BSCP | BIOMEDICAL SCIENCE CAREERS PROGRAM

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IN THIS ISSUE

SAVE THE DATES

Biomedical Science Careers Student Conference
The Westin Copley Place
Friday, March 31 and Saturday, April 1, 2023

New England Science Symposium
The Joseph B. Martin Conference Center at Harvard Medical School
Sunday, April 2, 2023

Virtual Career Fair
Thursday, May 11, 2023
12:00 PM to 2:00 PM

For more information please visit the BSCP website at www.bscp.org.

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."

KEYNOTE SPEAKER

Gilda A. Barabino, PhD

Gilda Barabino, PhD, is president and professor of biomedical and chemical engineering at Olin College in Needham, Massachusetts. She is only the second president of the small (382 students) school and the first woman. It is only the most recent in a long line of firsts for her. "I'm accustomed to being the pioneer breaking down the barriers," she says. Barabino has been involved with BSCP since the 1990s, when she was a professor at Northeastern University. She became a member of the Board of Directors in 2021 and will be a keynote speaker at the Biomedical Science Careers Student Conference in April.

The chemical engineer, whose research has always been focused in the biomedical area, primarily in sickle cell disease, did not discover her passion until she was in college. Attending high school in Louisiana, she says she was not drawn to a career in science, "because I didn't have any role models who looked like me and I didn't get any encouragement to pursue science." She thought she would become an elementary school teacher, given her penchant for tutoring classmates from as early as when she was in elementary school.

At Xavier University of Louisiana in New Orleans, which ranks first in the country for graduating African American students who go on to medical school, she was encouraged to be a pre-med major because she had a talent for science and math. Initially following that course as a pre-med chemistry major, Barabino ultimately "decided to tackle medicine as a researcher rather than as a clinician," and switched her major to chemistry, graduating in 1978.

Barabino enrolled in Rice University's PhD program in chemical engineering, the first

Gilda A. Barabino, PhD

African American to be accepted and to graduate from the program. "I don't know where I got the wherewithal to do it," she says of the application process. With no mentors or former professors guiding her, she selected schools and wrote letters stating she wanted to be a chemical engineer and asking whether they would accept her with a BS in chemistry. Rice was one of three to accept her. She chose it because it was closest to her home.

When she arrived, Barabino recalls an almost immediate sense of isolation and marginalization. One professor told her that he didn't think she would make it to graduation. Others spoke of her not having the same background as everyone else. "Especially as I was entering an environment that a woman of color had not been in before, I didn't have the luxury of not assuming that some of this 'you're not like us' had to do with me being a Black woman," she says. But none of it stopped her.

The subject that would occupy the bulk of her research career, sickle cell disease, came to her when she was looking for a thesis topic. At the time, several researchers in her lab were using chemical engineering principles to examine abnormalities in blood disorders. And, she explains, "I was particularly

interested in a thesis project where I could give back to my community and sickle cell disease disproportionately affects Black Americans. I thought this was a really good opportunity for me to meet my dual goals to use engineering as it applied to medicine and to give back to my community."

As she has moved on through academic appointments at Northeastern University, Georgia Tech and Emory University, City College of New York and now Olin, Barabino has continued to be a pioneer, teaching and establishing laboratories to study sickle cell disease and other cellular and tissue disorders. At Northeastern, where she rose from associate professor to full professor and vice provost, she was the first African American woman to hold a tenure track position in chemical engineering. When she arrived at the school she created a place for herself, seeking out "others who looked like me" in departments throughout the university. Early on, she received an NIH grant to conduct sickle cell research and reached out to clinicians in the Boston-area medical community. The clinicians were intrigued to work with an engineer.

The opportunity to lead Olin was particularly attractive, because "I've always wanted to have an impact in the field of engineering and in higher education," Barabino says. Among the characteristics that attracted her to the school are its interdisciplinary focus and commitment to gender parity. Nevertheless, she says, her appointment feels groundbreaking because, "While we have gender parity we don't have ethnic parity."

Barabino, who says her husband and son have been her strongest advocates and supporters, advises students, "Be true to yourself. Don't go into an environment and feel you have to contort yourself and lose your identity to fit in. That's never a good thing for anybody. Take advantage of support where you can get it. Seek out those who seem more amenable. Dream big and don't lose sight of your dreams." ■

MENTORSHIP IN ACTION

Doug Kerr, MD, PhD, MBA, Chief Medical Officer, and Jordyn Turin, Associate Scientist, Generation Bio

Jordyn Turin's enthusiasm is infectious when she talks about her relatively new position as a research associate at Generation Bio, a biotechnology firm focused on gene therapy for rare and prevalent diseases. Sitting with her mentor, Doug Kerr, in a conference room at the company's Cambridge, Massachusetts headquarters, the two discuss the course of their relationship, which began remotely in late 2020 through BSCP's Virtual Connect program. Created during the early days of the COVID-19 pandemic, Virtual Connect paired college students, post-baccalaureates, master's candidates and post-docs with mentors in their fields of interest.

