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REMINDER

Please remember to update your contact information at www.bscp.org.

Click on "Update Contact Information" and then "Current BSCP Students/Fellows and Alumni."

CONVERSATIONS WITH THE BOARD

Reshma Kewalramani, MD, FASN, CEO and President, Vertex

Reshma Kewalramani, MD, FASN, CEO and president of Vertex, is one of the newest members of the BSCP Board of Directors, having joined in September 2019. She will co-chair the virtual Evening of Hope fundraiser on October 5 with Vertex executive chairman Jeffrey Leiden, MD, PhD. Kewalramani also will be a keynote speaker at the next BSCP student conference, which has been rescheduled from April 2020 to April 2021 (please see Save the Date, left). Following is an interview we conducted with her recently by email. It has been edited slightly for space.



Reshma Kewalramani, MD, FASN, CEO and President, Vertex

Where did you grow up?

I grew up in Mumbai, India (when it was still called Bombay). My family moved to the US when I was 12.

When did you first become interested in science and medicine?

When I moved to the US, I was entering middle school as a new immigrant. Even though I spoke English, no one knew it because of my heavy accent. My clothes were different. I wasn't familiar with American pop culture; this was in the early 1980s, when we had two TV channels in India; there were no mobile devices, no internet and no social media. So those years were difficult for me. But during that time, I found an interest in math and science because I found a lot of gratification and achievement in those areas. If you spend enough time with a math problem, you can almost always solve it. If you experiment with science, you almost always learn something new. That reward of problem solving and discovery brought me incredible joy and kept me going while I was trying to understand how to fit in. I had teachers who took me under their wing and gave me the opportunity to do science projects outside of our normal schoolwork, and

I fell in love with these disciplines. When I was 16, I participated in the Westinghouse Talent Search (which is now the Regeneron Science Talent Search) and was a semi-finalist. If I wasn't hooked on science before that, I certainly was now.

Do you have any relatives involved in science or medicine?

I grew up in a relatively conservative Indian family, and I always quip there are really only three career options for an Indian child: you can become a doctor, you can become an engineer, or you can become a priest. I wasn't going to become a priest and I wasn't interested in engineering, so medicine it was. Of course, it helped that I was genuinely interested in science and math, but my family was a source of motivation to pursue medicine. After high school, my older brother went into a seven-year combined undergrad and medical school program, and so did I.

Did you have early mentors or role models? What about at BU?

I am a huge fan of mentorship because I have been the great beneficiary of excellent

mentors. In high school, Mr. Gallo, my science teacher, was instrumental in helping with one of my first science projects. We needed a source of radiation for some experiments with fruit flies and I remember he convinced his personal dentist to lend us his x-ray machine for the task! It was also Mr. Gallo who identified an opportunity for me to spend a summer at the University of Iowa, which is where I developed my Westinghouse project. I've had the opportunity to work with some outstanding mentors who took the time to guide me, give me advice, help me connect the dots and also open doors. One in particular is Willard H. Dere, MD, currently at University of Utah George and Dolores Eccles Institute of Human Genetics. Will was my mentor when I first transitioned from academia into industry. Moving from academia to industry can be a difficult transition. The ways of working are different and there are constructs and expectations in industry that just don't exist in academia. Will had gone through the same transition many years before me. He really helped me understand drug development.

Because I've benefited from great mentors myself, I'm passionate about building mentorship and career development opportunities for others. I know from experience

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that many people, women in particular, go through a zig-zag path as they move through their careers. Having a source of advice, guidance and motivation throughout your career is extremely valuable.

How did you choose to specialize in nephrology?

When I was completing my internship and residency at MGH, the clinicians I most admired were nephrologists, because of their bedside manner, their care of the whole patient and their ability to think critically through complex medical problems. It's a very logical, first-principles-based discipline, and I enjoyed that.

After receiving your MD, did you practice medicine before transitioning to biotech?

Yes, I completed my internship and residency in Internal Medicine at the Massachusetts General Hospital. I then went across the street to the Brigham to complete my fellowship in Nephrology.

