

JEFFREY LEIDEN, MD, PHD
 21ST ANNUAL EVENING OF HOPE
 DENNISE A. DE JESÚS DÍAZ, PHD
 SHERMAINE HUTCHINS

BSCP

BIOMEDICAL SCIENCE
 CAREERS PROGRAM

Keynote Speaker

Jeffrey Leiden, MD, PhD

JEFFREY LEIDEN, MD, PHD, chairman, president and CEO, Vertex Pharmaceuticals, was the opening keynote speaker at the 14th biennial Biomedical Science Careers Student Conference in April. A physician scientist, Leiden began his career as a molecular biologist and practicing cardiologist. He held several academic positions between 1987 and 2000 before moving to Abbott Laboratories as president and chief operating officer and chief scientific officer. He joined Boston-based Vertex seven years ago.

During his first year at Vertex, Leiden established one of the company's signature programs to enhance science, technology, engineering, arts and math (STEAM) among Boston public high school students in underprivileged communities. The program includes an on-site Learning Lab and a 10-year, \$50 million commitment to STEAM education.

"I have always been impassioned on hooking kids on science early," he says. Vertex's commitment to giving back to the community is a core part of the company philosophy. When Leiden joined the company this was manifested through employees' volunteer work. His personal experience has been, "The vast majority of [scientists] get hooked on science early — grade school." He also feels, "If we're going to remain competitive — the U.S. and Massachusetts — we're going to need to train more scientists and engineers."

The focus on underrepresented minorities and girls comes from Leiden's sense of fairness. Speaking of the Vertex students in comparison to those in the area's more

affluent communities, he says, "They all have the same abilities. Who has more opportunity? Kids in Brookline and Weston. It's not right and it's not fair. Same with girls." He notes that, in general, unless girls are encouraged to study math and science, "We lose them in seventh through ninth grade."

Throughout his schooling and career, "I was very lucky," Leiden says. "My father was a psychologist. My parents encouraged an interest in science. All the way through, I had a series of mentors. At almost every stage of my career I had people helping me."

Through the Vertex program, students come with their class to work in the company's learning laboratory and are paired with mentors for after-school projects. Each year 25–30 are offered full-paid internships in the lab. One or two annually receive full scholarships to the University of Massachusetts to pursue STEM study. "The idea is to hook 'em early and pull them through," he says.

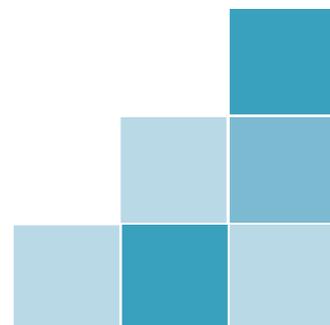
Vertex pioneered precision medicine, which is now being pursued more generally in the industry. Under Leiden's leadership, the company has delivered the first and only precision medicines to treat the underlying cause of cystic fibrosis. His mission, and the basis of the company's research priorities, is to bring transformative medicines to people with cystic fibrosis and other serious diseases. He says currently one of the most exciting areas of research involves sickle cell disease. "With the discovery of gene editing, there's a clear way to develop a gene editing treatment for sickle cell," he says. Vertex is working with



JEFFREY LEIDEN, MD, PHD

CRISPR Therapeutics, in Cambridge, on the first gene editing approach to be tried in humans. BSCP students can be part of this exciting research and more through a host of internship, fellowship and job opportunities at Vertex.

Leiden's advice to students and others interested in pursuing careers in biomedical sciences is straightforward. Find a mentor — a teacher, principal, someone in a company. Find a place you can actually DO science; don't just read about it. Find the smartest people you can work with and work with them. Work on really hard problems. ■





21st Annual Evening of Hope

THE 21ST ANNUAL EVENING of Hope took place Tuesday, April 24, 2018, at the Seaport Boston Hotel. The event raises money to support BSCP programs, which are always offered at no cost to participants, and celebrate the organization's successes. Honorees were Jeffrey Leiden, MD, PhD, chairman, president and chief executive officer of Vertex; and Josef H. von Rickenbach, chairman of the board, PAREXEL International Corporation. David P. Meeker, MD, chief executive officer of KSQ Therapeutics, and Lydia Villa-Komaroff, PhD, president and founder of Intersections SBD, were the event's co-chairs.