Doug Kerr, MD, PhD, MBA

Jordyn Turin

Kerr has been a BSCP advisor since 2014, when he was at Biogen. He first heard about the organization in 2012 and reached out to Joan Reede about becoming a mentor/advisor. After his initial session with Turin, they kept in touch largely through email, finally meeting in person at Generation Bio just before Thanksgiving 2021. Then a recent college graduate working in a research position at a large Boston hospital, Turin says she wasn't actively looking for a job but she "was very impressed by the culture at Generation Bio."

On Turin's first visit to Generation Bio, she had several interviews exploring possible career opportunities. She stayed into the evening, sitting in the company's cafe talking to employees. "You could tell [she] experienced this very much different and distinct culture… a lot of young people hanging out and sharing ideas," recalls Kerr, who is one of Generation Bio's founding members. "I could see all the people in the lab talking. I could see that everybody was very happy to be here," confirms Turin. "Now that I'm here, I can confidently say that it is even better than I ever could have imagined."

As an undergraduate at Connecticut College, Turin wanted to go to medical school. During her first meeting with Kerr, when she talked about her ideas for the future, he advised that she consider an MD/PhD. "No one had ever suggested that to me before," she says. "I never even knew that was an option." She had not known about the biotech industry until she met him, either. "Having people like Doug to tell me these opportunities exist and these are options that I could pursue—and to encourage me to follow a different path—has been so helpful."

Kerr and Turin's mentor-mentee relationship has continued since she joined Generation Bio. "I am incredibly lucky to be part of BSCP," she says. "I've had so many mentors throughout college, but the best one I've ever had [Kerr] is sitting to my right." Expressing her appreciation for the collaborative environment at Generation Bio, in addition to the company's innovative science, Turin explains

that as a Black woman in STEM, she had never experienced her ideas being as heard and encouraged as they are in this community.

From his perspective, Kerr says, "When you see Jordyn and some of the other students somewhat disillusioned with the beginning of their career, and in some ways even being told, 'That's life; welcome to it,' that is crushing." He and his peers at the company have worked to create an environment where younger employees feel they can be very honest. "They feel they can question me. [That's] one aspect of our culture that we want to make sure permeates. I want people to question me, to push back, to not fear any hierarchical structure."

Turin will start a master's program in public health at Brown University this month. She opted for the remote program so she can keep her full-time job at Generation Bio. In the future, she may still go for that MD/PhD. "I really appreciate the clinical aspects of an MD/PhD," she says. "My main goal is to help as many people as possible. It's me figuring out what that looks like." She has a lot of support while she figures it out. ■

Special Thanks To
The Massachusetts Medical Society for their support of this newsletter

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2022 HOPE SCHOLARS

Christopher George
MD/PhD Candidate
State University of New York, Downstate

Scholarship sponsored by Sanofi

Christopher George is a fourth-year medical student at the State University of New York, Downstate, and a PhD candidate focusing on the genetic epidemiology of keratinocyte carcinoma in a collaboration between leading research groups at Erasmus University Medical Center (Erasmus MC) in Rotterdam, Netherlands, the Harvard Department of Population Medicine and Kaiser Permanente Division of Research. He is also a Columbia University alumnus. Christopher recently completed a research year at Erasmus MC, where his research focused on actinic keratosis genetic risk, epidemiology and longitudinal progression. Currently as a visiting research scholar in the laboratory of David E. Fisher, MD/PhD, at Massachusetts General Hospital in the Harvard Cutaneous Biology Research Center, Christopher is working to specify novel non-melanoma skin cancer preventive medications and topical treatments for congenital melanocytic nevus syndrome. Outside of his research and clinical duties, Christopher serves as National Grants Chair for the Student National Medical Association and is actively engaged in the Biomedical Science Careers Program (BSCP). He has presented his research findings at both the 2020 and 2022 BSCP New England Science Symposia, attended the Biomedical Science Careers Student Conference in 2021 and BSCP's Virtual Connect Program in 2020 and 2022. In the future, he hopes to improve healthcare access in underserved communities and spread awareness of the risks of cutaneous carcinoma through pursuing his dream of being a physician-scientist, medical leader and educator.

Christina Pierre
College Student
Boston University

Scholarship sponsored by the Biogen Foundation

Christina Pierre was born and raised in Boston, Massachusetts. She is a member of an immigrant family whose customs became a part of her introduction to the healthcare system; the women in her family gave her a broad understanding of the field. She is currently a pre-med undergraduate student at Boston University's Sargent College of Health and Rehabilitation Sciences majoring in behavior and health and minoring in biology. Christina is a research assistant in the department of pediatrics' StreetCred program at Boston Medical Center (BMC), where she works alongside Lucy Marcil, MD, MPH. Her research project provides families with economic resources, evaluates whether or not the families benefit from them and encourages policy change to relevant stakeholders. Christina first participated in BSCP as a high school student. 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. She attended the BSCP Virtual Connect Program in 2022. Outside of research, she participates in community service projects to address issues of food security in low-income neighborhoods and offers counseling to populations in crisis. In the future, Christina plans on pursuing a Master's in Public Health in health policy and law and, later, obtaining an MD/PhD specializing in internal medicine with a focus on health policy or health services research.

