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Caroline Carregal

CAROLINE CARREGAL, DIRECTOR of continuing education and certification at the Massachusetts Medical Society (MMS), became a member of the BSCP Board of Directors in 2016. The MMS is the state's professional association for physicians and medical students that educates and advocates for patients and physicians.

Carregal has directed the society's educational activities for nearly 20 years, overseeing the transition from traditional classroom teaching to digital learning to individual performance improvement. For the BSCP board, she says, "I think my role is to bring the perspective of organized medicine. I bring the relationship we have with practicing physicians." She adds, "I learn so much from everyone," on the board and relays back to the society ideas and initiatives she thinks it should support.

The 20-year MMS veteran began working with BSCP at the suggestion of her mentor, Corinne Broderick, a former MMS executive vice president and BSCP board member emeritus, who was involved with the program before it was even incorporated. In 1996 Broderick asked Carregal to help at what she called "this annual event," which was one of the first Biomedical Careers Student Conferences. Carregal recalls, "I went over in the wee hours — because Lise [BSCP Executive Director

Lise Kaye] never sleeps — to do operational, logistical things."

Initially, she relates, her contribution was primarily focused on helping Kaye and BSCP founder Joan Reede, MD, MPH, MS, MBA, with the details of setting up before each conference and on-site management of student flow at the events. BSCP became a passion project for her. The MMS publishes BSCP's biennial directory and Carregal took on responsibility for coordinating its printing and distribution. She is also involved with BSCP's newsletter's production. "We were very committed to making sure BSCP succeeded," she says.

To those outside Massachusetts, Carregal explains, the MMS is known primarily as the publisher of the *New England Journal of Medicine*, the world-renowned medical journal and website that the society has owned and published since the 1920s. But to those in-state, it is also an advocacy and education organization. The organization's primary role, she says, is keeping members connected and keeping patient care at the forefront; making sure medicine has a voice. "Students use it for networking, networking, networking," and mentorship, Carregal says. For the four medical schools in Massachusetts, "Mass Medical is Switzerland. It brings the medical schools together." Student membership, which is



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free, is available only to medical students in Massachusetts; but the society encourages BSCP students who attend medical school anywhere in the country to join their local societies.

In Carregal's view, the two organizations are symbiotic. "[The] MMS's affiliation with BSCP extends its mission to support up and coming scientists, technologists and educators to consider various opportunities within the medical profession. As health care expands to population health, it is imperative that the diversity within the populace of patients is representative within the profession that advances science and treatment alternatives. BSCP is a conduit for making this happen," she says.

"We try to bring younger people and minorities into the field. When they ask, 'How can I network?,' BSCP is right there." ■

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Where Are They Now

Christalyn Rhodes

ON APRIL 12 CHRISTALYN RHODES, a PhD candidate at Harvard University, presented her research on the movement of lung cells in asthma and viral infection in a TED-style talk at Harvard's Sanders Theatre. She was one of eight Harvard Horizons Scholars speaking that day.

To be chosen for the Society of Horizons Scholars, which provides students with mentoring and individualized presentation coaching, is a tremendous honor. Each year the program, launched five years ago, selects eight doctoral students from throughout the Harvard University community. Rhodes was the first Horizon Scholar ever chosen from the School of Public Health.

A Dallas native, Rhodes was also the first member of her family to attend college. Gifted in math and science, she graduated from the University of North Texas with a degree in biology and a strong desire to work in health care. She got a job in the pathology lab at Children's Medical Center Dallas analyzing biopsies from children with chronic recurring colds. "I remember thinking about how it would be to be a parent of these kids," she recalls. Many of them returned months after their early visits with asthma. Her scientific curiosity piqued, Rhodes "figured out a way to improve fixation techniques and study the cells," looking for a relationship between the cold virus and asthma.

"I fell in love with research," she says, and started searching for organizations and conferences that would allow her to expand her skills. She found a conference for black medical students in New Orleans and flew there hoping to make professional connections in hopes of formally pursuing research as a career. Rhodes met BSCP founder Joan Reede, MD, MPH, MS, MBA, who was holding a session. After the session, Reede told Rhodes about BSCP.