Three individuals who have contributed a great deal to BSCP over the years were named to the 2018 Honor Roll, which was established in 1998 to recognize the dedicated volunteers who have shared their time, expertise and talent with BSCP students and who are responsible for the organization's success. They are:

Jill Rapp Dietz

Merck Research Laboratories

Involved since 2015 as a planning committee member

Toby Ferguson, MD, PhD

Biogen

Involved since 2014 as an advisor and poster judge

Jeffrey E. Saffitz, MD, PhD

Beth Israel Deaconess Medical Center

Involved since 2010 as an advisor, panelist and poster judge

In addition, three students were 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 Hope Scholarships, in the amount of \$7,500, are given out over the course of two years (\$5,000 year one and \$2,500 year two). BSCP retains the funds and distributes the money to the students upon receipt of proof of payment of expenses for educational purposes. This year's recipients are:

Francheska López Rivera

PhD Candidate

Harvard Medical School

Scholarship awarded by Biogen Foundation

Maya Dennis

College Student

University of Massachusetts Amherst

Scholarship awarded by Sanofi Genzyme

Danielle Ampofo

High School Student

Leicester High School

Scholarship awarded by an anonymous sponsor

Francheska López Rivera was born and raised in Puerto Rico. She is currently a third-year PhD candidate in the biological and biomedical sciences program at Harvard Medical School, studying the processes of transcription and chromatin organization. Francheska first became interested in molecular biology as a participant in MIT's Summer Research Program in Biology. She received a BS in Environmental Design (Architecture) with a concentration in Integrative Biology from the University of Puerto Rico-Río Piedras in 2013. That year she began a two-year post-baccalaureate program in the Harvard University Research Scholar Initiative, which introduced her to the fields of transcription and genetics. In 2014, Francheska presented a poster on her post-baccalaureate project at the BSCP New England Science Symposium (NESS), where she was awarded the Beth Israel Deaconess Medical Center Department of Neonatology Award. She attended the BSCP Conference in 2018

and presented a poster on her dissertation at NESS, receiving the Ruth and William Silen, MD Award. After completing her doctoral studies, Francheska plans to combine her love for biology, art and education by creating animations of biological processes to help build a bridge between scientists and the general public.

Born and raised in Boston, Massachusetts, Maya Dennis is a freshman at the Commonwealth Honors College at the University of Massachusetts Amherst (UMass), where she studies microbiology. As a high school student, she co-founded Aspirations in Medicine (AIM), a club to support students interested in pursuing biomedical careers. In 2016 she attended the Harvard T.H. Chan School of Public Health Youth Conference. Maya also participated in the DF/HCC Continuing Umbrella of Research Experiences (CURE) Program, where she evaluated the clinical implications of pancreaticobiliary disorders under the guidance of Tara Kent, MD, MS. At UMass, she was on the biomedical track of the Integrated Concentration in Science Program and was recently awarded the Tina Brown-Stevenson and Harry C. Stevenson Diverse Scholar Healthcare Scholarship. Maya attended the BSCP Skills Workshops for College and High School Students in 2014 and 2016, and the Biomedical Science Careers Student Conference in 2016 and 2018. She plans to attend medical school. She hopes to become a physician and reduce health care disparities in underserved communities.

Danielle Ampofo was born in Accra, Ghana, and raised in Leicester, Massachusetts. She is currently a junior at Leicester High School and a member of the Youth Health Action Committee, which brings awareness to drug use in teens. She is also a member of the Honor Roll and Student Council. In the summer prior to her junior year, Danielle worked in a pediatric clinic through the High School Health Careers



Program (HSHCP) at the University of Massachusetts Medical School, a four-week summer research program. She was awarded first place for her 2017 HSHCP health disparities project, *“Eating Disorders in the LGTB Community as Compared to the General Population in Massachusetts.”* In 2017, Danielle participated in the Health

Professions Recruitment and Exposure Program (HPREP) for high school students at Harvard Medical School, where she learned about microbiology, the brain and cancer. She attended the BSCP Skills Workshops for College and High School Students in 2016 and the Biomedical Science Careers Student Conference in 2018.

Danielle has been nominated to attend the National Academy of Future Physicians and Medical Students Congress of Future Medical Leaders Conference in June 2018. She is planning to attend medical school and to one day inspire young students like herself to dream big. ■

A Student Advisor’s Perspective

Dennise A. De Jesús Díaz, PhD

DENNISE A. DE JESÚS DÍAZ, PHD, a former BSCP student and 2010 Hope Scholarship recipient, spoke at the 21st annual Evening of Hope fundraiser on April 24. The Puerto Rico native, who received a PhD from Tufts University Sackler School of Biomedical Sciences, first became involved with BSCP in 2007, when she was doing a post-bachelor internship at Tufts. That year she presented a poster at the New England Science Symposium (NESS). “It was a great experience,” she says. During graduate school she returned to NESS every year and began attending the biennial Biomedical Science Careers Student Conferences. “BSCP has been a great support system,” she says. “I think of them as part of the family. Every time I have felt in doubt about something, they have been there for me.”