Rebecca Louisthelmy
PhD Candidate
University of Maryland College Park

Scholarship sponsored by an anonymous sponsor

Rebecca Louisthelmy, born and raised in New York, is a first-year PhD student at the University of Maryland College Park. She is a first-generation student, born to Haitian parents. Rebecca graduated from the University of Massachusetts Amherst in 2022, where she studied biomedical engineering. During the first year of her undergraduate program, Rebecca was confident she wanted to be a physician but quickly changed her mind when

she joined a neural engineering lab led by Chase Cornelison, PhD. Her project in the lab used macromolecular crowding to generate brain cancer cell-derived matrices and studied the effects on neural cell migration related to wound repair. Her research was presented at the 2022 Annual Biomedical Research Conference as well as the 2022 annual meeting of the Biophysical Society in San Francisco. Her research was also published in the *Cells Tissues Organs Journal*. She received the Rising Researcher student achievement award in 2022. Rebecca credits much of her success to her village, including BSCP. Rebecca attended the BSCP Skills Workshops for College and High School Students in 2018, the Biomedical Science Careers Student Conference in 2021 and the BSCP Virtual Connect Program in 2020 and 2022. She was also a BSCP/Cytiva intern in the marketing and communications department. Rebecca aspires to continue research in the tissue engineering and regenerative medicine field as she completes her PhD. Her ultimate goal is to produce groundbreaking research that will impact many, change the face of STEM as well as inspire, guide and mentor the next generation of rising researchers. ■

2023 BIOMEDICAL SCIENCE CAREERS STUDENT CONFERENCE

Applications Available Now

For the first time since 2018, the Biomedical Science Careers Student Conference will be back in-person on Friday, March 31, from 6:00 PM to 9:15 PM and Saturday, April 1, from 7:30 AM to 6:00 PM at The Westin Hotel Copley Place in Boston. The event is geared primarily to high school juniors and seniors (Saturday only); college and community college students; post-baccalaureates; medical, dental and graduate students; and postdoctoral fellows.

The Conference has two primary objectives: first, to provide more than 1,000 Black/African-American, Hispanic/LatinX and American Indian/Alaska Native students/fellows with an opportunity to network with advisors and role models from the basic and clinical sciences, medicine, public health, academia and the biopharmaceutical industry. These advisors/role models will encourage students/fellows to complete advanced studies and provide concrete advice and information on available resources, professional opportunities and career paths in biomedical and other science-related fields. Since the Conference was founded, in 1992, many of these mentor/mentee relationships have developed into productive long-term associations. The second objective is to enable student participants to meet, inspire and network with one another. Student participants should be seriously interested in or currently studying medicine, biomedical science or other related fields such as chemistry, physics, biology, nursing, dentistry, pharmacy, engineering, biotechnology, physical therapy, public health, allied health or environmental science.

Attendees will be able to attend breakout and plenary sessions, as well as small group meetings between advisors and students/fellows; listen to inspirational keynote speakers; and benefit from networking opportunities with professionals from the biopharmaceutical industry, academia and the National Institutes of Health. There will also be a program featuring fellowships, job and research opportunities, internships and summer programs.

Workshops are geared to each academic level, with some repetition across levels.

Highlights for postdocs include Networking and Career Discussion, Fellowships and Postdoctoral Training, and Other Biomedical-Related Career Opportunities. Residency Training and Beyond is specifically for medical students. Getting into Medical/Graduate/Professional School is geared towards post-baccalaureates and college students. There will be a special session for community college students on Networking and Community Building and a panel on Orientation and Getting into College for high school students. All attendees should be able to benefit from sessions on Funding and Research Opportunities, Public Health Careers, Technology in Science and Medicine, and Science Careers in Industry. A Resource Room session will allow students and fellows to interact with local and national organizations and institutions.

Keynote speakers will be:

J. Nwando Olayiwola, MD, MPH, FAAFP
Chief Health Equity Officer & Senior Vice President, Humana, Inc.; Adjunct Professor, The Ohio State University College of Medicine and College of Public Health (Friday night)

Gilda A. Barabino, PhD
President, Professor of Biomedical and Chemical Engineering, Olin College of Engineering; BSCP Board Member (Saturday morning)

André L. Churchwell, MD
Vice Chancellor of Outreach, Inclusion and Belonging, Chief Diversity Officer, Vanderbilt University; Inaugural Levi Watkins, Jr., MD Chair, Vanderbilt University Medical Center

Keith B. Churchwell, MD
President, Yale New Haven Hospital; Executive Vice President, Yale New Haven Health System; Associate Clinical Professor of Cardiovascular Medicine, Yale School of Medicine

Kevin Churchwell, MD
President and Chief Executive Officer, Boston Children's Hospital (with brothers André and Keith, Saturday Luncheon Fireside Chat & Nesson Award Recipients)

Deadlines to Apply

February 6, 2023 for community college students through postdocs

The deadline for high school students has passed. BSCP will be accepting applications for current available slots and waitlist.

To request an application, please contact Ahmed Azim.

For questions regarding the event, please contact Pinar Kilicci-Kret. ■