jamaica
Degrees: BS (biology) – Yale University; MD – Columbia University College of Physicians and Surgeons; MPH – Harvard T.H. Chan School of Public Health
Professional Fields of Interest: Psychiatry, child psychiatry, maternal mental health, public health, mental health policy, global mental health, health services research
Future Developments in Field: Child psychiatry is a growing field. The developmental framework that guides our work and the importance of understanding the ecosystem within which children develop are natural connections to promotion of a population health agenda and are in alignment with public health strategies. Current research spans basic science to neuroimaging, translational and health services research (including the growing acknowledgement of the impact of adverse childhood experiences on overall health), health equity and the use of implementation science to help scale up evidence-based interventions and improve outcomes for young people. There is a shortage of child psychiatrists nationwide, making psychiatrists with this further training in high demand. The additional impacts on mental health of the current pandemic has also led to increased demand for child psychiatrists.
Qualities Needed for Success: Dedication to working with multiple systems and the desire to make an impact on others. There is a shortage overall of child psychiatrists but even more so when we consider the percentage of child psychiatrists who are in any minority group.
Personal Mentors: My lifelong mentor has been my mother. In high school and college, I had very supportive teachers and professors who encouraged my interest in science. In medical school, the minority dean of my school was very instrumental in helping guide me to my chosen field as well as key supervisors in my fellowship training experiences. In my experience, good mentorship not only depends on the career knowledge mentors can impart, but also a willingness to help establish connections, and concern about the mentees' overall growth and development.
Best Advice ever Given: If I was interested in medicine for financial reasons I might consider another path, but if I wanted to do something that would allow me to feel like I was giving back to my community each day then I would not be disappointed. Of course what gives meaning to one's life is different for everyone, but for me this clicked.
Change in Choice of Career: Initially, I wanted to become a bench scientist. When I started medical school I was interested in pediatrics, but through every rotation in medical school, I saw the need for addressing mental health needs. Too often in my training I felt that physical health and emotional health were seen as separate entities. I truly believe it is impossible to have one without the other and I am heartened to see that knowledge about awareness of adverse childhood experiences (ACES) and their overall impact on health is increasing. During the pandemic we have seen an increase in mental health needs, further highlighting the importance of our work in the field.
Best Career Experience: In college I participated in summer programs geared towards minority students interested in both science and careers in medicine. These experiences exposed me to like-minded peers as well as minority medical students and faculty, and helped me to envision myself having a career in medicine. Currently, I carve out time to give back as a way of honoring those who helped me by encouraging and supporting students and trainees.
Worst Career Experience: Not one particular event but I have struggled at various times to find strong mentorship relationships.
Dealing with Discouragement: I start by drawing strength from my faith, and from supportive family and friends. Then I remind myself of my goals and try to learn as much as I can from each situation because every situation has lessons to be learned. The ability to impact an individual or a population in the way we can in health and public health is an awesome and rewarding opportunity.
Advice to Students Thinking about Biomedical Careers: It is not an easy path to travel and the long training can seem discouraging especially compared to other careers. The ability to make an impact on others in a way not possible in other

careers is what makes the long road worthwhile. The time we are currently in is a testament to that!
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Finding supportive mentors can be a difficult but a very worthwhile first and ongoing step.
Other Interests: Traveling, cooking, yoga, and learning about mindfulness

ALFRED C. JOHNSON
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Birthplace: Marion Junction, Alabama
Degrees: BA (chemistry) – Albany State University; PhD (biomedical sciences) – University of Tennessee
Professional Fields of Interest: Molecular biology and biochemistry; research services, science management
Future Developments in Field: Molecular biology and biochemistry will continue to play an important role in unlocking the mysteries of the human genome and developing cures for cancer, AIDS, and other diseases.
Qualities Needed for Success: Proper mentoring, dedication, willingness to sacrifice, and basic understanding of scientific principles
Personal Mentors: Billy Black, PhD (undergraduate advisor): he recruited me to the university and made sure I did the right things while I was there including participating in research. Frank Kenney, PhD (graduate school advisor): he taught me how to approach a research problem and find a solution. Ira Pastan, MD (former laboratory chief): he was very supportive of my career development and enabled me to meet the right people. Marc Horowitz, JD (former supervisor and mentor): he taught me how to be effective on the management side of NIH and instilled in me the need to pay attention to the "little details." Michael Gottesman, MD (current mentor and former supervisor): he prescribes a freedom to tackle problems at the highest level.
Best Advice ever Given: Be positive, proactive, and persistent. As long as you want it bad enough and are willing to work hard for it, you can get it.
Change in Choice of Career: I initially started out on a pre-med pathway but found that I really loved research. With experience, I also found that you can make a big difference through management.
Best Career Experience: My previous positions opened a lot of avenues for conducting research and impacting the careers of students but also provided me with the experiences needed to manage a large service organization. It has been amazing to see what you can accomplish when you have the resources and supporters.
Worst Career Experience: I had a bad experience at a research summer program while an undergraduate. The research was good but the area we were living in was somewhat hostile. It was during the seventies and there was still a lot of racial tension. The majority students did not always accept minority students but we did not let it bother us. The minority students supported each other and worked harder.
Dealing with Discouragement: Look at the situation and roll with the punches. It is a waste of time to dwell on it. Each failure or discouragement is an opportunity to improve or succeed.
Advice to Students Thinking about Biomedical Careers: Take the time to really research what you want to do with your life. Get advice from those already in the field that you are interested in pursuing. Talk to people before taking a chance. Gain experiences and learn from the experiences. Biomedical science careers require a lot of dedication.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: It is more of a challenge to find role models and funding but you need to find them. Have multiple mentors and build a support network. Don't burn bridges because you will need them in your career.
Other Interests: Family, church, and college football

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Birthplace: Bridgewater, Massachusetts
Degrees: BA - Mount Holyoke College; MD - University of Pennsylvania School of Medicine
Professional Fields of Interest: Drug and device safety, pharmacovigilance and risk management, ophthalmology
Future Development in Field: Risk management activities globally; development of a state of the art drug safety pharmacovigilance department

Qualities Needed for Success: A strong academic background, keen interest in population health, interest in technology, familiarity with drug and device regulations, strong organizational and communication skills
Personal Mentors: Mrs. Horr, chemistry physics teacher, Bridgewater Raynham Regional High School; Anna Jane Harrison, PhD, professor of chemistry, Mount Holyoke College; Curtis Smith, PhD, professor of neurobiology, Mount Holyoke College; and Helen O. Dickens, MD, Associate Dean, University of Pennsylvania Medical School. Their achievements opened doors for both women in general and women of color, particularly in the areas of science and medicine. Drs. Harrison and Dickens encouraged me to pursue professional opportunities in medicine and science despite the challenges for women of color in these pursuits. Mrs. Horr and Dr. Smith instilled the excitement of the quest for knowledge, the thrill of the quest for research, the drive for academic excellence.
Best Advice ever Given: Love what you do; stay focused but flexible; see academic achievement as a necessary tool, not an endpoint to effect positive change; stay inquisitive and be a lifelong learner.
Change in Choice of Career: I was always interested in healthcare. During medical school and residency, surgery, particularly microsurgery, very quickly became my passion. This led me to my interest in ophthalmology. After a long career in private practice, I became interested in population health and the impact one could have on large numbers of patients. That and an interest in drug safety led me to pharmacovigilance in the biotechnology world.
Best Career Experience: Both careers have been satisfying. It is very difficult to point to one experience. Each patient whose life and health have been impacted by my efforts provides a sense of accomplishment, joy, and satisfaction.
Dealing with Discouragement: I have benefited from informed and engaged mentors throughout my career. Staying realistic about one's goals and maintaining an appreciation of one's accomplishments as well as areas that need improvement will keep you balanced and allow you to not only cope but learn from discouragement.
Advice to Students Thinking about Biomedical Careers: Maintain a balance between basic science and humanities. This will help you to develop into a well-rounded compassionate health care provider. Critically evaluate life style preferences (this will influence your choice of career path), compare compensation opportunities, and remain aware of the responsibility that a career in medicine and science will bring. Keep ethics front and center. Remain curious and flexible.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: The social conscience has moved away from affirmative action. Negative preconceptions concerning ability and drive are more entrenched than ever. Scholarship dollars are hard to find. Personal drive and commitment aligned with strong mentorship will allow you to overcome these obstacles.
Other Interests: Family, sports (skiing, tennis, sailing, and Master's track) music, cooking, reading, gardening, and my faith

DEMETRICE "DEE" JORDAN
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Birthplace: I was born in Memphis, Tennessee but am a longtime resident of Atlanta, Georgia.
Degrees: BA (geography), MA (health and medical geography) – Georgia State University; Dual PhD (geography and environmental science policy) – Michigan State University
Professional Fields of Interest: Global health, neglected tropical diseases, infectious diseases, health geography, health disparities, health equity
Future Developments in Field: With the onset of COVID-19 and the wide-spread geographic nature of the pandemic, the science of geography, spatial analysis, and mapping health and disease has experienced an elevated profile. As such, geographers in science and public health have experienced increased interest. These occurrences have made geographical research relevant to broader audiences and increased its visibility to future students interested in health research careers.
Qualities Needed for Success: Curiosity, stamina, drive to succeed, and the desire to advance knowledge and transform lives. Additionally, for the field to be more robust and responsive we need to have greater representation of minority groups in our research. When you lack equitable diverse representation on research teams, you will not have the people at the table who know what questions to ask certain populations, or those who understand the lived experiences of the people who are the most in need of help. Greater representation and broader perspectives are essential.
Personal Mentors: Good mentors believe in you, recognize your ability, see your potential, and force you to lean into what is possible. They help you to build confidence and choose the road that leads you towards your career. They can look forward and backward at the same time and they provide the gut check you sometimes need. They are warriors who stand guard to help you avoid the pitfalls and stumbling blocks in your early career, and they share the rules of engagement and help you navigate complicated terrain. They are proud of you, happy to see you, talk with you, and watch you grow. I call my mentors collectively, "The Wise Council." They provide me with multi-layered support, are different ages, races, and stages of their

careers, and are absolutely essential to my life.
Best Advice ever Given: Be known as someone others want to work with.
Change in Choice of Career: I started out interested in biology, environmental health, and marine science but later pivoted to geography. As a first-generation college graduate the expectation was that I would become a doctor; becoming a health geographer was not on anyone's radar. Over time, my family has come to understand the significance of the work that I do. I am only the second African-American woman to receive a PhD in geography from the Department of Geography at Michigan State (the first was 44 years ago), and the first to receive a dual PhD.
Best Career Experience: I am fortunate to work in global health and study health and disease around the world. The interactions with the people in Africa and the tropics are among my most enriching experiences – I have been accepted as an insider and outsider at the same time. While I am not always familiar with the cultures of the people I meet, they are often gracious, willing to share information, show me around, and allow me to observe their daily lives, on the hope that I will do something to improve their lived experience. Their trust motivates me. I have learned through the people I meet, "if you can't do great things, then do small things great, but always endeavor to do something to help others."
Worst Career Experience: I was a research fellow at the National Cancer Institute – on my first day I was mistakenly identified as one of the administrative assistants by a member of the leadership team. When it was discovered that I was actually one of the research fellows, not even an apology was provided. When I was walked around the floor to my office, I did not see anyone who looked like me in the offices where the researchers and scientists sat, but there were several in the area where the administrative assistants were. Additionally, when we took the summer fellows picture, I was the only African-American or Black in the group, everyone else was White and Asian. I knew I had to be stellar to increase the likelihood that other underrepresented minorities would be selected for the opportunity in future years.
Dealing with Discouragement: I pray, find a place to unwind, dance, listen to music, stay positive, and reach out to my support network who are always there to hold me up. As a minority in science, there is always the possibility of discouragement from not being accepted or having to prove you deserve to be where you are. Most places are not giving out consolation prizes - if you are there, it is because you belong, period. To cope in the space, develop a resiliency playlist of songs that motivate you to persevere, that uplifts you, and reminds you of your brilliance and worth.
Advice to Students Thinking about Biomedical Careers: Do not fear the words, "competitively awarded" on an application. In the biomedical field, applying is half the battle, though you will face a lot of rejection. Regroup and learn from those opportunities. The way we can affect change is if we get a seat at the table. The way to get a seat at the table is being accepted. The way to be accepted is to apply. If your application is rejected, ask for feedback to improve future submissions. Always maintain a "teachable spirit," and the willingness to make the necessary adjustments. Have more than one mentor - no single person can provide all the support you need. Have mentors that you trust and rely on their advice. Be a good collaborator and remember there are others coming behind you.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Underrepresentation is one of the primary issues facing minorities in biomedical science. Underrepresentation limits the availability of mentors from your racial or ethnic group which can limit those with a shared understanding of your lived experience. Having a sense of community and feeling "wholly" accepted can enhance the overall experience, allow scholars to thrive, help scholars deal with the ups and downs of research, and improve their work outcomes. Often, minority scientists feel they have to work twice as hard to be considered just as good or to prove they belong in the room. Many spend considerable time trying to "prove" their worth, especially when they are the only one representing their racial and ethnic group. It can be lonely, isolating, and exhausting. Community is invaluable.
Other Interests: Developing diversity, equity, and inclusion programs, cooking, writing poetry, classical music, rowing, dancing, biking along the river, community service, and philanthropy.
Additional Comments: To solve some of the complicated problems facing society, we need new energy from the younger generation of scientists.

NIMISHA KALIA
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General Electric
Assistant Professor of Medicine
Johns Hopkins University

Former BSCP Student and 2003 Hope Scholarship Recipient

Birthplace: India
Degrees: BS (biology) – University of South Florida; MD – University of South Florida College of Medicine; MPH/MBA – Johns Hopkins University
Professional Fields of Interest: Population health, public health, wellness initiatives, artificial intelligence, global health

Future Developments in Field: Helping people to be more educated and engaged about their own health
Qualities Needed for Success: Passion, hard work, and persistence
Personal Mentors: Dr. William Silen, Dr. Joan Reede, Dr. Edward Bernacki and Ms. Lise Kaye. They have continuously guided me during my career.
Best Advice ever Given: You create your own luck in life.
Change in Choice of Career: I have always been driven towards medicine and public health. I received my MPH/MBA degrees, which have helped me learn how to evaluate the most effective use of funds.
Best Career Experience: The months I spent working in Uganda. There was a huge need for effective management in allocating healthcare dollars and minimizing waste. This experience solidified my career decision to pursue degrees in public health and business.
Worst Career Experience: Early in my career, I applied to a research fellowship and was not accepted. I was initially disappointed but summoned up the courage to call the program director and ask how I could have improved my application. She provided honest feedback; feedback that I applied to applications moving forward. Ever since that experience, I view rejection as an opportunity to learn how I can continuously improve. There is ALWAYS a silver lining, but only if you are willing to hear honest feedback, do some reflection, and set a strategy to improve for next time.
Dealing with Discouragement: Never, never, never give up. Persistence is the key to any great accomplishment. Surround yourself with positive people who believe in your ideas and will give you honest feedback and encouragement when you need it.
Advice to Students Thinking about Biomedical Careers: Think outside the box and do not be afraid to combine your interest in biomedical sciences with other interests. For example, I have colleagues who are engineers and computer programmers working in the biomedical sciences. They bring unique and valuable talents that help advance the field.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: The myriad of distractions that can potentially derail you from a meaningful career. My advice to help retain your focus is to surround yourself with positive thoughts and career mentors.
Other Interests: Travelling, reading, dancing, painting, spending time with my family

SOPHIA C. KAMRAN

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Former BSCP Student

Birthplace: Hoffman Estates, Illinois
Degrees: BS (biology and biological engineering) - Massachusetts Institute of Technology; MD - Harvard Medical School
Professional Fields of Interest: Oncology, cancer research, genomics, radiation oncology
Future Developments in Field: We're moving into an era of precision, personalized oncology care - both in the medical and radiation oncology fields. In the radiation oncology field specifically, new technology is being developed that can better target tumors and improve local control.
Qualities Needed for Success: The biggest one is grit! You don't necessarily have to be the smartest or most talented, but you do have to be able to keep going and not give up. There is a lot of failure in this field, and you need to accept failure and keep trying.
Personal Mentors: Look for mentors who are willing to share their experiences, knowledge, and successes. No one has gotten where they are without someone more senior willing to help. Have as many mentors as you can, including research, career, and life mentors. Truly extraordinary mentors will help you navigate your path.
Best Advice ever Given: There are two best pieces of advice I've received. The first one is that family always comes first. When you get older, you realize how important that is. You can still be successful in your career, even while prioritizing your family. The second piece of advice is that when people tell you that you can't do something, make sure to go to your mentors and reflect on it, but don't take 'impossible' at face value - especially if it's new or novel.
Change in Choice of Career: When I initially attended MIT, I thought I wanted to be an engineer or get a PhD. I didn't really have any exposure to the field of medicine until I worked in a lab at MIT and met one of my future mentors, a pediatric hematologist conducting basic science research. I shadowed her in the clinic, and I found it fascinating that she could teach, see patients, and conduct research at the same time. Having an MD allows for so many different opportunities, and in the end, I found it most fulfilling to work with patients.

Best Career Experience: The most rewarding part of my career is to be able to see patients and conduct research at the same time. In a field like oncology, it can be emotionally difficult to see patients all the time, as many can be very sick and, in some cases, you may lose your patients quickly after forming relationships. When breaking up my clinic schedule with research time, I feel that I can add to the current body of knowledge and hope my findings can help patients in the future. Whenever I publish a paper, it's validating because it demonstrates that I'm making a difference and helping my patients and others.
Worst Career Experience: Medical school was very demanding. It can be overwhelming trying to navigate this space, which can display a culture of bullying. You have to really hold onto your colleagues whom you trust, and the mentors who are good at heart and want to help you. In a culture that can be harsh, it is important to find someone you can really trust.
Dealing with Discouragement: When I come up against discouragement, I go to my colleagues and mentors, talk it through, and try to figure out the best next step. It's important to ask for help when you need it, especially early on. It also never hurts to take time away to clear your head. Sometimes, I take a break from it all and do something completely unrelated. This helps me to clear my mind and feel refreshed enough to tackle the challenge ahead.
Advice to Students Thinking about Biomedical Careers: Find the right mentors and never give up - when you're truly passionate about something, you will figure it out.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: There aren't many role models who are minorities in top positions in the biomedical fields - we need more. You often want a mentor in whom you can see yourself, and it can be harder to see yourself in someone who is not a minority, or in someone who has drastically different life experiences from you. We need to recruit and retain more minorities in the biomedical fields.
Other Interests: In my free time, I like to relax with my husband and our two Italian greyhounds. We enjoy hiking and camping with our dogs, going to the beach, spending time with our friends, trying new restaurants, skiing, and traveling. I also try to run every day or every other day.

SAMANTHA E. KAPLAN
Assistant Dean for Diversity and Multicultural Affairs
Director, Early Medical School Selection Program
Assistant Professor of Obstetrics and Gynecology
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Degrees: BA (English) – Yale University; MD – University of Virginia; MPH – Harvard T.H. Chan School of Public Health
Birthplace: I was born in Boston, Massachusetts and raised in Washington, D.C.
Professional Fields of Interest: OB/GYN, physician workforce diversity, health disparities
Future Developments in Field: OB/GYN: The majority of future changes will be about minimally-invasive surgical options and perhaps advancements in prevention of premature births. Diversity: Increased efforts at creating a diverse and inclusive medical education environment are essential to addressing disparities.
Qualities Needed for Success: You have to have lots of energy, be comfortable with uncertainty, have surgical skills, enjoy educating patients, and work well under stress.
Personal Mentors: Yes I had mentors. They were interested in me and interested in my career. They were able to see and be honest about my strengths and weaknesses. They had experiences and wisdom that they were able to share with me. They were able to be objective when I could not.
Best Advice ever Given: Be true to yourself and view life as a continuum in which you will have multiple opportunities. Be prepared to take advantage of opportunities that come your way.
Change in Choice of Career: I pretty much knew what I wanted to be.
Best Career Experience: The Commonwealth Fund Harvard University Fellowship in Minority Health Policy
Dealing with Discouragement: I try to step back and re-evaluate the reasons for my initial reaction to the situation and see if there is anything I should do differently. I try to differentiate between what is related to me and in my control, and what is not.
Advice to Students Thinking about Biomedical Careers: There are multiple opportunities in biomedical science careers. If you want to pursue a career in this field, there is a role that is right for you.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: There is a lack of both mentorship and role models. Unfortunately you feel you are the odd one out there and this can affect your experience.
Other Interests: I have three kids ages nine and under. If I had time, my other interests would be exercise, reading, traveling, and baking

DOUGLAS KERR

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Birthplace: Bloomington, Indiana
Degrees: BA (molecular biology) – Princeton University; MBA – Northeastern University; MD/PhD (molecular neurovirology) – Sidney Kimmel Medical College, Thomas Jefferson University
Professional Fields of Interest: Neurology, drug development, pediatric developmental disorders, neurodegeneration, and genetics
Future Developments in Field: In neurology, we have had a very limited ability to treat and reverse disorders of the brain. It's an incredible time to be in the field, we are at the brink of unlocking the code of what the brain does and how you can treat it.
Qualities Needed for Success: Curiosity and fearlessness
Personal Mentors: Look for a mentor who can really commit to guiding you.
Best Advice ever Given: Be curious and be fearless.
Change in Choice of Career: I spent ten years in an academic setting at Johns Hopkins, founded a company, and finally moved to biotech. Each change has been a great opportunity to develop skills and challenge my perspective. Each of my degrees has been a different toolkit for me to understand how to maximally impact my career.
Best Career Experience: After ten years of developing a therapy for infants with a fatal genetic disorder, we discovered not only the therapy but also a screening test to diagnose and treat before the onset of symptoms.
Worst Career Experience: Looking back at my decision to create a company, I really thought I could do it. However, I couldn't convince people that the ideas were right or that the company could be profitable. It didn't work out but I'm glad I did it.
Dealing with Discouragement: I try to look at it as a learning opportunity.
Advice to Students Thinking about Biomedical Careers: There is something to be said for on-the-job training and having a mentor. Spending time to figure out what makes you passionate will help you to refine where to go next.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: There are hidden biases that exist everywhere in society. It's incumbent upon employers to help employees recognize the value and importance of having people from a variety of different backgrounds.
Other Interests: I am a jazz trumpeter and I play in a blues band. I also have a lobster license and fish off of Gloucester Harbor.

TAIMUR H. KHAN

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Birthplace: Boston, Massachusetts
Degrees: BS (biology and arts & visual culture) – Bates College; MPH (global health systems management) – Tulane University School of Tropical Medicine & Public Health; MD – Tulane University School of Medicine
Professional Fields of Interest: HIV/STI treatment & prevention, and LGBTQIA+ care. Novel interventions for the treatment of infectious diseases including behavioral interventions and use of technological innovations.
Future Developments in Field: COVID, and the global nature of this infectious disease, has changed the way we approach the development of medicine; addressing how we do research, how we confront racial disparities, and how we educate our patients are fast changing developments.
Qualities Needed for Success: A holistic approach to life. Life experiences outside of healthcare and medicine will help you to relate to patients as well as provide necessary relief from the rigors of the profession.
Personal Mentors: Mentors must be approachable and non-judgmental. A mentor can only work with what they are given. A mentee must feel comfortable enough with the mentor to talk with them openly and honestly and not hesitate to ask "stupid" questions.
Best Advice ever Given: Sometimes, rejection is the best thing that can happen to you.
Change in Choice of Career: I started out in neurology, then shifted to medicine, and now specialize in infectious diseases. I never expected to teach, but when I was offered the opportunity to teach in my role as chief resident, I realized that I enjoyed teaching.
Best Career Experience: 1) Becoming an independent physician and having patients trust me and believe in me because of

my skills, not because of my training. 2) Teaching, and seeing the “ah-hah” moment in the medical students under my charge when they realize that they understand a concept.
Worst Career Experience: The period during my fellowship was difficult – it was the combination of having a high patient volume, performing scholarly research, and meeting the expectations of being a specialist in a field.
Dealing with Discouragement: Discouragement is a learning opportunity. You can choose to sit with it and suffer, or you can acknowledge it, learn from it, and move on.
Advice to Students Thinking about Biomedical Careers: It has to be about the journey and not about the destination. It is not enough to be doing what you do for the accolades or the money - you must genuinely like the work.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Lack of representation in the field; not being able to see yourself in mentors or someone whom you admire and would like to emulate. If a student does not feel comfortable around those that should be mentoring them, then they will not get the full benefit of a mentor relationship.
Other Interests: Drawing and art work, working out, playing board games, my dog

ESTHER KISSEIH

Attending Neonatologist
Beth Israel Deaconess Medical Center
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Birthplace: Ghana
Degrees: BSc (biology) – Oral Roberts University; MD – Indiana University School of Medicine
Professional Fields of Interest: Neonatology, medical education, translational and clinical research, neonatal pulmonary physiology
Future Developments in Field: Advances in fetal surgery, equity-based family centered care, point-of-care imaging and genetic therapies.
Qualities Needed for Success: The ability to embrace the team approach, and work across different specialties and disciplines to ensure a common goal.
Personal Mentors: I am grateful for the privilege of having had dedicated mentors who have been intellectually generous and highly supportive in my development as a clinician, thinker and mentor. From a mentee's perspective, I recommend finding mentors with shared experiences or interests, as well as embracing the model of having multiple mentors with individual roles as connectors, associates, advocates or coaches.
Best Advice ever Given: Always stay curious. Take advantage of every encounter and opportunity to gain more insight.
Change in Choice of Career: I am still early in my career, so I have not had any changes yet in my career path.
Best Career Experience: When I have been able to combine clinical care with scholarship activities in a supportive environment.
Worst Career Experience: I can’t think of one.
Dealing with Discouragement: I see it as a learning opportunity and I continue to move forward.
Advice to Students Thinking about Biomedical Careers: Form partnerships with dedicated mentors, seek out available opportunities, stay curious
Issues Facing Minority Students Pursuing Careers in Biomedical Science: There has been an increase in underrepresented minorities in biomedical science. The obstacles overcome by minority students helps to develop a sense of compassion, empathy and determination. These distinguishing qualities are needed to address health care disparities and alleviate human suffering either through research or patient care. Our diverse experiences and backgrounds are immeasurably valuable for patient care and for biomedical research.
Other Interests: Spending time with family, running, outdoor activities.
Additional Comments: Never underestimate your potential. Keep pushing forward with determination. Our world needs your talent and expertise.

CAROLE KOUNGA

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Former BSCP Student

Birthplace: Cameroon
Degrees: PharmD - Massachusetts College of Pharmacy and Health Sciences; MD – Indiana University School of Medicine
Professional Fields of Interest: Cardiology
Future Developments in Field: The last two years of COVID has taught us several things that will change how we move forward in medicine. There is a whole new range of cardiovascular complications brought on by COVID that will continue to be studied. We are now better able to understand the benefits and limitations of telehealth and telemedicine, and will likely continue to see the expanded use of both in the future. COVID made apparent the disparities in the delivery of health care, and we can better appreciate what those disparities are and address them.
Qualities Needed for Success: Hard working, good at self-directed learning, curious, a team player who is able to interact with varying subspecialties
Personal Mentors: Look for four things in a mentor: someone who is doing things you are interested in; who can relate to you, your background and your aspirations; who is available and gets to know you on a personal level; and who helps you expand your network and provides you with connections.
Best Advice ever Given: It is okay to take risks. It is okay to ask - the worst thing that can happen is they say no.
Change in Choice of Career: I was a pharmacist for five years before going to medical school. After medical school, I was a physician, and thought I would specialize in infectious diseases. I have now changed focus away from internal medicine and towards cardiology. As you learn more, you discover new interests. It is okay to explore options and pursue different paths to follow those changing interests.
Best Career Experience: What I am doing right now in my role as Chief Resident. I am still in training and under supervision, but yet I also get to lead my own team, and watch my trainees as they grow as providers and as individuals, and become more independent. I also enjoy the doctor-patient interactions I have on a daily basis.
Worst Career Experience: My first years of training were during COVID. It was all work, with no ability for an outside outlet. It was emotionally and mentally draining.
Dealing with Discouragement: I have a support system that includes my parents, family members and friends, who I turn to first and who remind me why I am doing what I am doing. I also turn to my mentors who can offer advice as to how to assess the disappointment, help me learn from the failures, and turn it into a learning opportunity.
Advice to Students Thinking about Biomedical Careers: Science is fun! It is okay if you don't get it the first time around. Find people who can help you learn more, and keep trying. Don't quit.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: It can be difficult being in an environment where no one looks like you, can relate to your background, or understands your unique talents. Realize, however, that you cannot succeed on your own, and that you will need a support group, or "bubble" as I call it, to surround yourself with, who will provide you with the encouragement you need. Reach out to others who may be experiencing similar things even if they aren't exactly like you, and create your own family of support to help you navigate the bigger world of medical science.
Other Interests: Drawing, painting, listening to music, watching Disney movies
Additional Comments: I have connected with some great mentors from past BSCP programs, some of whom I still keep in touch with. It is a great opportunity to meet amazing people, and hear their stories. Seize the opportunity, get to know these amazing people, keep in touch with them, as you never know who might be able to help you.

JERRY KOUNGA KOUNGA

Investigational Drug Lead Clinical Research Pharmacist
Pharmacogenomics/Precision Medicine/Drug Safety and Pharmacovigilance Specialist
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Former BSCP Student

Birthplace: Cameroon, Africa
Degrees: BS and MSc (biochemistry/biophysics) – Faculty of Sciences, University of Yaoundé/Pasteur Institute; PhD (biochemistry/biology) – University of Kansas; PharmD – Massachusetts College of Pharmacy and Health Sciences Worcester
Professional Fields of Interest: Investigational drugs, pharmacogenomics implementation/precision medicine, drug safety and pharmacovigilance, clinical trial integrity, mandated post-marketing adverse drug events reporting, and use of pharmacogenomics to inform precision or personalized medicine.
Future Developments in Field: The classic "one size fits all" medical practices are almost over. Precision medicine based on pharmacogenetics/pharmacogenomics is gaining ground as the norm for the future. We now know that our genes affect our body's response to medications, and a drug that works well for some people may not work well, and may even be toxic, in

other people. Precision medicine will help avoid unwanted side effects and lead to better treatment outcomes. Unnecessary prescriptions will be avoided, healthcare dollars will be saved, and overall healthcare delivery will improve. Mandated post-marketing adverse drug events reporting will help compile a better safety profile of pharmaceuticals and avoid preventable side effects and harm to patients as well as the related medical costs.
Qualities Needed for Success: Dedication, confidence, focus. Most of all, love everything that you are doing and do it to the best of your ability.
Personal Mentors: Look for someone who is well versed in their field, is willing to guide you, and takes pleasure in teaching and mentoring others and helping their mentees uncover new opportunities and reach their goals.
Best Advice ever Given: Don't worry about what people might think or say about your learning aptitude. Remember, only YOU can change your destiny. Be focused and determined to be the very best, and you will succeed.
Change in Choice of Career: Always be ready to make choices that best fit your current needs. If you can't find what you love to do, take what you have and turn it into something you love.
Best Career Experience: The years I spent as a postdoc in the Department of Dermatology at Harvard Medical School/MGH/Cutaneous Biology Research Center made me a fine and well-rounded scientist. I was exposed to top-notch quality research and scientists from around the world, acquired tremendous scientific knowledge, and developed superb critical thinking skills.
Worst Career Experience: With a group of scientists, we decided to launch the first US SkinDNA-based personal skincare products. After two years of hard work on product formulation and pairing based on concomitant skin conditions, we failed to draw in the necessary capital to kick off our very innovative enterprise. Despite the failure, I was able to adapt many of the concepts I learned from that project to the precision medicine aspect of my current clinical research position.
Dealing with Discouragement: Take it positively and draw valuable lessons from all unpleasant situations. Do not allow any setback to alter your confidence.
Advice to Students Thinking about Biomedical Careers: Take everything that you do very seriously, bring your very best to every task, and always strive for excellence.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Minorities are less exposed to healthcare provider role models to whom they can look up to or contact for advice. Many of them do not know what the various facets of biomedical fields are and how to navigate through them to get into related programs. There is a false perception that minorities are not as good as other groups, thus minority students may feel less confident and doubt their intrinsic ability. An intense preparation from an early age will help build confidence and aptitude to compete well in any setting.
Other Interests: I love ballroom dancing and I referee soccer games.

GABRIEL KREIMAN
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Birthplace: Buenos Aires, Argentina
Degrees: BSc (physical chemistry) – University of Buenos Aires; MSc (computation and neural systems), PhD (biology division) – California Institute of Technology
Professional Fields of Interest: Computational neuroscience, artificial intelligence
Future Developments in Field: Intelligent algorithms
Qualities Needed for Success: Curiosity, perseverance, and strong quantitative skills
Personal Mentors: My mentors in graduate school and during my postdoc were fundamental to my career. Look for a mentor who will guide you.
Best Advice ever Given: Pursue your passions. As the old saying goes: if you enjoy what you are doing, you don't have to work a single day in your life.
Change in Choice of Career: I switched to studying neuroscience in graduate school and I have been studying it ever since.
Best Career Experience: Graduate school was tremendously important for me. It was where I grew up academically and career-wise. I learned to trust my own instincts and methods.
Worst Career Experience: None.
Dealing with Discouragement: I started competing in triathlons as a way to cope with career frustrations.
Advice to Students Thinking about Biomedical Careers: One piece of advice I would stress is to have a strong quantitative foundation. Learn these skills early on.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: It is particularly important for minority students to find the right mentors in order to thrive in the academic environment.
Other Interests: Endurance training in triathlons.