In 2010 Rhodes attended her first BSCP conference, where she learned about grant opportunities for minorities interested in

research. She sought out principal investigators interested in applying for the NIH diversity supplements and was invited to join the lab of James M. Hogle, PhD, at Harvard Medical School.

From there, the single mother piled her two preschool-age daughters into her car and drove from Dallas to Boston, where she worked in Hogle's lab on an NIH grant for a year and a half. While working full-time she also took classes at Harvard and successfully applied to graduate school in the university's Biological Sciences in Public Health program.

During her early months in the lab of Jeffrey Fredberg, PhD, Rhodes came close to leaving. "I didn't understand how difficult experiment design was. Every experiment I tried didn't work." After two years, she was able to convince Fredberg to let her pursue the research she was passionate about, inspired by her work at the Dallas hospital. "There's no cure for asthma. [The] therapeutics we have don't stop the progression of the disease and only poorly manage its symptoms. This is largely because asthma is so heterogeneous. We didn't have a good way to identify what asthma looks like," she explains. The group began to study asthma from a different perspective. As physicists and engineers, they had been looking at how cells interact with each other and with their environment. They found that asthmatic cells move more. Rhodes describes that as her "Eureka moment." The staunch differences in the migratory patterns of the asthmatic cells provide a measurable physical signature of what asthma looks like, and this can be leveraged to probe causes of the development of the disease as well as develop new therapeutics.

Based on her research, Rhodes is hoping to develop an affordable diagnostic for asthma — none currently exists — and design a therapeutic for children under three to prevent asthma from developing.



CHRISTALYN RHODES

She has already started to test drugs. For the short term, she wants to be a principal investigator. Asthma disproportionately affects minority communities, she says, and "I don't feel there are a lot of people who look like me who get to have a seat at the table. I am fortunate in that I have used this opportunity to affect change in something so personally important to me."

Meeting Joan Reede in New Orleans "was serendipitous. It pointed me in the direction of great opportunity, and though I worked hard throughout the process, it may have never begun had we not met," Rhodes says.

"They [BSCP] are the people who connected me to my research. I'm eternally grateful," she says. "If their goal was to get people to graduate school or medical school, they did that with me... They opened my eyes to a whole new world." ■

2017 Evening of Hope

THE 20TH ANNUAL EVENING of Hope fundraiser took place on Thursday, April 27, at the Sheraton Boston Hotel. The event raises money to support BSCP programs, always offered at no cost to participants, and celebrates the organization's successes. Three individuals who have contributed a great deal to BSCP over the years were named to the Honor Roll: Joyce Sackey, MD, FACP, associate professor of medicine, dean, Multicultural Affairs and Global Health, Tufts University School of Medicine; Cherié Butts, PhD, associate

director, Discovery Portfolio Management, Biogen; and Mayra Lorenzo, MD, PhD, attending dermatologist, Massachusetts General Hospital, instructor in dermatology, Harvard Medical School.

Sackey has been involved with BSCP since 1994, serving as student advisor and panelist. Butts has been involved with BSCP since 2010 both as a student advisor for the Biomedical Science Careers Student Conference and judge for the New England Science Symposium. Lorenzo is a former BSCP student and 1998 Hope Scholarship

recipient. She has been a BSCP student advisor since 2006 and has also participated in the New England Science Symposium as a judge.

Theophilus B. Hill, MD, resident in anesthesiology at Beth Israel Deaconess Medical Center was the Evening of Hope BSCP Participant Representative. Hill attended the BSCP Student Conference in 2010, 2012 and 2014, the New England Science Symposium 2010 and 2011 and served as a volunteer for several conferences and workshops. ■

2017 Hope Scholars

AT THE 2017 EVENING OF HOPE, four students received \$7,500 Hope Scholarships over two years:

Rocio Nunez Pepen
College Student
Brown University
Sponsor: Sanofi Genzyme

Born in the Dominican Republic and raised in Boston, Rocio Nunez Pepen is a freshman at Brown University, concentrating in biochemistry and molecular biology. Throughout high school she was part of Harvard Medical School's Hinton Scholars Program as well as the Hinton Mentor Program. Her project, "Pancreatic B Cell Death: The Role of Nitric Oxide Synthase," won first place in Boston's Regional Science Fair and Genzyme's Best Biology Project, as well as third place in the Massachusetts State Science Fair. She participated in Harvard Medical School's Project Success Program for two summers, conducting research at Massachusetts General Hospital under the mentorship of Richard Hodin, MD. Rocio attended the 2016 BSCP Skills Workshops for College and High School Students. She is planning on attending medical school and pursuing an MD/PhD degree. Her goal is to work in the Dominican Republic to promote health care and wellness to underprivileged rural communities.