Why did you choose that path?

I originally thought that my path was to do basic science research. I wanted to be a "triple threat" — see patients in the clinic, teach students and run my own lab. At the time, I was a transplant nephrologist, so my lab relied on using live mice models to research transplants. It was through that experience that I realized I hate mice — I was petrified of working with them. The research was going well, but the next step was to work with rats. At that point, I put my foot down — I was not going to work with rats! Fortunately, around the same time I became very interested in clinical research. Going through these experiences, it clicked that what I really wanted to do was bring new medicines to patients, to transform diseases. I had a desire to advance medicine by leaps and bounds versus step by step, and drug development was the path to do that.

After I made the transition from basic science research to clinical research, I realized that you cannot be in the driver's seat of bringing new medicines to patients in academia. Biotech or pharma is where new medicines are created. I needed to move into industry. I joined Amgen and spent more than a dozen years there before I moved to Vertex.

How did you become involved with BSCP?

I care deeply about developing and supporting the next generation of scientists and giving back to my community. I want to ensure students of all walks of life have the opportunity to pursue a career in the STEM field, and I deeply appreciate the work BSCP is doing to increase access for these students. Vertex has long been involved with BSCP and when I came to Vertex and learned about BSCP, I wanted to be involved. We at Vertex strongly believe in BSCP's mission and are proud to work together to provide students the hands-on opportunities to succeed in their careers.

In what way(s) do you believe it can benefit students?

I wouldn't be where I am today if it weren't for the mentors, coaches and colleagues who supported me along the way. All of us need support to succeed, and BSCP provides that support system to students.

Why do you believe it is important for a company to support equity, diversity and inclusion?

Our mission at Vertex is to invest in scientific innovation to create transformative medicines for people living with serious diseases. As part of that mission, we have a strong and long-standing commitment to creating a diverse and inclusive workplace and to promoting social justice and economic and educational opportunities within our communities. Diverse teams generate the best ideas and make the best decisions for patients and for our company. It's something I am deeply passionate about and focused on as CEO, and it will continue to be a top priority for our company moving forward.

What advice do you have for disadvantaged and minority students — women and men — in the biomedical sciences, and graduates just beginning their careers?

I am often asked for career advice by young people, from all walks of life, ethnic and racial backgrounds, gender and sexual orientation. I tell them: When faced with a career decision, ask yourself the following questions, in order. Thus far, they have served me well.

1. What's best for your family?
2. Will you learn as much as you will contribute?

3. Can you see opportunity beyond the visible horizon?
4. Do you like the people you would be working with?
5. If none of the questions help you discriminate between the choices before you, choose the riskier option. I have found risk is indeed proportional to reward.

How do you think the current pandemic is affecting/will affect biomedical science education (ability to learn practical skills if school is forced to be remote), the practice of medicine, pharmaceutical development and job prospects in the biomedical field?

There is no doubt that the COVID-19 pandemic has been tough on individuals, families, businesses and governments. We have all been impacted by this outbreak.

Even in the most challenging times, though, there is almost always an opportunity to learn and innovate and use it as a springboard to do better going forward. In this instance, perhaps one silver lining to the pandemic is the ways in which we have adopted technology — in education, in business and in our personal lives to connect with friends and family. In health care, this prominently manifests itself in the rise of telemedicine. What this has meant for patients is that many of their physician visits, which would have normally taken place in the office, can now take place from the safety and comfort of their own home using the phone or video conferencing. [For] drug development, including at Vertex, our work to make our clinical trials virtual preceded the COVID-19 pandemic, but COVID created a favorable environment for rapid adoption

by patients, physicians and regulators. Virtual trials hold the potential to allow patients broader access, speed up timelines for enrollment, make the development process more efficient and ultimately serve patients better. We've already seen the benefits of implementing digital technologies and at-home lab tests into our clinical protocols and have heard positive feedback from patients and physicians on these measures. Technology has the power to alleviate many of the obstacles patients face on a daily basis and can help relieve some of the burdens they face when taking part in a trial. Using mobile health devices, we will be able to reach patients in more remote areas and capture more detailed and informative data — all while creating a better patient experience. ■

2020 EVENING OF HOPE

It is no exaggeration to say that the 23rd annual Evening of Hope, which will take place on October 5, 2020, will be unlike any in the event's history. Rescheduled from its original May date, the BSCP's only fundraising event will be held virtually, due to the ongoing coronavirus pandemic.