VINU KRISHNAN
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Birthplace: India
Degrees: BTech (electronics and biomedical engineering) – Cochin University of Science and Technology, Kochi, India; MS (biomedical engineering) – University of Akron, Ohio; PhD (materials science and engineering) – University of Delaware
Professional Fields of Interest: Bioengineering, nanomedicine, drug delivery, pharmaceutics
Future Developments in Field: The landscape in genome editing (particularly using CRISPR) has been rapidly changing, giving promising alternative therapies for patients with formerly incurable diseases
Qualities Needed for Success: Perseverance, determination, creativity, curiosity, and never hesitating to ask the simplest of questions
Personal Mentors: Look for someone who had previous experience in mentoring students; who is humble and accommodating; who is eager to reach out to their mentees, make time for their students, and help instill confidence; and who empathizes with you and gives you honest feedback
Best Advice ever Given: There are no failed experiments in science. Every outcome is trying to tell you something, and success could only be a step away. So, be a good observer and a listener. It is easy to get lost in the scientific weeds and lose sight of the grand prize. Remember to look at the big picture and break it down into its simpler pieces.
Change in Choice of Career: Working in academia helped me become an independent researcher who can identify a problem, analyze, and solve it. Transitioning to the industry where team work is more valued than individual achievements enabled me to utilize those skills with a greater impact. Industry allows me to have a much better work-life balance and family-friendly life. I also feel that I am expanding my knowledge/impact on the society.
Best Career Experience: As a graduate student, my PhD research was to optimize and advance targeted drug delivery for treating children with cancer. I had the opportunity to interact with pediatricians, their patients and families. I saw firsthand the impact my work could have on society and this spurred and motivated me to pursue a career in scientific research.
Worst Career Experience: I came from India to the United States for graduate school. It was the first time I was traveling abroad, and I ad little understanding of the American educational system. I was dependent on my mentor who unfortunately fell ill with advanced breast cancer. I was left on my own with no one to advise or guide me, especially through my initial research experiences. It was a difficult time as a budding scientist.
Dealing with Discouragement: I never take discouragement personally. I take a pause from what I am doing, and walk it off or listen to music or read unrelated materials. This helps me clear my mind and assess how to spin the discouragement into something positive. I then try to identify my next steps and press forward.
Advice to Students Thinking about Biomedical Careers: Do not limit yourself to a single area of research or field. Be open to exploring different paths. Be curious, and receptive to new ideas. Have the courage to listen and accept criticism. Use it to grow and develop your character.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: I feel that we receive fewer applications for research positions from minorities. It may be that students in these communities are not aware of the exciting opportunities that await them in academia and in industry. Steps could be taken for a wider outreach and to make a dedicated effort to create dedicated internship positions for minorities.
Other Interests: Reading (fiction and biographies), cooking, baking, biking, hiking, painting, listening to music

JEAN C. LEE
Associate Microbiologist, Division of Infectious Diseases
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Associate Professor of Medicine, Infectious Diseases – Harvard Medical School
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Birthplace: San Antonio, Texas
Degrees: BA (biology) – Texas A&I University; PhD (microbiology) – University of Texas Health Science Center - San Antonio
Professional Fields of Interest: Microbiology, bacterial pathogenesis, molecular biology, *Staphylococcus aureus*
Future Developments in Field: Our understanding of *S. aureus* bacterial pathogenesis is evolving rapidly. The human innate immune response to infection is now recognized as a prime factor in overcoming infection, and *S. aureus* has developed multiple strategies to escape the immune response. The role of T-cells in the immune responses to extracellular pathogens like *S. aureus* is now recognized as critical for vaccine development. My lab focuses on the biologic roles of *S. aureus* extracellular vesicles in bacterial pathogenesis as well as in vaccine development.
Qualities Needed for Success: Hard work, persistence, creativity
Personal Mentors: I had excellent mentors in graduate school and during my postdoctoral training.
Best Advice ever Given: Take more risks. Focus – quit worrying about what everyone else is doing. Don't mistake activity for

achievement. Read outside of your immediate field.
Change in Choice of Career: I set out after college to become a medical technologist, but decided to further my education and went back to school to obtain a PhD.
Best Career Experience: Teaching and seeing students get turned on to science; collaborations and discussions with colleagues to move science forward**.**
Worst Career Experience: Going through my oral exams in graduate school was very stressful. Rejection of grant applications, when it happens, is also a bad experience.
Dealing with Discouragement: For about 50 years, I would run when feeling discouraged. Running made me happy, fit, and helped build my self-esteem. Sadly, I can't run anymore, but with age, it becomes easier to deal with discouragement. **Advice to Students Thinking about Biomedical Careers:** It's a huge investment in time and effort, and you need to think about whether or not you can deal with that. However, science is so incredibly interesting and also a lot of fun. You have to love your job.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: There are so many new programs to encourage underrepresented minorities to enter the field of biomedical science. This creates opportunities that have never existed before. Take advantage of these and show the world what you can do! The world is waiting and needs you!
Other Interests: My children and their blossoming careers, listening to Audible books, church.

BRIAN C. LEWIS

Assistant Vice Provost for Outreach and Recruitment
Associate Dean for Diversity and Pre-Matriculation Programs
Associate Director, Education and Training, UMass Cancer Center
George F. Booth Chair in the Basic Sciences
Professor, Department of Molecular, Cell, and Cancer Biology
Professor, Program in Molecular Medicine
University of Massachusetts Chan Medical School
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Birthplace: Kingston, Jamaica
Degrees: BS (biology) – University of California Los Angeles; PhD (human genetics and molecular biology) – Johns Hopkins University
Professional Fields of Interest: Cancer research, genetics, oncology
Future Developments in Field: Cancer immunotherapy is at the forefront of cancer treatment at the moment. Understanding how to most effectively activate the immune system to eradicate a tumor, as well as understanding how to combine immunotherapy with other treatment strategies is the key. Our current ability to study the characteristics of the individual cells that comprise a tumor will allow us to achieve these goals.
Qualities Needed for Success: Desire and perseverance
Personal Mentors: It is important to identify mentors who have a genuine, vested interest in you and your development. A good mentor dedicates much time and effort to you as an individual, and thinks things through from your perspective. I've had various mentors from all different backgrounds; they all believed in my ability, even when I had doubts myself, and encouraged me to move forward. Know that mentors come in all flavors; don't limit yourself to people who look like you, and don't have preconceived notions about some "mold" that you think a mentor should fit into. Minorities can find mentors who are non-minorities, and men can find great mentors in women.
Best Advice ever Given: My father told me to always do what I enjoy. If you do something that you're truly interested in, you'll always find a way to make a living.
Change in Choice of Career: I've been lucky; I wanted to pursue a career in academia and have been fortunate to find a great institution that has helped me to succeed in that arena. For a long time, I identified only as a scientist. However, over the last several years I have increasingly embraced a role as an administrative leader at my institution, resulting in positions with increasing responsibilities. This has brought new challenges, but also the great reward of working with a greater number of students, particularly those from underrepresented backgrounds.
Best Career Experience: Getting my PhD was very rewarding. I entered graduate school with a sincere interest and desire, but I wasn't quite sure if I would succeed.
Worst Career Experience: Having to worry about research grants and funding. This often puts a damper on collaboration efforts because everyone is so concerned with getting their own personal research funded.
Dealing with Discouragement: I turn to colleagues and mentors to talk things through.
Advice to Students Thinking about Biomedical Careers: Experience different things and know yourself. This will give you the self-confidence that allows you to trust your instincts. Try to expose yourself to as much as possible within the field. There are countless ways for you to contribute, so find an area that suits you best.

Issues Facing Minority Students Pursuing Careers in Biomedical Science: There are very few faculty members who are members of underrepresented groups. You may look around and not see many people in leadership positions who share your history and background. Others may have a prejudicial misperception that you are not as good as your peers from majority groups. Maintain your belief in yourself and seek support from others.
Other Interests: I have two young kids. I also enjoy sports and being outdoors.

MARY FRANCES LOPEZ

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Faculty Assistant Director
Office for Diversity Inclusion and Community Partnership - Harvard Medical School
Research Scientist, Endocrine Division - Boston Children's Hospital
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Birthplace: Oakland, California
Degrees: BA (biology with emphasis in microbiology) – University of California San Diego; PhD (biology with emphasis in endocrinology) – University of California, Santa Cruz
Professional Fields of Interest: Neonatal growth, obesity, and cancer
Future Developments in Field: Obesity is a significant risk factor for several types of cancer. Minority populations are known to have greater prevalence of obesity, making them more vulnerable to cancer. Overcoming cancer health disparities should be a public health priority in this society.
Qualities Needed for Success: Desire to succeed, determination, and perseverance.
Personal Mentors: My mother was a mentor to me. She was able to instill in me good moral values, the mentality that I should aim high, the importance of a good work ethic, and the value of working hard to achieve. I also had an academic mentor as an undergraduate student. He taught me not only how to survive but also how to succeed as a college student. As a faculty, I have also had a couple of great mentors that had guided me through my career at Harvard.
Best Advice ever Given: Get a mentor to help guide your career.
Change in Choice of Career: I originally wanted to become a physician. However, when I was an undergraduate student, I was given the opportunity to do research in a NIH-sponsored laboratory. I fell in love with biomedical research and decided to pursue a PhD instead.
Best Career Experience: The highlight of my career was to be nominated for two mentoring awards by my students and postdocs. Having them say that I have made a difference in their lives reminded me of one of the reasons I decided to become a scientist and a mentor.
Worst Career Experience: The frustration of not getting funding to pursue my research.
Dealing with Discouragement: I deal with discouragement through my faith in God. I also get encouragement and support from my family.
Advice to Students Thinking about Biomedical Careers: Explore the field you might be interested in before deciding in which direction to take your career. Know that there will always be obstacles along the way; so, don't let them discourage you. Always keep your eyes on your goal. *You will get there!*
Issues Facing Minority Students Pursuing Careers in Biomedical: Sometimes it is difficult to feel that you belong in college or university when you are one of few underrepresented minority students attending your institution or when you don't have a good support system. If you are going through this, please find an organization(s) that will provide you with support, mentors, and peers that will listen to you and help you with whatever you need. Never give up!
Other Interests: Photography, videography, music, and travel. I also love spending time with my family.

ALARICE LOWE

Staff Pathologist – Stanford Healthcare
Associate Professor of Pathology
Director, Circulating Tumor Cell Lab
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Birthplace: Los Angeles, California
Degrees: BS (biology) – Massachusetts Institute of Technology; MD – University of California, San Diego
Professional Fields of Interest: Medicine, pathology, cytopathology
Future Developments in Field: Technology that allows for less invasive diagnosis of disease, particularly tumors/cancer.

Qualities Needed for Success: Motivation and curiosity in your field of interest, good communication skills, and good interpersonal skills
Personal Mentors: Most students will be assigned mentors during different phases of their careers without being given a choice, but we always have opportunities to reach out to people we respect/admire and ask them to serve as our mentors. I have had many mentors, but it is a treasure to find one that aligns in many different respects and is able to understand all aspects of career and life. One reason I want to participate in this program is to advise students on the best way to help themselves in their career choices. A good mentor is one to whom you can speak candidly; someone who will listen to you and who is open to helping you develop your individual life and career choices. A mentor should not be looking to replicate themselves in their students.
Best Advice ever Given: On a professional level: always put your patients first. In medicine, we find ourselves overwhelmed and overloaded with work, but it is important to maintain focus on our highest priority - individual patients and achieving the best possible outcome for each of them. For professionals that don't treat patients, the message is similar – always take the time to produce a quality product. As a result of this advice, I may be tired at times, but I have always been proud of the quality of care that I provide to my patients.
Change in Choice of Career: I have had two major shifts in my career. First, I originally thought I would be a pediatrician and interacting with kids daily. Now, I am a pathologist and work mostly with adults. Most of my work is done behind the scenes with less direct contact with my patients. Second, I changed from a clinical and teaching path, to one that incorporates research.
Best Career Experience: The general feeling that I have survived the initial rigor of training. I am now in a place where I am striving to balance my work load with my personal life. I want to spend more time with my kids, volunteer at their schools, and still achieve what I want to in my work.
Worst Career Experience: My first two months of attending. I was overwhelmed by the amount of responsibility and work load, but I survived and each of you will also survive anything that you encounter.
Dealing with Discouragement: I remind myself that I am here for a reason, and try to figure out the best way to productively deal with the situation.
Advice to Students Thinking about Biomedical Careers: Figure out what your passion is and where your interests lie. That passion will allow you to weather the difficulties, stay motivated, and keep pushing forward even when work and life may feel overwhelming.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: In my experience, many professionals in leadership roles in the biomedical science field cannot easily relate to persons from non-dominant communities. This may make it difficult for non-dominant students to find the support that they need, and to have access to resources and opportunities necessary to advance their careers. As a result, it is necessary for non-dominant students to find organizations like BSCP that will provide them the support, mentorship, and networking opportunities to help them.
Other Interests: Spending time with my family, playing volleyball, running

RAFAEL E. LUNA
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BSCP Board Member and Former BSCP Student

Birthplace: Washington, District of Columbia
Degrees: BS (biology) – Southern University; PhD (biology) – Louisiana State University; MBA candidate – Boston College
Professional Fields of Interest: Academic research, entrepreneurship, mentoring, and leadership.
Future Developments in Field: The incorporation of the humanities into the sciences in order to become better scientists and better human beings.
Qualities Needed for Success: The next generation of scientists will need academic training rooted in both the sciences and the humanities to be successful. In addition to taking the regular scientific courses, they also need a background of classic literature, poetry, and a heavy dose of philosophical reasoning to be good scientists.
Personal Mentors: Mentors should examine the way that professors ask questions. Aspiring scientists should be surrounded by people who know how to ask the "right" kind of questions. For example, is this person a critical thinker, open-minded, amenable to change, letting the data inform their hypothesis? These are all important questions to consider when selecting mentors. The way that this person acts as a scientist is the way the possible advisor will serve in the role of mentor. Mentors should be thoughtful, inquisitive, and enjoy the mentoring process.
Best Advice ever Given: Do what you love, and you'll never work another day in your life. Stability and money do not lead to

happiness. Mentees should love learning new things and be fine with not having control of everything. Every day is an adventure.

Best Career Experience: I was working on a collaborative team project and I came up with a hypothesis. As part of a scientific team, we spent years working on this project, and we were finally going to publication when our collaborators gave me more data to support our hypothesis. Before we continued with the publication, the top scientist in our group did one more experiment in light of the team's new data. I was panicked, since I hoped that our research project would not unravel. He did the experiment and it went exactly as I predicted based on previous data collected. That was the best feeling in the world. I literally cried. I want more of those experiences but it's hard to come across them. This is why, I encourage others to cherish every moment that they have as a scientist.

Worst Career Experience: This is difficult, because I always find a way to turn everything around and learn from it. The only way we learn as scientists is from our failures, we don't learn as much from our successes. My manuscript on my collaborative research project was rejected by one of the top three journals in the world. From that experience, I realized that I needed to put a story to my science and developed the unprecedented method for scientific storytelling which I then published into a book entitled: *The Art of Scientific Storytelling*. Hence in addition to being a scientist, I became an entrepreneur. I always try to learn from perceived setbacks and move forward.

Dealing with Discouragement: Reading poetry, British classic literature, writing, and going to plays. I completely immerse myself in the humanities. This helps me realize that life has so much to offer and is bigger than my individual circumstances.

Advice to Students Thinking about Biomedical Careers: Excel in math and the sciences but also study the classics. Study poetry, as well as mathematics. One of the worst things in the education of younger scientists is the lack of humanities training. To be a great biomedical scientist you need to be great at science and be a great storyteller. Biomedical trainees need to know the best way to communicate to others in order to be successful as a scientist, which can be accomplished with supplemental humanistic training to a scientific curriculum. In addition, students should not accept things the way they are. Instead they should look at the scientific realm, and think of ways to make an impact and leave their mark on science.

Issues Facing Minority Students Pursuing Careers in Biomedical Science: In order for you to be successful as an underrepresented minority in STEM, you have to be three times better than everyone else. I learned this concept from attending Southern University, a Historically Black College and University. If you work at the same level you may not succeed. The key is learning how to speak and set yourself apart from others. At times, it seems that first-generation, low-income, and underrepresented minorities may not have learned how to shine and speak in front of others confidently. If you don't have a professor that does this for the underrepresented minority student, then it would be difficult for this student to learn the best way to communicate effectively and confidently in front of a scientific audience.

Other Interests: Humanities, playing basketball, Pilates, enjoying time with my daughter, learning new things that have nothing to do with science, and learning new languages. I love learning and I love my life as a biomedical scientist and my career in higher education.

JOSEPH A. MAJZOUB

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Birthplace: Visalia, California

Degrees: AB (biology) – University of Michigan; MD – Stanford University School of Medicine

Professional Fields of Interest: Pediatrics, molecular biology, pediatric endocrinology

Future Developments in Field: Curing diabetes, using new information from the human genome project to discover better treatment for diseases

Qualities Needed for Success: Drive, getting joy from your work, long-term vision, resilience, intelligence, effective communication skills, ability to interact with people

Personal Mentors: My father: he gave me confidence in myself at a young age. Also in training, the head of my program, Dr. John Potts, was my principal mentor; he gave me confidence to do what I thought I should do.

Best Advice ever Given: You can do what you want to do if you work hard at it. Choose a career that gives you sustained joy, because a lot of time will be needed to get better. Persistence/resilience counts a lot.

Change in Choice of Career: 30 years ago I was working at Brigham and Women's Hospital as an adult doctor and was asked to go to Children's Hospital to run their endocrinology program. It was the most invigorating experience and it changed my whole orientation. People should change jobs every ten years. I have recently changed again, moving back to doing more

research, less administration.
Best Career Experience: Being able to integrate my clinical work with children and my research is very fulfilling.
Worst Career Experience: After being supported by one grant for eight years and being told that I wasn't going to be supported anymore; I felt rejected.
Dealing with Discouragement: By seeking reaffirmation from people I trust and respect. I try to step aside from the discouraging situation and focus on what I can do to move ahead.
Advice to Students Thinking about Biomedical Careers: If you are dedicated and willing to stick with it, it is possible to do almost anything. There are tremendous job opportunities. A physician can get a job anywhere.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Once they have recognized an interest, the first issue is to get an education. There are tremendous opportunities; employers are seeking minorities.
Other Interests: Cooking, reading, playing the piano, traveling, being with my family

CLARENCE R. MANUEL

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Clinical and Diagnostic Assay Development for Viral Vaccines
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Birthplace: Plainfield, New Jersey
Degrees: BA (English) – Saint John's University, Minnesota; MBS (pharmacological science) – Rutgers New Jersey Medical School; PhD (pharmacology) – Saint John's University, New York
Professional Fields of Interest: Pharmacology, immunology, metabolism, and ministry
Future Developments in Field: Less manual bench work and more automation
Qualities Needed for Success: Perseverance, ability to collaborate and work on a team, a strong faith
Personal Mentors: A good mentor will care about your professional and personal well-being.
Best Advice ever Given: Don't be consumed by your present circumstances and challenges. Sacrifice is a part of the journey.
Change in Choice of Career: In the third year of my postdoc, during COVID, my focus shifted from academia to industry.
Best Career Experience: During my doctoral training, I was working in a lab while working two jobs. I managed to maintain a high GPA and excel in the laboratory, earning a summer research internship at the National Institute on Aging in Baltimore, MD. Despite my achievements, I was still stretched thin and it resulted in me being kicked out of the lab. This was my best experience because this challenging time matured me personally, spiritually, and professionally. In addition, my removal from the lab allowed me to join a more supportive research environment, and propelled me to greater professional heights. Ultimately, I became one of the most successful, high-achieving doctoral students from St. John's.
Worst Career Experience: My worst career experience was the same as my best career experience. It was difficult to live on the stipend I was awarded as a graduate student, and so I was forced to work extra jobs to make ends meet, all while maintaining good grades, and my personal and spiritual life.
Dealing with Discouragement: I rely on my faith in God, and my loving wife and strong support system.
Advice to Students Thinking about Biomedical Careers: You can't do it alone. Don't be afraid to ask for help and leverage any and all resources available to you.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Imposter syndrome is an obstacle. It is difficult not to see anyone in the room who looks like you and still believe in your ability and promise. Remember that you do not represent the entirety of your culture, that you are intelligent, and that you deserve to be at the table.
Other Interests: Swimming, working out, spending time with family, serving in church
Additional Comments: Don't believe that there are not many spots for minorities in science and medicine. Don't believe that you must compete against other minorities for internships, fellowships, medical school/grad school admissions, research positions, etc. We need to support one another, help each other, and remember that mentoring does not always have to come from above, but can also come from your peers.

KEVIN MARKS

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Birthplace: Massachusetts
Degrees: BA (molecular and cellular biology) – Cornell University; PhD (molecular pharmacology) – Stanford University

Professional Fields of Interest: Cancer oncology, drug discovery, biology
Future Developments in Field: New modalities, gene therapy becoming more important, increased use of large data sets, increased use of artificial intelligence
Qualities Needed for Success: Relentless curiosity. Much of what we know now we did not know five years ago, so it is important to constantly learn new things. Since most work in drug discovery is collaborative, you must be able to work as part of an interdisciplinary team of strong thinkers and doers, and have strong communication skills.
Personal Mentors: Good mentors are reflective, humble, willing to share with you what they have learned through their experiences, and willing to help. The mentors that have been most valuable to me are those who have a style complimentary to mine, and with whom I can feel comfortable, but who are also different enough from me that they cause me to stretch my thinking.
Best Advice ever Given: Get to know yourself and bring yourself to work. Every person has a different set of attributes, strengths and weaknesses. You must be aware of what those attributes are, trust that your authentic self will be valued, and use those attributes for good. Don't change who you are to fit what you think people want you to be. You can't succeed by trying to be someone else. Research is dependent on using the varied styles and personalities of the people who are involved.
Change in Choice of Career: I have not had changes in the area of practice in my career – I went directly from graduate school to industry and have been there ever since - but rather in the types of roles I play within that area of practice. I started out working with a small start-up company and have moved to a big industrial company with thousands of employees.
Best Career Experience: I spent a decade in my last job, starting when it was a small start-up, working with a team of dedicated professionals who became like family to me, and sharing the experience of watching the company grow to fruition and succeed.
Worst Career Experience: Earlier in my career I job hopped quite a bit. I was transitioning to different jobs as a means of moving away from jobs I didn't enjoy, instead of moving towards jobs I wanted. One transition in particular was a bad fit and I didn't last long at that job. I learned from that experience that it was more important to move towards what you want instead of away from what you don't want.
Dealing with Discouragement: Two things are important when dealing with discouragement in drug discovery: First, appreciate that drug discovery, by its nature, requires failure and that road blocks are part of the path to success. Second, your peers are going through the same thing as you are, so there is no need for you to put on a good face and act as if things are okay. Talk to your co-workers, be open, share your discouragement with them and they will help you get through it.
Advice to Students Thinking about Biomedical Careers: Those seeking PhDs very often are solely focused on their own projects and their own academic research. If you are interested in industry, it is necessary to understand how to work collaboratively.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Minority students have so much to contribute to the biomedical sciences yet face important barriers. These barriers are varied, but often include barriers to access and barriers to inclusivity. Access barriers can include challenges to find concordant mentors or sponsors who can help candidates to grow their careers and make connections that will facilitate skill-building and job searches. Inclusivity barriers can include challenges to be heard and seen in environments where the individual's identity attributes are not represented well in their environment.
Other Interests: Running, mountain biking, hiking

JONATHAN I. MATSUI
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Birthplace: Eugene, Oregon
Degrees: BS (zoology) – University of Washington, Seattle; PhD (neurosciences) – Washington University in St. Louis
Professional Fields of Interest: Faculty affairs and faculty development, higher education administration, developmental neurobiology
Future Developments in Field: Through studying developmental neurobiology, exciting discoveries will improve health and provide new treatments for illnesses.
Qualities Needed for Success: Curiosity, a willingness to ask questions and say "I don't know but I will look into that and follow up", perseverance, and the ability to self-reflect when encountering problems.
Personal Mentors: I have had incredible mentors throughout my career. One mentor may not fill all of your needs. Look for multiple mentors who can help you develop and grow, inspire you to push forward, and point you in the right direction.
Best Advice ever Given: If something doesn't go well, take a step back, reassess, and try to find another way forward.

Change in Choice of Career: Before college and as an undergraduate, I thought that I would be a medical doctor. I got involved with research which was incredibly exciting, and it gave me the opportunity to discover things that no one else had previously observed. Then, as a researcher, I was given a number of administrative roles and eventually transitioned to administration full-time.
Best Career Experience: One day I received a note from a former trainee expressing their thanks for my being their mentor years before. I was pleased to know that I could have a positive influence on someone.
Worst Career Experience: When an experiment doesn't work (and many won't), I have needed to review the data and the variables to determine the necessary next steps.
Dealing with Discouragement: I have a strong network of colleagues, friends and family members to support me.
Advice to Students Thinking about Biomedical Careers: Think broadly. Something you may not necessarily have thought you were interested in could open up opportunities. Find something you are passionate about.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: There are many opportunities that students may not be aware of, especially if they are first-generation students. Be on the lookout for opportunities, utilize whatever resources are available, and talk to as many people in the field as possible.
Other Interests: Renovating a farmhouse built in the 1880's with my spouse and restoring the garden around the home.
Additional Comments: Be invested in your "community" however you define that. You can gain opportunities by collaborating with others.

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Former BSCP Student

Birthplace: San Fernando, Trinidad, West Indies
Degrees: BSc (human sciences with neuroscience), MSc (neurological sciences) and PhD (neurobiology) – University College, London, UK
Professional Fields of Interest: Central nervous system (CNS) research and development (R&D)**,** pharmacovigilance, professional career development, and career and corporate coaching
Future Developments in Field: For CNS R&D scientifically, translational medicine, optogenetics, imaging, genomics, immunology, information technology and "big data," including artificial intelligence and nano-technology, have tremendously influenced and will continue to have a significant impact on the field of basic and clinical neuroscience. It would be wise for upcoming scientists to acquire skills and knowledge in these areas and apply them to the relevant areas of interest to themselves in pursuit of their career goals.
Qualities Needed for Success: Determining what you are passionate about and what contributions you wish to make, purposeful and strategic logical thinking, willingness to learn from experts and students, dedication, resilience, excellent writing skills, oral presentation skills, financial management, leadership and management skills.
Personal Mentors: I have had and continue to have many mentors and a few advocates (rare individuals willing to "promote" you). Some of these persons do not know that they are my mentors. Mentors to me are persons whom I admire for some specific quality, trait, or position that I see they have achieved in their life. I typically try to contact them and learn from them. For me, mentoring is very specific, so I have many mentors (professional and personal) from whom I seek advice and try to learn the secret of their successes by asking questions and through personal observation. Recently and more importantly, I have discovered that having a coach is critical to achieving personal and professional success and at this stage of my life I currently have two coaches, one in each area.
Best Advice ever Given: Put God first in your life.
Change in Choice of Career: After nine years in academia, I changed my full-time employment towards pursuing drug discovery through research in the pharmaceutical industry. Five years later, after some soul searching and prayer, I transitioned from drug discovery to drug development. Another five years later, a further opportunity was offered to help build a new research and development unit with focused attention on external innovation. Over the past six years, I have had four different roles within the same company. Each role has been different and with its own challenges, affording me a period of growth and development. Each decision was important and required prayer and reflection. This constant changing may seem erratic to some, but each situation was a critical time of introspection and sense-making which involved prayer and interaction with many personal and professional contacts. I have come to realize that the only constant in the world today is that "*Things*

will change." The only question that remains is the rate of change and one's capacity to lead it rather than struggle along and be forced to move by it.

Best Career Experience: Leading a team of professionals focused on central nervous system drug development was exhilarating and helped me to realize, in part, my ultimate career goal. Prior to this experience, moving to London, England to pursue my university education was another career best experience. It not only meant that I was trained by some great minds in the field of neuroscience such as Professors John Z. Young, Bernard Katz, Semir Zeki, Patrick D. Wall, and Geoffrey Burnstock to name a few, but also exposed me to life in the United Kingdom and in Europe which in itself was a tremendous educational and life experience. In 2017, I changed to something completely different, i.e., the world of pharmacovigilance, focusing on patient safety, and it has the potential to become my best career experience yet. Currently, as I think about the future, I am preparing for yet another career transition; ask me about it.

Worst Career Experience: I had a challenging period working in a field that was not of major interest to me, but I derived some benefit from this experience; so thankfully, I have had no "worst career experience" thus far. You can learn from every experience you have, especially if you classify it as a "failure" or "worst" experience. No pain, no gain. Learn from the experience and pivot.

Dealing with Discouragement: I lick my wounds for a few minutes, hours (or days, depending on the scale of the disappointment), and then I pray to God for strength, wisdom, knowledge, and insight. I get up and get back to work, taking a positive outlook, and learning from the experience.

Advice to Students Thinking about Biomedical Careers: First you need to know who you are and what it is that you wish to do in your life. What do you want to contribute? This clarity and subsequent focus helps in making career decisions. Once you get your degree(s), combine your training and expertise with your natural talent and find a career path that is best suited to you and not necessarily the career path that most people pursue, e.g., academia, industry, government. Think out of the box with regard to your career development and focus on what you want to accomplish in your life. The world is changing rapidly and opportunities abound. Some helpful books include "Alternative Careers in Science" by Cynthia Robbins-Roth, "How to Succeed in Academics" by Linda L. McCabe and Edward R.B. McCabe, and "Career Renewal" by Stephan Rosen and Celia Paul.

Issues Facing Minority Students Pursuing Careers in Biomedical Science: There is an incorrect notion that institutions want minorities but they cannot be found, and when they are found they are not as competitive. We need to overcome this stereotypical and grossly incorrect thinking by excelling and being visible. Students need to join minority and majority groups and associations, actively participate in them, and use them to help each other and themselves in the process. There is too much negative thinking and apathy out there amongst non-minority and minority populations as well. It is time for minority students and professionals to show the world that the perceptions about our abilities are wrong. We can only do this by ourselves and we need to stop looking around for help. Do not settle for minority roles and positions. Look beyond those to the major roles and positions and work towards accomplishing those goals. Work, pray, focus, achieve and succeed!

Other Interests: Anything to do with my family, coaching, reading (particularly anything to grow in my Catholic faith and leadership), traveling to new places and meeting new people

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Instructor in Pediatrics - Harvard Medical School
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Birthplace: Brooklyn, New York

Degrees: AB (human biology) – Stanford University; MD – Harvard Medical School

Professional Fields of Interest: Pediatrics, neonatology, policy, and administration

Future Developments in Field: Increasing knowledge and understanding of the pathophysiology of development will lead to improved management techniques and survival of neonates. With these tools, we hope to have decreased morbidity and increased survival with less long-term injury. Physicians in all specialties will need to take an active role in shaping health care policy in order to improve health care in this country.

Qualities Needed for Success: Determination, perseverance, networking, and mentoring. In addition, one must be willing to reassess one's direction and make adjustments to achieve his/her goals.

Personal Mentors: My first and greatest mentor was my mother. She gave me core values, instilled in me pride in who I was and where I came from, and taught me that there were limitless possibilities of what I could achieve. Because of her, I believed that anything was possible. In addition, there have been several people who have guided my path along the

way. One in particular was a laboratory mentor who showed me the ropes and directed me by asking the hard questions that led to pivotal changes in my career's direction.
Best Advice ever Given: Decide in your own mind what is important to you, not what others think is best, and then do your best to accomplish that goal.
Change in Choice of Career: I love children and science. In neonatology, there is an excitement and gratification from helping a newborn during a critical phase of life that will have long-term effects. This is why I have always enjoyed clinical medicine. However, in my career as a physician I have had different roles that have changed with time and expanding interests. I have had a basic science focus, a clinical and administrative focus, and more recently, I have incorporated issues of policy. As I have progressed in my career, I have taken on more leadership and administrative roles with somewhat less clinical activity.
Best Career Experience: When I was a resident, I took care of a very premature baby. He had almost all of the problems a premature baby could have. The family needed a lot of support. I was able to help them through this difficult time and we became friends. I have seen this baby develop, and become a healthy and successful person. He is now a grown adult.
Dealing with Discouragement: I talk with people in my support system, pray, and systematically examine the problem. There are ways to make creative solutions. Sometimes I have to think outside the box but, most importantly, I keep trying and I don't give up.
Advice to Students Thinking about Biomedical Careers: Biomedical careers are expanding and there is definitely a role for you. Choose a career where you find joy in what you do despite all the potential ups and downs. Find mentors to help guide you along the path to where you want to be.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: There can be additional hurdles because of preconceived notions about race. Networking and mentoring are going to be important to help you over the hurdles and through the maze. Remember, mentors come in all colors. When you get discouraged (and we all do from time to time), don't give up. Speak with someone with similar experiences who can help to give you that extra push to keep on moving forward.
Other Interests: My children, music, travel, cooking, sewing, and entertaining

JASMINE A. McDONALD
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Mailman School of Public Health, Columbia University Irving Medical Center (CUIMC)
Co-Director, Continuing Umbrella of Research Experience (CURE)
Assistant Director, Cancer Research, Training, and Education Center (CRTEC), CUIMC
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Former BSCP Student and 2007 Hope Scholarship Recipient

Birthplace: Tuskegee, Alabama
Degrees: BS (biochemistry and molecular biology) – University of Maryland Baltimore County (UMBC); PhD (biological sciences in public health) – Harvard University
Professional Fields of Interest: Breast cancer risk reduction, molecular epidemiology
Future Developments in Field: Recent trends suggest a convergence in breast cancer incidence rates in black and white women due to the stability in incidence trends in white women compared to the steady annual increase in black women (0.3% per year). These changing incidence patterns over a short time period cannot be attributed to changing genetic factors. At the same time, there has been an increase in invasive breast cancer in women under age 40 years. Therefore, the field has begun to look at behaviors (e.g., breastfeeding) and environmental exposures (e.g., personal care products) that differ by race and the association with breast cancer. However, most importantly is the examination of these exposures during sensitive and critical windows of breast development when there are dramatic structural and functional changes in the breast tissue (e.g., *in utero*, puberty, pregnancy, postpartum).
Qualities Needed for Success: Grit, flexibility, confidence, and a mentor
Personal Mentors: A mentor should not be everything in one person. Find an academic mentor, a personal life mentor, and at least one peer mentor.
Best Advice ever Given: My father said, "Don't be a chump and take the easy way out."
Change in Choice of Career: My scientific foundation, as attained through my undergraduate and doctoral training, is within the basic sciences with a focus in infectious diseases. For my postdoctoral studies, I pursued training in population sciences so that my laboratory research could have population-level applications incorporating my passion for the immune system and inflammation.
Best Career Experience: My postdoctoral fellowships at the University of Pennsylvania and Columbia University, where I was introduced to population health research. These experiences renewed my interest in pursuing an academic career. Moreover, these experiences were enriched by my active involvement in community-based participatory research and

working within a multidisciplinary research team.
Worst Career Experience: The worst part of academia is that it can be a shock to your confidence on a regular basis. This is why you need mentors and a strong peer support team. Your papers are constantly being rejected and your grants not funded – these negative experiences happen all of the time.
Dealing with Discouragement: I turn to my peer mentors to vent, I turn to family and friends for encouragement, I turn to my son to force me to see the bigger picture, and I turn to my pet hedgehog for patience. Lastly, when things are about to hit a peak, I dance it out – at home or at work.
Advice to Students Thinking about Biomedical Careers: Be versatile and willing to take the solution of a research problem where it needs to go. Don't be stuck in supplying solutions based only on what you know and your area of expertise. You have to be willing to learn new areas and/or work with other experts to really make a public health difference.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Minority students never forget that they're the minority. Expectations are higher. They may often feel a little exploited and expected to 'represent' minorities as a whole. However, minorities have to understand that the institution needs them just as much as they need the institution. I encourage minority students to see what the institution can do for them within their career trajectory. In addition, minority students may lack biomedical mentors that can relate or sympathize with issues they face as a minority. I therefore encourage students to think more broadly about 'mentorship.' Consider peers or those outside of biomedicine to mentor on issues facing being a minority in academia.
Additional Interests: Dancing anywhere at any time, family time, and gardening

GEOFFREY McDONOUGH
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Birthplace: Toronto, Canada
Degrees: BA (philosophy), BS (biology) – University of North Carolina Chapel Hill; MD – Harvard Medical School
Professional Fields of Interest: Leadership and development, non-viral gene therapy, rare diseases, retinal disease, vaccine development
Future Developments in Field: We are headed into revolutionary times; with the development of more DNA- and RNA-type therapies, we are increasing the types of diseases we can treat and the number of people we can treat.
Qualities Needed for Success: A strong sense of curiosity, an ability to learn, a desire to achieve mastery in a specific area, an openness to pursue new opportunities in science.
Personal Mentors: A mentor should be a person of high integrity who has an interest in you and your future. It is best if the mentor has life experiences and expertize in the areas you are interested in.
Best Advice ever Given: Take up less space; focus on creating space for other people to be successful.
Change in Choice of Career: I started as a paramedic, then became a physician. I moved from there to biotech, medical affairs, corporate development and global business. I worked in Europe for a time as CEO of a global corporation, then moved back to the states, and ultimately my current job.
Best Career Experience: The different stages of my career have all been challenging and fun. Choosing one best is like choosing a favorite child, hard to do. Knowing the thrill of creativity, being on the front edge of what is known and what can be done, and applying that to patients in need, have all been great.
Worst Career Experience: Encountering a manufacturing challenge which resulted in a drug shortage for patients.
Dealing with Discouragement: I focus on the big picture. Even though I may be in the wavy part of the ocean, I keep my eye on the horizon.
Advice to Students Thinking about Biomedical Careers: Meet people so that you can understand how broad the life sciences and biotech industry is. There are hundreds of different tracts you can take. Once you start, there are many places to go.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Over the last twenty years of my career there has been a growing understanding that a diversity of voices is better for the field, that collaboration inspires innovations, and an awareness that change needs to occur. Now is the best time to be entering the biotech field. Don't be afraid to find your voice and share your intelligence.
Other Interests: Spending time with my family, cooking, traveling, cycling, reading, watching movies
Additional Comments: The field is short on labor. We really need energetic, young, talent that brings the perspective of a new generation.