After finishing graduate school De Jesús Díaz was a post-doctoral fellow at the National Institutes of Health (NIH). She

was enjoying her research there and planned to become a professor, when a former lab colleague from Tufts contacted her. He had just started a company in Maryland and wanted her to join him. “At the time I wasn’t prepared to leave NIH,” De Jesús Díaz says. “But it was such a unique opportunity.”

She is now the director of scientific operations at biotech startup Remedy Plan, which is developing drugs for colorectal and gastric cancers. The drugs are still in the proof-of-concept stage, and the company will soon start looking for FDA’s Pre-Investigational New Drug approval before it can begin testing in humans. In addition to the scientific research — “It’s a little like running your own lab,” she says — De Jesús Díaz is responsible for aspects of the business she never thought she would have to think about, which she finds exciting.

BSCP continues to be a resource for De Jesús Díaz, directing her to people in the biotech field for support and advice, and introducing her to board members, many of whom are world leaders in the field. “I really appreciate how BSCP has allowed me to thrive at each stage of my career,” she says. ■

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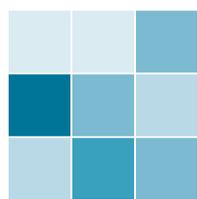
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Where Are They Now Shermaine Hutchins

SHERMAINE HUTCHINS WILL receive an MPH in health care management from Yale School of Public Health in May. The Daytona Beach native, who became a BSCP member in 2015, began his circuitous path to health care management as a medic in the United States army. After his discharge he had a highly successful career in radio broadcasting. But a medical checkup led him to set his sights on a career as a leader in the medical field.

From 1998 to 2002 Hutchins served in the Florida Army National Guard as a combat medic, with a tour in Nicaragua. When he was discharged, the only related jobs he could find were as a hospital orderly or transport worker. “I hated it,” he says. After a chance encounter in Tallahassee, he started working there as a DJ at a radio station. He was so popular that a station in Ohio recruited him to do its afternoon drive-time show. “I thought, ‘This is it,’” he recalls. “I have salary, benefits.” He also had a wife, which made the stability even more important. But a few years into his tenure, advances in technology — smartphones, Spotify — challenged the industry. “Radio revenue really took a hit,” Hutchins says. “I realized really quickly this was not going to be long-term. That was a sobering thought.” He decided to go back to school.

At first Hutchins considered studying for an RN. “It was similar to what I’d done in the military. I thought it would be an easy transition.” He applied to community college with a science focus. As part of the application he was required to have a physical. The doctor who examined him “was

the first black physician I’ve ever seen face-to-face,” he says. “He said to me, ‘Why don’t you think about medical school?’ Nobody had ever said anything like that to me.”

Hutchins started looking into medical school. He discovered SMDEP, a summer medical dental educational program based at Yale School of Medicine and funded by the Association of American Medical Colleges and Robert Wood Johnson. In 2013, “I was fortunate to participate in SMDEP. That was my first experience with individuals who looked like me and wanted to go along this path.”

The following summer he did a research fellowship at NIH through the Community College Summer Experience Program. While there he learned about BSCP and the New England Science Symposium (NESS), and attended his first BSCP conference and NESS the following spring. At NIH, he says, “I was still a minority. [In Boston,] I’m just seeing underrepresented minority people talking about science and medicine. I was blown away. I had thought I was an anomaly.” At his community college, everybody was telling him he could never go to college. At BSCP, “People wanted to take my hand and walk me through, and they were regular people. It really humanized people doing advanced science and health care for me. I left there thinking I can do anything I want to do,” he says.

Back in Ohio, inspired by BSCP, Hutchins started the Midwest Pre-health Conference to help students get into medical school and learn more about other advanced degree health care and science careers. He also developed an interest in the governance of hospitals, thinking if he were to



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become a physician, he wanted to run a hospital. “Mentors made me aware of pathways that might not include medical school,” he says.

He applied to medical school and health care management programs. For the latter, he felt it was important to attend an “elite” school because “as a black male in the U.S., to get into management, people really pay attention to where you went to school.” When he was accepted into the Yale School of Public Health, he felt his path was decided. In July, Hutchins will join ProMedica Healthcare in Toledo, Ohio, as an administrative fellow, working with the president and senior executives.

At the BSCP conference in April 2018 Hutchins was accompanied by several of his students and mentees from all across the country, including Yale and Ohio. “I believe in the program that much,” he says. “Things I’m passionate about I’m passing on to them.” ■