This year the event will honor The Honorable Martin J. Walsh, Mayor, City of Boston, and Jill and Niraj Shah of the Shah Family Foundation. It is co-chaired by Reshma Kewalramani, MD, FASN, president and chief executive officer, and Jeff Leiden, MD, PhD, executive chairman, of Vertex.

Evening of Hope provides the critical funds needed to ensure that all BSCP programming is offered at no cost to participants. As a result of this event, more than 13,000 minority and disadvantaged students and 1,200 postdoctoral trainees and junior faculty from across the country have participated in BSCP programs.

The global pandemic has underscored the crucial role of doctors, medical staff, scientists, engineers and researchers in the United States, and the importance of diversifying these fields to mirror the communities they serve. This has been a founding element of BSCP's mission even before the current crisis highlighted the need. Similarly, events of the past several months have compelled us to face the uncomfortable realities of systemic racism, inequality and the enormous amount of work we still have to do around these issues.

Three individuals who have contributed a great deal to BSCP over the years will be named to the 2020 Honor Roll, which was established in 1998 to recognize the dedicated volunteers who support the organization's mission, sharing their time, expertise and talent with BSCP students and responsibility for the organization's success. They are:

- **Li-Li Hsiao, MD, PhD**
 Director, Center for Kidney Innovation & Care
 Director, Asian Renal Clinic
 Associate Director, Harvard Summer Research Program in Kidney Medicine
 Brigham and Women's Hospital
 Assistant Professor of Medicine
 Harvard Medical School
 Involved since 2010 as an advisor
- **Brian Lewis, PhD**
 Assistant Vice Provost for Outreach and Recruitment
 Associate Dean for Diversity and Pre-Matriculation Programs
 Graduate School of Biomedical Sciences
 Professor, Department of Molecular, Cell and Cancer Biology
 University of Massachusetts Medical School
 Involved since 2011 as an advisor, judge and panelist
- **Kenneth I. Maynard, PhD**
 Senior Director, Global Project Management
 Pharmacovigilance Affiliate Relations
 Global Patient Safety and Evaluation
 Takeda Pharmaceuticals
 Previous BSCP Student
 Involved since 2000 as an advisor, panelist and judge

In addition, three students will be awarded Hope Scholarships. Presented annually at Evening of Hope, the Hope Scholarships are awarded to underrepresented minority students enrolled in high school, college, medical, graduate or professional school for the upcoming academic year who have demonstrated an interest in

biomedical, biopharmaceutical or other science-related fields, and have had direct involvement in BSCP. The students selected are highly motivated, have recognized potential and seek opportunities for educational advancement.

The Scholarships, in the amount of \$7,500, are given out over the course of two years (\$5,000 in the first year and \$2,500 the second). The funds are to be used for educational purposes. This year's recipients are:

- **Judene Thomas** — *Scholarship sponsored by the Biogen Foundation*
PhD Candidate — Cell and Molecular Biology
Northeastern University

- **Leeza Santiago Millan** — *Scholarship sponsored by Sanofi Genzyme*
PhD Candidate — Biological and Biomedical Sciences
Harvard University
- **Graciella Rios Ortega** — *Scholarship sponsored by an anonymous sponsor*
College Student — Biochemistry Major, Public Health Minor
Simmons University

At the virtual event, Alexander Jeremiah, an MD candidate at NYU School of Medicine and a 2019 Hope Scholarship recipient, will also share his experiences participating in BSCP. For more information on this year's Hope Scholarship recipients, see accompanying article, below. ■

2020 HOPE SCHOLARSHIP RECIPIENTS

The 23rd annual Evening of Hope fundraiser will take place virtually on October 5, 2020 ([see related article](#)). Three students have been selected as Hope Scholars, each receiving \$7,500 over two years, to be used for educational purposes. They are:

Graciella Rios Ortega *College Student* *Simmons University*

Graciella Rios Ortega was born and raised in Boston, Massachusetts, and lived for a short time in Ciales, Puerto Rico. She is currently a senior at Simmons University majoring in biochemistry, with a minor in public health. Throughout high school at Boston Latin Academy, Graciella participated in Harvard Medical School's AP Biology Hinton Scholars Program, an after-school enrichment program designed to enhance students' understanding of the AP biology Big Ideas framework. In 2017, as a graduating senior, she was accepted into Dana-Farber/Harvard Cancer Center's CURE program, where she conducted research on the regulation of surviving 2B expression by alternative pre-mRNA splicing in the lab of Edward Benz Jr., MD. She attended the BSCP Skills Workshops for College and High School Students in 2016 and 2018, and the Biomedical Science Careers Student Conference in 2018. Graciella is currently a Health Career Connections intern, employed through the Youth Programs at Brigham and Women's Hospital, which aims to expose Boston Public Schools students to science and medical careers. She also

works as a medical assistant/ambulatory service representative at Boston Medical Center where, among other duties, she has been conducting COVID-19 testing for vulnerable populations. After graduation, she plans to pursue a combined degree in medicine and public health. Graciella aspires to have a career in community health and to be an advocate for health equity, in hopes of eliminating the health inequalities present in the current health care system.

Judene Thomas *PhD Candidate* *Northeastern University*

Born and raised in Saint Andrew, Jamaica, Judene Thomas is currently a PhD candidate in cell and molecular biology at Northeastern University. In 2017, as a first-generation college student, she obtained a BA in biochemistry from Mount Holyoke College (MHC), graduating with university and department honors. At MHC, Judene participated in physics-based cancer research, investigating the role that quantitative ultrasound and diagnostics play in carcinoma detection and treatment. As a graduating senior, she was awarded the Gertrude "Bobby" Lerch award for Excellence in Biochemistry, in recognition of her academic pursuits, aspiration, dedication and commitment to science or medicine. Judene also participated in the 2-Year Dana-Farber/Harvard Cancer Center's CURE program, where she conducted hemolytic anemia-focused research in the lab of Edward Benz Jr., MD,

at the Dana-Farber Cancer Institute. She attended the 2016 BSCP Skills Workshops for College and High School Students, the 2016 and 2018 Biomedical Science Careers Student Conferences and the 2016 BSCP New England Science Symposium. Following her undergraduate career, Judene pursued biomedical research at Beth Israel Deaconess Medical Center (BIDMC) in the Division of Endocrinology, Diabetes and Metabolism, and in the Division of Cardiovascular Medicine. At BIDMC, Judene began tutoring students through Harvard Medical School's AP Biology Hinton Scholars Program, mentoring students through the CURE College Coaching Program and was an invited CURE alumni speaker. As the recipient of the prestigious National Science Foundation STARS fellowship award, Judene plans to continue her current interdisciplinary translational research endeavors, exploring mitochondrial dysfunction as it relates to cancer, tissue regeneration, aging and reproductive function. She aims to discover innovative research methods to improve patient care as a clinician-scientist and inspire BIPOC students to pursue health and science careers through mentorship and community engagement.

Leeza M. Santiago Millán *PhD Candidate* *Harvard University*

Leeza M. Santiago Millán was born and raised in Fajardo, Puerto Rico. She is currently a PhD candidate in the biological and biomedical sciences program at

Harvard University. In 2018, she graduated *magna cum laude* from the University of Puerto Rico at Humacao with a bachelor's degree in biology. During the summer of 2016, Leeza gained her first biomedical research experience at the National Institutes of Health. In 2017, she was awarded competitive research fellowships at the University of Pennsylvania and Michigan State University, and in 2018 she was a fellow in the Post-baccalaureate Research Education Program at University of North