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Armed Forces Health Surveillance Division
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Former BSCP Student and 2004 Hope Scholarship Recipient

Birthplace: Washington, District of Columbia
Degrees: BS (chemistry) – University of Maryland Baltimore County; PhD (health sciences and technology) – Massachusetts Institute of Technology; MPH (epidemiology) – University of North Carolina at Chapel Hill
Professional Fields of Interest: Epidemiology and public health
Future Developments in Field: There will be major changes in the application of information technology tools to do what we already do more quickly and efficiently.
Qualities Needed for Success: Self-motivation, critical thinking skills, a good work ethic, being persistent yet patient
Personal Mentors: A good mentor should guide you, provide help when needed, provide opportunities for you to gain or enhance your skills and knowledge, and be supportive as you pursue your aspirations.
Best Advice ever Given: My PhD advisor taught me that presenting research does not simply mean presenting data, but telling a story with your data.
Change in Choice of Career: The first part of my career was focused on training to be a scientist and engaging in research on cancer. After receiving my doctoral degree, I shifted to public health, which I felt was a better fit in terms of what I could envision myself doing long term. Someone I went to college with exposed me to epidemiology, and I felt it was a good match between my science background and wanting to do applied work.
Best Career Experience: My most fulfilling career experience was when I was an Epidemic Intelligence Service Officer working for the Centers for Disease Control and Prevention. This program gave me the opportunity to work in a field I had never worked in before and the freedom and independence to learn. I really enjoyed being involved in so many different types of projects.
Worst Career Experience: It was difficult to switch careers from scientific research to public health. I had to start from scratch in terms of education and work experience.
Dealing with Discouragement: Talking with other people really helps. It's amazing how many people have similar experiences to yours and it helps to realize you are not alone in your struggles.
Advice to Students Thinking about Biomedical Careers: Whether or not you have attained your dream job, always complete what you're doing with excellence. You might not be in an ideal position, but you can always learn something from your work.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: One challenge is that many minority students don't have someone they feel comfortable going to for support or advice as they encounter difficulties while pursuing their studies.
Other Interests: I love to travel, watch movies, and engage in opportunities that allow me to practice my Spanish skills.

CHARLOTTE M. McKEE
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Birthplace: Boston, Massachusetts
Degrees: BA (history and science) – Harvard College; MA (history) – Columbia University; MD –Columbia College of Physicians and Surgeons
Professional Fields of Interest: Clinical research and drug development, with a focus on respiratory, inflammatory, and rare diseases; lung transplantation, cystic fibrosis, translational research
Future Developments in Field: It has been so exciting to witness the explosion of novel technologies being used to make progress during this recent pandemic, and the ability to apply science for human benefit. It makes me even more excited and optimistic for the future of drug development. At the same time, future trends in healthcare financing and delivery mean it will be increasingly important for new medicines to demonstrate significant impact on disease to be successful. I'm confident that good science will continue to be, translated into real, meaningful improvements in people's lives.
Qualities Needed for Success: Curiosity, willingness to work hard, passion for the path you choose, open-mindedness, and an ability to work well with others. Luck also helps a lot.

Personal Mentors: Mentors should be good listeners and have relevant experience, but equally important is a commitment to the mentee's career and to the actual work that mentoring involves.
Best Advice ever Given: Whatever you decide to do, commit to it, own it, and do it well.
Change in Choice of Career: My career as a physician has had many unexpected twists and turns – reflecting back, I believe my openness to change has been a key reason my career has been successful and rewarding. I started out as an academic pulmonary clinician/researcher at Brigham and Women's Hospital, focusing on lung transplantation and translational research. I was introduced to the world of private industry and biotechnology through a random recruiting email, which eventually led to my leaving BWH full time and joining Wyeth's clinical translational research group. From there I moved to smaller biotech companies, where I have remained ever since: first at a very small company called Tolerx, then at Infinity, then Vertex, and now as Chief Medical Officer of a biotech start-up in "stealth mode". I think this trajectory points out the tremendous opportunities available in clinical research, if you keep your eyes and mind open, and are willing to learn. When I finished my fellowship training and began practicing academic medicine I would have never imagined that this would be my career path – but I would not trade it for anything.
Best Career Experience: My best career experience so far was being part of the process bringing CFTR modulators to people with cystic fibrosis at Vertex – these are medicines that treat the underlying cause of this lethal genetic disease. Development of these medicines involved a deep collaboration among industry, academia/clinicians, and patient organizations, and I am personally so proud to have been a part of this leading Vertex's CF Clinical Development organization. The things I love about drug development are the focus on science, the promise of helping patients, and the ability to collaborate with highly-functioning, motivated, teams of people working towards the same goal. I hope my best experiences are still to come!
Worst Career Experience: The most painful experience was when the small biotechnology company where I spent six years (Tolerx) failed and went out of business. It was very hard because I was deeply invested in and committed to the company and its mission. Ironically, this experience led me to new and different career opportunities which I would not have otherwise considered, thereby allowing me to expand my career in unexpected ways. I can attest to the cliché that for every door that closes another opens, difficult as it may be.
Dealing with Discouragement: I try to step back and get the situation into perspective. I often turn to coworkers and, of course my family, for advice or support. Finally, no matter how tough things get, I try to find time to exercise –it is an important tool for stress relief for me and helps me work through difficult or discouraging situations.
Advice to Students Thinking about Biomedical Careers: Find an area that you are passionate about, learn as much as you can about it, and be the best you can be at it. Even if you ultimately decide to do something different, excellence in any field will serve you well. Medicine and science are difficult fields, but there are many different paths within them and they can be incredibly rewarding if you love what you're doing. So engage deeply but keep an open mind and a willingness to consider different things - you may be surprised about what you love.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: I imagine a big hurdle is a lack of role models – people with similar backgrounds who look the same. Despite that, there are many, many of us fiercely dedicated to minority students' success. Students do have to search out mentors to find the type of support they need – it may take speaking with a lot of people and may involve getting bits of help from many different sources, but I believe it's well worth the time and effort.
Other Interests I spend time with my family as often as I can, including our two grown sons who were home with us during the pandemic but are now in Philadelphia and San Francisco. My husband and I also love to hike, bike, and spend time on a lake in New Hampshire. I also read A LOT.

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Degrees: MD – Instituto Tecnológico y de Estudios Superiores de Monterrey, Mexico; MPH (public health) – Harvard T.H. Chan School of Public Health
Professional Fields of Interest: Neurology, health services research, community health, equity, justice, diversity, inclusion, access to healthcare, telehealth, STEM education, workforce diversity
Future Developments in Field: Assure equitable access to health and quality healthcare through innovations including telemedicine.

Qualities Needed for Success: You must be passionate about today and about what is ahead. To be successful, it is important to work hard while having a growth mentality.
Personal Mentors: Mentorship is a two-way relationship. Respect goes both ways, and there are some very well-defined responsibilities on both sides. Mentors should be people you trust and are comfortable enough with to share anything. True mentors push you forward and connect you with the right people. True mentors offer you honesty, grace, empathy, compassion, trust, vulnerability.
Best Advice ever Given: In life: "Persevere, never give up" (my dad) and "Be patient, things will sort themselves out" (my mom). Academically: "You should apply to medical school" (my high school anatomy teacher).
Change in Choice of Career: When I was a child, I wanted to be a teacher or a lawyer mainly because I wanted to help people. I completed an aptitude test and it pointed me to medicine. From there I decided to shadow someone in the field and my interest was sparked.
Best Career Experience: Truly getting to know people is the best part of my career. I care for patients from the time I meet them through the rest of their lives. I keep a small box of notes and mementoes; I think of them as family.
Worst Career Experience: At work: Coping with patients who are growing sicker or dying. Academically: It's always hard to strike a balance where both your personal life and your work life are ok.
Dealing with Discouragement: I take as much vacation time as I can. Spending time with family is very important to me. This helps me stop everything work-related and recharge my batteries. Just going away for the weekend with my family can put things in a new perspective.
Advice to Students Thinking about Biomedical Careers: Perseverance is the key. Medicine is not a 100-meter race, it's a marathon. Understand that there will be many failures; it can often feel like you are taking two steps forward and one step back. Knowing this will help you build healthy expectations as you're going through experiences as a student.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: It may be that while we are pursuing academic dreams, we have family responsibilities that take extra effort. In some circumstances, students may be financially responsible for their families. Hopefully, barriers will continue disappearing in our society, but it is important to be aware of them and to seek out the right support systems. Students can stay on track by looking forward and having a "glass half full" mentality.
Other Interests: Traveling, cooking, eating, dancing, doing jigsaw puzzles, and spending time with my two daughters, husband, friends, and our extended family

ERIBERTO MICHEL

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Birthplace: Walla Walla, Washington
Degrees: BS (biology) – University of Washington; MD – University of Washington School of Medicine
Professional Fields of Interest: Adult cardiac surgery, thoracic organ transplantation, heart and lung transplants
Future Developments in Field: The ways in which we will use innovative technologies to help people with heart failure, increase the transplant donor pool, and deliver transplantations
Qualities Needed for Success: Self-reflection, doing something that makes you happy, hard-working, willing to think outside the box to solve difficult medical problems, attention to detail
Personal Mentors: I have had some great mentors throughout my educational pathway. In particular, I had a pediatric mentor who was willing to help me advance my career, even after I decided not to pursue pediatrics. Good mentors will help you learn specific skills needed for your career, be your champion at work, support you during the hard times both academically and personally, and help open up doors. Most importantly, a mentor should be invested in your overall happiness and help to facilitate ways for you to pursue what makes you happy.
Best Advice ever Given: If you do what you love, and are passionate about what you are doing, things will come.
Change in Choice of Career: I didn't decide to pursue medicine until the end of college. During medical school, I thought I would become a pediatrician but then I had some clinical experiences in surgery which made me decide to pursue that route instead. I relied on my mentors from pediatrics to help me navigate my way into my new path in surgery.
Best Career Experience: My father was a Mexican immigrant who had genetic heart problems, but never had access to good health care. Being in a place where I can help people like my father get the treatment they need, has been very fulfilling.
Worst Career Experience: Losing patients, or seeing patients have bad outcomes, due to social barriers to equitable health care or other systemic problems outside of their control.
Dealing with Discouragement: I rely on my wife, family and mentors to ground me and remind me that the trajectory of

medicine is a long one. There is so much progress to be made professionally, that it is important to keep up the good fight.
Advice to Students Thinking about Biomedical Careers: Look broadly and find your passion. The field is so big and there are so many options, that it should be possible to find a way to channel your passion.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Lack of role models, someone who can show you how to get from A to B, and explain the nuts and bolts of pursuing a career in medicine. Without someone to serve as an example, it can be challenging to map out a path towards a medical career.
Other Interests: I spend a lot of time watching Disney movies with my two-year-old daughter. I also love playing and watching sports, spending time with family and friends, and doing volunteer work when possible.
Additional Comments: The field of biomedical sciences is so broad, that it will surely allow you to find a way to follow your passion in the service of others. If you can find what you are passionate about, you will have a successful and fulfilling career.

MONIKA MITRA
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Degrees: BS (geography) – Loreto College, Kolkata, India; MSc (geography and regional planning) – University of Calcutta, Kolkata, India; MA, PhD (geography) – Boston University
Professional Fields of Interest: Disability and public health
Future Developments in Field: The movement to telehealth resulting from the COVID epidemic has proven to be beneficial. To ensure the sustainability of telehealth, the technology should be made accessible and match the needs of people with disabilities.
Qualities Needed for Success: Being passionate about what you do and believing in yourself.
Personal Mentors: I have had many mentors. The mentors whose guidance I most appreciated were those who believed in me.
Best Advice ever Given: Coming from a country and culture in which humility, especially in women, was emphasized, I was encouraged to learn to be confident, speak up about my strengths, and not talk about what I can't do but what I can do.
Change in Choice of Career: Moving from public health practice to academia.
Best Career Experience: My career right now at Brandeis University.
Worst Career Experience: Being uncertain of my future when I moved to the US to start my doctorate.
Dealing with Discouragement: Time is the best way to deal with discouragement – giving myself distance from the discouragement, time to think it through, and getting perspective from mentors
Advice to Students Thinking about Biomedical Careers: Be passionate, believe in yourself, and things will work out.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Barriers to entry, barriers to opportunity, a lack of mentoring and support. Minority students are pigeon-holed into a certain set of lower expectations. How you deal with these externalities is the driving force in whether you can succeed. You need to have strength and good mentorship to help overcome those barriers.
Other Interests: Cooking, yoga, reading
Additional Comments: Seek mentors in whatever stage of your career you are at.

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Birthplace: I was born in Kolkata, India but grew up in Kenya
Degrees: MD – University of Bristol, UK
Professional Fields of Interest: Nephrology, HIV, LGBTQ medicine
Future Developments in Field: The way we measure the percentage functionality of kidneys (GFR) is moving away from the historically raced-based manner in which that functionality has previously been measured.
Qualities Needed for Success: Motivation, curiosity, a hunger to learn, and a mind open to what you may discover along your journey. It is important to keep up to date on the literature in your field.

Personal Mentors: Melanie Hoenig has been an influential mentor. She worked with HIV patients and patients with kidney disease and inspired my career choices. A good mentor is someone who is willing to give you their time and understands you as an individual, not just as a projection of their vision of you. A good mentor helps you to widen your horizons, provides you with different perspectives, and is willing to help you imagine many different trajectories for your career path.
Best Advice ever Given: Early on give different projects a shot. Be open-minded.
Change in Choice of Career: I have always practiced nephrology, but I am now also involved with advocacy for sexual and gender minorities and in mentoring medical students who wish to be involved in advocacy.
Best Career Experience: I had the opportunity to represent the Commonwealth of Massachusetts in front of Congress, discuss health disparities, and help influence policy regarding underserved populations.
Worst Career Experience: Being told not to apply somewhere as I may have been perceived to be not good enough. It was soul crushing. I applied anyway and got in.
Dealing with Discouragement: Having a good support network and mentors with positive mindsets who believe in me, seeing the patients that I work with prosper and get healthy, and having a hobby to get my mind off of things – these all help to validate what I am doing, even on a very bad day.
Advice to Students Thinking about Biomedical Careers: You should have a clear intention about what you are doing and why you are doing it. You will only be of service if you really enjoy what you are doing.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: The system is trying to be more vocal about structural race-based inequity in the medical education system. However, speaking from the perspective of a foreign medical graduate and person of color, there is still a lot of stigma around being "not as well trained." We need to be open-minded and have more open dialogue about this issue
Other Interests: Hip-hop dance and free-style dance battles, teaching French, spending time with my dog
Additional Comments: Anything is possible if you really want it, as long as you work to the best of your ability without compromising your integrity.

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Birthplace: Washington, District of Columbia
Degrees: BS (occupational therapy), MEd (special education: curriculum and instruction) – Howard University; PhD (adult learning and human resource development) – Virginia Polytechnic Institute and State University (Virginia Tech)
Professional Fields of Interest: I am an occupational therapist with a focus on adult education in higher education, at-risk students and physical dysfunctions in rehabilitation.
Future Developments in Field: Advanced technology, particularly through robotics and biotechnology. My interest is primarily in adult rehabilitation. Technology today is more advanced than one could have ever imagined.
Qualities Needed for Success: In a helping profession a person must demonstrate a delicate balance between competence and caring, and embrace the concept of lifelong learning. Empathy, perseverance, a good work ethic, cultural sensitivity, and critical thinking are also important ingredients for success. Most of all, you must have a vision and believe in yourself.
Personal Mentors: I have had multiple professional mentors in my life who have taken a special interest in my professional aspirations and helped me accomplish goals. The best mentoring relationship is one where the mentor and mentee work collaboratively in a partnership.
Best Advice ever Given: Develop stick-to-it-ness and persevere despite adversity. When you fail, fail forward and you will experience great growth.
Change in Choice of Career: I always wanted to be an occupational therapist.
Best Career Experience: Becoming tenured, finishing my doctorate, and becoming Assistant Dean, all before the age 40; becoming a Fellow of the American Occupational Therapy Association (AOTA); founding the Master of Science in Occupational Therapy program and Doctor of Occupational Therapy program at Howard University.
Worst Career Experience: Being asked to demonstrate unethical behavior and compromise quality of care for a company's personal financial gains.
Dealing with Discouragement: Prayer, meditation, and calling on family for advice and encouragement
Advice to Students Thinking about Biomedical Careers: Have faith, believe in yourself, and be open to change, but don't let people discourage you. Make sure you have a vision. It is very important to position yourself around positive people who can provide you with the proper guidance. Remember to always give back.

Issues Facing Minority Students Pursuing Careers in Biomedical Science: These include academic under-preparedness, lack of access to programs, and difficulty finding good role models. Also, poor performance on standardized exams is often a challenge.
Other Interests: I love to jog early before the sun comes out and read motivational books.

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Birthplace: Dhamtari, India
Degrees: MBBS (MD equivalent) - Byramjee Jeejeebhoy Medical College, University of Pune, Pune, India; DPB (diploma in pathology and bacteriology) - College of Physicians and Surgeons, Mumbai, India; PhD (immunology) – University of Maryland, Baltimore
Professional Fields of Interest: Immunology (this is what brought me to the US), rheumatology, clinical immunology, basic and translational research, autoimmune and other immune-mediated diseases
Future Developments in Field: This is the ”golden age” of immunology. In the last decade there has been a lot happening with rapid speed. Immunology has been driving discoveries and drug development to help with cancer and autoimmune diseases. CAR T-cell therapy (where you take the patient’s own cells, modify them, and put them back so they can then kill the cancer cells); CRISPR – gene editing technology (genetic mutations can be edited and diseases potentially cured); the development of other therapies like interleukin (IL)-2 therapy for lupus; and harnessing the immune system to find different treatments for diseases.
Qualities Needed for Success: Being interested and excited in what you are doing – that will give you the drive and determination to push through. In research, there are a lot of challenges – often your hypotheses are wrong, or things don’t go the way you expected or hoped. The data will keep pushing you down. The hours are long and you have to work hard. You must be tenacious and stick with it. Mostly, you have to love what you do, and be excited to learn new things and by the joy of discovery.
Personal Mentors: A good mentor is going to help you regardless of whether it helps them. It is better if your mentor is in the same field as you. As a woman, it is good to have at least one mentor who is a woman. Having multiple mentors will serve you well as different mentors can help in different aspects of your career development. Also, think of students or postdocs in your research lab rotations as peer-mentors. It is a good idea to speak with the students who are ahead of you in their career and whose interests might be aligned with yours to get a good idea of possible career tracks.
Best Advice ever Given: Do good science and do good work; the rest will follow. Love what you do and have a good work ethic.
Change in Choice of Career: The biggest change for me was when I came to the US. Before that, as a physician, I was in the clinical world caring for patients. I was not exposed to much research at the time. I came here with a mind open to exploring a career in research, not knowing if I would like it. I struggled at first and was rethinking my decision. I pushed through though, and looked for help from peers and mentors until I was able to start enjoying the PhD program, and started feeling more comfortable using my prior knowledge and gaining new skills to help me in the research environment.
Best Career Experience: Two great experiences. First - in research, when our experiments work and when we’re able to publish our research in good scientific journals. Those moments are few and far between, so when they happen it is truly exciting. Second - by mentoring trainees at all different stages of their careers. My most rewarding mentoring experience has been mentoring high school students through Harvard Medical School’s Project Success Program. For many students, it is their first exposure to the academic medical/research field, and they’re excited by this experience and it opens their eyes to a new career path.
Worst Career Experience: As a graduate student in Baltimore, I had a mentor who was very hands on and gave me lots of scientific guidance in the lab. When I moved to Boston as a postdoc, my lab was not like that. It was more like a “sink or swim” kind of environment. I had to push myself out of my comfort zone to learn more, reach out to people for help, and figure things out on my own. Looking back though, that was a great way to become independent and resourceful. Although, my postdoc mentor was instrumental in my overall career development and still continues to be. Hence multiple mentors are very important, because a single mentor may not be able to provide you with all the guidance you need.
Dealing with Discouragement: Learn to handle disappointment by accepting it, and then putting it aside for a while to regroup. Dissociate your feelings from the rejection and negative comments. Take those negatives as a challenge and the feedback as tools to improve and move forward. Ask for help. Make sure you have the right mentors. Surround yourself with the right people. Remove negative influences from your life and bring more positive influences.

Advice to Students Thinking about Biomedical Careers: "Go for it." Learn as much as you can. Find opportunities through school and friends. Try to get exposure to professional medical and research environments. Talk to people in those fields, learn about their trajectories, their interests, how they became interested in their career path, and what they enjoy about it.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: I have learned that a lot of people in this field get their opportunities through connections (mostly through parents or friends of parents). Minority students don't necessarily have the same breadth of connections, and therefore don't get access to the same opportunities. It is important for minority students to use programs like BSCP, NESS and Project Success to help foster those connections.
Other Interests: Reading, cooking, arts and crafts, watching movies, spending time with family and friends, traveling to new places

SHARON MURET-WAGSTAFF

Professor of Surgery
Director, Immersive Simulation, Center for Surgical Anatomy & Technique
Emory University School of Medicine

Birthplace: Louisville, Kentucky
Degrees: MS (public health) – University of Minnesota; MPA (policy and management) – Harvard University; PhD (developmental psychology) – University of Minnesota
Professional Fields of Interest: Surgery, anesthesiology, simulation, patient safety and quality, organizational performance excellence
Future Developments in Field: This is a very exciting field right now. We use a state-of-the-art simulation center, including a mock operating room and electronically-controlled mannequins, to train medical students, physicians, and others. Students gain individual and teamwork skills safely before applying skills with a patient in the real world. Focus on patient-reported outcomes, use of minimally-invasive surgery, and robotic-assisted surgery are some of the areas of innovation in our field.
Qualities Needed for Success: You must be smart, creative, collaborative, hard-working, and highly focused on the quality of the work since this is an extremely high-risk area.
Personal Mentors: I had, and still do have, mentors. You never outgrow a need to learn. Mentors have a personal interest in you and your career. One mentor is rarely enough; you need to reach out to people with various areas of expertise.
Best Advice ever Given: Be courageous and go for it. Be persistent and learn from every experience.
Change in Choice of Career: I find it helpful to strive toward a specific goal while always staying open to new possibilities. My ultimate goal always is to find ways to have an impact on ever-better outcomes for patients.
Best Career Experience: Now. It will probably be even better tomorrow.
Worst Career Experience: There are some experiences that are not exactly the fit you might have hoped. The important thing is to recognize this early, learn from it, and look for better opportunities to be the best you can be.
Dealing with Discouragement: When I feel discouraged or puzzled, I talk to my mentors and ask them to help me figure it out. Never worry alone.
Advice to Students Thinking about Biomedical Careers: Set your sights high.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: If you look at the demographics, we need more diversity in every field of medicine. You will be faced with multiple options and hard choices, and must think carefully about the environment and pathways that are best for you.
Other Interests: I love working out, spending time with friends and family, reading, and exploring new ideas.
Other Comments: Dream big, work hard, and have fun.

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Birthplace: Birmingham, Alabama
Degrees: BA (biology) and MS (microbiology) – Alabama State University; PhD (developmental biology) – The Johns Hopkins University
Professional Fields of Interest: My primary interests are science education and science education policy as it relates to training a diverse community of future scientists and physicians. My secondary professional interests are scientific training

and developmental biology. Specifically, I am interested in chromatin remodeling and the role this level of gene regulation plays in cancer and aging.

Future Developments in Field: The training of a diverse cadre of scientists may hold the key to the future success of our nation. The science community must become more diverse and inclusive as we create new technologies and develop treatments for illnesses that affect distinct populations. National attention to this issue will have a positive impact on what research is conducted and how results are interpreted and applied.

Qualities Needed for Success: Perseverance and resilience are key qualities for success in any endeavor. Successful students are creative, passionate and possess good critical thinking skills. Students must also write well and be receptive to complex math at an early age. Lastly, an ability to accept and act on critical feedback is a must.

Personal Mentors: Multiple mentors are crucial to professional success. I am reminded of the mentor I had when I began working at the NIH more than 30 years ago. He provided me with great insight over the years and still gives me good advice to this day. He is one of my many mentors who have provided me with different perspectives about specific career and personal issues.

Best Advice ever Given: My best advice came from my grandfather who grew up in rural Alabama at the turn of the 19th century. He graduated from high school and managed to not just provide for, but also educate, his six children. This was very significant for a black man during that time. He would often say, "Always reach further than you can see." He was an achiever with faith in possibilities. He made a gigantic impression on me. Today, I am still awed by what he managed to accomplish in such a harsh environment. It underscores what one can do with faith and potential.

Change in Choice of Career: In high school and in my early undergraduate years, I just knew I would become a professional athlete and my first undergraduate major was business/finance. I thought I would need that knowledge to effectively handle all the money I would earn as an athlete…*not.* Although sports scholarships paid for most of my college education, I sustained multiple injuries as a collegiate athlete and had to give up the idea of making a living as a professional. Fortunately, during my sophomore year, a friend introduced me to the chair of the biology department who challenged me to take a course in genetics. I immediately fell in love with the subject and the next semester changed my major to biology. I never looked back.

Best Career Experience: One of my most enlightening experiences occurred while I was a graduate student at Johns Hopkins University. Although studying science at Johns Hopkins was a tremendous opportunity for me, the learning environment there was not always nurturing. This experience reinforced a very valuable lesson about stepping up to challenges and expressing my will in difficult situations. Succeeding through that challenging time showed me that I could succeed in science, despite some obvious obstacles.

Worst Career Experience: This also occurred at Johns Hopkins University. I worked at the NIH for three years as a technician before I applied to graduate school and this rendered my study skills very rusty. As a result, during my first year in graduate school, I struggled with an advanced biochemistry course. When I went to the department chair for help, he suggested that I attend a local high school and take a chemistry course. I was very offended by his outlook, but took this as a challenge and used it as motivation to get the help I really needed to successfully complete the course. I successfully matriculated through this course and all of those that followed to earn my PhD degree.

Dealing with Discouragement: Sometimes discouragement can be used for motivation. Don't let a bad experience determine your outcome.

Advice to Students Thinking about Biomedical Careers: It is critical to find someone who is in the same career that you are seeking and conduct informational interviews. If you aspire to be a physician, pursue shadowing experiences to find out if this is really your calling. It is important that you are happy and successful. Therefore, your career endeavor must be one you are passionate about and will consider doing simply for the enlightenment. Most people find their calling in science because they also find searching for answers to interesting questions captivating and fun.

Issues Facing Minority Students Pursuing Careers in Biomedical Science: Students from underrepresented populations do not get enough exposure or opportunities for hands-on experiences at an early age. Nationally, students from underrepresented populations who initially pursue STEM degrees are about 40 percent less likely to complete them than their white and Asian-American counterparts. This is often a result of ill-preparation and lack of exposure, which is all too common at many of the primary and high schools that serve children of color. This poses a great challenge to overcoming the systemic problem of increasing diversity in these important fields of study.

Other Interests: I love being outdoors! This includes biking, hiking, camping and running with my wife and dog, Pepper. I also love the beach, along with a good medical thriller to read. I have four children and four grandchildren. Before the pandemic, I spent a lot of my "free" time with them. I really miss them and look forward to spending time with them again…in person!

DORKINA CARMELL MYRICK

Physician, Scientist, Policymaker

Former BSCP Student

Birthplace: Los Angeles, California
Degrees: BS (biology) – Prairie View A&M University; MD, PhD (biology/pathobiology) – Warren Alpert Medical School of Brown University; MPP (Master of Public Policy) – University of Oxford; JD - Boston University School of Law; LLM – Université Paris II Panthéon-Assas; LLM Candidate – University of Turin/World Intellectual Property Organization
Professional Fields of Interest: Legal issues at the intersection of medicine, research, innovation, ethics, and policy.
Future Developments in Field: Areas of ongoing and future development include: 1. Personalized medicine: disease therapy will continue to be tailored to the specific genetic composition and biology of the disease process in the individual, however questions linger regarding the accessibility of the technology. 2. Gene editing. as gene editing increases in prevalence, unresolved issues surrounding ethical concerns about its application must continue to be addressed. 3. The expansion of artificial intelligence in medicine will continue to shape the landscape of the practice of medicine through diagnostic application, drug discovery, and therapeutics. 4. Increased use of biometric identification will continue to exacerbate medical data privacy and data security concerns. 5. Medical and legal academia must rapidly adapt to globalization and changing demographics in a way that will influence the future of education.
Qualities Needed for Success: A curious mind and willingness to become a lifelong learner. You must continuously work hard and take risks. A positive attitude, tough spirit, and great mentors are all crucial elements of success.
Personal Mentors: I've had many mentors along my journey, and all of them have had similar qualities. They have all been genuinely interested in my success, pushing and encouraging me to establish and achieve my goals. Most importantly, they have always provided me with honest feedback, whether it was good or bad.
Best Advice ever Given: Be yourself!
Change in Choice of Career: I didn't always know I would end up doing legislative policy work. I became interested in legislative policy work during my time at the National Institutes of Health.
Best Career Experience: Working on Capitol Hill. The work allowed me to expand my horizons and make an impact on a broader scale. I believe that I was able to help more people by using my health and scientific background (working through the legislative process) than either practicing medicine or doing research, alone. Each day had unique challenges, and no day was ever the same
Worst Career Experience: "Worst" is a very difficult word for me. I have had many experiences - aspects of which have been both good and bad. However, I view all of these experiences in a positive light because I have learned from them all. Sometimes, the "worst" experience was actually the "best" because I learned the most from it.
Dealing with Discouragement: I turn to meditation, introspection, faith, and belief in a higher power.
Advice to Students Thinking about Biomedical Careers: Go for it! Don't be discouraged by others who say you can't do it. You can!
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Significant issues include inadequate mentorship and a dearth of information on careers in biomedical science. Bright minority students may also feel negative peer pressure and academic isolation that may prevent them from pursuing careers in the biomedical sciences. Lack of family support can be a significant obstacle for these students as well. In addition, the quality of their high school education may be suboptimal. As a result, minority students may not be well prepared for future college, graduate, and/or medical studies. These obstacles can be overcome with the help of good mentoring and by exposing these students to the possibilities of careers in the health and biomedical sciences at an early age.
Other Interests: Travel, reading, movies, painting, spending time with my family and friends

MARK NAMCHUK
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Birthplace: Edmonton, Alberta
Degrees: BS (chemistry) – University of Alberta; PhD (bioorganic chemistry) – The University of British Columbia
Professional Fields of Interest: Drug discovery and development, molecular design, small and large molecule, biochemistry, orphan disease, psychiatry and addiction, oncology, infectious diseases
Future Developments in Field: The pharmaceutical industry and biotechnology are being reshaped by pricing concerns. That will change how science makes its way out of the university and into industry, and the risks that scientists and companies will be willing to take. The broad implementation of human genetics in this process will place an emphasis on orphan disease, at the expense of major disease areas where underlying genetic factors in disease are less prominent in effective treatment.

Qualities Needed for Success: Scientists who are willing to take risks - to take a novel idea out of the ether and push it through. Interpersonal skills are also critical. You want to create a reputation of being a person who can be relied upon, someone who knows how to manage working groups, and is a joy to work with.

Personal Mentors: Mentoring is a two-way street. For a mentor, you want someone who has a teaching style that will fit how you want to learn. You also want someone who will teach you not just the specifics of the science, but also science ethics: how to work through complex problems and how to deal with failure. On the other side, a mentee has to make themselves "mentorable" or easy to be taught. If a mentor is going to pour time and effort into helping you advance your career, you will have to do the work to get there. I have been fortunate to have had phenomenal mentors throughout my career. During my PhD, my supervisor was like a "lab dad" to me, teaching me not only chemistry, but also how to think through problems and ethical concerns. In the course of my industrial career, my mentors have taught me about the way the business world thinks, how to analyze business and management problems, and other skills not taught in my scientific training.

Best Advice ever Given: 1. Early in my career when I was at Vertex, I felt the need to prove that I was the brightest person in the room. One of my mentors admonished me with this: "Everybody knows how smart you are. Knock it off and let me know how good you are to work with." It made a big impression on me. I realized that I was not aware that in my career at the time, a different skill set was important. I needed to show that I could work collectively with others, manage people, and drive a project. 2. My father advised me that, while it was okay if other people are smarter than me, I should not let other people outwork me. I should grab every opportunity that I have to overcome any deficiencies in my natural abilities, and try to be excellent in even trivial tasks.

Change in Choice of Career: Recently, I have had a major shift in my career path. After 24 years in biotech and managing groups as large as 450 people in a research-oriented environment, I moved into an academic position at Harvard, where I am teaching about the process of developing therapeutics, and helping others move really early ideas toward translation.

Best Career Experience: My best career experience was probably also my most challenging. I had been directly managing a small group of 13 people and was asked to oversee a program with over 200 people, none of whom directly reported to me. I quickly discovered that the skills I had for managing a small group were inadequate for the larger group that did not report to me. I also felt there was competition for my job and criticism of my work. I looked to my mentors to help me get through the project, and it ended up being a formative experience for me. I learned about leading through influence. The experience also reinforced for me how rewarding it can be to develop a new drug that can help people who had never been able to be helped before.

Worst Career Experience: My first job at a start-up company was my first experience as a manager. I couldn't get management to do what I wanted them to do. After moving on from that job and looking back in hindsight to how I handled it, I realized there was a lot I needed to learn about managing up to get things done. More generally, there have probably been over a hundred projects that I have worked on for years that ended up blowing up - that can be discouraging even though it is the nature of the field.

Dealing with Discouragement: I am a pretty positive person. I allow myself a day or two to grieve, but not more than that. The next day I figure out how to fix it and move on. As I have gained more experience, I have realized that usually the failures are not me but the situation. There may not have been anything I could have done to alter the course, so I try not to let failures diminish my self confidence in my skills and my abilities.

Advice to Students Thinking about Biomedical Careers: For anyone thinking of a career in science, try not to lose the joy of trying new and hard things, as risk taking can be very rewarding. For those of you thinking of working in industry, know that the science in industry can be just as good as in academia. You are not giving away your soul by working in a commercial environment. You will need to appreciate that you will be working at a fast pace, in a team setting, and need to have interpersonal skills. For those of you thinking of a career in management, first figure out how much you like to manage people and if you are a person people will want to work for. You will have to have the patience to listen to complaints, work through them, and understand that you will not always be able to accomplish what you set out to do at the beginning of the day because other people's problems need to be dealt with first.