Jessica Pierre Francois
MD Candidate
University of Massachusetts Medical School
Sponsor: Biogen Foundation

Jessica Pierre Francois was born and raised in Boston and is a first-year medical student at the University of Massachusetts Medical School. The first person in her family to graduate from college, she received a bachelor's degree in biology and psychology from Boston College in 2010. As an undergraduate, she was accepted into the Dana-Farber/Harvard Cancer Center's CURE program, where she conducted research on multiple myeloma under the guidance of Robert Handin, MD. After graduating, Jessica joined the neuro-oncology lab of Scott Pomeroy, MD, PhD, at Boston Children's Hospital. In addition to her research, Jessica has always worked with underserved populations. Since 2013, she has been a member on the advisory and alumni committees of CURE, which mentors and advocates for underrepresented students in the biomedical research field. She is also chair of Empowering Through Education, a summer academic leadership camp for Haiti's most vulnerable youth. She attended the BSCP conference in 2006, 2010, 2012, 2014 and 2016 and credits these experiences as motivating her to pursue a career in medicine.

Mariana Serrano
College Student
Eastern Connecticut State University
Sponsor: Radius Health

A first-generation college student born and raised in Connecticut, Mariana Serrano is a junior at Eastern Connecticut State University studying health sciences, biology and anthropology. She conducts research related to current medical practices on unconsented diverse sex development surgeries and mentors minority high school and college students on leadership, cultural awareness and inclusion. In the summer of 2016, Serrano participated in the Harvard Catalyst Summer Clinical and Translational Research Program. Mariana attended the Biomedical Science Careers Student Conference in 2016 and the 2017 New England Science Symposium. She plans to attend medical school and continue mentoring and remain involved in clinical research.

McKenzi Thompson
High School Student
Wayland High School
Sponsor: Anonymous

Born and raised in Boston, McKenzie Thompson is a senior at Wayland High School as a METCO student. During her

SAVE THE DATES

Biomedical Science Careers Student Conference

The Westin Copley Place Boston
Friday, April 6 and Saturday,
April 7, 2018

New England Science Symposium

The Joseph B. Martin Conference Center
at Harvard Medical School
Sunday, April 8, 2018

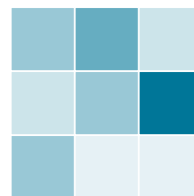
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Click on "Contact Information/Submit Resume" and enter your information in the appropriate window.

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freshman year, she traveled to China as an exchange student. In her sophomore year, she was a John and Abigail Adams Scholar. At the beginning of junior year, McKenzi was admitted into the ICAN Medical Scholars program. In 2016, she travelled to Italy on a cultural enrichment trip after having receiving straight A's in her fourth year of Latin. That same year, she co-wrote and performed a play for an Emerson College festival and received best ensemble and director awards. In the summer of 2016, she participated in the Harvard Medical School Project Success program

and worked in the neurology laboratory of Clifford Saper, MD, PhD. She was awarded the BSCP John R. Moore Scholarship. At the beginning of her senior year McKenzi created a new club at her high school, POWER (People Of Wayland Emphasizing Revisions), to immerse students into discussions to promote equality for all walks of life. The goal is to combat racism, sexism, homophobia and other prejudice and ultimately to create a safer environment at school. McKenzi is planning on attending medical school. ■

Resources

NIH Extramural Diversity Website

TO HIGHLIGHT ITS FOCUS ON THE importance of diversity to its mission and support for underrepresented minorities, the National Institutes of Health Office of Extramural Research established a website devoted to Diversity in Extramural Programs. In graphically delineated blocks, the site helps visitors discover opportunities to participate in diversity programs.

For details visit extramural-diversity.nih.gov. ■