Carolina-Chapel Hill. Leeza has presented her work at numerous scientific conferences, including the BSCP New England Science Symposium in 2017 and 2018. In 2017, she was awarded the Ruth and William Silen, MD, Award for her poster presentation titled *Role of Histone Acetyl Transferases CBP and p300 in Adipogenesis*. In 2018, she also attended the Biomedical Science Careers Student Conference. As a first-generation Hispanic woman in science, Leeza has a personal interest in

broadening diversity in the scientific community. Presently, she serves as director of admissions and mentoring pod leader of the Health Professions Recruitment & Exposure Program (HPREP) at Harvard Medical School, a program that aims to decrease educational disparities among high school students from Boston. Leeza is striving toward a career in academia and aims to reform the Puerto Rican educational system to increase access to educational opportunities on the US mainland. ■

WHERE ARE THEY NOW

Hawasatu Dumbuya, PhD

When she arrived in Medford, Massachusetts, from France as a high school sophomore, Hawasatu Dumbuya, PhD, spoke what she describes as “very minimal” English and thought she wanted to become a social worker. Within a year she was fluent, within two she had discovered a love of science and medicine, and today she is a senior scientist in Translational Discovery, leading clinical innovation initiatives at the US arm of a global corporation.

Dumbuya's parents had emigrated from Sierra Leone to France and raised Dumbuya and her younger brother in Chambéry, in the French Alps. Her father moved to Massachusetts in 2000, and the rest of the family followed six years later. Though she had studied English in France, Dumbuya spent sophomore year in ELL classes. By her junior year she joined mainstream classes and was able to take honors courses. One, in her senior year, helped set the course of her life, inspiring a desire to become a pediatrician.

Dumbuya attended the Massachusetts College of Pharmacy and Health Sciences (MCPHS), receiving a BS in 2013. During the summer of her sophomore year she was accepted into Dana-Farber/Harvard Cancer Center's Continuing Umbrella of Research Experiences (CURE) program. CURE introduces high school and college students from underrepresented populations to cancer research, placing them in research settings at local institutions. Dumbuya says that experience “cultivated [her] interest in cancer biology research.” It also introduced

her to BSCP. “Before CURE, I wasn't exposed to women of color with my interests,” she says.

At her first BSCP Conference in 2012, Dumbuya says, she was awe-struck by the breadth of biomedical science professionals of color. Since that first event, she has attended three more Conferences, as a participant, speaker/panelist and student adviser. She has attended multiple New England Science Symposia (NESS) as a poster presenter and attendee, winning a poster award in 2017, and has been on the NESS Planning Committee; and she attended several BSCP Skills Workshops as a panelist and moderator. “Every time I go, it's another shot of motivation,” she says.

During the summer before her senior year in college, Dumbuya was considering applying to medical school, followed by graduate school or possibly pursuing an MD/PhD. She was also continuing to work in the lab where CURE had placed her. “One Saturday morning, I was in the lab, waiting for some data,” she recalls. “I thought, I don't mind this. I like it. I really fell in love with research.” At that moment Dumbuya decided to pursue a graduate degree.

After college she enrolled in the Molecular Pharmacology and Physiology program at Brown University, receiving her PhD in 2017. She received a Hope Scholarship from BSCP in 2016, which she says helped enormously with her education expenses. “It was another humbling experience. It helped me update my laptop, buy software. It contributed to my education.”



Hawasatu Dumbuya, PhD, Senior Scientist, Clinical Innovation Team, L'Oreal USA

“When I got accepted into Brown, I had a burning fire to give back, especially to English Language Learners,” says Dumbuya. One year when she was a panelist at the BSCP Skills Workshop, Dumbuya says she had been struck that there were no students from her high school participating. Believing she had arrived where she was thanks to the support of her family, friends and teachers, she believed that something similar to the BSCP platform would be helpful at her alma mater. Initially she told only her mother and Lise Kaye, former BSCP executive director, of her idea. Kaye told her it was a great idea but since she had just been accepted into a PhD program, she should focus on her PhD. “I didn't listen,” Dumbuya says, laughing. After an initial pilot, her program at Medford High School has been running for six years, and twice has received funding from Medford Educational Foundation. Dumbuya leads it,

VIRTUALLY BSCP

Last spring when the world changed seemingly overnight, we at BSCP quickly shifted gears. We rescheduled our biggest planned events, the biennial Biomedical Careers Student Conference (see [Save the Dates](#)) and [Evening of Hope](#) (coming soon; see related article). But we wanted to make sure we stayed connected to all of the BSCP community. To that end, we have held an ongoing series of virtual events and augmented our web presence to be as available and helpful as we can. Following is a list of some of everything we have been doing virtually since April and will continue to do for as long as necessary to all stay safe.