Issues Facing Minority Students Pursuing Careers in Biomedical Science: Since I am not a minority, I have not experienced these hurdles first hand. As someone observing from the outside, I wonder whether we are creating an environment where someone can feel comfortable on a cultural and political level with the people with whom they are working, be uninhibited and free to be themselves, and therefore can perform at their best. I believe the balance is not there yet, and it can still be difficult for minorities in biomedical sciences to find the group of people with whom they feel comfortable.

Other Interests: I am an avid photographer. I love to hike, kayak, backpack, and spend time outdoors. My favorite thing to do is to get to a place where it is just me, the bears, and my camera. I am also a sports nut.

Additional Comments: In this moment, everything may appear to be really hard - especially in what is a very competitive field in Massachusetts. Remember that you will get through it as long as you have the driving force to push on, even if things don't initially work out. Not everyone is an early bloomer; lots of people struggle at first and make mistakes. Don't get discouraged. You will be okay.

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Birthplace: Cameroon, West Africa
Degrees: BA (sociology), BSN, EdD – Boston University; MS (nursing) – Northeastern University
Professional Fields of Interest: Education, community health, policy studies, administration
Future Development in Field: A shortage of nurses is a consistent problem. There is a need for more men and minorities in nursing, as well as training for nursing faculty. Recruitment should be focused in these areas in order to enable health care providers to meet the increased demands of patient care.
Qualities Needed for Success: Hard work, being a "people person" (someone who enjoys working with people), and commitment.
Personal Mentors: I've had mentors who have facilitated my need for professional growth by helping me to publish my work in peer-reviewed publications and to conduct research. They were good teachers. They provided pertinent feedback which enabled me to improve on my teaching and research.
Best Advice ever Given: The golden rule: treat everybody as you'd like to be treated. Also, you must enjoy what you do.
Best Career Experience: Nursing: I am able to make a difference in the lives of patients as well as students.
Worst Career Experience: When a patient for whom I provided care dies. It is difficult to deal with death, even when it is foreseeable. We, as health care providers, are hardly ever prepared to deal with death even when we feel we have provided the best possible care that we could under the circumstances.
Dealing with Discouragement: Seek advice from peers or friends.
Advice to Students Thinking about Biomedical Careers: The nursing profession is a rewarding career. It provides a personal sense of fulfillment.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Lack of financial support is always a hindrance. Without the funding, it is difficult to obtain an education. Particularly, if their extended family is dependent on them financially, they are unable to put themselves into the field. Most students today are adult learners and have other life-long commitments such as family, full-time jobs, or paying for a home. Thus, the choices they have to make can be very difficult as well as costly.
Other Interests: Playing soccer and listening to music
Additional Comments: This program is the best forum for students to have questions answered.

SHARI NETHERSOLE

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Degrees: BS – Yale University; MD – Harvard Medical School
Professional Fields of Interest: General pediatrics and community health
Future Developments in Field: As medicine has conquered many of the acute illnesses that have afflicted children, there is now a need to focus on chronic conditions in children. This includes a focus on prevention and education for a broad segment of the population. The challenges of childhood obesity, asthma, mental health disorders, and developmental and behavioral problems are prominent, and we will need to work with communities and policy makers to address this. It is also clear that most aspects of good health are determined by social and environmental factors rather than by health care service delivery. It is important to identify the roles of health care institutions in addressing those social determinants, and how to work across sectors to best support improved health outcomes for children and adults.
Qualities Needed for Success: Perseverance, especially when things aren't going the way you want them to; being proactive
Personal Mentors: My program directors made me aware of opportunities that would be beneficial to my career and served as sounding boards for my ideas.
Best Advice ever Given: Don't be afraid to be independent and be yourself, even if you want to follow a non-traditional path.
Change in Choice of Career: Your career path can change over time in ways that can't always be anticipated. Just make sure you enjoy what you are doing.
Dealing with Discouragement: I talk with my colleagues and try to get a pep talk. I also try to find a lesson learned.

Advice to Students Thinking about Biomedical Careers: Focus and work hard on understanding basic science concepts. Having a strong fundamental knowledge base is very important.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Try not to be intimidated or overwhelmed by being one of a few. Also, look for helpful mentors and understand that anyone can be a good mentor, even if they are of a different race, culture, or gender.
Other Interests: Reading and hiking

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Degrees: AD (industrial engineering), AD (nursing) – Delaware Technical & Community College; BS (nursing) – University of Arlington, Texas; MS (nursing informatics) – Walden University
Professional Fields of Interest: Nursing
Future Developments in Field: In nursing, the future is trending towards remote care. More ER follow-up visits are being done virtually and will likely continue, regardless of the state of Covid. With respect to the treatment of rare diseases, we are moving away from replacement therapy and treatments requiring weekly infusions to gene therapy.
Qualities Needed for Success: The most important quality, whether as a bedside nurse or otherwise, is empathy. You are asked to shoulder the problems of others on a daily basis. If you are getting into the field for the money, you will burn out quickly. The second most important quality is good communication skills. You must know how to talk to families in a non-intrusive way while at the same time being able to draw out the family's medical history.
Personal Mentors: I did not really have mentors while I was in nursing. Since I have switched to the pharmaceutical industry, I have had two or three mentors who have helped me in different areas and for different things. These mentors helped me to learn the rules and navigate the next stage of my career. Find mentors who will support you, give you of their time so that you can ask your questions, and share with you their experiences, including their failures, so that you can learn from them.
Best Advice ever Given: Be yourself; be authentic. Don't try to fit into a perceived idea of what you should be. This is especially true when dealing with the families of patients.
Change in Choice of Career: I went from a bedside nurse to the pharmaceutical industry. Being a bedside nurse, working with sick patients all the time, can take a lot out of you. I didn't want to be the kind of nurse who didn't care. I was studying for my bachelor's and master's degrees while doing the night shift so that I would be prepared to move on before I burned out. I now use the skills I learned as a nurse, and during the course of my education, to help me in my current career.
Best Career Experience: What I am doing right now. I see it as a calling, not a job. I am the face of the company for the families of patients with rare diseases. I am the beginning of their journey to getting treatment. I am able to form relationships with them, and support them through their diagnoses and their treatments.
Worst Career Experience: My first ER job. I was working in adult care, I looked very young, and the patients were not kind to me. I had a hard time reconciling the desire to help them and treat them, while not being treated well by them. When I transitioned to the pediatric ER it was better, as pediatric patients are much kinder.
Dealing with Discouragement: As I have grown in my job, I have learned not to take the way patients respond to me too personally. I better understand that each patient has many things going on in their lives, and if they don't follow my instructions or take their medications, it is not because they don't like or respect me. I try to put myself in their shoes and empathize with what they are going through, let them know I am there for them, and keep on supporting them.
Advice to Students Thinking about Biomedical Careers: Nursing is one of the best career paths. There are so many options in nursing, whether in medicine or in industry. Nursing is the basis for anything else you may want to be, and nurses are always needed. School can be a struggle – don't ever give up! Don't let your grades in school determine who you are going to be.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Most people will pursue careers that they see other people around them pursuing. If you don't see someone who looks like you or who comes from your background doing something, you are less likely to try it. I wanted to participate in this event so that students can see someone who started out with an associate's degree and worked to put themselves through school, moving on to get a masters degree and succeeding in the biomedical sciences field.
Other Interests: Baking, sewing, reading, traveling
Additional Comments: I wanted to be a part of this event so that I can help to encourage students that this career is possible for them, and that they can go as far as they want.

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Birthplace: U.S. Virgin Islands
Degrees: BS (chemistry) – Massachusetts Institute of Technology; PhD (molecular toxicology) – Massachusetts Institute of Technology; MD – Harvard Medical School
Professional Fields of Interest: Biological engineering, parasitology (malaria), synthetic biology
Future Developments in Field: Malaria vaccine, improved drug discovery
Qualities Needed for Success: Perseverance; internal motivation; willingness to challenge yourself and take calculated risks
Personal Mentors: Accessible/available, genuine interest, and investment in my success
Best Advice ever Given: Always keep an open mind but be true to your core interests and values.
Change in Choice of Career: Trained in chemical sciences and medicine, but now a professor in biological engineering/synthetic biology working in malaria parasite biology
Dealing with Discouragement: Staying positive and not "taking the experience personally"
Advice to Students Thinking about Biomedical Careers: Be passionate and excited about the path on which you are embarking.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Advice on and early exposure to career path options
Other Interests: Biking and cricket

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Birthplace: Detroit, Michigan
Degrees: BA (biological sciences), MD – University of Chicago
Professional Fields of Interest: Oncology, drug development, neuro-oncology
Future Developments in Field: Oncology is experiencing enormous progress in the development of treatments targeted towards individual patients, and in harnessing the immune system for the treatment of multiple types of cancer.
Qualities Needed for Success: Interest in science and the complexities of biology; compassion for the patient
Personal Mentors: The best mentors are those whom you can communicate honestly with, and who can help you make important career decisions. It is not necessary that they be in your particular field of interest. Mentors from different disciplines can provide helpful guidance and be an example of what you may wish to achieve.
Best Advice ever Given: It is a mistake to focus solely on the destination and not on the process. It is great to have five- and ten-year goals, but life happens while you are getting there. Be open to what is happening during the process.
Change in Choice of Career: I started working as a clinician within an academic setting. I took care of patients, did research, and taught medical students, residents, and fellows. I had worked with drug companies and the government to investigate new drugs, but did not feel empowered to be a prime mover in the process. I wanted to be able to pursue drug development from the industry side, help to move drug development along more directly, and impact patient care on a broader scale. About 15 years ago I moved into biotech where I believed I could more directly help move drug development forward.
Best Career Experience: There have been different highlights in different parts of my career, but the emotional touchstones are always the interaction with the patients.
Worst Career Experience: There are many highs and lows, as an oncologist and in drug development, but you have to accept that you will not always succeed and try to learn from every failure.
Dealing with Discouragement: I look to my colleagues and co-workers to help me deal with the tough days. I use my connections with other people to help me keep my perspective.
Advice to Students Thinking about Biomedical Careers: You will have to work hard and study hard to achieve your goals at a time in your life when many of your peers are doing other things and having fun. It is a fascinating field and there are many rewards, but initially it can be grueling. It is important for students to think seriously about their personal motivation for pursuing this career so that they can maintain perspective as they navigate the challenges.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: I had to overcome biases facing females during a time when there were not many females in my field. As a minority, you are underrepresented and often feel as though you have to prove your contribution and your value more than others.

Other Interests: Kayaking, scuba diving
Additional Comments: The most important thing in your career path is the personal connections you make along the way.

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Birthplace: Washington, DC
Degrees: MD – University of Ilorin, Nigeria; MPH – Benedictine University, Illinois
Professional Fields of Interest: Drug safety, clinical trials
Future Developments in Field: As part of the trend towards personalized medicine and preventative medicine, there will be an increased focus on adverse events of manufactured medicinal drugs resulting in more signals observed and more data generated. A platform to analyze the large amounts of additional data will be needed. The field will be expanding into other specialties and a lot more hands on deck will be needed to identify, capture, analyze and interpret the data.
Qualities Needed for Success: Resilience, open mindedness and inquisitiveness. You always want to ask one more question. There is very little room for mistakes when looking at the safety of products being produced, so being detail oriented is essential.
Personal Mentors: In looking for a mentor, first, look for someone who will be honest and frank with you and let you know your flaws. Second, find someone who will not just be a mentor, but a coach; who tells you what you need to do to change, and then enables you to do it. Third, your mentor should have a good network and connect you with other people who can get you to where you want to go.
Best Advice ever Given: My father gave me my first best piece of advice: never believe that you can't do anything, no matter what other people say. The second best piece of advice is a quote from Voltaire: "No problem can withstand the assault of sustained thinking."
Change in Choice of Career: I used to do clinical work. A few years ago one of my mentors spoke about the pharmaceutical industry with such passion, that it made me want to learn more. Eventually, I switched to industry.
Best Career Experience: The breadth and scope of the work that I am doing right now stimulates and challenges me every day.
Worst Career Experience: Not being credited with the work that I was doing.
Dealing with Discouragement: I look to the bible and certain verses in the bible that provide encouragement. Coming home to my three beautiful daughters always helps as well.
Advice to Students Thinking about Biomedical Careers: Look at every opportunity, don't limit yourself, be open minded. Your only failure is in not trying.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Minority students have to work twice as hard and put in extra hours, just to prove themselves to others and show they can do the work. Things will usually not come to you easily – you must speak up and ask to be given the opportunities.
Other Interests: Watching movies, reading, playing ping pong, traveling, volunteering in my church.
Additional Comments: If you have a passion, never let anyone discourage you from pursuing that passion. If someone's advice doesn't line up with your dream, try to follow your dream

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Birthplace: Sao Paulo, Brazil
Degrees: MD – University of Sao Paulo; MBA – Escola de Administração de São Paulo, Fundação Getúlio Vargas, Brazil; PhD (medical information sciences and computer science) – Stanford University
Professional Fields of Interest: Biomedical informatics, computer science, and biostatistics
Future Development in Field: Both medical informatics and bioinformatics are relatively new fields and are still growing. There is a lot of interest from the biomedical and computer science communities, and there is still a shortage of qualified personnel in academia and industry.
Qualities Needed for Success: Both quantitative and analytical skills. Persistence, scientific interest, hard work, and interpersonal skills

Personal Mentors: Starting in graduate school, I often sought advice on career paths and how to take the initial steps towards an academic position.
Best Advice ever Given: First things first (in the context of taking care of family matters before career ones)
Best Career Experience: Mentoring others. This is a chance to amplify your influence in the field by training the new generation.
Worst Career Experience: Resistance to change and lack of understanding of a new scholarly field on the part of some academics.
Dealing with Discouragement: Ignore, if possible.
Advice to Students Thinking about Biomedical Careers: Never lose the human perspective and never forget the reason we are seeking new knowledge.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Some may not properly acknowledge your achievements.
Other Interests: Music and reading

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Birthplace: Bogota, Colombia
Degrees: BS (biochemistry and molecular biology) - Brown University; MD - Meharry Medical College
Professional Fields of Interest: Gastroenterology, hepatology
Future Developments in Field: Incorporation of artificial intelligence in clinical practice, as well as further understanding of the rapidly growing non-alcoholic fatty liver disease.
Qualities Needed for Success: Ability to adjust to changes, persistence, resourcefulness, and a desire for constant improvement.
Personal Mentors: My mentors have been honest, supportive, and inspirational about not only being a good physician scientist but about becoming a better person.
Best Advice ever Given: Maintain your humanity in the midst of all the pressures that you face.
Change in Choice of Career: I have thankfully been driven to pursue medicine since high school, during which time I have also gained interest in scientific research.
Best Career Experience: Practicing medicine in Honduras and Colombia has given me a pure and raw view of the practice of medicine, and has also allowed me to focus more on the patient experience, appreciate more the physical exam, and approach medicine with the ultimate goal of global application.
Worst Career Experience: Encountering individuals who utilize their high hierarchical positions to belittle others. Learning from these experiences has motivated me to remember to be empathetic and gracious to others, no matter where my career takes me.
Dealing with Discouragement: Remembering what I currently have and the path that has taken me to who I am today reminds me to focus on the positive of the situation, and try to learn from it. It is helpful to rely on supportive individuals. Running, and attending church also helps.
Advice to Students Thinking about Biomedical Careers: Learn as much as you can at whatever stage you are in, not only about medicine and science but about liberal arts. This will help you to be versatile and allow you to better communicate with people during the course of your career.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Facing and working through bias is not easy but it helps if you remember your purpose and how your actions open up doors for more students who look like you. This in turn will help you focus on your best self which will enable others to see your value and the impact of what you do.
Other Interests: Running, traveling, reading nonfiction, and learning about other cultures.
Additional Comments: Enjoy the now, it will never come back to you.

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Birthplace: Warren, Michigan (near Detroit)
Degrees: BS (cellular and molecular biology) – Grand Valley State University; PhD (biochemistry) – University of Wisconsin
Professional Fields of Interest: X-ray crystallography; general structural chemistry; solving structures of proteins that are important drug targets. To understand better what I do, use this analogy: if drugs are the key, I determine the structure that makes up the lock.
Future Developments in Field: Structural chemistry is constantly advancing. Current focus is on the use of cryo-electron microscopy (cryoEM) for solving difficult drug targets, along with complementary techniques such as SAXS (small angle X-ray scattering), HDX (hydrogen deuterium exchange), and BioNMR (biomolecular nuclear magnetic resonance), among others.
Qualities Needed for Success: Determination; passion for what you do. I never planned on being a scientist - I did not get good grades in these subjects. However, I pursued science because I found it deeply interesting, even though it was not at all an easy subject for me.
Personal Mentors: As an undergraduate, I had a research mentor with whom I still keep in touch. I was at a smaller university, so it was easier for my mentor to spend time with me, get to know me and my goals, as well as my strengths and weaknesses. A good mentor is one who invests in you and your success, is willing to answer your questions, and helps to guide you.
Best Advice ever Given: Do what you love, even if you are not good at it. STEM fields are notoriously difficult and can be disheartening, but I've found continued motivation in my career because I truly love what I do. Find good colleagues and a supportive environment.
Change in Choice of Career: I entered the path I am on now later into my undergraduate education. I switched my major halfway through college and in graduate school I thought I would go into academics. I joined industry after a short academic postdoctoral research experience for many reasons including: the ability to focus on doing great bench science instead of writing grants; having fewer worries about how starting a family could affect my career; and most importantly, how my research could directly help impact and improve the health and well-being of people.
Best Career Experience: I love helping my team make new discoveries. I help guide the team through the drug design process and highlight possible areas for improvements. I love working with people from different backgrounds, with different ideas, who bring different approaches and insights to the table.
Worst Career Experience: When I had to work with people who had personalities that were very different from mine and we just didn't mesh. In that case, you just have to keep going and not let it stop you.
Dealing with Discouragement: The problem almost never goes away on its own, so I find that I deal best by taking a break from science for a bit. Stepping away from it all and clearing my head – nature, hiking, teaching my kids how to garden, and spending time in the fresh air.
Advice to Students Thinking about Biomedical Careers: Follow what you find interesting, even if it might not be your best skill right now. Finding your passion will help you to improve your skillset and increase your knowledge in that area. Be flexible – it is okay to take a step back and think about a change.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: At some point in your career, you may run into colleagues, professors, or hiring managers that harbor unconscious biases against people from different backgrounds (race, ethnicity, gender, LGBT, etc). While many companies and universities are working to correct this detrimental imbalance of underrepresentation, it's a long-term process so immediate changes may not be obvious. For anyone from a minority group, it is helpful to seek out a peer or mentor who has a career similar to one you desire and get their advice and insight.
Other Interests: I mostly chase around two young kids. I also like to do what some consider "old lady" hobbies - quilting, gardening, and watercolor painting. I did ballet for most of my life and still love it.
Additional Comments: I had children while pursuing my postdoc and after just starting my first job in industry. I am happy to talk about the challenges of having a family while pursuing a career, how to balance the two, and how your career may affect your family. I'm also happy to chat about changing courses in your schooling and professional careers, and what it's like switching from academia to industry.

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Birthplace: Indianapolis, Indiana
Degrees: BA (English literature) and MSW - Rutgers University; PhD (public health) - University of Illinois Chicago
Professional Fields of Interest: Public health, determinants of health, maternal and child health (especially of women and children with disabilities), disability policy, higher education administration

Future Developments in Field: The biggest concern I currently have is how the changes to the Affordable Care Act are going to influence the health and well being of low-income Americans.
Qualities Needed for Success: The best researchers are creative, entrepreneurial, and always excited about learning new things. In the health sciences, it's also very valuable to have a commitment to social justice.
Personal Mentors: Openness, a willingness to commit time, honesty and candor, and the flexibility to really try to figure out what is in the best interests of the student.
Best Advice ever Given: I was given some great advice in regards to my doctoral dissertation: don't be famous, just finish. Students often spend too much time agonizing over every detail, when the most important thing is just to sit down and edit.
Change in Choice of Career: I did my undergraduate degree in English literature, but, to support myself in college, I worked with people with intellectual disabilities in group homes. I continued that work after college and then pursued my Master's in social work. I had worked both in New Jersey and New York and was struck by the differences in state policies regarding people with intellectual and developmental disabilities, so I was very interested in studying those policies. I studied with a professor from the University of Chicago and was planning on going back to work after that, but I fell in love with research and teaching, so I went back to become a faculty member. My most recent transition was from being a full-time researcher and faculty member to being the dean of a college, which is a completely different role. I pursued it because I thought it would be really fun to learn some new skills, and I really enjoy being an administrator and supporting the work of the faculty in my college.
Best Career Experience: I couldn't possibly pick out one "best" season of my career. I have been so fortunate and incredibly lucky. I loved working as a professor/researcher, and I'm having the time of my life in my administrative role. I fundamentally think that work is a joy when you get to collaborate with a committed, engaged, and high-functioning team to do really good work. I love mentoring students and junior faculty, I love my research, and I just have a phenomenal job.
Worst Career Experience: It's never easy when you have to make personnel changes, but fortunately it does not happen often.
Dealing with Discouragement: I recharge my batteries and approach the situation with a fresh mindset.
Advice to Students Thinking about Biomedical Careers: Take every opportunity to learn as much as you can and work as hard as you can. You may not be the smartest person in the room, but you can always be the hardest working person.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Minority students can lack the support that non-minority students often take for granted. Because there are fewer people of color in medical sciences, it can result in feelings of isolation or a lack of mentors with shared experiences of discrimination. In later career stages, there can be a problem of being asked to be the token minority, and being asked to put in a lot more time. Microaggressions are the norm in some workplaces, which can damage confidence and create hostile work environments.
Other Interests: I make pottery.

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Intellia Therapeutics
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Birthplace: Chengdu, China
Degrees: BS (biology) – East China Normal University, Shanghai, China; PhD (molecular biology) – Peking University, Beijing, China
Professional Fields of Interest: Biotechnology, drug development, scientific research
Future Developments in Field: We will see the evolution of CAR-T cell therapies as we learn how to apply these therapies to solid tumors (i.e. liver, lung, brain, breast, etc.).
Qualities Needed for Success: A passion for what you do, resilience, curiosity, the ability to collaborate and work as a team, the ability to problem solve, and the courage to try new things and think outside the box.
Personal Mentors: Qualities to look for in a mentor include empathy, compassion, openness and honesty (they don't sugar coat difficult situations), wisdom, and the ability to communicate with you in a way that is understandable and helpful.
Best Advice ever Given: Don't be afraid to show your vulnerability; to make mistakes, ask questions, look for advice. Learn how to network.
Change in Choice of Career: I have made small changes along my career path. Before I started working in industry, I was not much involved with immunology research. Now I concentrate in immune-oncology, and am on the cutting edge of developing therapies to battle cancers.
Best Career Experience: I enjoy my current job, my colleagues, and being able to work collaboratively conducting experiments, analyzing data, and pushing forward with new advances.

Worst Career Experience: When I tried to address challenges with creative thinking, only to be told "no" by my supervisor. This effected my motivation and my interest in the job.
Dealing with Discouragement: While my natural instinct would be to criticize myself, I have learned that it is important to not take discouragement personally, to take a step back, separate the feelings from the fact, and analyze the situation with clarity.
Advice to Students Thinking about Biomedical Careers: There are so many different opportunities and roles that you can fill in the biomedical world. Before making judgements on what you want to do, make sure to speak to people with experience in the field, do an internship or a coop or get some other real world experience, and try different things to find out what you really love.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: 1) Understanding how values, cultures, and feelings are expressed in a second language can be challenging. It is therefore important to spend time learning your new language. 2) Sometimes you may find yourself gravitating towards those of your same racial, ethnic or gender group. It is important to build relationships with people from different backgrounds. This can be challenging for minority groups.
Other Interests: I enjoy outdoor sports. I compete in triathlons and in dragon boating competitions on the Charles River. I also help organize social events for alumni groups.
Additional Comments: Be happy. If you are passionate about what you do, you can achieve happiness.

MARTIN PETERS

Vice President, US Neuroscience Strategy & New Product Launches
Takeda
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Birthplace: Columbia, Missouri
Degrees: BS (chemical engineering and biochemical engineering) – University of Missouri Columbia; MS, PhD (biomedical engineering) – University of Michigan
Professional Fields of Interest: Late-stage drug development, pharmaceutical product launches; commercialization and product development strategy
Future Developments in Field: 1) More targeted innovation leading to higher impact products for smaller patient populations. Mostly gone are the days of a big blockbuster product for all (like Lipitor). 2) The role of government and insurance companies in health care decisions is increasing which reduces the value of "me too" products and raises the bar on innovation. 3) Breakthroughs in gene therapy, like CRISPR, that have the potential to cure rather than just treat disease.
Qualities Needed for Success: Collaborating well with others is most important. Drugs are no longer developed by the mad genius sitting in a room alone waiting for a "eureka" moment. Other key qualities are open-mindedness and creativity.
Personal Mentors: One of my most influential mentors was my graduate school advisor, David Mooney. He wasn't much older than I was but he was interested in me, in helping me to get the experience I needed to succeed, and in teaching me how to be a professional. He taught me how to think about science, how to design experiments, and how to communicate in scientific forums. He set a great example for me to follow and the skills he taught me I have taken with me and use to this day. The most important thing to look for in a mentor is someone whom you enjoy being around and can easily communicate with.
Best Advice ever Given: "Don't turn down a job you haven't been offered." Don't take yourself out of the running for a job because of self-doubt or a belief that you are not good enough to get the job. My second best piece of advice, which I remind myself of constantly, is "you don't ask, you don't get."
Change in Choice of Career: In graduate school I had a narrower view of what it meant to be a scientist. I thought I would be a university professor because that's what PhDs do. Over the course of my career, I have broadened that view as I moved from considering academia to focusing on industrial science, and then to business where I now combine my interest in health care with business strategy.
Best Career Experience: I am happiest when I am working with an energized and dynamic team. If I had to pick one experience that was a highlight, it would be being a part of the team that launched a product to treat a previously untreatable rare pediatric neurology condition that killed otherwise healthy babies. Seeing a video of a toddler who would otherwise be nearly paralyzed running around a doctor's office was life-changing for me.
Worst Career Experience: Early in my career, I was part of a team that launched a vaccine that when used as directed would often not come out of the vial.
Dealing with Discouragement: If I'm discouraged due to struggling with a problem I cannot solve, I try to break it down to smaller pieces until I find some part against which I can make progress. This incremental progress reenergizes me and helps me to again get focused on the whole problem in a positive way.
Advice to Students Thinking about Biomedical Careers: You have made a great choice! Don't limit your options to what you know now - the universe is bigger than what you can see and there are thousands of different opportunities out there. Ask lots of questions, take risks, meet as many people as possible, and let your passion and curiosity show.

Issues Facing Minority Students Pursuing Careers in Biomedical Science: Minority job-seekers will find that much of the pharmaceutical industry does not look like them. The landscape is improving but it can still be intimidating. Worry less about fitting in and instead be brave and bring your authentic self to work both for your own long-term mental health and to add to the diversity of ideas these companies know they need to be successful. Make use of the employee support resources that may be available and, if at all possible, identify a mentor with whom you can create a safe space to discuss challenges and get questions answered.
Other Interests: Home brewing, home improvement, wood and metal-working, hiking, personal fitness, cooking
Additional Comments: I am excited to meet the impressive students involved with this program and learn more about their personal journeys in the biomedical sciences.

MEGHAN E. PIERCE
Research Scientist
Translational Research Center for TBI & Stress Disorders
VA Boston Healthcare System
Instructor in Psychiatry
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Birthplace: Chicago, Illinois
Degrees: BA (psychology), MS (counselor education, clinical mental health counseling, addiction counseling), MA (experimental psychology, neuroscience), PhD (experimental psychology, neuroscience) – University of Nevada Las Vegas
Professional Fields of Interest: Neuroendocrinology, neuroimaging, stress, post-traumatic stress disorder, traumatic brain injury
Future Developments in Field: A huge push towards translational research. Sometimes in research we are siloed from the rest of the field and don't see how what we are doing will translate to patient care. A push towards the integration of fields will help us see the whole picture. We can get a more nuanced picture of what happens.
Qualities Needed for Success: We are moving towards a more collaborative environment, so the ability to collaborate is key. Other key qualities include being resilient, hard working, and driven to succeed despite failures and mistakes.
Personal Mentors: 1. Communication – a mentor/mentee relationship is a two way street. A mentor should be willing to listen to the student, not just talk, and help the student find their way in the field. 2. Flexibility – a mentor should be able to take a step back and allow changes to happen in science, in the lab, and in the mentees' career goals. 3. Warmth – a mentor should want to help the person, not just the science. 4. Encouragement of autonomy and independence – a mentor should let the mentee take the reins.
Best Advice ever Given: Don't give up hope and have a positive spirit despite failures and/or rejections. This was extremely helpful advice, especially in graduate school when I was experiencing quite a bit of rejection.
Change in Choice of Career: For my first three years of college I was a film major. I took one neuroscience class and it changed my life. When I was in graduate school, I thought I wanted to go into clinical psychology. Once I worked in a lab, I realized research was my passion.
Best Career Experience: Graduating and moving to Boston. I am a first-generation student; my family was skeptical of my desire to go to college, and I never thought I would get as far as I did in Las Vegas, or even move from Las Vegas. Taking that success even further and getting into the fellowship program at Harvard Medical School has been overwhelming and surprising. The community at the school has been supportive and encouraging; I feel as if I am treated like family, and I get to do something that I love.
Worst Career Experience: In graduate school, I had an uncomfortable experience with an advisor and I had to deal with internal departmental politics that I was unfamiliar and uncomfortable with in order to address the situation.
Dealing with Discouragement: I have had to deal with discouragement from my family; I was told that I should not go to college because I would fail. The way I deal with discouragement is to take the negativity and use it to propel me forward to prove to others that I can succeed. Discouragement is a staircase, not a crutch.
Advice to Students Thinking about Biomedical Careers: It is an amazing and growing field in which there is the potential to help millions of people. We always need more people to do research and work to help patients.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Coming from areas where there may not be well-funded schools; discouragement from family and mentors; navigating micro-aggressions at college and through graduate school. We need to help minority students navigate the road to a medical science career by being their advocate.
Other Interests: Beer brewing, hiking, reading, and taking care of my baby, golden retriever, and parakeets.

CHRISTINE ELIZABETH PIERRE

Geriatric Primary Care Physician
Extended Care Community Program
Beth Israel Deaconess Medical Center
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Birthplace: My family is from Haiti, I am Haitian-American and I was born in Mattapan, Massachusetts.
Degrees: BA (Latin American studies) - Barnard College of Columbia University; MD - Ross University School of Medicine
Professional Fields of Interest: Family medicine, geriatric medicine, community health, underserved and immigrant populations
Future Developments in Field: The elderly population is growing very quickly, and there needs to be more awareness of the vulnerability this population faces given that it is underserved. The COVID19 pandemic highlighted how more resources are needed to care for our elderly. In medicine as a whole, more efforts need to be made to recruit underrepresented minorities. Given the recent political climate in the country, I hope health care won't lose sight of this.
Qualities Needed for Success: You need to be determined, hardworking, self-aware, compassionate, and a team player.
Personal Mentors: A mentor should be honest and straightforward, and share with you what they've learned during their own journey. It's best to have a mentor whom you get along with easily. Your mentor doesn't necessarily have to come from the same background as you, but they do have to understand who you are and be supportive of your goals.
Best Advice ever Given: Be honest with yourself about what you really want in life. Don't be scared to risk going after it.
Change in Choice of Career: An alternative career choice for me would have been becoming a chef, however I have always wanted to do medicine since I was a child. I originally thought I would become a pediatrician, but I love children so much that I found it difficult to see them suffering.
Best Career Experience: A large portion of my geriatric patients are veterans or have immigrated to the US with their families, so I love interacting with them and hearing their life stories. I enjoyed being trained in family medicine and women's health, loved delivering babies - it's so beautiful to bring life into the world - and learned to accept failure as a form of self-growth.
Worst Career Experience: The learning curve as a resident was challenging. Understanding that I cannot always know the answer or save someone's life is difficult.
Dealing with Discouragement: When I encountered roadblocks along my journey to be becoming a doctor, I would constantly remind myself to stay focused and keep going. Now when I encounter discouragements, I usually take a step back and assess what my emotions are and where they are coming from. This helps clear my mind so I'm better able to assess the situation. Working out, eating healthy, and my faith, along with good support from family and friends, are key.
Advice to Students Thinking about Biomedical Careers: Make sure that this career is something that you really want. Work hard and stay away from negative people. Don't be afraid to take risks.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: People may underestimate your abilities because of your background. It's important to be aware of the biases that you may face, but do not let that consume you because that can prevent your true potential from shining. Believe that once you've been accepted into a program, you own that spot.
Other Interests: I enjoy Kizomba Latin dancing, cooking, traveling, watching Masterpiece Theater, and spending time with family and friends.

FRINNY POLANCO WALTERS

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Assistant Director (Faculty), Office for Diversity Inclusion and Community Partnership
Harvard Medical School
Attending Physician, Adolescent and Young Adult Medicine
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Former BSCP Student

Birthplace: Dominican Republic
Degrees: BA (community health) – Brown University; MD – New York Medical College; MPH (health policy) – Harvard T.H. Chan School of Public Health
Professional Fields of Interest: Health equity, reproductive health, developmental disabilities, minority health, antiracism and unconscious bias professional development

Future Developments in Field: The field of adolescent medicine will expand as it becomes more obvious that there is a need to focus on that age group apart from the rest of pediatrics. There should continue to be a greater awareness and a willingness to discuss issues around sexual violence. Additionally, specific attention should be paid to the rise of sexually transmitted infections which disproportionately impacts adolescents and young adults. It is my hope that the ACA stays in place and continues to be improved to provide health insurance coverage to many populations that did not have it before.
Qualities Needed for Success: Passion - if you are passionate about what you are doing you won't allow barriers to get in your way; focus; compassion - you should be able to empathize with others and judge less; and always be professional and respectful.
Personal Mentors: I have had many wonderful mentors who are the reason I am where I am today. A good mentor is committed, believes in their mentee, cares for the professional and personal wellness of their mentee, and has faith and belief in the abilities of the mentee. A good mentor will always "walk the walk," i.e., do the things themselves that they are teaching you to do.
Best Advice ever Given: "Do not worry about the money, just follow your dreams of becoming a doctor."
Change in Choice of Career: I had always wanted to be a pediatrician. During my residency, I discovered that I was most intrigued by adolescents and started to focus on that subgroup. After observing the inequities of treatment among patients, I realized that I wanted to address those inequities and could better influence change by getting involved with policy making.
Best Career Experience: Seeing my patients do well and succeed. It is most rewarding to be able to help improve personal health in general.
Worst Career Experience: When I make mistakes. It is hard to forget, but I realize that things happen for a reason and I should learn from the mistakes so that they don't happen again. I am also more comfortable sharing those mistakes so others avoid that same mistake as well.
Dealing with Discouragement: Time, reflection, and prayer
Advice to Students Thinking about Biomedical Careers: Don't be discouraged by the amount of time it takes to get you to where you want to be in your career. It will happen.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: A lack of foundation in the sciences – minority students often come from schools that do not provide a good foundation in the sciences and so the students erroneously believe that they cannot succeed in the field; finances – it is expensive to pursue a career in biomedical science, especially since you don't earn much for quite a while; and the scarcity of role models who understand what you are going through, believe in you, and can assure you that you will succeed.
Other Interests: Dancing to Latin music; listening to music; cooking (trying out new recipes); traveling to experience new cultures, languages, and foods.

ROBERT J. POMPONIO
Global Scientific Advisor, Head US Based Biomarker Expert Group
Biomarkers and Clinical Bioanalysis
Translational Medicine Early Development
Sanofi
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Birthplace: Long Island, New York
Degrees: BA (marine biology/organic chemistry) – Gettysburg College; PhD (human genetics) – Medical College of Virginia
Professional Fields of Interest: Human molecular genetics with regard to rare genetic and oncologic diseases
Future Developments in Field: Combining real world evidence, electronic health records, and creating greater access to diagnostics. Additionally, creating the ability for physicians, scientists, and patients to leverage that information to make impactful decisions and apply health resources that will achieve the greatest benefit.
Qualities Needed for Success: Excellent communication skills, both in writing and while interacting with others; persistence; dedication to your work, and the ability to be compassionate.
Personal Mentors: I've had a number of mentors along my path. Each person took an interest in my career development and helped me achieve my goals. They helped me see what pathways were available and offered me the support to pursue and achieve my goals.
Best Advice ever Given: Believe in yourself, work hard, and you'll go far. Work as a key contributor to a team and you'll get even farther.
Change in Choice of Career: I switched from marine biology to genetics when I was curious about how genes and genetic variation influence outcome. I went from being a bench scientist early in my career, to being a leader of labs and other scientists, and then to being a global scientific advisor at Sanofi.
Best Career Experience: Working at Genzyme for my postdoc. I learned how to conduct research at a fast-paced and innovative biotech as we brought therapeutic products through the regulatory approval process.

Worst Career Experience: Going through a merger and the restructuring of a company.
Dealing with Discouragement: I don't let it get me down as it is just a part of discovery. I know that if I keep working at a problem and engage others for their help and advice, I will find a solution. Have a good network to support you.
Advice to Students Thinking about Biomedical Careers: Don't narrow your career choices too early. Explore what science has to offer you and what you have to offer it. Pursue what engages you most and then use that interest to keep exploring.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Many barriers are coming down but we can still do better in giving students the support and encouragement to succeed.
Other Interests: Hiking, skiing; pretty much anything outdoors!

VON POTTER

Medical Director
Forma Therapeutics
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Former BSCP Student

Birthplace: New Haven, Connecticut
Degrees: BS (biology) – Fairfield University; MD – Ross University School of Medicine, Dominica
Professional Fields of Interest: Research oncology, hematology. Making sure that drugs are effective and safe in multiple populations by insuring that clinical trials are accessible to diverse populations and that the data is more inclusive.
Future Developments in Field: We are working in the right direction to insure that there is more diversity in the pharmaceutical industry and that clinical trials through drug development will reflect benefits for all populations. There are not enough people of color working in the industry. We need people who grew up in underserved neighborhoods and who understand the culture and beliefs of those groups to work in the industry.
Qualities Needed for Success: Persistence, determination, faith. Faith in yourself that you can do it, faith in the people who work with you, and faith that the people you work with can trust you.
Personal Mentors: I have had many influential mentors during the course of my career. One in particular, who is 20 years older than me, calls me all the time to see how I am doing and pushes me to the next step and to where he sees I need to be. A good mentor is one who is willing to make time for you, reaches out to you to make sure you are okay - not merely answering your questions when you call them, and looks out for your well-being.
Best Advice ever Given: I was given this advice in childhood - never say "I can't." Don't let obstacles stand in the way. You can say I can't at this time, but that doesn't mean you shouldn't keep trying to overcome the hurdle. There is a world of opportunity that you may miss out on if you don't keep trying.
Change in Choice of Career: I started out like most medical students wanting to treat patients. I was initially interested in pediatrics or radiology. However, I also wanted to be a "medical missionary," discovering the world using medicine beyond just helping patients in the United States. When my father was sick with sarcoma, I went with him to his medical visits. His oncologist explained to me that they were doing clinical trials and asked if I was interested in the research. I found my calling in clinical research. There are challenges, though, as there are so few people of color in industry.
Best Career Experience: Two career experiences, which I have considered to be the best experiences, have also been the hardest, but they have served to drive me to accomplish more. The first is when I was working with a patient at Yale in a clinical trial. The patient was very close to my age at the time, very good to work with, and eager to work with me. He ended up not surviving and the pain of losing that patient drives me to work harder. The second experience was working with an experimental drug that we thought would be a miracle drug, but the patients of varying tumor types were not doing equally as well with it. Again, that experience drives me to work harder to discover better drugs to help each type of cancer.
Worst Career Experience: At various points in my career, I have experienced people trying to stop my career growth and disparaging my reputation just because they felt they had the right to stop me. One time, trying to confront that, I reacted with anger and realized in hindsight that my anger was not helpful. I have learned how to handle my feelings in a professional manner and not let managers or colleagues treat me differently.
Dealing with Discouragement: I turn inward, look at myself first to see what I did to contribute to the disappointment, acknowledge my faults, determine if there was any miscommunication on my part that contributed to the disappointment, and then either fix what was wrong or ask what I can do to change the outcome. If I can't change anything, then I work with it as it is, but continue to respect the lessons learned from the experience.
Advice to Students Thinking about Biomedical Careers: Don't give up. Don't settle. Decide what you want to do, where you want to be, and then strategize how you will get there. Keep your eye on the goal, and take sidesteps if necessary to get you to that goal. (I worked for a local phone company in order to make enough money to apply to medical school – sometimes you need to get off track to get yourself back on track.)

Issues Facing Minority Students Pursuing Careers in Biomedical Science: There is a misconception that students of color don't want to study, that they want the easy way out, that they don't want to put in the effort, but rather, just want it handed to them. You must fight that perception! Although it is better for students of color now than 10 years ago, micro-aggressions are still an obstacle.
Other Interests: I am an avid photographer. I own lots of photography equipment which I pay for by doing wedding shoots and other photography-related jobs. I use photography to break away.
Additional Comments: No matter how far you go in life, don't forget where you came from or the people who supported you along the way and helped you to get where you are.

LAUREN POWELL

Vice President - Health Equity & Community Wellness
Takeda Pharmaceuticals
President & CEO – The Equitist
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Former BSCP Student and 2014 Hope Scholarship Recipient

Birthplace: Indianapolis, Indiana
Degrees: BS (biochemistry) - Xavier University of Louisiana; MPA (social policy and minority health policy) - Harvard University John F. Kennedy School of Government; PhD (clinical and population health research, concentration in racial/ethnic health disparities) - University of Massachusetts Medical School
Professional Fields of Interest: Public administration, epidemiology, biostatistics, public health, health equity, community engagement, and equity, diversity and inclusion in healthcare.
Future Developments in Field: Equity, and specifically health equity, will continue to be a challenge in America, with the specific need to address racism and other forms of oppression that are the social causes of disease.
Qualities Needed for Success: Tenacity, perseverance, self-awareness, emotional intelligence, and strong communication skills
Personal Mentors: It's important to find someone who is successful, and has followed a path you are interested in traveling. People who have had some of the most challenging roads tend to make the best mentors. The most important thing is to find someone who actually wants to be a mentor, and has a track record of successful mentees.
Best Advice ever Given: **"**Be slow to anger and quick to forgive."
Change in Choice of Career: I was on the path to medicine as an undergrad (pre-med/biochemistry), but my medical school applications were rejected twice. Concurrently, I was starting to fully understand ways in which the healthcare system that I wanted to be a part of was broken. It hadn't occurred to me before that I could help fix that system without being an MD. Also, Hurricane Katrina happened my senior year of college. It opened my eyes to the complete scope of the healthcare system and how it can fail at every level. This experience helped me find my place in public health and focus on health disparities.
Best Career Experience: Every year at the Harvard Kennedy School there is a class day when the students vote on awards for their peers. The year I graduated (May 2017), I won three awards, and it was such a deep accomplishment for me. The most exciting was the Barbara Jordan Award for Women's Leadership. I was so honored knowing who Barbara Jordan was and what she did for women, black women, and the community. *[Barbara Jordan was a powerful leader, politician and public servant. She served as the first black woman elected to the Texas Senate in 1966, the first black Texan in the U.S. Congress representing the 18th Congressional District, and Chair of the U.S. Commission on Immigration Reform, among her many other accomplishments.*] The award is such a high calling for me, and I feel challenged to live up to her example of lifting up the African-American community through public service.
Worst Career Experience: One of the most challenging parts of my career so far was being the only African-American student in my PhD program for four years. It was difficult feeling isolated, and feeling like people didn't understand my drive to work hard or how I thought outside of the box. Although this experience was a challenge, it was also the fuel to my fire and motivated me.
Dealing with Discouragement: I have a very close contingency of fellow scholars with whom I vent and share my struggles. I also rely on support from my family, particularly my sister, and I pray and seek wisdom from God. Ultimately, I turn back to having confidence in the core of who I am and the path that I am intended to travel. I refuse to let discouragement stop me.
Advice to Students Thinking about Biomedical Careers: You're capable of achieving more than you think. Just because others don't share your dream does not mean your dream cannot be achieved.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Racism is still a very prominent stumbling block and challenge for minorities - both institutionalized and systemic. There is still a burden to feel like you are representing an entire community and that can be a heavy weight to carry.
Other Interests: I enjoy cooking, live music, going to concerts, yoga, fashion, and international travel.

Additional Comments: I am open to speaking with or mentoring anyone, regardless of their career interest - even if it's just to think through your next step. I'm also a former BSCP student, so I know what it's like to be in your shoes and to need a listening ear!

MARK C. POZNANSKY

Attending Physician, Infectious Diseases – Director, Vaccine and Immunotherapy Center
Massachusetts General Hospital
Professor of Medicine – Harvard Medical School
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Birthplace: London, England
Degrees: BS (pathology), MD – Edinburgh University; PhD (medical sciences) – Cambridge University
Professional Fields of Interest: Infectious disease medicine and immunology
Future Development in Field: I anticipate novel approaches to the treatment of immune and inflammatory diseases and the development of more effective vaccines and immune therapies for cancer and infectious diseases, including COVID-19.
Qualities Needed for Success: You need bright new ideas and persistence, as well as independent thought and an intellect that pushes the envelope and challenges current paradigms.
Personal Mentors: Fortunately, I have had four mentors: Professor Dulcie V. Coleman at Imperial College, Professor John T. Potts, Jr. and Professor Bruce Chabner at MGH, and Professor Andrew Wyllie at Cambridge University. Their wisdom continues to guide my career development and research in a multitude of caring, erudite, and constructive ways.
Best Advice ever Given: One's choice of profession is very important. Intuitive choices can be the best when you think about what you would like to do.
Change in Choice of Career: There hasn't been a change in my career. I've liked doing science since I was nine years old. I performed my first experiment on my brothers at that age. (They are still alive and healthy.)
Best Career Experience: My best career experience has been developing my own research team, and founding and directing the Vaccine and Immunotherapy Center (VIC) at MGH over the past 14 years. I have been able to get to a position where I have the opportunity to discover new concepts, explore new ideas in biology and medicine, and attempt to develop medical products that emanate from them. I continue to find the delivery of medical care to my patients deeply satisfying, challenging, and always a learning experience.
Worst Career Experience: Dealing with storms in teacups amongst the ivory towers of academia.
Dealing with Discouragement: I do research work with my team and wonderful collaborators of the highest quality with a persistent and diligent attitude, which I believe offers me the best chance of overcoming discouragement.
Advice to Students Thinking about Biomedical Careers: New ideas are the most precious commodities in science and never more so than now during the COVID-19 pandemic. Harvard Medical School and MGH are wide open for young people to come up with bold new ideas and test them. That is where the whole process of discovery starts.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: It is tough to see a bright minority student with enormous potential come up against glass ceilings because of lack of support and mentoring.
Other Interests: My family, classical music, and gardening. I play classical piano.
Additional Comments: Every time I take a student, it adds enormously to my laboratory and to me personally. I am able to get support and give support. Having a student trainee in the lab provides amazing energy and the lab gets a lot out of working with minority student development programs. My lab teams have had wonderful and positive experiences mentoring SRTP students (Summer Research Trainee Program, Center for Diversity and Inclusion) and BSCP students at the MGH over the past 17 years.

MARK R. PROCTOR

Neurosurgeon-in-Chief and Director, Brain Injury Center
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Franc D. Ingraham Professor of Neurosurgery – Harvard Medical School
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Birthplace: New York
Degrees: BA (French) – Dartmouth College; MD – Columbia University College of Physicians and Surgeons
Professional Fields of Interest: Pediatric neurosurgery, brain injury, and sports-related concussions
Future Developments in Field: We will see an increase in functional neurosurgery.
Qualities Needed for Success: You need commitment and the ability to align what you do with what you're passionate about.

Personal Mentors: Find a mentor who makes you think about the problem and won't just hand you the answers.
Change in Choice of Career: I never wavered in my career choice.
Best Career Experience: Going out of my comfort zone by taking on specific leadership positions.
Worst Career Experience: Learning how to lead people is challenging.
Dealing with Discouragement: You must have the self-confidence to realize you can make a difference with enough hard work.
Advice to Students Thinking about Biomedical Careers: Learn to clearly communicate what your goals and aspirations are.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: There may be issues in mentorship and finding mentors from diverse backgrounds.
Other Interests: I enjoy playing squash

MARK PUDER

Senior Associate in Surgery – Boston Children's Hospital
Professor of Surgery – Harvard Medical School
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Birthplace: I was born in Savannah, Georgia; I grew up in Texas.
Degrees: BS (biology) – Midwestern State University; MD – Vanderbilt University; PhD (virology, biochemistry) – Harvard University
Professional Fields of Interest: I am a pediatric surgeon with a very active research laboratory.
Qualities Needed for Success: Intelligence, motivation, and a very strong commitment to taking care of patients
Personal Mentors: Mentors are individuals who truly care about you as a person; they selflessly have your best interest in mind.
Best Advice ever Given: Learn everything you can.
Change in Choice of Career: My path has not been very straightforward. After medical school, I went into pediatrics and then into surgery. I then decided to take time off for research, which ultimately led to my taking five years off to earn my PhD.
Dealing with Discouragement: I talk to colleagues and relieve stress through exercise.
Advice to Students Thinking about Biomedical Careers: Always work extremely hard and always do the right thing. Often times the easiest thing is also the wrong thing.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Dealing with stereotypes, which are unfortunately still present.
Other Interests: Spending time with my wife, kids, and two dogs

ANTHONY A. RENÉ

Training Liaison (Volunteer) – National Institutes of Health, Office of the Director
Assistant Director, Retired
National Institute of General Medical Sciences, National Institutes of Health

Birthplace: Louisiana
Degrees: BS (biology, chemistry) – Southern University; MS (physiology, bacteriology), PhD (cell biology, biochemistry) – Catholic University
Professional Fields of Interest: Cell biology, biochemistry
Future Developments in Field: Bioinformatics, computational biology, bio-imaging
Qualities Needed for Success: A genuine interest in a particular career, willingness to work hard, ability to remain focused
Personal Mentors: I had several mentors throughout my career. They were accessible, knowledgeable, and supportive.
Best Advice ever Given: If I had a burning desire to accomplish something, I would succeed.
Choice of Career: My biggest career change was going from a research laboratory setting to an office, moving from doing research to overseeing and being responsible for the research and the research training of others.
Best Career Experience: I am currently having my best career experience. I have the opportunity to make a difference in the lives of many people: students, postdoctoral fellows, and university faculty.
Worst Career Experience: The period of my career spent in a military research laboratory. This was not a good experience because of the research focus.
Dealing with Discouragement: Consult with your friends, colleagues, mentors, and counselors.
Advice to Students Thinking about Biomedical Careers: Select a career carefully. Do something that you can get excited about, something that will keep you awake at night. If you do, it will be a career you can enjoy.

Issues Facing Minority Students Pursuing Careers in Biomedical Science: Financial support is a big problem. Some students begin their families early. Early on, learn to balance school and family.
Other Interests: Mentoring students; maintaining a healthy life style; creating a pleasant, enjoyable home environment where music, books, and tennis are involved.
Additional Comments: Get a life! Select a partner carefully. Diversify your activities. Be a giving person.

LAURA E. RILEY

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Birthplace: Dorchester, Massachusetts
Degrees: BA – Harvard College; MD – University of Pittsburgh School of Medicine
Professional Fields of Interest: Infectious diseases associated with obstetrics and maternal vaccination
Future Developments in Field: Improved survivals for gynecological cancers due to immune and/or genetic modifiers; More progress in treating preterm birth; and recognition and treatment for severe maternal morbidity, especially given the vast racial/ethnic disparity.
Qualities Needed for Success: Focus, hard work, self-motivation, commitment, and love of medicine
Personal Mentors: I've had multiple mentors. One high-risk obstetrician was very supportive and focused; I wanted to be just like him. Also, there was an attending physician at Boston University Medical Center who was very committed to underserved populations.
Best Advice ever Given: Do the best you can.
Change in Choice of Career: I will always enjoy delivering babies, although I am becoming more interested in how quality care is delivered equitably.
Best Career Experience: When I deliver a baby to a woman who has wanted a baby for years.
Worst Career Experience: Several years ago, one of my favorite patients, a young college girl, died five weeks post-partum due to complications of AIDS; it was the most devastating experience of my life. I learned that you could only do the best you can. With all your education and expertise, you can't control everything even if it seems unfair.
Dealing with Discouragement: I didn't think I'd get into medical school. My college advisor told me I'd never get in because my grades weren't good enough and the competition was very tough. I asked other people and they disagreed, so I ignored the bad advice and persisted. Persistence works every time. I applied and got in at several places. You have to get multiple opinions and, if you get advice that you don't like, go to others and see what they say.
Advice to Students Thinking about Biomedical Careers: Do as much exploration about various aspects of the field that interest you because there are so many ways to have an impact on women's health. In addition to being an obstetrician or gynecologist, you can also consider genetics, ultrasound, *in vitro* fertilization, public health, urogynecology, and basic science research.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: The competition is fierce, so you have to do your best. Take advantage of networking opportunities by joining different medical societies. Look for mentors and sponsors; they do different things but both are critical to your success.
Other Interests: My kids; working out; shopping, it is even more fun in NYC! I wrote two books for patients: "*You and Your Baby: Pregnancy*" and "*You and Your Baby: Healthy Eating During Pregnancy*." Three years ago, I relocated to New York City from Boston. I am now Chair of OB/GYN and opened a new maternity hospital in August 2020 in the middle of the pandemic!

SYLVIA E. ROSAS

Nephrologist – Joslin Diabetes Center/Beth Israel Deaconess Medical Center
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Birthplace: Berlin, Germany
Degrees: MD - Colegio Mayor de Nuestra Señora del Rosario; MSCE (clinical epidemiology) - University of Pennsylvania
Professional Fields of Interest: Kidney disease, diabetes, epidemiology, clinical research, cardiovascular and metabolic abnormalities in chronic kidney disease
Future Developments in Field: We will start using more genetic testing and more omic biomarkers to be able to

recognize the individual risk for progression of kidney disease.
Qualities Needed for Success: Perseverance and focus are important. You are more likely to be successful if you pick one area and really become an expert in that area (even within a field, such as nephrology). You won't be successful if you try to do everything; it's impossible and you will spread yourself too thin.
Personal Mentors: Mentors that are the most helpful are those that are more mid-career and have the time to spend with students. It's usually helpful to have a group of mentors (not just one) who can help with different aspects of your career.
Best Advice ever Given: It is necessary to learn how to say NO to certain non-important, non-career building opportunities in order to have time to focus on other more important items.
Change in Choice of Career: I never really considered being anything other than a doctor. Medical school starts right after high school in Colombia, so I've been in the medical field since I was 17. Before I had research experience, I used to think I would practice in a different setting, such as private practice; however, I loved the two-year research requirement for my nephrology training so much that I pursued research opportunities in my career. Now, I try to focus most of my efforts in clinical research.
Best Career Experience: Now that I'm in the mid-career level, I have started thinking more about my legacy and what is really important to me. It's important to me to mentor physicians and promote diversity in medicine. Supporting programs like VRIP (Visiting Research Internship Program) and BSCP that help people advance up the ladder gives me a lot of personal satisfaction. Helping people advance in their careers is almost like having professional children and it's important to give back in the same way you were assisted.
Worst Career Experience: My least favorite thing is completing paperwork (much more than there used to be), which takes away from time spent with patients or research.
Dealing with Discouragement: My policy is that when people tell me no (if I get rejected for a grant, or a job request, etc.), I focus on how I might have communicated better so that they would have understood what we are trying to accomplish. When it comes to grants, I see it as my job to make it clear to reviewers how we are trying to move the field forward. You have to look at rejections as learning experiences; successful people learn from their mistakes, try not to repeat them, and recover faster to try again.
Advice to Students Thinking about Biomedical Careers: It is most important to believe in yourself. Don't assume your neighbor is smarter or better, but recognize that you have your own strengths. Don't lack the confidence because you have the talent.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: One of the most important reasons students don't pursue biomedical careers is because they have additional family responsibilities. If their family relies on them financially, they might not be able to take on the medical/graduate school debt or might need to have two jobs while in school. There are programs out there that try to bridge the gap for these students, but it can take a lot of research and preparation to find and participate in them. It's important to think long term when making these career decisions.
Other Interests: Cooking, gardening, travel

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Birthplace: Washington, District of Columbia
Degrees: BA, MS, PhD (biology) and MD – Case Western Reserve University
Professional Fields of Interest: Pathology, heart disease, and sudden cardiac death
Future Developments in Field: Sudden cardiac death is very common; we don't have very effective ways to prevent it other than using very expensive devices, which have significant quality-of-life problems. This is a great area to discover applications in basic research.
Qualities Needed for Success: The most important thing is that you find your career fascinating and enjoyable. You have to be hard working, smart, and passionate.
Personal Mentors: I have had many and continue to have mentors to this day. A mentor is someone who takes a personal obligation for your career development. It is a one-way relationship, the only thing in return for the mentor is the personal satisfaction derived from your success.
Best Advice ever Given: Rather than a single bit of advice, I have followed role models to see how they achieve their successes.
Change in Choice of Career: I knew that I wanted to become a physician-scientist early on. I went to an MD/PhD program. However, I wasn't very passionate about my PhD thesis work and when I began my residency, I still didn't know

what I wanted to do. I talked to a faculty member about this and he suggested that I meet with the Chief of the Division of Cardiology at my institution. This was how I met a person who played a huge role in my career path.
Best Career Experience: It is hard to pinpoint the best career experience since the career is a long journey. The key is to enjoy every step along the way. When you finally achieve your goal, you realize that there is always the next one. I always feel satisfied when I get to where I wanted to get to, but I also enjoy the never-ending journey.
Worst Career Experience: I don't think I had a worst career experience. I had some bad experiences during my PhD because I was not so passionate about it.
Dealing with Discouragement: I tend to be an optimistic person. I don't let setbacks get me off my focus. I keep my expectations realistic and keep things in perspective.
Advice to Students Thinking about Biomedical Careers: Follow your passions; don't set your sights too low and don't be afraid to try.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: There are great opportunities. However, this is largely a pipeline issue. We need to challenge and support students. If we provide opportunities and mentoring, and address problems early on, all students can be successful

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Birthplace: Kolkata, India
Degrees: BS (chemistry) – Presidency College, Kolkata, India; MS (chemistry) – Indian Institute of Technology, Kanpur, India; PhD (chemical biology) – Cornell-Rockefeller-Sloan-Kettering Tri-Institutional Program in Chemical Biology
Professional Fields of Interest: Gene therapy, gene editing
Future Developments in Field: Next generation of genomic medicine for patients.
Qualities Needed for Success: Ability to problem solve, flexibility, being open to new ideas and challenging the status quo
Personal Mentors: Look for a mentor with leadership qualities and high emotional intelligence. A great mentor will empower you to realize a better version of yourself and celebrate your success and growth.
Best Advice ever Given: Enjoy what you are working on. Life is too short to spend time on things that you don't care about.
Change in Choice of Career: I switched from academia to industry.
Best Career Experience: When I was a postdoc, we were engaged in a very early field of discovery, where everything we were learning became the established principle for the field.
Worst Career Experience: Incompatibility with management
Dealing with Discouragement: I am a glass-half-full person with a positive outlook. I take any discouragement as a learning experience, and I move forward.
Advice to Students Thinking about Biomedical Careers: The biotech/pharma field can feel daunting. Know that whatever skills you have acquired during your training can be transferrable to industry and have confidence that those skills will enable you to succeed.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Minority students often are not aware of the available career options. As employers, we tend to look to the same pool of applicants from the same set of schools. We need to engage in greater outreach to different schools and communities that may not be aware of the opportunities available to them.
Other Interests: Cooking, baking, traveling
Additional Comments: A lot of us have great jobs, a very few of us have meaningful careers. Pick a career path that motivates you and makes you feel alive.

RAYMOND E. SAMUEL
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Birthplace: Saint Vincent and Grenadines, West Indies
Degrees: BS (chemical engineering) – Massachusetts Institute of Technology; MS, PhD (physiology and biophysics) – Yeshiva University; MD – Albert Einstein College of Medicine
Professional Fields of Interest: Health disparities; Alzheimer's disease; dementia; men's health; community-based participatory research; orthopedic surgery; musculoskeletal growth and development; chemical engineering; drug delivery; tissue engineering; nanotechnology; biomaterials; STEM career development
Future Developments in Field: Continuous health monitoring by wearable devices; data analytics; molecular therapeutics-targeted therapy; precision/personalized medicine; behavioral health
Qualities Needed for Success: Being a transdisciplinary, collaborative team player
Personal Mentors: My mentors gave advice about career planning, provided support (letters of recommendation), and introduced me to the "culture" of orthopedics, medicine, biomaterials, and healthcare. They kindled my love and excitement in my work.
Best Advice ever Given: Learn to master multiple things at the same time (time management). Family, work, and community are all very demanding.
Change in Choice of Career: I moved from engineering to clinical medicine to basic research to translational medicine to public health to starting a company and back to academia where I do all the things I enjoy – research, education, training, and community outreach.
Best Career Experience: Choosing to specialize in orthopedic surgery, exciting clinical experiences (excellent short-term gratification), and investigating a wide variety of research topics to find a niche for myself; moving to Historically Black College and Universities (HBCUs) in southern Virginia and North Carolina (the opportunity to be a big fish in a small pond); enabling students to achieve their full academic and professional potential.
Worst Career Experience: I am disappointed that I am usually the only "black" physician/researcher in most of my working environments.
Dealing with Discouragement: I go home and spend time with my family. There is no "failure" at home - I find unconditional acceptance and approval, and I am told that I am the "world's greatest dad."
Advice to Students Thinking about Biomedical Careers: Don't quit trying. Be bold and be strong. Prove that you have the stamina and the determination to do it.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Lack of familiarity with the culture of biomedical sciences, not enough access to mentors
Other Interests: Baseball (NY Yankees and Derek Jeter fan – oops!), football (Tom Brady and New England Patriots), and basketball (LeBron James and Steph Curry); church; going to basketball and baseball games with my family; Alicia Keyes and Amy Winehouse.

LOREN SAULSBERRY
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Former BSCP Student and 2015 Hope Scholarship Recipient

Birthplace: Houston, Texas
Degrees: BA (neuroscience, English) – Wellesley College; PhD (health policy) – Harvard University Graduate School of Arts & Sciences
Professional Fields of Interest: Cancer prevention and control research, health disparities, health policy, health communications, health services research. Research interests include: health care policies and health services that affect cancer care across the continuum from prevention and early detection to cancer outcomes; the relationship between politics and health communication on health policy issues; and the determinants contributing to health disparities that are affecting vulnerable populations, especially across race/ethnicity and socioeconomic status.
Future Developments in Field: Precision medicine and genomics; identifying biological, social, and environmental determinants of health; developing treatment plans tailored to an individual's medical and health-related social needs.
Qualities Needed for Success: Keeping an open mind to opportunities that might not have been predicted, particularly in health policy where the environment and the health system are constantly changing.
Personal Mentors: Strive to have a collection of mentors with diverse experiences. Not one person will fit all your mentorship needs. Cast a wide net and always keep looking for mentors. You never know where you may meet someone who can influence your career.

Change in Choice of Career: I originally intended to go into medicine with a research focus in cancer genetics. While working in bench science, I began to appreciate the breadth of stakeholders who play critical roles in the health system and who determine the type of treatments ultimately available to patients. I realized that I could use my scientific background within health policy to work on how health care policies and regulations are instituted, which could have a broader impact at the population-level.
Best Career Experience: A pivotal point in my career was the time I spent in DC working with the Kaiser Family Foundation. They focus on how to communicate research findings to legislators across the aisles who are making health policy decisions, and how to convey the implications of those policies to the general public. I learned how important it is, as a researcher, to communicate with, and get evidence-based information to, the people making policy decisions.
Worst Career Experience: In between my 3rd and 4th years of graduate school. I had completed all my coursework but still needed to determine the full scope of my dissertation. I felt like I was at the point at which I had to decide my future directions and figure out how to launch my career. It was a very uncertain time. Many of the ideas I developed never took off or weren't quite appropriate at the time. However, in hindsight, that period of searching, reading the literature voraciously, and refining my own interests was such a meaningful use of my time. I still have notes of many of those "failed" research ideas, which have guided my thinking on research projects I am carrying out today.
Dealing with Discouragement: I take a moment to reflect on and analyze the source of the discouragement. Most times, it is incredibly uncomfortable to sit with the feeling that something did not go according to plan. Without dwelling for too long, I figure out what the next step should be; I may reach out to a mentor for help, look for a new research idea, get a fresh start, etc. What has been most important for me is the two-step process of first reflection, then second taking action.
Advice to Students Thinking about Biomedical Careers: For those who know exactly what they want to do, congratulations and go for it! For those still searching for their area of expertise, or who like multiple areas and haven't been able to sacrifice one path for another – know that you can't do it all but you likely can find a place where your interests intersect. If there isn't a place of intersection, perhaps there is an opportunity there for you. Seek out advice. Use resources like BSCP to introduce you to the options and find people who will support you potentially blazing a new direction.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: A sense of isolation is the biggest obstacle facing minorities. Even in organizations that value diversity, there may not be many minorities in your department who can relate to the unique set of circumstances you face, so you may still feel alone. It can be challenging to bring your ideas and approaches to the table, as others may likely be unfamiliar, but try and bring "all of you" to your work and your work place. There is no doubt that it takes courage to do so, but, in my experience, it can be enormously fulfilling for you individually and your organization collectively.
Other Interests: Cycling, yoga, camping, hiking, music

JAMIL B. SCOTT
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National Human Genome Research Institute
National Institutes of Health
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Former BSCP Student and 2006 Hope Scholarship Recipient
Emeritus BSCP Board Member

Birthplace: Lansing, Michigan
Degrees: BS (biology with cell and molecular biology concentration) - Tennessee State University; PhD (cell and developmental biology) - Harvard University; MPH (family and community health) – Harvard T.H. Chan School of Public Health
Professional Fields of Interest: Community-based approaches to reduce disparities in chronic preventable diseases and increase resilience to stress among marginalized communities and populations; bridging public health and medical training early in medical education; cultural competence in health care and strategies to mitigate unconscious bias
Future Developments in Field: There will be greater emphasis on translational public health research, bridging the gap between laboratory-based studies and population-based studies. In medical education, there will be greater emphasis on ensuring cultural competency, mitigating bias, and understanding the social determinants of health
Qualities Needed for Success: To be successful, one must first define what success is on his or her terms and be dedicated to achieving that vision. With the support of mentors and trusted professionals, he or she must devise a plan and break that plan down into action-oriented short- and long-term goals. Along the way, one must make sacrifices, be flexible, and actively invest in and maintain a network in order to master and become a leader in his or her field.
Personal Mentors: My personal mentors are the people in whom I can confide and trust. I am able to openly share my triumphs and downfalls with them and have discussions to ensure that, no matter what happens, I am able to continue on my unique path towards personal and professional success. They invest in my goals, almost as if they were their own goals, and

take a sincere personal interest in me as a person.
Best Advice ever Given: The best advice I have been given was simply to follow my passions. This requires an understanding that I was not made brilliant and awesome for nothing, and that it is my moral obligation to find my path and execute my purpose in life. I have also been advised to have a plan which allows for a certain level of flexibility, but which sets a direction for me to follow to help get me to where I wish to be.
Change in Choice of Career: I completed my graduate studies in cell and developmental biology, which was an extremely laboratory-intensive and isolating experience. Before completing my dissertation and PhD, I decided to change the direction of my career towards public health. My decision was based on what issues and concerns were interesting and important to me and my sense of community. As a result, I later completed an MPH in family and community health. I now work on research that is more collaborative and more immediately relevant to today's health issues.
Best Career Experience: My best career experience was attending Tennessee State University, where I was embraced by committed and concerned professors and mentors. They gave freely of their time and were personally invested in my success. Without the guidance, training, and support I had while at Tennessee State University, I would not have been prepared for the work I did at Harvard University and Harvard School of Public Health, and would not be where I am today, professionally.
Worst Career Experience: I would not consider any experience a "worst" because with every experience something is learned to carry me further. It may have been a hard lesson but often the most difficult experiences lead to the most important achievements moving forward. I have learned to be discerning around selecting quality mentors and knowing when to move on from situations that do not serve me or my goals.
Dealing with Discouragement: I try not to spend too much time attempting to understand why a person would diminish my ideas, contributions, or intentions. For every person that seeks to hamper your progress, there are many more that will reach out and help you. However, it is important for me to understand workplace dynamics and institutional goals, so that I can make better decisions around working relationships in the future.
Advice to Students Thinking about Biomedical Careers: Be prepared to work hard and look forward to the academic, personal, and professional rewards that will follow. In all things, give your best effort. That way, no matter how a situation turns out, you can walk away from it with you head held high, knowing that you have done all that you could.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Minorities in the biomedical sciences are at risk of becoming isolated. Additionally, minority students are discredited to some degree and, unfortunately, often must work harder to validate their presence in certain schools or programs. Institutions must strive for a more inclusive culture.
Other Interests: Dance (ballet, modern, Folkloric Haitian, and praise dance); learning about nutrition and trying out new, healthy foods; traveling; and investing in relationships with family and friends. I also enjoy music, and taught myself how to knit, crochet, stain, and finish furniture while in graduate school. Since buying my first house, I am semi-obsessed with YouTube DIY home improvement and decor projects.

HENRIQUE DOS SANTOS SECKLER

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Birthplace: Rio de Janeiro, Brazil
Degrees: BS (genetics) – Fed. University of Rio de Janeiro, Brazil; MS (biotechnology), PhD (chemistry) – Northwestern University
Professional Fields of Interest: Proteomics, gene therapy
Future Developments in Field: The use of gene therapy to treat disease is the future of medicine. It is becoming more common in clinical trials to turn the focus away from treating the physiology of the disease and instead treat the genetic causes of the disease by altering or shutting down the genes that are deleterious.
Qualities Needed for Success: Curiosity, resilience (the capacity to absorb a lot of failure), and an attention to detail. While I am not meticulous, as a scientist, it certainly helps to be so.
Personal Mentors: A good mentor is one who had a plan for how they were going to achieve what they wanted in their career and knows how to adapt that plan to help you achieve what you want in your career. Mentors should be organized and sincere.
Best Advice ever Given: "Your science degree is yours to do whatever you want with." My high school biology teacher convinced me to try a degree in the basic biological sciences first, instead of the more applied fields such as medicine or bioengineering, and then specialize. I think having had a broad education rather than a focused one made me a better scientist.
Change in Choice of Career: I started in biology and switched to analytical chemistry.