Webinars

Between April 20 and June 30 more than 1,600 students from across the country have attended BSCP-hosted webinars on subjects from Getting into Graduate School for Basic Science Disciplines to Getting into Health Professional School to a four-day series for pre-med students in partnership with Tour for Diversity in Medicine.

BSCP will continue to offer subject-based webinars across all academic levels covering content from conference workshops, niche subject areas not available at the conference and content identified by students as areas of need. In addition, we will continue to partner with other organizations to provide access to their webinars.

New England Science Symposium (NESS) Virtual Oral Presentations — June 24–25

Eight of the 12 students/fellows selected to make oral presentations at the April 2020 NESS presented their research virtually over two nights to a panel of judges and a viewing audience. Three individuals were awarded Ruth and William Silen, MD, Awards.

New England Science Symposium Facilitated Research Discussions — July 22–23

More than 100 students/fellows whose abstracts were selected for poster presentations at the April 2020 NESS participated in virtual small-group facilitated research discussions with professional scientists, researchers and clinicians. The purpose of these small break-out sessions was to offer professional and peer feedback, foster networking and connections and provide guidance.

What's Happening at BSCP

In June we launched a monthly e-blast to the BSCP community that showcases past and upcoming offerings, including the newly created "Ask an Advisor" series. If you have not received this and would like to, contact Hollie DeSilva at Hollie_DeSilva@hms.harvard.edu.

Skills Workshops

Beginning in October and continuing throughout fall 2020, workshops and trainings to address the needs of high school students and their parents will be held virtually. Subject areas will cover topics addressed during the traditional in-person program and also will include information students and parents have indicated they need now. These topics include but are not limited to the following: application process for college/graduate/medical/professional schools, crafting the college essay/personal statement, interviewing skills, financial planning, resume writing and internship opportunities. Please check the BSCP website, bscp.org, for workshop and training dates and registration information.

BSCP Virtual Connect

A virtual counterpart to the mentoring/advising sessions that take place at the biennial BSCP Student Conference, Virtual

holding sessions monthly, often bringing in guest speakers. She shapes the events based on input from teachers and students. "I'm the person behind the scenes," she says. "There was a big need. The high school recognized that. The high school supported it."

After earning her PhD, Dumbuya says, "I wanted to do something new. I knew industry was the next step." She has been at L'Oreal USA since late 2017, leading the team efforts on developing novel concepts and methods for clinical evaluations and proof of efficacy that new ingredients in products — sunscreens, brightening agents, acne and anti-aging products — are effective on humans. "Leaving academia to join industry was scary, but I was also very excited," she says. In reality, the transition was more difficult than she had anticipated. Dumbuya admits to a loss of self-confidence and period of suffering "imposter syndrome." "I had to reach back out to my mentors and to my family to remind myself who I was and how far I have come and can go. Now that I have adjusted, I'm really happy and have complete conviction that it was the right next step for me," she says.

Dumbuya had been signed up as a student advisor for the 2020 Biomedical Science Careers Student Conference, which was postponed until 2021 due to the coronavirus. She is looking forward to seeing everyone there next spring. ■

Connect is for BSCP college and community students, post-baccalaureates, medical/dental/graduate students and postdoctoral fellows. Small-group virtual mentoring sessions (three to four students per mentor), organized by subject area, began in August and will continue through the fall for students/fellows who were registered to attend the postponed April 2020 BSCP Student Conference. For more information, contact Hollie DeSilva at Hollie_DeSilva@hms.harvard.edu. ■