Best Career Experience: The job I have right now. It is nice to be in the biotech/pharmaceutical industry, a growing field, in which we are developing cures and producing therapies that help people.
Worst Career Experience: The end of my PhD experience. Graduate school gets progressively harder, and completing a PhD is difficult.
Dealing with Discouragement: There is a lot of discouragement in drug development, and experimental science as a whole. The key is to remember to go back to the basics – when an experiment fails, go back to the last thing you did that worked well, the most basic fact, and rebuild from there.
Advice to Students Thinking about Biomedical Careers: Get into research as early as possible. It is good to have a handle on how things are discovered, and how research works, even if you don't ultimately end up in research.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: There can be language and color biases in the selection of people that have their papers published, who make presentations, and who are chosen for lab work. If English is your second language, these skills may be harder to master, so it is important to work at it.
Other Interests: Skiing
Additional Comments: Don't be discouraged. There is more than one option for how to get where you want to go in your career.

JAMES L. SHERLEY
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Birthplace: Memphis, Tennessee
Degrees: BA (biology) – Harvard University; MD, PhD (molecular biology and genetics) – Johns Hopkins University School of Medicine
Professional Fields of Interest: Tissue stem cell biology and development, tissue stem cell engineering, cancer cell molecular biology, aging research, environmental toxicology, and drug development
Future Developments in Field: Methods to identify, isolate, and expand adult tissue stem cells for research and biomedical applications; methods for detecting tissue stem cell toxicity for drug evaluation; determination of the molecular basis for non-random chromosome segregation by tissue stem cells
Qualities Needed for Success: Excitement about discovery, dedication to career work, self-confidence and conviction, excellent scientific training, excellent presentation skills, and strong interpersonal communication skills
Personal Mentors: Grandparent and particular relatives, parents, particular grade and high school teachers, particular Sunday school teachers, undergraduate faculty research advisor, undergraduate research supervisors who were graduate students or postdoctoral fellows at the time, graduate research advisor, faculty mentors during early years as a principal investigator, and faculty and administrative mentors for developing research center administrative expertise. The best mentors had confidence in my ability to become a scientist and showed that confidence to me. They understood and cared about what was going to happen to me, and they provided essential information, support, and counsel.
Best Advice ever Given: The best pieces of advice I've received came from my father: "Put people first." Of all the things going on, think about people and their needs first. Also, "It is your sincere intentions that matter. What matters most in this life is not what we do, but why we do it."
Change in Choice of Career: I have not had a change of career as of yet. I have been a scientist from birth. However, later in my academic research career, I came to understand that entrepreneurship and business development are important means of advancing the benefits of scientific discovery to patients sooner; and I now direct a biotech start-up company that I founded for this purpose.
Best Career Experience: Seeing my students and trainees confidently and expertly present their research. In the future, seeing young investigators whom I have mentored grow in their own careers and life pursuits.
Worst Career Experience: Meeting noted senior scientists who were white, whose papers I read with excitement as a student, having all the excitement of one day meeting them, only to have them ignore or dismiss me. I attribute these disarming and disheartening moments to my race. They were not receptive of me and expressed no interest in talking with me. Also, when I gave presentations at scientific conferences, scientists who were white consistently asked me, "Whose laboratory do you work in?" I hated this, but over the years I came to expect it from most scientists and to simply correct people as a matter of fact, without judgment. This continued late into my career when I was no longer a young scientist, nor did I look younger than my age. The idea of a black person leading a laboratory group still does not occur to many among the majority of white scientists. Because of my race, many among them invariably assume that I work for someone else, even with my now graying hair.

Advice to Students Thinking about Biomedical Careers: Recognize and know your own ability. It is one thing that others cannot control or take away, unless you allow it. Getting excellent training and finding committed mentors are sometimes hard things for students to accomplish, but believing in themselves is always within their control.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Racism: It contaminates everything and it comes in many guises. One such racist idea is that American students of African heritage are not capable of work at the highest level. Students must avoid internalizing this pervasive suggestion that exists in every aspect of the scientific and biomedical enterprises. The challenge is to recognize the irrationality of this idea and not be limited by it. Isolation: "Being the only one." Make connections, try to keep connected, and don't become isolated. Modesty: Celebrate your successes more. Special programs: Avoid programs and enterprises that, although well intended, reinforce destructive ideas in society that engender low expectations for students who are members of underrepresented groupings, e.g., a minority program at the University of Maryland in Baltimore was reported to encourage minority students to retake classes that they had already passed. Ridiculous! Instead, they should focus on identifying minority-specific barriers to higher level of achievement in these courses. Some of these barriers will most certainly be due to institutional and individual practices.
Other Interests: Spending time with my two daughters, movies, poker, reading science history, and multiple developing novelistic/autobiographical writing projects
Additional comments: Needed social change begins with determined individuals, but it only happens when they can bring others into their vision.

MACKENZIE A. FIRER SHERWOOD
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Birthplace: Milwaukee, Wisconsin
Degrees: BA (chemistry) - Skidmore College; PhD (chemistry) – Boston University; MBA – UCLA Anderson School of Management
Professional Fields of Interest: Cell and gene therapy, CRISPR/Cas9, CMC (chemistry, manufacturing and controls) strategy
Future Developments in Field: There will be a greater shift towards personalized medicine; the use of CRISPR will continue to explode in the next couple of years; and we will see more automation in manufacturing.
Qualities Needed for Success: Seeing the holistic picture of a program or problem, experience with cross-functional team management, patience, a strategic mindset
Personal Mentors: The best mentors are those who recognize your own personal qualities, see you for who you are, and adapt their mentoring style to suit your needs rather than recreate themselves. A good mentor will also challenge you to think outside your comfort zone, and is honest with you about the challenges they faced and their career experiences.
Best Advice ever Given: Don’t ride the “research wave.” There are going to be successes and challenges in your work life and it’s easy to have them influence your overall mood – try not to let them impact your outside life.
Change in Choice of Career: I thought I would pursue a career in academia, but very early on decided to pursue a career in industry instead. I originally studied protein chemistry, and then moved on to biopharma. In industry, I began in an individual functional role, and then moved to a cross-functional strategic role.
Best Career Experience: When I have been involved with clinical trials for products that have not been approved yet, and have the opportunity to hear the stories of patients who are using the product and benefiting from the therapies, it has been extremely rewarding. It is so meaningful to me to be able to work on therapies that can help treat diseases that have not been able to be treated before.
Worst Career Experience: It was very demoralizing when I was in a position where I was asked to do the same thing over and over again, and did not learn anything new.
Dealing with Discouragement: I talk about the experience with a mentor whom I am comfortable sharing my feelings with, and I vent to my friends – both of which helps me to reset and feel better. Internally, I make a list of things that I can do, and even if it’s just small things that are crossed off the list, it makes me feel that I am moving forward.
Advice to Students Thinking about Biomedical Careers: Be a sponge. Say yes to any opportunity, even if it’s not a perfect fit. Use every opportunity as a learning experience.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Many of those with the responsibility for hiring or providing opportunities have implicit biases against those who may be culturally different or who have a resume that might not look perfect. Another obstacle is the institutional racism in our educational system which impacts lower income students.
Other Interests: Spending time with my two young children, Pilates, reading

SHAHLA SIDDIQUI

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Birthplace: Pakistan
Degrees: MBBS - Aga Kahn University; MSc (biomedical ethics) – National University of Singapore; DABA (anesthesia) – University of Maryland Baltimore, Columbia University, NY
Professional Fields of Interest: Intensivist, anesthesiologist, medical ethicist
Future Developments in Field: COVID has created a huge burden on ICU units and resulted in changes to how we deliver intensive care. Critical care patients have many different needs. It is important for all kinds of medical professionals to become involved with intensive care so that the footprint of care can be expanded.
Qualities Needed for Success: Compassion is the most essential quality needed when treating patients in critical care. You must be able to have interpersonal connections with both the patients and their family, as well as your peers, and demonstrate humanistic qualities.
Personal Mentors: Both my parents were physicians and have been mentors to me. My mother has been a great role model as well, showing me that there are no limits to what you can accomplish. The qualities to look for in a mentor are a personal choice. You want to choose someone whom you would like to emulate, and who you believe can give you confidence, doesn't set limits on what you can achieve, and can open up doors for you.
Best Advice ever Given: Go for it! You will fail. For every ten projects you start, maybe only two or three will be successful, but you shouldn't see that as a failure. You have to take the risks in order to learn and evolve. Believe in yourself and in the end, you will come out stronger.
Change in Choice of Career: I have had to restart my career from scratch twice. Ten years after my undergraduate training in the US, I had to return to Pakistan, where I had to start my career all over again. Then I moved to Singapore, where I was working and teaching. When I came back to the US, I had to restart my career again. When you restart your career, you have to build back your confidence, regain the trust of your colleagues, and prove yourself all over again. While it is difficult, it will help to improve your skills and help you evolve.
Best Career Experience: The pandemic made me realize that life and death is a real equalizer. The pandemic effected everyone. It helped me to reach out to the patients and their families, and make real connections. It made me a more sensitive human being.
Worst Career Experience: Experiencing and dealing with gender bias. I have worked in three different cultural environments, and in each one there are different gender biases. There are fewer women in leadership roles, and women are expected to work harder than their male counterparts, while also being a wife, mother and homemaker. I try to speak up about these biases when I can and not let it affect my motivation or passions.
Dealing with Discouragement: I find people who can give me positive energy. I take time out for myself – maybe ten to twenty minutes a day – to read something motivational, or otherwise coach myself to understand what can help me feel better. Don't feel like a victim; look for a solution, a way out.
Advice to Students Thinking about Biomedical Careers: My mother always said that working in the biomedical fields, where you have the ability to serve others, is the most rewarding and noble of professions. It doesn't matter what you do within the broad range of fields, it is an honor to be able to save lives or help relieve suffering.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: This career is very demanding; it requires a lot of hard work and is highly competitive. There is a history of racism and biases, but don't feel like a victim. Stay positive and always believe in yourself. If you show commitment, compassion and excellence, then biases will fall and a path will open for you. Fight for what you want.
Other Interests: I spend time with my family, particularly my two sons. I like listening to music. I used to ride horses and play polo. My father was an amateur polo player and he taught me that it is important to have other interests in life and to excel in different ways.

MARK J. SIEDNER

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Birthplace: San Jose, California

Degrees: BA (biochemistry/economics) – Hamilton College; MD – Johns Hopkins University School of Medicine; MPH (epidemiology/biostatistics) – Johns Hopkins University Bloomberg School of Public Health
Professional Fields of Interest: Global health, HIV, non-communicable diseases, and understanding health and human disease in resource-limited settings
Future Developments in Field: There is never a dull moment in the field of global health.
Qualities Needed for Success: For global health, you need to have an interest in travel and a true interest in cross-culturalism. Overall, you'll need to have patience.
Personal Mentors: I've achieved what I have today largely due to the mentorship I've received. Look for a mentor whom you aspire to be like, both professionally and personally.
Best Advice ever Given: Always be ready to apologize
Change in Choice of Career: I had a wonderful opportunity after college to live internationally. It was a somewhat daunting adventure but it got me on track to pursue a career in global health.
Best Career Experience: I've had the incredible privilege to practice medicine and do research in Uganda and South Africa, which has brought me both practical experience and the chance to learn first-hand about the issues I seek to address through my field of study.
Worst Career Experience: Coming to the realization that life and work only get more interesting and challenging - with each victory, many new challenges lay ahead.
Dealing with Discouragement: I turn to my family, friends, and mentors. It's very important to know yourself and learn when it is time to take a break.
Advice to Students Thinking about Biomedical Careers: Do as much as you can while you're in the training phases of your career. Learn about what kind of person you are and the things you like (and do not like). Volunteer, travel, and talk to others. Make sure that you are pursuing a life and career you actually want and that will inspire you to succeed.
Other Interests: Eating the most exotic foods in places I probably shouldn't be eating them.

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Birthplace: Bucharest, Romania
Degrees: BSc (biochemistry and cell biology) – International University, Bremen, Germany; MSc (molecular biology), PhD (cell biology and neuroscience) – Jacobs University, Bremen, Germany
Professional Fields of Interest: Biology, cell biology, neuroscience, regenerative medicine
Future Developments in Field: Advances in technology, such as genetic and genomic manipulations, higher visualization of the biology of organisms and tissues, and artificial intelligence are becoming increasingly incorporated into our work.
Qualities Needed for Success: Passion and interest in the area you are gearing towards; drive to achieve the academic skills needed to succeed; the motivation to keep learning and studying; perseverance
Personal Mentors: It is important to have a mentor who resonates with you and your interests, and with whom your personality matches. That mentor should also be someone whom you can communicate with honestly, openly and freely. If you have that, then you can get from them everything that they have to offer.
Best Advice ever Given: It was not one piece of advice or one particular person that has encouraged me, but rather growing up in an environment that made me feel as though I could achieve anything that I wanted that has been the most enabling.
Change in Choice of Career: I have known what I wanted to do since I was six years old. The changes have been in the areas of biology that I am involved with, and the progressive accumulation of learning and growth in the field.
Best Career Experience: My current career is extremely satisfying. I am passionate about what I am doing, and I never feel like I am working too much or that it's a job.
Worst Career Experience: Sometimes work can be overwhelming and it is a challenge to balance that work and my personal life.
Dealing with Discouragement: Science teaches a lot about dealing with rejection and failure. There are more failures than successes, and through your experiences you learn to take it in stride. Learn from failures, but never let them get to you and keep your eyes on the horizon and your next target, because the next success will be coming.
Advice to Students Thinking about Biomedical Careers: Make sure you are passionate about what you do, and then go for it! It will not be easy, and sometimes not financially rewarding, but if you have the conviction that this is what you want to do, it will be emotionally rewarding.

Issues Facing Minority Students Pursuing Careers in Biomedical Science: I have worked primarily in international environments, where there is openness and acceptance to diversity and new ideas. Whatever obstacles there may be can be overcome if you have passion in what you do, and a determination that nothing will stand in your way.
Other Interests: Science is my hobby. I also enjoy walking, hiking, being in nature, reading, listening to music, and going to museums.
Additional Comments: You can overcome any potential hurdles if you are interested in and committed to the work that you do, have the determination to succeed, and are passionate about what you do. If that is all true, you will have a very rewarding experience.

VINCENT C. SMITH

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Former BSCP Student

Birthplace: Dallas, Texas
Degrees: BS – Texas A&M University; MD – Stanford University School of Medicine; MPH – Harvard T.H. Chan School of Public Health
Professional Fields of Interest: Health service research, parental NICU discharge readiness, families affected by substance abuse, and medical care for LGBTQ-headed families.
Future Developments in Field: There will be improvements in the management and outcomes of former premature infants. There is much better understanding of premature infants' physiology and mechanism of disease.
Qualities Needed for Success: Persistence, patience, being detail-oriented
Personal Mentors: My personal mentor took time to know me. He spent a lot of time thinking about my future and what my plans and goals were. He helped me to shape myself into the physician I wanted to become. He always kept my best interest at heart. I could talk to him openly and honestly. He had an extraordinary effect on my life.
Best Advice ever Given: Always believe in yourself. Role models say, "be like me." Mentors say, "be like you."
Change in Choice of Career: I started my research doing basic science because it was what I knew. I felt that it was not for me. I just did not know what other options were available. Then, I was introduced to health services research. It was a much better match with my personal research interest.
Best Career Experience: My first job working in a hospital was the best. I learned a lot and got exposure to the medical field. It felt like I was doing something important.
Worst Career Experience: I spent a long time working in a lab that I did not enjoy. I did not know enough to seek better mentorship.
Advice to Students Thinking about Biomedical Careers: Keep an open mind. Do not be afraid to try new things.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: There are many people who do not realize that minority students interested in biomedical sciences exist. This may make it harder to find research opportunities.
Other Interests: Hiking, science fiction/fantasy reading, and holiday cooking

CARMELA S. SOCOLOVSKY

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Birthplace: Chicago, Illinois
Degrees: BA (neuroscience, French language and literature) – University of Virginia; MD – University of Chicago Pritzker School of Medicine; MPH (health policy) – Harvard T.H. Chan School of Public Health
Professional Fields of Interest: Care delivery transformation for vulnerable populations
Future Developments in Field: Value-based payment systems will create increasing financial incentives to restructure care delivery to reduce cost and improve quality/outcomes. For communities with vulnerabilities, this will hopefully mean health care systems will build innovative methods to address patients' social and medical needs more effectively
Qualities Needed for Success: Patience, perseverance, empathy

Personal Mentors: The best mentors are the ones who acknowledge what they don't know and are willing to reach out to colleagues with expertise in other areas to help get the information that is needed, and to expand the mentee's network. A good mentor is also someone with whom you feel comfortable talking with about your personal life as well as your career, because personal decisions often affect your career decisions.
Best Advice ever Given: Take it slow. Medical training is an endurance race, not a sprint. Be careful of burn-out.
Change in Choice of Career: Health equity has always been the focus of my career, but I initially planned on following a traditional academic medicine path, in part because that is what I was most exposed to. A combination of networking, mentorship and training (especially as a Commonwealth fellow) helped me craft a clearer, and less traditional, vision for my career that better fits my interests and goals.
Best Career Experience: The Commonwealth Fund Fellowship in Minority Health Policy at Harvard Medical School. It provided me with a year of guided introspection and training, opening up doors for future opportunities, and gave me the ability to make a difference. I also enjoyed the work I did on Project ECHO in the south side of Chicago and spending a few months as an au pair in France before medical school.
Worst Career Experience: Residency training is indispensable, but it is hard. I realized that I was losing focus of the bigger picture, and wanted to do more than clinical care.
Dealing with Discouragement: I talk to friends, family, or mentors to help me troubleshoot the experience and figure out whether the discouragement was due to something I had control over and, if so, what I could have done better.
Advice to Students Thinking about Biomedical Careers: Be patient. Training takes a long time. If you have a vision of what you want to accomplish that may be different than the typical path, don't let others dissuade you. Stick with it. It takes fortitude.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: It can be more difficult for students who aren't familiar with the educational or medical system. It is harder to navigate the rules of the game without the benefit of generational knowledge and connections. There is still a lot of racial and gender bias. Minority students face micro aggressions that can be wearying.
Other Interests: Spending time with my family (8 month old son, husband and dog), home renovation DIY projects, traveling

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Former BSCP Student

Birthplace: I am originally from Nicaragua and grew up in the Washington, DC area.
Degrees: BS (biology and French) – Yale College; MD – Harvard Medical School; MPH (global health) – Harvard T.H. Chan School of Public Health
Professional Fields of Interest: General surgery, global health, underserved communities, working with the Hispanic community
Future Developments in Field: An increased use of robotics in surgery
Qualities Needed for Success: Perseverance, interest in learning, and a support system
Personal Mentors: Look for a mentor whom you admire and who shares your values.
Best Advice ever Given: Focus on one thing and do that one thing particularly well.
Change in Choice of Career: In medical school, I toyed with different specialties but ultimately decided to do surgery because of the impact I could have on people's lives. In the middle of my residency, I decided to get my MPH and developed an interest in global health. Now I am working in my community.
Best Career Experience: One of the most fulfilling aspects of my career is the relationship with my patients. It is a privilege to be able to heal people and see the immediate impact that a surgery has. Additionally, being able to work on solving healthcare problems on a public health level is extremely rewarding.
Worst Career Experience: My residency was the most challenging time. Practicing medicine is like learning a new language. It takes years of experience to get to the point where it becomes second nature.
Dealing with Discouragement: I surround myself with my family and church community when I need support. In this career, remember that it's a marathon and not a sprint. In order to take really good care of your patients, you must take care of your own wellbeing.

Advice to Students Thinking about Biomedical Careers: This is a very rewarding career but it is also a long and challenging road. Make sure that you go into it for the right reasons. Be sure to find good mentors who can give you good advice and support you along the way.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: One of the biggest hurdles for minority students is the scarcity of minority role models in biomedicine. When you don't see a lot of minorities in your desired field, it can sometimes be easy to doubt yourself.
Other Interests: I'm involved in my church. I've been teaching myself how to play the piano. I enjoy running, music, karaoke, admiring nature, and animals (I have a French bulldog and 5 birds).

REBECCA ANNETTE SOTO
Senior Scientist, Communications and Content Marketing
Biocytogen

Birthplace: El Paso, Texas
Degrees: BS (biochemistry) – University of Texas at El Paso; PhD (biological and biomedical Sciences (BBS)) – Harvard University
Professional Fields of Interest: Science industry business and operations
Future Developments in Field: Current standards for drug trials often don't include participants who most need to be included in these studies – how we classify and design clinical trials will be changing to address these failures.
Qualities Needed for Success: To complete a PhD program you need to be patient, accept failure and understand that things don't always work out the way you expect, adapt to change, but most importantly, you must be collaborative.
Personal Mentors: I have had many great mentors since my undergraduate years. The mentor who has had the most impact on both my scientific and personal life is Mathew "Willy" Lensch (from Harvard University). He challenged me across many facets, but his intentions were always rooted in his desire to make sure I was okay not just as a scientist, but as a person. A good mentor is one who makes an effort to understand you at every level, where you come from, how you fit into the world professionally and personally, and who is interested not only in your professional results but also in your overall well-being.
Best Advice ever Given: Professionally, the best advice I received was from my PhD mentor who encouraged me to take advantage of opportunities that lead to more opportunities. From the personal side, my mother's advice was, "walk into a room like you belong," be confident in who you are and what you offer.
Change in Choice of Career: Where I attended undergraduate school was largely determined by family circumstances, and although I initially considered other schools, I learned to adapt and make the most of where I was. This allowed me to experience things that I would not have at a different school.
Best Career Experience: As a first year undergraduate, I participated in the Howard Hughes Medical Institute's Phage Hunters Program, which is designed for freshman to gain research lab experience. At the end of the program, I was asked to present at the annual symposium highlighting the work we conducted that year. This led me to continue my work with HHMI via a summer research opportunity at Harvard University. I had not known anything about bench research before starting that program, and it ended up encouraging me to pursue my doctorate.
Worst Career Experience: I would not say it was the worst, but getting through the PhD program was very challenging. In addition to the nature of the work itself, having to adapt to the differences between a majority-Hispanic culture in El Paso to the Boston/New England culture was a hard adjustment.
Dealing with Discouragement: Part of any PhD program is learning how to deal with discouragement. Things often don't work out the way you want. To get through it, I had to learn how to push through, to not take things personally, and to recognize what is constructive criticism. I absolutely experienced imposter syndrome when I first started, but I eventually found my path and embraced that each person has their own strengths and weaknesses.
Advice to Students Thinking about Biomedical Careers: I would give different advice to students at different stages of their education and career. When you are applying to schools, consider not only the reputation of the school, but the opportunities that it will provide and the environment in which you will be learning. Consider things outside the typical career paths, and see what else might interest you. Build up connections.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Lack of representation is the biggest problem. Although many schools are trying to address this issue with diversity and inclusion programs, there is still work to be done. Make sure you have mentors, regardless of cultural background, who care about you as an individual. Understand and appreciate other priorities in your life.
Other Interests: Sports, tennis, shopping, my faith, and faith-based community activities
Additional Comments: Navigating the graduate school process can be very difficult, especially during these last few years. With more learning happening remotely, it can be difficult to separate your school/work life from your personal life, causing many to experience burn-out. Make sure to take time out for yourself and prioritize your well-being. Take advantage of campus resources, and find a peer group, trusted mentor, and community outside of school/work that you can turn to.

DJADÉ SOUMANA
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BSCP Board Member
Former BSCP Student and 2013 Hope Scholarship Recipient

Birthplace: Manhattan, New York
Degrees: BS (biochemistry and molecular biology) - University of Massachusetts Amherst; PhD (biochemistry and molecular pharmacology) - University of Massachusetts Medical School; MBA (in progress) - Boston University Questrom School of Business
Professional Fields of Interest: Biomedical research, molecular pharmacology, industry, drug development
Future Developments in Field: In the field of sales and advertising, everything is becoming more targeted to the individual. We're getting better at understanding our customers, their purchasing habits, and what they need. On the biomedical side, there is also huge potential for personalized medicine. I believe that technologies like CRISPR will help us get answers to scientific questions we've never been able to approach before now.
Qualities Needed for Success: You can't give up! You need to persevere because success takes a lot of time. It's hard: there are many obstacles, and you have to have clarity of the mind and never forget why you want that success.
Personal Mentors: I always strive to have at least two or three mentors in any given area, both professionally and personally. I look for mentors who have either attained something I aspire towards or are well on their way. You can learn from someone who might not have every quality you are looking for, but you need to supplement that with multiple mentors. For example: if one of my goals is to be a world-class scientist who presents all over the world, I might try to find mentors including a world class scientist, someone with great public speaking capabilities, and maybe also a mentor who can help build my interpersonal skills. First, identify why you need that mentor, then, figure out the skills that are important for that aspiration, and then find people who have those qualities.
Best Advice ever Given: "Don't be afraid of chasing your dreams." One of my mentors said this to me because I often dream big and then come up with reasons to doubt that dream. After she gave me this advice, I chased my dream of working at the National Institutes of Health and ended up working there as a postdoctoral fellow!
Change in Choice of Career: I changed my career very recently: I was working on drug development for infectious diseases at the National Institutes of Health, and started to consider careers outside of lab work. I then met some scientists from GE who were using their scientific training for therapeutic efforts, and the business aspect sounded very appealing to me, so I changed my trajectory.
Best Career Experience: One year, I won both the BSCP Hope Scholarship and a fellowship from the National Institutes of Health. Those two things together were huge, especially because they came at a time when I was starting to doubt my abilities. Those two awards showed me that my efforts counted, I had good ideas, and this was the right field for me. The scholarship allowed me to attend other events and international speaking conferences, while the fellowship opened a lot of doors. Both gave me credibility, and it just became a snowball effect.
Worst Career Experience: It was really hard for me when I was not working in my chosen field because I felt off track. Working with fruit flies was also difficult because the fly life cycle requires getting up very early and waiting six to eight hours between consecutive batches. After living according to the fly-life-cycle for three weeks, I could hear the buzzing in my ears all the time!
Dealing with Discouragement: Discouragement is really hard, but you have to remember your greater purpose/goal. You must maintain perspective on how long of a journey a career is. Stay true to yourself, remember your purpose, and surround yourself with people who believe in you and won't let you give up.
Advice to Students Thinking about Biomedical Careers: This is a great time to be in biomedical science (industry or academia). Biomedical science is hard, but it is extremely rewarding and fun. When you're out there doing internships and working in labs - share ideas, talk, and read about the things that interest you. This will help you maintain your passion for science.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Often one of the biggest hurdles is imposter syndrome. Despite all your credentials, you may not think you belong. You have to work through it; if you're not 100% there, you're going to become the source of your own difficulty. Advancement opportunities can be harder to come by, or people may not respect your credentials. Many of the difficulties you may face are unjust and unwarranted, but things will shake themselves out - just focus on doing pristine work.
Other Interests: I love cooking. I'm obsessed with food - I use laboratory style techniques to cook elegant dishes and take beautiful pictures of them. I love being outside, riding my motorcycle, and playing tennis. I also used to do Tae Kwon Do.
Additional Comments: Projects that are worthwhile take a long time and you need to keep walking towards them. My overall message is this: never give up.

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Former BSCP Student

Birthplace: Nevada
Degrees: AA (liberal arts) – Palomar Community College, California; BS (chemistry) – University of California Los Angeles; MS (chemistry) – California State University, Los Angeles; PhD (chemistry) – University of California, San Diego
Professional Fields of Interest: Chemical biology, biochemistry, genetic diseases, neglected diseases, drug discovery, virology
Future Developments in Field: COVID has pushed us towards new frontiers and greater innovation in synthetic RNA and genetic therapeutics.
Qualities Needed for Success: Curiosity, perseverance, passion, and critical thinking.
Personal Mentors: Supportive mentors are those who advocate for you and coach you to go beyond your limits to achieve your highest and best.
Best Advice ever Given: Love what you do.
Change in Choice of Career: Changing scientific disciplines and moving from academia to industry.
Best Career Experience: In graduate school, I led an interdisciplinary research group between UC San Diego and Cornell University developing a platform to identify *de novo* peptides using machine learning. These efforts led to publishing in a prestigious journal, *Nature Communication*.
Worst Career Experience: Take each experience as a learning lesson. Those moments strengthen you to be the person you're meant to be at the end.
Dealing with Discouragement: I seek advice from mentors and other fellow scientists who have experienced what I may be challenged with. We typically discuss our shared experience and follow-up with next action steps.
Advice to Students Thinking about Biomedical Careers: Get into a research lab as soon as possible and immerse yourself in it. Start networking early, find mentors, and take advantage of opportunities because you never know what may come of it.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: There are unconscious gender-based and ethnicity-based biases everywhere. It is important to let our actions speak loudly for when we cannot let our voices be heard by doing amazing research and advocating for those experiencing similar challenges.
Other Interests: Baking, traveling, puzzles/games, gardening, and home improvement projects.
Additional Comments: If you love what you do and you are passionate about what you do, that passion will show through your work and you will be good at it. You can always succeed at something you love

TARALYN MARIE TAN
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Birthplace: Denver, Colorado
Degrees: BS (biochemistry and Biophysics) – Oregon State University; PhD (neurobiology) – Harvard University
Professional Fields of Interest: Neuroscience education, development of inclusive and equitable training environments in neuroscience and STEM
Future Developments in Field: In education and training – continuing to develop more support for students, with a particular focus on the student's mental health, by providing training, mentorship, and inclusive teaching environments. In neuroscience and STEM – continuing discussions about the structural barriers to entry, and more DEI work.
Qualities Needed for Success: 1) Perseverance and resilience - students will come up against all sorts of challenges; you must be able to stick it out. 2) An ability to leverage your support system – you must develop an effective line of communication with your mentors and support systems so that they can provide you with encouragement and insulation when things go wrong in the lab. 3) An innate curiosity, passion for the work, and desire to learn.
Personal Mentors: 1) A mentor should be flexible, willing to engage with you and acknowledge and value your goals, and adapt their mentorship style to match you and your needs. 2) A mentor should be your advocate, help you make connections, provide you with people and resources needed to achieve your goals, and be invested in your success. 3) A mentor should recognize the importance of being a mentor, learn about the best practices of mentorship, and grow as a mentor.

Best Advice ever Given: Keep an open mind, and have a willingness to try new things and explore different career paths.
Change in Choice of Career: I started out thinking I wanted to run a neuroscience research lab, but pivoted to neuroscience education and academic administration.
Best Career Experience: The day-to-day interaction with students. I am always amazed and inspired by the students I work with, and I'm glad that I can play a small role in helping them to achieve their goals.
Worst Career Experience: The administrative details of my work are not always fun, and it is always a challenge to find the funding and the people hours to advance our initiatives.
Dealing with Discouragement: I lean on my support network - a community of friends, colleagues and mentors – to help me brainstorm about how to get through the challenges.
Advice to Students Thinking about Biomedical Careers: It is important to self-reflect on what motivates you, what makes you satisfied, and then go after it. Be flexible, keep an open mind, and if you have a passion for something, find a path to get you to where you want to go.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: The hidden curriculum - there are norms and procedures of navigating the path of higher education and advancing in a career, particularly in STEM, that involves connections, inside information, and knowledge that is not always apparent to minority students. We have to learn how to make the implicit explicit, teach minority students how to navigate the space of higher education, and make STEM more welcoming to minority students.
Other Interests: Trail running, hiking, birding, generally being in the woods
Additional Comments: A good general piece of advice: if you find something you love, stick with it. Don't let negativity or bumps in the road deter you, or let others prevent you from achieving your dreams. Find people who are committed to helping you reach those dreams.

ELSIE TAVERAS

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Conrad Taff Professor of Nutrition, Department of Pediatrics – Harvard Medical School
Professor, Department of Nutrition – Harvard T.H. Chan School of Public Health
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Birthplace: New York, New York
Degrees: BS (neuroscience) – New York University; MD – New York University Grossman School of Medicine; MPH (clinical effectiveness) – Harvard T.H. Chan School of Public Health
Professional Fields of Interest: Pediatrics, childhood obesity, chronic disease prevention, health disparities, community health
Future Developments in Field: Equity and community health
Qualities Needed for Success: Commitment and passion for your work and what you are studying; strong work ethic; being flexible and open to new opportunities
Personal Mentors: Several mentors have assisted me at different points in my career with my career development
Change in Choice of Career: I wouldn't say that my career has changed, but that it has evolved over time. I knew that I wanted to go into medicine from very early on. My father wanted to be a doctor but wasn't able to go into medicine for financial reasons and family obligations. During college I became very interested in child development because my mother was back in school; she was interested in this field and really opened my eyes to it. I was specifically interested in pediatrics. In medical school, I truly understood how much there was to do within pediatrics. I realized that with a public health degree I would be able to change and improve the health of populations of children, not just impact children on an individual basis.
Best Career Experience: Mentoring students, fellows, and other faculty
Dealing with Discouragement: I don't get discouraged very easily. I preempt discouragement by being as organized as possible and working in teams. When discouragement does strike, I turn to discussions with my husband and research staff to try to figure out where things went wrong, and how we can regroup and prevent it from happening in the future.
Advice to Students Thinking about Biomedical Careers: Find good mentors.
Other Interests: Spending time with my family. We are an active family who enjoy traveling and visiting our families in New York and California.

SHELLY DIONNE TAYLOR
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Birthplace: Fort Lauderdale, Florida
Degrees: BS (Psychology) – University of Florida; DMD – University of Florida College of Dentistry; MPH (health management)– Harvard University T.H. Chan School of Public Health
Professional Fields of Interest: Dentistry, periodontics, health equity, public health, social determinants of health
Future Developments in Field: The future of dentistry will include expanded and enhanced working partnerships between medicine and dentistry. Through greater integration, patients will be treated holistically, which will improve health outcomes.
Qualities Needed for Success: Perseverance, patience, diligence, compassion, respect, strength
Personal Mentors: Selecting a mentor who you feel comfortable discussing your goals and fears with is important to fostering a genuine relationship. I enjoy reading the biographies of mentors to learn more about their journey and to determine if their path is relatable.
Best Advice ever Given: Believe in myself, and always go for it. Don't let insecurities damper your aspirations.
Change in Choice of Career: I always knew I wanted to be a dentist, but I did not know if I wanted to specialize or which dental specialty to pursue. As a dental student, I thought I would pursue endodontics, however, once I started practicing dentistry, I realized endodontics was not the right fit for me. After some self-reflection, I decided to pursue periodontics.
Best Career Experience: In 2017, I became the dental director of a new clinic with a very small staff. Over the course of a year, we increased the number of dentists, hygienists, and patients substantially. Collaborating with my co-workers to develop and expand a clinic that treats the under-resourced population has been a highlight in my career.
Worst Career Experience: At the beginning of my career, I was treating a patient with serious dental issues. The patient wanted all his teeth extracted, even though some teeth were salvageable. Instead of listening to what the patient wanted, I encouraged the patient to save some teeth. A year later, the patient's dental problems continued, and we ended up needing to do what the patient asked for in the first place, extractions. The lesson learned from this experience is to listen to the patient and tailor the treatment to meet them where they are.
Dealing with Discouragement: If the discouragement was a result of my actions, I self-reflect and ask myself what I could do better the next time. If the discouragement was a result of my team's actions, I discuss the results with my team, and we brainstorm how to improve.
Advice to Students Thinking about Biomedical Careers: Go for it! The field is very broad – explore the field widely. Talk with different people in different fields. Don't limit yourself. Try different avenues to make sure what you want to pursue is truly your passion.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Interviewing for a position can be a daunting process especially when you are the only minority in the room. I understand how this can feel uncomfortable, and how you may experience Imposter Syndrome. It's important to always feel confident that you earned the right to be in the room and you have the skills to excel in the position. Never doubt yourself!
Other Interests: I enjoy working out and competing in gym competitions. I also enjoy reading, photography, and traveling.
Additional Comments: Focus on yourself and what you want to achieve, not on what others may be doing. Always believe in yourself.

YOHANNES TESFAIGZI
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Lovelace Respiratory Research Institute (Albuquerque, New Mexico)
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Birthplace: Asmara, Eritrea
Degrees: BS (animal science), MS (biology), PhD (microbiology) – University of Hohenheim, Stuttgart, Germany
Professional Fields of Interest: COPD (chronic obstructive pulmonary disease), asthma, chronic bronchitis, lung cancer
Future Developments in Field: Earlier detection and better management of chronic lung diseases (including severe debilitation of the lungs resulting from exposure to cigarette smoking, other pollutants, or infection)
Qualities Needed for Success: Persistence, ability to work across disciplines and across cultures as a team, good communication skills, resilience, having long-term goals and milestones

Personal Mentors: The mentors that I look to for advice and direction are people in my field who understand what I do, and whom I feel comfortable to approach and ask questions. I learn from their expertise, wisdom and knowledge. For students looking for mentors, look for someone with whom you can relate, who has gone through the same issues you are facing or has reached the goals you have set for yourself, who is able to express their views in a way you can understand, and who listens to you.
Best Advice ever Given: Stay positive even in difficult conditions. Know that better times will come.
Change in Choice of Career: As a student, when I was in high school, I lived in a different country all alone, with no one to communicate with. That was a big change in my life. In my career, I started off with a focus in animal science and agriculture, and then discovered my interests tended more towards biology. In biology, I have shifted focus from molecular biology to pulmonary biology and airway epithelial biology.
Best Career Experience: The most difficult experiences, where things occurred or I was given responsibility that I wasn't expecting and thought I could not possibly accomplish, were the best. I was asked to recruit heavy smokers for a clinical study and that exposed me to a new field that I hadn't expected to go into.
Worst Career Experience: Leaving my own country, and being alone in a foreign country.
Dealing with Discouragement: I reflect on what is getting me discouraged, think about how I will deal with it and what I will do to get out of it – and then I learn from it.
Advice to Students Thinking about Biomedical Careers: If biomedical science is a real interest, try to find role models that you can look up to, and people who have experience and are successful in the field in which you are interested. Maintain a good long-term relationship with these people so they can help you when you need them. Be persistent. It is very rewarding work to be able to help people and improve the health of disadvantaged people with societal problems.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: The need to constantly adapt to other people's views and cultures, differences in ethnicities and backgrounds, and getting used to complex situations that one has not grown up with.
Other Interests: Tennis, piano, guitar, drawing, spending time with my wife and kids

TIFFANY THIEL
Executive Director, Process Development
Amgen, Inc.

Birthplace: Pennsylvania
Degrees: BS (chemistry) – Kings College; PhD (analytical chemistry) – University of Florida
Professional Fields of Interest: Analytical and physical chemistry in support of small molecule, siRNA and biological therapeutics; spectroscopy; solid state characterization
Future Developments in Field: The way we develop and manufacture molecules will change, with an emphasis on speed and agility. Continuous, modular manufacturing with real time controls continues to play a role here (versus traditional batch manufacturing). COVID developments have also reset speed expectations in our industry and opened up opportunities for collaboration among former competitors in the biopharmaceutical field.
Qualities Needed for Success: A strong technical background and scientific foundation; being collaborative, resourceful, and self-aware – know when you don't know something, acknowledge your lack of expertise, appreciate that the knowledge can be gained elsewhere, and reach out to others to fill those gaps.
Personal Mentors: A good mentor should be someone you respect, who is successful in their career, and who has moved through their career by being collaborative (not focused only on independent goals). A good mentor listens, processes information, and provides the necessary advice to help you advance your career. The mentors who have been beneficial to me and my career have been those who have experiences in not just one field of study or in one department in an organization, but who have worked across fields and have varied experiences that give them a broader understanding of pharmaceutical development.
Best Advice ever Given: Know more today than you did yesterday. Continue to learn. There should never be a period of arrested development in your career. If you feel you are stagnant in what you can learn in a certain position, traina successor and take up a new challenge.
Change in Choice of Career: I have always been in pharmaceutical development and process development – what has changed are the types of products I have worked on. I began with a background in analytical organic and physical chemistry and worked in small molecule development. Now I am involved in much more complex molecules and a wider spectrum of biopharmaceutical modalities.
Best Career Experience: Having the opportunity to manage and mentor other staff members, give back to them, and help them achieve their goals, has been very fulfilling.
Worst Career Experience: Having a manager I didn't respect.
Dealing with Discouragement: I naturally try to find the silver lining – I look for lessons learned, discover the mistakes and

find the opportunities to not make those mistakes again. If these instincts are not natural, one should develop a mind set to intentionally think of the positives and grow from experiences.
Advice to Students Thinking about Biomedical Careers: There is a big difference between your academic experience and a professional experience, particularly if you are thinking of a career in biopharmaceutical development. If possible, embed yourselves into the field by taking advantage of a co-op or internship opportunity. Find a mentor who can give you advice, bring you in on the inside, so that you can see firsthand what is involved.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Amgen is committed to recruiting staff members from diverse backgrounds, however, we find that the pool of minority students in the STEM field is small. The evolution of that lack of minority recruits may be the result of hurdles for minority students earlier on in their academic paths. STEM education and opportunities in STEM should be emphasized from early on, and opportunities for internships and other involvement with STEM careers should be made more available to minority students.
Other Interests: Being outdoors with my family, astronomy, running, rowing, and kayaking
Additional Comments: I would be happy to speak with students interested in talking about work-life balance. It is important to build a work-life balance early, whether it is balancing a family or other interests, because those habits will serve you well as you advance in your career.

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Former BSCP Student and 2012 Hope Scholarship Recipient

Birthplace: Boston, Massachusetts
Degrees: BS (biology and biotechnology) – Worcester Polytechnic Institute; PhD (biomedical sciences) - University of Massachusetts Medical School
Professional Fields of Interest: Regulatory affairs, industry, quality assurance, biotech industry
Future Developments in Field: There is a lot of development on the ICH-Q12 guideline, which aims to harmonize how we evaluate post-approval regulatory changes worldwide. I think it will be interesting to see how global health authorities collaborate and agree on the proposed strategies.
Qualities Needed for Success: It's important to be detail oriented, a team player, and willing to learn and adapt to new things. It helps to have a lot of drive and be willing to put forth initiative.
Personal Mentors: Mentorship is a two-way street that requires work from both the mentor and mentee. It must be a good fit for both parties involved. Try to connect with someone who has a journey that you can relate to, and who will support and advocate for you.
Best Advice ever Given: Life is never going to be a straight path - there will be bumps in the road, but you have to just continue to push toward your goals. No two people will have the same journey.
Change in Choice of Career: When I started my PhD in immunology, I thought I wanted to be a PI and work in a lab. However, by the time I graduated, I wanted to leave the bench altogether and work in industry. Industry gave me the opportunity to work on a team and directly impact the lives of patients by making sure that they have access to safe pharmaceuticals that otherwise might not be obtainable.
Best Career Experience: Getting into the postdoc program at Biogen in Regulatory Affairs-CMC and Manufacturing Sciences was pivotal because it allowed me to start something completely outside of my field of expertise. I was fortunate to meet mentors at Biogen that supported me and wanted me to succeed.
Worst Career Experience: When I started my PhD program, I had high expectations about the career that I thought was a good fit for me. Having to reevaluate my goals after graduating was very difficult.
Dealing with Discouragement: I generally try to be a very positive person. I tell myself that even though things may be rough right now, something better will come from it in the future.
Advice to Students Thinking about Biomedical Careers: Try to get involved in any way possible early on in your career - whether it is an internship, volunteering in a lab, or even job shadowing. Hands-on experiences help you identify what you like and don't like, and make you a strong candidate for schools and jobs in the future.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Often, minority students have a lack of awareness of the opportunities that are available. Additionally, students may not see people that look like them in biomedical careers, and might not realize that it's an option for them to pursue.
Other Interests: I love to dance! I also enjoy Zumba classes, kickboxing, and generally pursue being active.

Additional Comments: If students are interested, I did an interview about being a biotechnology manager that can be accessed at https://www.careergirls.org/role-model/biotech-manager-0/.

KIM L. THORNTON

Director, Division of Reproductive Endocrinology and Infertility
Beth Israel Deaconess Medical Center
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Birthplace: Cleveland, Ohio
Degrees: BS – Northwestern University; MD – Case Western Reserve School of Medicine: OBGYN Residency: Wayne State University School of Medicine; Repro Endo Fellowship - Yale University School of Medicine
Professional Fields of Interest: Reproductive endocrinology and infertility
Future Developments in Field: Most of the advances in my field will deal with the genetic testing of embryos for single gene mutations. By conducting advanced tests, we will be able to delineate which embryos will provide the strongest chances for a successful pregnancy and improve pregnancy rates. Current research is focusing on non- invasive testing of embryos, and polygenic screening of embryos for adult onset disease.
Qualities Needed for Success: You must have a passion for what you're doing and be willing to work hard. It's a long road, but very rewarding in the end. Not everyone gets to have a lasting impact on the lives of others in their daily work.
Personal Mentors: You won't have just one, and if you keep your mind and eyes open you'll find them. Various mentors will impact your life at different points and for many different reasons.
Best Advice ever Given: Follow your dreams and don't let anyone tell you that you can't do something.
Change in Choice of Career: I went the traditional route, from high school into college and then started medical school without any interruptions. I didn't always know that I would end up in OB/GYN or end up working in this advanced sector of that field.
Best Career Experience: It's very rewarding to help people reach their dream of having a family. My clinical research is also a great aspect of my career.
Worst Career Experience: Having to deliver bad news (for example: telling someone they lost a pregnancy or didn't conceive).
Dealing with Discouragement: I tend to get more frustrated than discouraged. In times like these, you need a solid group of people whom you can trust. Friends and colleagues act as great sounding boards, helping us act appropriately and avoid overreacting.
Advice to Students Thinking about Biomedical Careers: Prepare yourself as much as possible by building solid fundamental organizational and study skills. You'll benefit by learning good study skills early because in the medical field you will need to be a life-long learner. Practice self-care and make sure that you build healthy lifestyle habits into your daily activities.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: These are contingent upon each student's educational background. Some may not have the basic study skills needed to succeed in this field, so they will have to work much harder to overcome their shortcomings. Seek help to build the skills you need to succeed
Other Interests: Spending time with my daughter, gardening, reading, traveling, cooking, and serving on the board of two nonprofit organizations
Additional Comments: There are resources out there to help you. Look for them; if you can't find them, ask for help.

TRICIA THORNTON-WELLS

Director, Translational Medicine
Alkermes
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Birthplace: Atlanta, Georgia
Degrees: BA (philosophy), MS (biomedical informatics), PhD (neuroscience & statistical genetics) – Vanderbilt University
Professional Fields of Interest: Neuroscience, genetics, drug development, neuro imaging, neurological & neuropsychiatric disorders
Future Developments in Field: Clinical trials will rely more on biomarkers and will focus more on targeted therapies for particular subgroups of patients, instead of wide categories of disease with heterogeneous etiologies or underlying bio-physiology.

Qualities Needed for Success: A desire to continually learn, ask questions, and add skills and knowledge; critical thinking; general data analysis skills
Personal Mentors: A good mentor is someone who has a genuine interest in the professional development of their mentee, who makes time for the mentee (i.e., doesn't leave the training entirely to other people in their lab), and who encourages you to have an open mind about your career path.
Best Advice ever Given: Persevere. You can do anything for whatever amount of time it takes, as long as you keep the goal in mind. Keep telling yourself, "I can do this for X years, because it will open up the next door to opportunity." Also, QTIP: Quit Taking It Personally (with regard to constructive feedback on work product)
Change in Choice of Career: Up until about seven years ago, I was a tenure-track Assistant Professor at Vanderbilt University doing academic research. Due to the difficult funding environment, I began looking at a career in the pharma/biotech industry, and it has turned out to be a good fit for me. The work is very similar, but much to my surprise, it is even more exciting and challenging.
Best Career Experience: Working in my current role as Project Lead for a drug in early-stage development. It is by far the most rewarding job I've ever had! I am constantly learning about new areas of research, building on my skill set and gaining hands-on experience across so many different disciplines within drug development.
Worst Career Experience: Unfortunately, I have had the experience where politics and chaotic management got in the way of great science. A good work culture is very important wherever you are!
Dealing with Discouragement: I think about the worst case scenario. That helps me to put things in perspective, because nothing is ever as bad as you think. I focus on persevering and keeping at it until things turn around.
Advice to Students Thinking about Biomedical Careers: Love what you do. In this field, you can do something exciting while also making a good income.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Due to a lack of representation in the field, it can be challenging for minorities to imagine themselves in this field and to build a good network. However, LinkedIn has made finding those role models so much easier and within reach! Don't hesitate to reach out to someone on LinkedIn with a thoughtful message, because I've found people are willing to help! Glass ceilings still exist, and minorities do still face negative unconscious (if not overt) bias, but it gets better with every day, every new person entering the field, and working toward a critical mass!
Other Interests: Reading, hiking, and spending time with my husband and two teenage boys.

HENNING TIEMEIER

Sumner and Esther Feldberg Chair in Maternal and Child Health
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Birthplace: Hamburg, Germany
Degrees: MA (sociology) and MD – University of Bonn Germany; PhD (medicine) – Erasmus University, Rotterdam, Netherlands
Professional Fields of Interest: Child development, maternal and child health, etiology of child psychiatric diseases
Future Developments in Field: Child developmental problems have been medicalized; frequently the first treatment for child psychiatric diseases is pharma-based and the promise has been to search for medical causes of these diseases and improve treatment. Now, increasingly there is a focus on the societal and familial impacts on these disorders. Second, many disorders in child psychiatry that share causes, symptoms and treatment, are artificially split. Slowly we are lumping disorders together again - for example the diagnosis of Asperger syndrome is not used anymore.
Qualities Needed for Success: Research that combines scientific rigor with societal and public health concerns. Quantitative research, with a globalist and translational approach.
Personal Mentors: A mentor should be really good in the subject matter of their expertise. But a good mentor cares for you as a person, not just as a scientist, and supports your life choices even if that choice means you leave the group or even the field.
Best Advice ever Given: The best advice I received was to not go back to working in clinical practice but take the risk of focusing on research only.
Change in Choice of Career: I changed the focus of my research 15 years ago, from old age psychiatry to child development.
Best Career Experience: Almost 20 years ago, I was involved with others in setting up the Generation R Study, a large pre-birth cohort in Rotterdam that enrolled nearly 10,000 mothers and their children, which continues its work today. It was a great experience.
Worst Career Experience: I worked for 18 months as a health service researcher. While it is relevant, it did not suit my

personality.
Dealing with Discouragement: When confronted with a discouraging result in research, I take a step back from the problem, and then look at it objectively to determine whether it is worth it to try again, or just to accept the failure and withdraw. If the research project was a mistake, then the challenge is to learn and grow from it.
Advice to Students Thinking about Biomedical Careers: Follow your interests and not the fashion. Have fun. Perhaps my most important advice, team up with friends to do research, try to have a best friend in your lab (but not your partner). Engage in quantitative thinking even as a basic scientist.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: While I am reasonably optimistic about the arguably decreasing overt racial discrimination, I cannot judge the subtle racial discrimination that may be experienced by minority students. I do know there is a lack of representation among minority groups, and therefore a lack of a peer group. For survival in the biomedical field, it is important to have support from friends which is easier if those friends are from the same background. It is harder for minorities to find that support group of peers. Another issue faced by minority students is that often they are considered to be a representative of their racial or ethnic group, and there can be a lot of pressure to perform on behalf of the whole group. Just think of the trivial but frequent request some students receive to represent their group in meetings, committees, and events.
Other Interests: I love to cycle and cook**.** More interestingly**,** I am lucky to have found a community here in Boston that plays the German game of Skat (it is a card game somewhat similar to bridge). I used to play all the time in Germany, but haven't played in a while because I could not find people to play with anywhere in the Netherlands where I lived for 20 years.
Additional Comments: I respect the mission of BSCP.

MEHMET TONER
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Birthplace: Istanbul, Turkey
Degrees: BS (mechanical engineering) – Istanbul Technical University; MS (mechanical engineering) – Massachusetts Institute of Technology; PhD (medical engineering) – Harvard-MIT Division of Health Sciences and Technology
Professional Fields of Interest: Biomedical engineering, clinical application of engineering tools, transplantation and organ preservation, tissue engineering and regenerative medicine, microfluidics, clinical diagnostics
Future Developments in Field: Storage time for organs to be transplanted will be extended. Stem cell treatments and immunotherapies are becoming the fastest growing area of medicine. Diagnostics are improving with the help of microtechnologies.
Qualities Needed for Success: Science is becoming more multidisciplinary. Therefore, it is important that you have the ability to work across disciplines, have a team player attitude, and be able to work cooperatively to solve complex problems.
Personal Mentors: The people who have helped me grow in my career I call "angels' rather than mentors. A mentor is someone who you interact with significantly; an "angel is someone who you might have spoken to once or twice, but who changes your life. They are people who think of what is best for you rather than what is best for themselves. As for mentors, the most important quality to look for in a mentor is selflessness. A good mentor will make you a better person, as well as a better scientist.
Best Advice ever Given: The best advice I received was given to me by a person who I met with only once or twice. An interviewer at Yale told me to go to MIT instead of Yale, because it would be better suited to meet my combined interests in biomedical engineering and health care.
Change in Choice of Career: I left Istanbul and came to the United States for graduate school, and have remained here since. That was my big change. In terms of my career path, that has basically stayed the same although I am always looking to learn more, explore other fields that I may not be as knowledgeable in, and apply that new knowledge to innovations within my own field.
Best Career Experience: When I decided to switch my approach towards academia with more of a focus on industry and applied and translational work, and whether the research and the knowledge is useful to mankind.
Worst Career Experience: No "worst" experience comes to mind. I have been lucky. I did find it more challenging as a young faculty member, worrying about securing my future, getting tenure, and climbing the ladder.
Dealing with Discouragement: Bad news comes and goes. I don't look to the past, I always look forward. I feel confident that I can generate the new ideas, and build the new teams, that will lead to success.

Advice to Students Thinking about Biomedical Careers: There are three boxes that you can find yourself in: doing work that you are not excited about and nobody else cares about it; doing work that you are excited about but nobody else cares about it; or doing work that you are excited about and everybody wants it. Try to avoid "me too" research. Go with your heart, pursue the big ideas even if you might fail. Enjoy the challenge of the journey.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: During my 40 years of experience, I have seen changes in cultural attitudes towards the need for inclusion. While it has gotten better, there is still a long way to go.
Other Interests: Cooking, art collecting, playing tennis, skiing, sports
Additional Comments: If you only think with your brain, your successes will be short lived. Think with your brain and your heart. Try to be right and do right in the course of your career.

NANCY TORRES-FINNERTY

Internal Medicine
Boston Health Care for the Homeless Program
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Birthplace: Bronx, New York
Degrees: BA (biology) – University of Pennsylvania; MD – University of Illinois at Chicago College of Medicine
Professional Fields of Interest: Medical care for underserved populations, substance use disorder, perioperative care for patients experiencing homelessness
Future Developments in Field: The opioid epidemic is now the number one cause of death in the homeless population of Boston. We are finding new ways to make treatment as accessible as possible and educating patients about harm reduction.
Qualities Needed for Success: Work hard and persevere. Know yourself and have faith in your own strengths. Learn how to reassure yourself so you don't need validation from others.
Personal Mentors: My personal mentor is my mother. She taught me the importance of believing in myself. Whatever anyone tells you about your strengths or your weaknesses doesn't mean anything unless you believe those things for yourself.
Best Advice ever Given: You can be a wonderful mother and a doctor at the same time.
Best Career Experience: Every opportunity to help someone die with dignity, peace, and comfort is a privilege and an honor. To be present with a patient at the end of life and to help them have a good death is one of the most humbling and beautiful experiences I have ever had.
Worst Career Experience: I was caring for multiple sick patients at the same time on different floors in the hospital. One was deteriorating and needed to be transferred to the ICU, another was having an acute psychiatric episode which I couldn't attend to right away, plus several more patients I didn't even lay eyes on yet … I was overwhelmed and burst into tears in the middle of the ward.
Dealing with Discouragement: Talking to family and friends who know me best helps me to think more objectively when self-doubt takes over my brain. Also, I have learned the importance of self-care. It reminds me I am a person with value and worth, regardless of my mistakes and failures.
Advice to Students Thinking about Biomedical Careers: Work hard and stay focused. Don't be discouraged by a bad grade, negative feedback, or an advisor who tells you that you won't make it. Learn from your mistakes and move on to the next step.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Minorities are still underrepresented in the health field. Stereotypes and biases may never go away, but we don't have to feel like we have to prove ourselves. We need to let our achievements speak for themselves.
Other Interests: Dancing, music, funny movies

JASMIN TOWER

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Generation Bio
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Birthplace: San Antonio, Texas
Degrees: MA (organizational psychology) – William James College; BS (management) – University of Massachusetts Dartmouth
Professional Fields of Interest: Human resources, culture, engagement, diversity, equity & inclusion, industry, pharmaceuticals, biotech
Future Developments in Field: The biotech industry will continue to be a pipeline for innovation and global discovery in the development of therapies for patients.

Qualities Needed for Success: Natural curiosity, due diligence, accountability, and a foundational knowledge in your area of expertise with flexibility to grow.
Personal Mentors: Look for mentors with whom you have a natural affiliation, whom you can learn from, and who empowers you to contribute to their work. Mentors should expose you to their networks, and be active in helping you to achieve success.
Best Advice ever Given: Follow great leaders within great organizations because they tend to invest in people.
Change in Choice of Career: The biggest change in my career has been transitioning from roles within mid-sized and large pharmaceutical and life sciences organizations, to joining a smaller biotech company. Biotechs allow for more autonomy and influence to shape the company's direction from both a scientific and culture perspective.
Best Career Experience: At the last company I was involved with, I was charged with establishing the North American and EMEA HR strategy for fourteen acquired and/or established biotech organizations. We were able to uncover the organizational cultures within each company and determine what drove innovation at these smaller biotech companies, while leveraging the advantages of a bigger pharmaceutical framework.
Worst Career Experience: Working for a company where I was at odds with the organizational culture and values, which prevented me from bringing my authentic self to the job.
Dealing with Discouragement: I take time to reflect, figure out what the root cause of what the discouragement is, and then determine how much it has to do with me personally versus the environment and broader circumstances. The majority of the time, it's not personal, it's business.
Advice to Students Thinking about Biomedical Careers: Understand what motivates and excites you and then follow your passion. If you love what you do, you will bring your best attributes to the job. There are many possibilities, as the key skill sets and capabilities are transferable to many different employment options.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: It can be more challenging to discover opportunities and get your foot in the door. Be open to networking, putting yourself out there, reaching out to industry professionals, and attending conferences/industry events. SHARE YOUR STORY! Exposure will lead to opportunities which lead to experiences grounded in your education.
Other Interests: Traveling, Zumba, entertaining, being a hockey mom
Additional Comments: Biotech and life sciences are wonderful fields to be in. They are looking for the best and the brightest, from whatever their origin, which makes the industry inherently diverse.

PO TSE
RS EDS/Senior Reliability Technologist
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Birthplace: Hong Kong
Degrees: BS (electrical engineering) – Northeastern University; MS (science in management), PhD (ultrasound medical imaging) – Worcester Polytechnic Institute; PhD candidate (material science) – Northeastern University
Professional Fields of Interest: Electronics sourcing such as components devices, printer-circuits-board-assembly (PCBA) manufacturing process, printed-circuit-boards, and focusing on product quality and reliability issues
Future Developments in Field: This is a needed and essential field currently, and in the future, especially for medical/biomedical devices. This field will also impact high reliability industries such as NASA, aerospace, military, automotive, test and measurement, and telecommunications. Products being developed in these industries must ensure long-term product reliability performance requirements to be met and not be compromised due to materials changes.
Qualities Needed for Success: You need to be detailed-oriented, a systemic thinker, and have strong analytical ability, patience, and passion.
Personal Mentors: Dr. John Lau has been my mentor. His experience in his field, his network in a variety of fields, and his work ethic increased my capacity and my horizon.
Best Advice ever Given: Take your time to resolve a problem.
Change in Choice of Career: I used to be a designer engineer and I used those skills as a stepping-stone for what I do now.
Best Career Experience: Solving a problem in an unconventional way when everyone thought it was not possible.
Worst Career Experience: Someone didn't give me the clear information to work with and this led to an unintelligent pre-assumption on the outcome.
Dealing with Discouragement: Take heart and do not be afraid. Try to improve the situation by re-visiting the issue again, which takes a lot of courage.
Advice to Students Thinking about Biomedical Careers: Take your time; don't rush into a decision about your career.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Minority students are not given the opportunities to see what is out there. The schools and guidance counselors are not guiding them into these fields.

Other Interests: Reading, reading, and reading
Other Comments: Be passionate about your career choice.

KATY VEPRAUSKAS
Staff Pathologist
Pathology Specialists of New England
Elliot Hospital and Southern New Hampshire Medical Center

Birthplace: Kailua, Hawaii
Degrees: BS (physiological science) – University of California; MD – University of Hawaii
Professional Fields of Interest: Pathology (specializing in head and neck (ENT)) and dermatopathology.
Future Developments in Field: One of the biggest struggles will continue to be the rift between the cost of advances in healthcare and its affordability. The technology we have available to us keeps advancing, which is great, but we struggle to keep up with the cost of these advances for actual patients. I hope that the future will bring more research to guide us in how best to utilize these developments, and that by practicing evidence-based medicine we can streamline cost and maximize efficiency. One great example of this is in the field of targeted molecular therapy for cancer patients -- only the patients with a certain mutation are treated with the drug that targets that mutation.
Qualities Needed for Success: Persistence, responsibility, and an interest and aptitude not only for science but critical thinking in general. Medical practitioners have to not only learn a great deal of information, but also have to have the commitment to apply the knowledge of medicine to difficult cases which may not fit the textbook examples.
Personal Mentors: Select someone who is committed to spending time to connect with you and who shares the same values, whether it be a shared interest in a certain specialty, a similar background, or a commitment to work-life balance. I've had many mentors throughout my training -- some have been research collaborators, others have helped me navigate the journey towards my subspecialty, and a couple have helped me get through personal struggles. It's best to have a few different mentors who have various strengths and backgrounds; that way you'll have lots of help for the various challenges that you'll encounter in your medical training.
Best Advice ever Given: Ask as much advice as you can from the people who came before you. There's no need to reinvent the wheel! From talking to fellow students about study strategies, to asking residents and attendings how to best prepare for a certain rotation, I've gained so much insight in how best to navigate the waters of school and residency. That's one of the reasons I wanted to participate in this mentoring program!
Change in Choice of Career: I've always been interested in science but I also liked writing, so it took me a while and many different courses to figure out that I wanted to go into medicine. Also, I was always held back from medicine by the thought that you had to be some sort of genius to do it, which I didn't consider myself to be at all! But after some shadowing and other experiences in college that made me decide that medicine was something I really wanted to do, I took the MCATs and got a decent score, which gave me the confidence to apply to medical school.
Best Career Experience: One of the best experiences I've had was when I started signing out cases independently (i.e. giving the pathologic diagnosis on patient specimens, from biopsies to tumors removed during surgeries). It was really rewarding to finally come to the end of my formal training, put all that I had learned to use, and give patients the diagnoses they needed in order to get proper treatment.
Worst Career Experience: I struggled a lot in medical school and residency with feeling that my time was largely out of my control. It's not hard to sacrifice time when you know it's to help a patient, but there are many parts of medical training where you aren't really helping patients but are just stuck doing tasks because you are at the bottom of the food chain. This hierarchical system in medicine seems to be changing for the better, but there are still aspects of it that can be frustrating when you're going through it.
Dealing with Discouragement: Having friends and family both in and out of medicine is incredibly helpful. Your medical school and residency friends can relate to what you're going through and can understand the challenges that medical training brings, but friends and family outside medicine bring a greater perspective that is also invaluable.
Advice to Students Thinking about Biomedical Careers: You should definitely have an interest in and an aptitude for science, but you should also have a commitment and passion for the practice of medicine. Seek out opportunities to shadow or work in something related to medicine. You don't want to just go on the premed track and end up halfway through medical school or residency realizing you'd rather do something else with your life. It's important to have a sense of the sacrifices that you'll have to make and whether you feel that the rewards of the profession will balance these out.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: My friends and I who are women in medicine often talk about how there's sometimes an unspoken sense that we have to always try harder, act more professional, work longer hours, etc. in order to be seen as having the same level of competency as our male peers. Medicine is still male-dominated at the upper levels and in certain specialties, but it is improving.
Other Interests: Hiking, skiing, going out with friends, music

NATALIA VOGE

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Janssen Pharmaceutical Companies of Johnson & Johnson
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Birthplace: Mérida, Yucatán (Mexico)
Degrees: MD – School of Medicine, University of Yucatán, Mexico; PhD (microbiology) – Colorado State University
Professional Fields of Interest: Translational science and medicine, virology, immunology, autoimmune diseases, viruses, public health
Future Developments in Field: There is a lot of excitement about translational medicine. We work with newly discovered immune pathways that may lead to the discovery of brand new therapies for old diseases, and also with well-known pathways to learn if they can be targeted in other disease indications.
Qualities Needed for Success: Resilience is key. Things sometimes go wrong in science; understand that this is the normal process to learn and move forward. You must be dedicated, willing to go the extra mile, and open to learning new things all the time, but also be willing to rest and take of your mental health.
Personal Mentors: Look for a mentor with life experiences, as the person with the most number of degrees is not necessarily the person with the most hands-on experience. A good mentor will give you their committed time, even if it's just thirty minutes every six weeks. Try someone that you relate to in some way
Best Advice ever Given: Data shall prevail.
Change in Choice of Career: I practiced medicine as a physician in Mexico for some years before applying to graduate school in the United States. I went from having my own thriving practice and successful MD to being just another grad-student since the MD degree that I earned in Mexico is not recognized in the US. After completing my doctorate, I decided to take the USMLE steps and passed all of them, but did not match into any program in part because as a foreigner I wasn't trained on best practices when interviewing and because I had graduated medical school about eight years back. So, I decided to entirely focus on clinical development research. Now, I have found a home in translational medicine where I can use my medical background as well as my basic-science background. This is the right place for me.
Best Career Experience: My current job at Janssen. We are discovering new immune pathways to discover the best and safest ways to deliver new medicine to patients.
Worst Career Experience: When I finished graduate school, it was difficult as an immigrant to find a job.
Dealing with Discouragement: Know that it is okay to feel frustrated or disappointed, but be swift to move on. You have to keep trying and working hard.
Advice to Students Thinking about Biomedical Careers: Everyone considering this field should assess whether this is what they really want to do. It is satisfying to know that you are working for the greater good, however, being in the biomedical sciences and particularly in drug delivery which will affect patients' lives, requires a high degree of responsibility and a strong code of ethics.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: There are preconceived notions about minority students and their abilities, and inherent biases (in all interactions, not only in the biomedical sciences) that must be overcome almost on a daily basis.
Other Interests: Martial arts, music, cats.
Additional Comments: It is not an easy path. You must work hard. Don't give up, though. Things will get better!

LUCY CHARLENE WAFO

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Former BSCP Student

Birthplace: Yaounde, Cameroon
Degrees: BS (biology) and MS (biological sciences) – University of Massachusetts Lowell; PharmD - Massachusetts College of Pharmacy and Health Sciences University
Professional Fields of Interest: Pharmacy, pharmacogenomics, digital health, public health, academia
Future Developments in Field: There is a legislative movement to advance the profession of pharmacy into more of an equal provider status. Ten years ago pharmacists couldn't do immunizations, and now we provide medical therapy management, immunizations, and point-of-care testing. The scope of the profession is expanding from pharmacists acting as just medication experts to being more of an integral part of the healthcare team.
Qualities Needed for Success: Humility is the most important quality for success. When you're humble, you can look back at

past successes and failures and make the most out of every situation. It keeps you well rounded and helps you learn and grow. Determination and focus are next on the list. Nothing comes easy in life, and you really have to go for it if you want to achieve your goals. Be passionate about what you do - once you are determined, no matter the obstacle, you will keep going.
Personal Mentors: Mentoring is a two-way street. It requires time, commitment, and common ground. I would advise students looking for a mentor to identify someone who will help get them to where they need to go. Make sure that the relationship doesn't end the day of the program - it's the beginning, not the end.
Best Advice ever Given: 1) No matter what is happening on the outside, stay true to your values and objectives in life. 2) Always try to find the balance between your roles in society (career, family, personal identity, etc.). 3) Give back - no one would be where they are without other people helping them along.
Change in Choice of Career: When I joined BSCP in 2010, I was on the pre-med path after participating in the UMass Summer Enrichment Program. I was initially interested in becoming a gynecologist. I had a change of heart around the time I was helping with a project on healthcare cost containment with the Department of Public Health and the Greater Boston Interfaith Organization through an internship with the Health Career Connections Internship Program at the Harvard School of Public Health. At that point, I had started to consider whether I wanted to do policy, medicine, or pharmacy. With the cost containment project, I was working with all three and realized medications are the most significant percentage of our healthcare costs. Pharmacy seemed like the best option to bridge my interests in public policy and clinical medicine, and I felt I would be in a better position to use my strengths to help people.
Best Career Experience: In general, what I like most about my current career is being able to provide recommendations to the clinical team to ensure the best therapeutic outcomes for patients and subsequently being able to communicate the designed therapeutic plan to patients and their families in a patient-friendly and patient-centered manner. It's amazing to be able to improve patients' health outcomes and see the impact my clinical advice can have on their lives.
Worst Career Experience: It's always sad to learn that a patient who had been under your care for a long time has passed away.
Dealing with Discouragement: Maintaining my faith and physical well-being, as well as seeking help and wisdom from my support system of family, friends, and mentors. Additionally, I read motivational and empowering authors to help me get through the discouragement. When I'm in an unexpected situation, I take a step back and analyze the situation before trying to find a better solution.
Advice to Students Thinking about Biomedical Careers: Your path might not be as straightforward as you think, but you have to maintain a vision of where you want to go and assess your progress each step of the way. You will have obstacles, but if you stay determined and focused, and find people who can help you through, you will be able to get to where you want to go.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Issues faced by minorities include sexism and institutionalized racism, combined with the belief some people hold that, due to being a minority, you don't have the talent to do your job. You can rise above that by staying true to yourself while nurturing your talents, using them to excel in your field, and making a difference with your work.
Other Interests: I enjoy traveling, especially anywhere with beautiful views, nice weather, and a beach. I like running, both playing and watching soccer, as well cooking.

HELEN H. WANG
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Professor of Pathology
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Birthplace: Taiwan
Degrees: MD – National Taiwan University; MPH (epidemiology) and DrPH (epidemiology and biostatistics) –Harvard T. H. Chan School of Public Health
Professional Fields of Interest: Pathology
Future Developments in Field: Personalized treatments for cancer patients
Qualities Needed for Success: Diligence, discipline, motivation, and persistence
Personal Mentors: The mentor and mentee should have common interests, and the mentor should take an interest in the mentee's goals.
Best Advice ever Given: Focus on one thing at a time.
Change in Choice of Career: The biggest change I made was choosing to switch from a research job to patient care.
Best Career Experience: Every day!

Worst Career Experience: The most challenging experience for me was my first job as an epidemiologist. I needed to write a lot of grants and work with a lot of senior people. This was difficult as it was early in my career and I was a non-native English speaker.
Dealing with Discouragement: I turn to my Christian faith.
Advice to Students Thinking about Biomedical Careers: Do what you like to do; don't choose this field because you think you'll get a good job.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: It can be difficult to come from a different culture and language. I was able to overcome with a lot of hard work and persistence. For a minority student coming from another country: Just focus on what you enjoy doing and try not to pay too much attention to what others think.
Other Interests: I enjoy reading, playing piano, and reading the bible every day.

MARY L. WARNER
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Birthplace: San Diego, California
Degrees: BS (general science) – Seattle University; MMSc (PA program) – Emory University School of Medicine; Doctorate of Behavioral Health (management track) - Arizona State University
Professional Fields of Interest: Physician assistant practice and education, interprofessional education, PA workforce research, opioid use disorder policy
Future Developments in Field: Interprofessional education where healthcare students practice as a team; shifts in physician assistant practice to include behavioral health
Qualities Needed for Success: Flexibility, persistence, and willingness to try new initiatives
Personal Mentors: The best way to find a mentor is to ask a lot of good questions. This will show the person you are speaking with that you are interested and want to learn something new. The mentee-mentor relationship will happen automatically.
Best Advice ever Given: Before I was his mentee, my mentor told me I would never become a director of a PA program. Later on, when I reminded him of what he had said, he smiled and told me he "absolutely never said that!" When he told me I wouldn't succeed, I walked away thinking I would prove him wrong and that's exactly how he wanted me to feel.
Change in Choice of Career: Make the most out of any opportunity that sounds interesting and serves the purpose in the moment. I've found that, more often than not, I end up using skills I learned in my early entry-level jobs.
Best Career Experience: I've liked everything that I have done for different reasons. I am really enjoying my time as an educator and leader. This role doesn't give me the instant gratification I experienced when I practiced clinically, but watching students learn and develop confidence is extremely rewarding.
Worst Career Experience: Working in academic medicine can sometimes be politically challenging. There are the forces of personalities, culture, and traditions that you may encounter. It's different from a hospital or clinical setting where everyone is focused on making the patient better so that differences in opinion are relegated to the back seat.
Dealing with Discouragement: The program director of my PA program told us during orientation that PA training would be full of very difficult experiences. "If you can make it through this time, you will have a solid foundation and have the capacity to tolerate a tremendous amount of uncertainty and intense situations." When I face a challenging moment now, I look back at past struggles and remember that I made it through those times. I find a way to carry on.
Advice to Students Thinking about Biomedical Careers: When you make it through a difficult time, take that confidence and experience to get through the next challenge.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: I was the first in my family to graduate from college and to attend graduate school. As the first to go through the process, I did not have a support system with first-hand knowledge of how to navigate the environment, which was challenging. Learn about imposter syndrome. I have worked with several students and faculty for whom this syndrome made it difficult to move forward.
Other Interests: I enjoy traveling, knitting, and going to the movies and theatre. My favorite moments occur when I am with my family on vacation.

KEITH WHARTON, JR.
Vice President, Medical Director
Ultivue

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Birthplace: Los Angeles, California
Degrees: BS (chemical engineering) – University of Arizona; MD/PhD (molecular biology) – University of California Los Angeles
Professional Fields of Interest: Pathology, biomedical science, diagnostic/therapeutic development, science education and literacy
Future Developments in Field: Better understanding and more accurate diagnosis of disease. In the near future we will have many tests that can predict with confidence whether a patient's disease will improve after taking a particular medicine.
Qualities Needed for Success: Curiosity, ambition, persistence, self-awareness, empathy, resourcefulness, and a positive, collaborative attitude. Know when to lead and when to be a team player. You should also strive to develop clear and engaging communication skills, and be somebody whom people enjoy working with. You will likely need a different mix of these skills at different stages of your career.
Personal Mentors: I had many inspiring and supportive teachers in school, but I didn't meet true career mentors in biomedical science until I worked at the NIH in my mid-20s, half-way through medical school and contemplating graduate school. To increase your chance of finding a mentor who is a good fit for you, reach out to many different types of people at different stages of your training, including those "outside-the-box." You will probably need to find new mentors to help guide you during each of the different stages of your career.
Best Advice ever Given: Identify and question all assumptions. Trust your instincts. Stay hungry (thanks to Steve Jobs). Don't allow selection committees to determine the course of your life. Design your experiment so that the results get you closer to the truth even if your hypothesis is wrong - because most of the time it will be.
Change in Choice of Career: To excel in any position, you need to feel daily satisfaction and like you are making progress towards your longer-term goals. After several years as a medical school faculty and then as an Associate Dean, I relocated to the Boston area to work in the center of the biotechnology universe. I am excited each day to work with extremely smart and motivated people, unified by a deep desire to develop new diagnostic tests and therapies. Making new therapies is difficult, expensive, and risky. It requires multidisciplinary insight into biology and disease. My unique combination of training and experiences has prepared me to make a difference in this exciting environment.
Best Career Experience: I was very fortunate as a graduate student to experience the thrill of discovery, to be the first person to have a specific insight into how a little piece of the natural world works – an empowering feeling that gave me great confidence going forward. Most non-scientists never experience this feeling, and most scientists consider themselves lucky if it happens more than once or a few times in their careers. For most, the opportunity to make a discovery does not fall in your lap; you need to prepare yourself to experience it, and take some risks. Now, as a mid-career professional with diverse experiences (and grey hair to go with it), I feel I am able to mentor individuals at various career stages. Now is the most exciting time in history to advance human health through biotechnology.
Worst Career Experience: I once worked in an environment where I felt management's expectations of employees were too low, which initially turned me off of a career in industry. Today, some of the best and brightest people who study science and/or medicine pursue industry-related careers because one's efforts can have a much wider, direct, and immediate impact on human health.
Dealing with Discouragement: Do not allow a committee's decision to determine your destiny. If you are rejected or must modify your plans, seek feedback, reassess, and move forward. Acknowledge your feelings and don't be shy to ask for help. You can't change the past, your background, or your prior actions, but you can learn from your experiences to shape your future. You will grow through the experience, and in the process learn who is on your team (and who is not). With experience, you will develop knowledge and confidence to navigate ever more challenging situations.
Advice to Students Thinking about Biomedical Careers: Try to identify a problem, question, or piece of humanity's puzzle that you care about deeply, whose solutions might be widely applicable to society or human health. Then figure out how you can contribute in a way that utilizes your talents and interests and that you can enjoy minute-by-minute, and after which you can see the rewards. Ideally, each job you seek is a "means" to acquire new skills and achieve a higher "end" you set as a goal, but recognize that your journey will be unpredictable, and you will need to refine your goals over time. The training for some careers is quite long (e.g. MD/PhD), so prepare to enjoy the journey.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Science is global. Our biology transcends national and geographic boundaries, uniting us as one species. DNA and the genetic code unite all life on earth. Many workplaces for biomedical science careers are already biogeographically and culturally diverse, but some are not. Equal access to biomedical career paths is enabled by education, science- and progress-minded cultures, laws that ensure equal opportunity and transparent hiring and promotion practices. Advancement in a biomedical career – or really any career – requires consistent results and growth potential, and relies less on background or effort. In addition to discrimination, underrepresented minorities might face issues similar to those faced by people with unmotivated peers: lack of challenge, difficulty escaping a culture of low expectations, satisfaction with doing less than your best work, and reaching less than your

potential. Try to find a peer group that motivates you to help define and achieve your potential.
Other Interests: I enjoy spending time with my family, reading, writing, art and architecture, and exercise. My work involves thinking and doing, reading and writing, and telling stories with scientific data and images; I love working as a scientist and as a pathologist, so I view many of my work-related activities as hobbies, too.

HILLARY D. WHITE

Neuroendocrine Immunologist, CD8 T Cell Immunology, Virology, Host-Pathogen Immunologic Interactions
Co-founder and Director of Scientific Affairs
White Mountain Pharma, Inc.
Retired Professor of Microbiology and Immunology
Geisel School of Medicine at Dartmouth

Birthplace: Durham, North Carolina
Degrees: BA (chemistry) and PhD (chemistry: biochemistry, enzymology, protein kinase enzymology and kinetics) – University of California Santa Barbara; Postdoc - University of Washington under Nobel laureate Edwin G. Krebs
Professional Fields of Interest: Virus – Host interactions focused on CTL/T killer cell immunobiology and molecular genetics, reproductive immunology, neuroendocrine immunology, retrovirus immunobiology, reproductive tract cancers, stress responses and sex steroid hormones in ovarian carcinoma, chronic diffuse pain in women and men in relation to neuroendocrine stress responses and sex steroid hormones, host immunologic responses to pathogens, transplantation immunology, tolerance vs autoimmunity
Future Developments in Field: Women's health, neuroendocrine stress disorders, reproductive tract cancer, and host-pathogen immunologic interactions
Qualities Needed for Success: Eagerness, willingness to learn, perseverance, commitment, embracing change, being a lifelong learner, listening to yourself, and fully welcoming a challenge
Personal Mentors: My thesis advisor and various colleagues have been great mentors. They were willing to get outside of their own self-interests in order to support others. Good mentors recognize that it is satisfying and part of a wider common good to help others, and thereby derive deeper meaning in your work.
Best Advice ever Given: Embrace following a pathway that resonates with you. Learn from the past, but don't dwell on it other than to productively change course. Look to the future and be goal-oriented.
Change in Choice of Career: Being open to rethinking goals has been essential for me. Since elementary school, I've loved science. In college, I started out in math but decided to switch to chemistry. I went to graduate school in chemistry/biochemistry. I got into immunology by narrowing my goals within microbiology and immunology, based on my interests. I did a lot of exploring before finding out that immunology and neuroendocrinology were my primary interests. I am still fascinated with new opportunities and directions along these lines, including transplantation immunology, tumor immunology, and reproductive immuno-neuro-endocrinology. The COVID-19 pandemic has been an important area recently for following advances in host-pathogen immunobiology.
Best Career Experience: Working in my field, I get valuable feedback from women. They feel that the medical arena has not done justice to their issues. Hearing positive comments from both women and men about these issues is very rewarding. I also enjoy teaching.
Worst Career Experience: It may be difficult when your plans fail to materialize. However, I have learned that this is usually a golden opportunity to reassess values and develop new insights that allow one to focus on turning a weakness into an opportunity and switch focus to even more exciting opportunities. A positive outlook is essential.
Dealing with Discouragement: Being inclusive and enabling, and mentoring each other is essential for growing the biomedical community into a vibrant community. When discouraging events occur, usually most people have done the best they could given the circumstances they found themselves in. Appreciate what you did right, acknowledge ways to course-correct, adjust your goals realistically, and use this information to get to a place that is closer to your goals. Don’t be afraid to aim high. You’ll never know if you can achieve your dreams unless you try. Use the infectious enthusiasm of people around you or people whom you may want to seek out to gain a positive attitude.
Advice to Students Thinking about Biomedical Careers: Listen to your inner voice. There's no sense in going after something that does not engage your interests and excite passion. There are many ills in the world. Given your interests, talents, and hard work - your job is to figure out your optimal place in making the world better.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Each minority group has a unique perspective that is valuable to others in the world. It is that unique perspective that sometimes opens the eyes of others who can’t see beyond their own narrow perspectives. It is important to get the best education and to be responsible for your own failures. Try to resist blaming others for your difficulties and instead learn how to become positive and proactive. If you find something you get excited about, you should try it. You never know how far you may get until you try. It is usually useful to have several "irons in the fire" at any one time, either in idea form or in stages of execution. Be aware that all people share

the basic human feelings of wanting to reach their fullest potential. Along the way, caring about others (in each of your endeavors) is an essential part of life that allows you to feel like you have lived a life worthwhile. Consider it your obligation to seek out and read about people who are inspirational to you.
Other Interests: Family, horticulture, hiking, reading, and bicycling

ROBERT T. WOODLAND
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Birthplace: Philadelphia, Pennsylvania
Degrees: BS (biology) – Villanova University; MS (microbiology) – Ohio State University; PhD (microbiology) – University of Pennsylvania
Professional Fields of Interest: Immunology, virology, gene therapy. Research interests: Immunology, vaccine development, and study of immune responses in humanized mouse models.
Future Developments in Field: A systems biology approach to vaccine development
Qualities Needed for Success: Hard work, a supportive family, and intelligence
Personal Mentors: My mentors helped me stay focused, were supportive when I got discouraged, told me how to do things right, and most importantly provided professional connections.
Best Advice ever Given: As a minority you have to be twice as good to get half as far - sad but still true.
Change in Choice of Career: No.
Best Career Experience: My postdoctoral training at Harvard's Dana-Farber Cancer Institute: It showed me I could compete with the best.
Worst Career Experience: Being laughed at by my high school guidance counselor when I told him I was planning for a career in scientific research.
Dealing with Discouragement: Read a book, get advice from someone I respect, and start over again.
Advice to Students Thinking about Biomedical Careers: Be prepared to work very long hours for modest pay. Seek out like minded peers for support.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Poor preparation for the study of science, family financial constraints, and the lack of minority role models. These things force students to make compromises in their training.
Other Interests: Reading, cooking, and making furniture

JARED KEITH WOODS
Neuropathology Fellow, Department of Pathology
Brigham and Women's Hospital

Birthplace: Louisville, Kentucky
Degrees: BS (biology, cellular physiology) - University of Louisville; MD/PhD – University of Connecticut Health Center
Professional Fields of Interest: Neuropathology; research; anything to do with the brain
Future Developments in Field: In the past twenty years, a lot of genetic testing has been used to help better understand many diseases, including cancer. I am hoping from that genetic testing we will start to develop new therapies and understand how to better treat patients.
Qualities Needed for Success: You must be interested in whatever you are doing. Don't just do what is most convenient or what you think you should. You have to care and work hard. Know that everything you are doing is to help patients.
Personal Mentors: The best mentors are those who want to see you succeed. I had an undergraduate research mentor who told me that when a student is successful, that makes the mentor look good, so the mentor should be invested in your success. It is a mutually beneficial relationship. A good mentor takes the time and goes out of their way to help you. You are not just another person with whom to meet, they are dedicated to you.
Best Advice ever Given: Keep an open mind. You never know what you will be exposed to and what path you will go down when it comes to your career.
Change in Choice of Career: When I started medical school, I didn't know what pathology was. As I gained experience and had more contact with the field, I realized that pathology was important in providing a correct diagnosis to help treating patients. Make sure you explore all options, because you may not know what you are interested in until you have had some exposure.

Best Career Experience: Working at a great institution like Brigham and Women's Hospital. There are so many people who are experts in their field to learn from.
Worst Career Experience: Getting involved with a research project that was not a good fit. When that happens, you have to learn how to recognize that it is not working, and back out.
Dealing with Discouragement: I step back and take time away from the problem. I also exercise to free my mind from the day's problems.
Advice to Students Thinking about Biomedical Careers: It is a lot of hard work. There are numerous steps along the way and a lot of things you have to master (research, clinical shadowing, doing well on tests). You have to keep pursuing your goals, try your best, and most importantly, find something you like to do.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: There are not a lot of senior-level people who can serve as role models and this can be a hurdle. Not seeing someone like you in the position may make you think it is not the right career. Staying strong and fighting for what you want can help overcome this issue.
Other Interests: Playing the drums; cooking; trying to learn a different language; trying out different foods.
Additional Comments: Looking forward to participating!

JINGTAO WU
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Takeda
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Birthplace: Beijing, China
Degrees: BS (probability and statistics) – Peking University; PhD (biostatistics) – Medical College of Wisconsin
Professional Fields of Interest: Statistics, biostatistics
Future Developments in Field: The greater use of statistics to advance clinical trials and drug development.
Qualities Needed for Success: Strong technical and analytical skills, an attention to detail, good communication skills, the ability to translate numbers in different ways to more easily interpret the message being sent through the data, and an ability to translate complicated terms into layman language. Be open minded – there are many ways to analyze data. You should be open to using whatever methods are helpful to defining your objective and use whatever tools are in the toolbox to explain your analysis.
Personal Mentors: My mentors have tended to be the managers I have worked for. A good mentor should be open-minded and patient.
Best Advice ever Given: Keep an open mind. There is a difference in how statisticians and non-statisticians interpret things. The statistician's job is to make others aware of the different ways data can be interpreted by not only looking at the average number (or how people on average behave), but also being mindful about the source of variabilities in the numbers.
Change in Choice of Career: I haven't really had any major changes in my career path. I did work for a computer software company for a year after college. I think that helped me to develop some skills that I still use in my career.
Best Career Experience: I love what I do every day. It is especially gratifying when we analyze data from clinical trials that we designed and the results confirm what we are thinking or encourages us to keep working until it does.
Worst Career Experience: When I spend a lot of time working on something and it is not understood. Sometimes people ignore or dismiss the data and statistics if the numbers are not what they expected; sometimes people have very strong beliefs in the relationships between responses and variables so that the models they use to interpret the data is biased. I am disappointed when they refuse to think again after discussions.
Dealing with Discouragement: I work with what is in my control; I figure out what I can do to change it and make it better.
Advice to Students Thinking about Biomedical Careers: Good communication skills are the most important thing. If you want to work for a pharmaceutical company, you have to learn how to apply what you learned in school, open your mind to learning new things, and apply all that learning into drug-development.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: I find that statisticians in the biomedical science world are generally a diverse group. The qualifications of the job are unique and require a very specific technical skill set, so there is little discrimination. It also seems to appeal to students in minority groups who might otherwise be discriminated against. "Math nerds" are welcome.
Other Interests: Making photo books, reading, shopping, singing, playing piano
Additional Comments: I know that many young students complain about statistics being difficult. Don't be discouraged by the challenge. The concepts of "average" and "variability" are intuitive and used in our daily life. Statistics is a science to study how to estimate and use these two concepts in all scientific fields involving collecting and analyzing data. It is very helpful in whatever career path you choose.

BRISEIDA XHELAJ

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Former BSCP Student

Birthplace: Albania
Degrees: BS (biology) – University of Connecticut; MD – John F. Kennedy School of Medicine; MPH, PhD candidate (community health) – Walden University
Professional Fields of Interest: Psychiatry
Future Developments in Field: As a result of Covid, masks, and isolation, there has been a dramatic increase in the number of psychiatric patients. We have seen a greater level of anxiety and PTSD, as well as an increase in alcohol dependency. A shortage of medications, or needed changes to medication, have disrupted patients' therapy.
Qualities Needed for Success: Focus, determination, discipline, a good work ethic, and lots of hard work. Take advantage of all opportunities that come along – conferences, seminars, interviews. You can't always fix your mistakes but you can learn and move on. Make sure you have mentors.
Personal Mentors: Good mentors are like talking to yourself; they can help you determine what your goals are and how to go about reaching those goals. Find a mentor who is in the same field you are interested in, and who inspires you to achieve what they have achieved.
Best Advice ever Given: Ninety seven percent of people work for the three percent of people who never give up.
Change in Choice of Career: Sometimes, things happen in life that may cause you to alter your career path. When I became a mother I took a break, but I never gave up on my career and kept going forward when I had the opportunity.
Best Career Experience: I finished my training right before COVID hit. The number of patients needing care exploded so quickly, that despite having little experience with the administrative details of a practice (like completing paperwork), I was immediately thrown under the bus. I had to learn quickly how to help people cope with anxiety and get through COVID. I developed videos on self-help that became widely distributed among the Albanian community. Despite the devastating nature of the pandemic, I was able to gain confidence and experience, I was available to help when it was needed the most, and I quickly went from being a new doctor to being a front line hero.
Worst Career Experience: After the birth of my son, I experienced post-partum depression. I was in school at the time. School was making me more depressed and I felt like it was the end of the world. I had to take a break, but I never gave up on my goals and moved forward when I could.
Dealing with Discouragement: I used to blame myself, but I have learned that failure is just a way of letting you know that you need to find a different path, change the way you approach things, solve the problem, and never give up.
Advice to Students Thinking about Biomedical Careers: It is better if you discover what you love, what you are passionate about, earlier on. Don't follow a path because it is what your parents want you to do, or you think that is where you can make the most money – because if you don't end up loving what you do, you will burn out. Take advantage of opportunities that will help you discover what you are interested in like volunteering or interning. Get good grades, find a good mentor, and always act like a professional.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Language can be challenging for immigrant students. Don't let that get in your way. Take English reading and writing classes. Take public speaking classes so that you can learn to present. Always practice your language skills. Don't be afraid to approach other immigrants for advice. Take advantage of the financial opportunities (loans, scholarships, student loan relief) available in the US. Explore all your options. Don't ever give up on your education.
Other Interests: Spending time with family and friends, especially my parents who have given me so much in my life, and now I feel I can give back. I also love traveling, swimming, exercise, dance, and exploring new cultures.
Additional Comments: Sometimes, life for kids in college can get difficult, so they give up on their education. Don't let life deter you. Don't lose confidence. Don't ever give up. You can make it if you keep trying. A career in biomedical sciences is like a diamond – it requires lots of pressure to make it perfect. You will experience a lot of pressure, and the road will be hard, but in the long run you will end up with a successful, happy life.

SYLVIA YIP

Senior Patent Agent
Generation Bio
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Birthplace: Malaysia

Degrees: BS (biochemistry) – National University of Malaysia, PhD (chemistry) – The Australian National University; JD candidate – Suffolk University Law School
Professional Fields of Interest: Biotech, pharma, legal (intellectual property and related transactions, in particular patents)
Future Developments in Field: Misinformation and skepticism about the COVID vaccines has created a negative reputation for the biopharma industry. It is therefore more important than ever for the biopharma industry to make greater efforts to connect with communities and help them understand what a biopharma company is and how it operates in order to rebut misinformation about the industry
Qualities Needed for Success: Natural inquisitiveness and a strong desire to seek objective answers and solutions; resilience to help cope with experimental failures and not knowing the correct answers and solutions.
Personal Mentors: Seek out mentors who are authentic, empathetic, able to share the pros and cons of the industry they are in, and share their own mistakes and failures as well as their lessons and successes.
Best Advice ever Given: Be accessible and flexible, as well as diplomatic.
Change in Choice of Career: I started out as a bench scientist and in academic research. While I loved the science, I realized that my personality was better suited towards the legal profession, where I can utilize my science background to advance legal and also business goals.
Best Career Experience: My current position is my best experience. Working in-house for a biotech company where I can interact with different colleagues from different career backgrounds such as science, legal, business, finance and regulatory.
Worst Career Experience: The high stress of billing hours in a law firm working environment.
Dealing with Discouragement: I try not to take things personally when my ideas are rejected and when someone disagrees with them. I try to empathize with the other person's perspective.
Advice to Students Thinking about Biomedical Careers: Set realistic expectations and goals, and then it will be easier to find satisfaction and not be discouraged. If you go into science thinking that your goal is to cure cancer and change the world, it is easy to feel disheartened and to stay in a career that is full of failures and unknowns. Celebrate small successes and milestones.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Many minority students are not raised in an environment where they have been told that it is possible to have a career in science and there is no one in their immediate circle from whom to draw inspiration from.
Other Interests: Cooking, playing music
Additional Comments: Although I am about to get a law degree, I will consider myself a scientist first. Science, for the most part, is objective and is not divisive. Science improves people's lives

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Former BSCP Student

Birthplace: Cuiabá / Brazil
Degrees: MD – Potiguar University, Laureate International Universities, Brazil; MS (clinical research) – Dresden International University and Harvard Medical School; PhD (candidate) - University of Sao Paulo, Brazil
Professional Fields of Interest: Preventive medicine within the general population (private sector) and volunteer work for underserved populations
Future Developments in Field: We have seen some success with programs developed to address the health issues of underserved and underrepresented populations. It is our hope that we can expand those programs to people around the world who are lacking medical attention and health and nutrition information.
Qualities Needed for Success: Figure out your five-year plan, and then do whatever you need to do to get yourself to where you want to be.
Personal Mentors: You will not be able to find the perfect mentor who exactly matches all your needs. Instead, you should seek out many mentors, each of whom can give you some percentage of what you need, and then combine and filter that advice to help guide you. One mentor who was very helpful to me is Dr. Michael Gibson, a cardiologist at BIDMC. He is very humble and generous with his time. He even made the time to take me to a museum to help relieve my stress.
Best Advice ever Given: When I was sixteen years old, I came to the United States for the first time. Before coming here, I was told by my sister that it didn't matter what my skin color, sexual orientation, or religion was; as long as I focused on what I wanted to achieve, I could do anything.

Change in Choice of Career: At first, I wanted to be a cardiologist. However, I discovered that being a cardiologist was not really what I wanted. I preferred to work on the bigger picture in medicine, and also wanted more of a life balance. I switched to preventive medicine which allows me to work with larger populations.
Best Career Experience: I worked for a year and a half in the northeastern part of Brazil. It is a very remote area, with limited access to technology and resources, and no other physicians available to help out. I was able to work directly with the patients and get to know the community. It was a challenge to have to solve problems on my own; one which scared me at first, but later was something I found to be a great experience.
Worst Career Experience: While I was working on my Master's degree, I was not able to take any breaks. I had to work through holidays and special occasions and I found this to be very difficult.
Dealing with Discouragement: There will be people who will try and discourage you from pursuing what you want. Don't let them distract you from your goals.
Advice to Students Thinking about Biomedical Careers: You should be flexible about what you want to do. There are more options on the academic side than working in bench research. If you are more of a people person, pursue a career in clinical research.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: There are those who will tell you that you are not good enough, simply because of who you are. Don't let them discourage you. Pursue whatever it is you want to do and look at your culture as being an asset rather than a disadvantage. I was brought up to be sociable and careful about how I present myself. I found these qualities helped me as I networked and in my travels.
Other Interests: Reading, running, and kayaking
Additional Comments: There is more than one path to follow.

ISABEL ZACHARIAS
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Vertex Pharmaceuticals
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Birthplace: Maryland
Degrees: BA (child development) – Tufts University; MD – Tufts University School of Medicine
Professional Fields of Interest: Hepatology, gastroenterology
Future Developments in Field: A focus on creating transformative medicines for people with rare liver disorders.
Qualities Needed for Success: Dedication, innovation, clear communication, collaboration, efficiency
Personal Mentors: I have several mentors that provide me with feedback and guidance that has been critical to my success at work as well as outside of work. A great mentor is one who is open, is willing to be asked questions, and gives thoughtful answers.
Best Advice ever Given: Ask questions and don't be afraid of what other people will think. The way to learn and to grow is to start with a question.
Change in Choice of Career: My career change happened a little over a year ago. I had been working in academic medical centers since 2002. I joined the Vertex team to work on treatments for a liver disease called Alpha 1 Antitrypsin Deficiency. It was a change for me, but I feel it has been a great career choice.
Best Career Experience: After my transition to Vertex, I have been involved in amazing experiences daily. These experiences range from successful cross functional collaboration, completion of a stretch goal, and contributing to my team's success.
Worst Career Experience: Not feeling confident to add to a conversation/meeting.
Dealing with Discouragement: I try to stay positive. I take each new day as it comes - with every new day there is a new opportunity.
Advice to Students Thinking about Biomedical Careers: It is a great field and there are so many different opportunities within the field.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: I am a first-generation American. When I was beginning my career, programs like this one were not available. I found the biggest hurdles for first generation students were learning about the opportunities that were available, finding mentors, and having access to the resources needed to go through the process. If you are interested in the biomedical sciences, make a point of getting involved with programs like these. It is important to get as much information as you can and find a mentor early on.
Other Interests: I spend time with my husband and two children. I also like to make jewelry and knit.
Additional Comments: I am excited for this event. It is critical to get exposure to the field early on. Don't be afraid to ask questions. Spread the word about this conference to your peers/ colleagues. Encourage all to attend as well.

MANA ZAJAC

Research Scientist
Cerevel Therapeutics
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Birthplace: New York
Degrees: BS (molecular and cellular biology) – University of Connecticut; PhD (biological sciences) – Carnegie Mellon University
Professional Fields of Interest: Immunology, cell biology, neuroscience, microscopy, drug discovery
Future Developments in Field: More machine learning, more integration across fields, a greater awareness of the complexities of biology
Qualities Needed for Success: Organizational skills; an understanding of your limits, when to know what you don't know, and when to ask for help
Personal Mentors: A good mentor is someone "who will bang on the table for you," cheer for you, and support you. Choose mentors you feel comfortable with and with whom you can be honest. Seek out multiple mentors. Know what works for you.
Best Advice ever Given: Hope for the best, prepare for the worst
Change in Choice of Career: About six months ago I transitioned from academia to industry.
Best Career Experience: I always wanted to be involved with drug discovery. During my postdoc, I accumulated the skills I needed to make the switch to industry. The transition has been great for me.
Worst Career Experience: I like to be challenged. When I found myself in a less challenging research space, I was not as happy.
Dealing with Discouragement: So many things in science don't work. After a failure, I reassess and try again.
Advice to Students Thinking about Biomedical Careers: Students should look for opportunities to work in a lab and get some research experience. Doing that will help lead to jobs and other opportunities. Don't be afraid to reach out to other scientists, and ask about their journey through graduate school and their career path. People are more willing to help than not.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: The bar is so much higher for minority students. You always have to be better than everyone else. Many minorities feel they walk a fine line between being too loud, yet making sure they are heard.
Other Interests: Cooking, baking, watching the Great British Bake Off
Additional Comments: You are a smart, motivated person – make sure you let people know that.

GERARD P. ZAMBETTI

Vice President and Director, Academic Programs in Biomedical Sciences
Associate Director for Training and Education, Comprehensive Cancer Center
Member St. Jude Faculty
St. Jude Children's Research Hospital
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Birthplace: Queens, New York
Degrees: BS (biochemistry and biophysics) – State University of New York; MS (biochemistry) – Emory University; PhD (immunology and medical microbiology) – University of Florida; Postdoctoral Fellowship (tumor biology) – Princeton University
Professional Fields of Interest: Cancer biology, tumor suppresser gene research (p53), cell cycle regulation, and apoptosis
Future Developments in Field: p53 is an essential gene that protects us against cancer. If you are born with a mutation in p53, you will have a very high risk of developing cancer, and often multiple tumors, as a child or young adult. You can also acquire mutations in p53 from carcinogens in tobacco smoke and from other environmental factors such as UV damage caused by sunburn. We are developing mouse models to better understand how p53 works as a tumor suppressor.
Qualities Needed for Success: Creativity, hard work, and perseverance. Your joy of discovery should keep you going.
Personal Mentors: When I was doing my Master's at Emory University, Bob Shuster was my mentor. He guided me to the University of Florida for my doctoral work where I met Doctors Gary and Janet Stein who played a very important role in my career. They helped me in making the right move for my next step in my career. During my postdoctoral fellowship, Dr. Arnie Levine provided an incredible opportunity to learn about p53 which I continue to work on today. I remain close to all my mentors.
Best Advice ever Given: When I was applying to universities and companies after my PhD, my advisor told me that the most important thing was to find the environment that was most collaborative, and had strong support and facilities to carry out my research. He also said that hiring a capable and dependable lab manager was very important.

Change in Choice of Career: I can't remember the moment I decided to become a scientist but I always loved science. In 2009, I assumed an administration role in the Academic Programs Office, in addition to maintaining my research program, which was a new challenge for me.
Best Career Experience: I have had multiple best career experiences in every stage of my career, such as demonstrating that MDM2 inhibited p53. As a basic scientist, identifying a potential new treatment for children with adrenal cancer has to be the most rewarding experience.
Worst Career Experience: Vacillating on accepting a position in a major drug company
Dealing with Discouragement: I try to look at the bright side of things. In our field, we are working to make a difference in treating human diseases so we have to remember to work harder to reach this goal.
Advice to Students Thinking about Biomedical Careers: It is not an easy field but it is an incredibly rewarding field. Choose each step of your career carefully; try to work in the best lab possible so you can move forward.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: Minority students are facing a lot of the same issues we all face. Funding is not easy to get, publishing is a challenge, and finding faculty jobs is difficult.
Other Interests: I love to fish, snow ski, and follow college football.

YONG ZHANG
Associate Director, Ex Vivo
Intellia Therapeutics

Birthplace: China
Degrees: BS (biochemistry) – Anhui University, China; MSc (biochemistry and molecular biology) – Shanghai Jiao Tong University, China; PhD (molecular and cellular biology) – Oregon State University
Professional Fields of Interest: Molecular and cellular biology, immunology, cell-based therapy
Future Developments in Field: There is a whole new world developing in gene and cell therapy. Currently, in the T-cell therapy field we isolate T-cells from the patients themselves, modify it, and then put it back into the patients. We are aiming towards using cells from healthy donors to treat the patients, which will hopefully translate into more successful therapies.
Qualities Needed for Success: Have passion for what you do, and stay resilient against setbacks.
Personal Mentors: The most important thing for a mentor-mentee relationship is a good connection. You must like your mentors and be able to relate to them.
Best Advice ever Given: Enjoy what you are doing and be resilient.
Change in Choice of Career: As a young child, I got interested in biology from my father. I was good at biology and chemistry in high school, so I chose biochemistry as my major in college. After college, I tried to be a tech support, which didn't work out. After moving to the US, I studied molecular and cellular biology for my PhD program, spent some time in academia, and became more focused on drug development later on. My career path has not been straightforward, but rather one of exploration and testing, moving on to other areas as I gained more knowledge and tried new things.
Best Career Experience: I have been really lucky in my current position at Intellia. We have a unique culture at Intellia which I call the double "e", and double "f" experience; exciting, energetic, fast and fun**.** (I actually made a video about the double "e" and double "f" experience, which is shown on Intellia's website here.) I appreciate the colleagues I am working with and being given the opportunity to learn new things. Even after five years of being at Intellia, I still find that I am never bored, and am always excited and energetic about my work.
Worst Career Experience: I spent too long in academia and could have been more efficient in identifying what my true interests were.
Dealing with Discouragement: As a scientist, you have to have nerves of steel. Success is rare, so you have to be resilient and keep trying. Frustration can be good for growth as long as you have a positive mindset.
Advice to Students Thinking about Biomedical Careers: Decide if this is what you really want to do, from your heart and not because of the money you will make. If you have passion for what you are doing, you will be more prepared to face the setbacks, challenges, and feedback that you will face.
Issues Facing Minority Students Pursuing Careers in Biomedical Science: There are many challenges, but you should follow your heart and don't let others tell you that you can't achieve what you want.
Other Interests: Playing basketball, working out, spending time with my dog, volunteering with younger people and sharing my experiences to help them advance their careers.
Additional Comments: Follow the two "don'ts" rule: when you look back, don't regret anything as long as you have tried your best, and when you look forward, don't lose your confidence and follow your gut. In your communication with colleagues, be transparent, be professional, and be fair.