



Juanita
MERCHANT



The Ludwig Scientific Advisor on how, against daunting odds, she forged a rewarding career as a physician-researcher and what she discovered along the way about leadership, family and scientific success.

As far back as Juanita Merchant can remember, her mother drummed into her and her brother the indispensability of a good education.

A woman of preternatural will, she had escaped the virulent racism and poverty of rural Oklahoma in the 1930s and earned a bachelor's degree from a Historically Black College near Tulsa. She then repeated that feat at another college in California—and earned a master's degree as well—to qualify for a teaching job in Los Angeles, California, on which she raised her two children alone after her husband, a World War II veteran suffering from alcohol dependency, left the family when Merchant was about eight years old.

Little wonder, then, that when Merchant finished middle school, her mother made sure she was bussed to a high school that offered college prep classes. But the counselors of the LA school system had other ideas. They pushed Merchant into home economics, where she would learn to sew, cook, knit and type. “This was the mid-60s, and there just wasn't any expectation that someone like me was going to go to college, and certainly not that I'd go into science,” says Merchant. Undeterred, Merchant took college prep courses in summer school, got admitted to Stanford University in 1973 and then went on to earn an MD and PhD from Yale University.

In 2018, after “retiring” from a rewarding 27-year academic career at the University of Michigan, Merchant joined the University of Arizona, Tucson, where she is today the Regents Professor and chief of the Division of Gastroenterology and Hepatology at the College of Medicine. Over the past three decades, Merchant—who is also a scientific advisor to the Ludwig Institute for Cancer Research—has compiled a rich portfolio of research on the molecular biology of gastric cancers and the regulation of gastrointestinal



Juanita Merchant as a postdoctoral GI fellow at Massachusetts General Hospital out for dinner with other GI research fellows.

growth and colon cancer by a transcription factor she isolated named ZBP-89. Still, the home economics experience may not have been entirely pointless. Some ghost of that education, Merchant muses, may have recently helped inspire her to devise a program in healthy cooking for people with gastrointestinal issues—one in which she currently cooks with patients in Tucson.

FORGING A PATH

At Stanford, where Merchant majored in



Juanita Merchant demonstrating an upper endoscopy at the University of Arizona.

Photo by Kris Hanning

biology, she met her first and perhaps most formative mentor, Renu Heller, in whose lab she researched cholesterol metabolism in the small intestine. Merchant credits Heller, a biochemist of Indian origin, with opening her eyes to the challenges women, especially minority women, were likely to face pursuing academic careers in science and medicine. She pushed Merchant to build up her qualifications. “She said, ‘if you want to be successful, you should get both an MD and a PhD,’” says Merchant. “The point she was making was that women need to be overqualified because they are not considered competitive if they don’t really stand out.” Heller also pushed Merchant to apply to her alma mater Yale University, which was then one of the few schools offering an MD-PhD program.

Merchant’s PhD research at Yale involved

the characterization of an enzyme isolated from the duck salt gland, a relatively obscure subject involving endless hours of electron microscopy. When Merchant found she would need to study the phosphorylation—a key chemical modification—of the Na,K-ATPase enzyme, Fred Gorelick, a gastroenterologist who had a lab next door offered his help. Over several days, he met with her at 6 A.M., prior to starting his clinical endoscopic procedures, to show her how to assay protein phosphorylation. He would be a lifelong friend and mentor to Merchant, who became the first African American to complete an MD-PhD in Yale’s Medical Scientist Training Program.

Merchant met another important mentor when she began her residency at Massachusetts General Hospital (MGH) in 1984. During her second year, she and another resident were the only African Americans

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in the program when they were approached by the Chair of Medicine, John Potts, who wanted to understand why Harvard's Black medical students weren't doing their rotations at the hospital. When the pair answered that they did not know, Potts asked them to arrange a pizza dinner with minority students to discuss the matter. “After that meeting, the very next year, they started turning up for rotations at the hospital,” says Merchant. The episode was to Merchant a lesson in proactive leadership. “John was very forward thinking in even asking that question, and I really appreciated that,” says Merchant. “He was very supportive and wanted to understand how to increase diversity in clinical training at MGH.”

After completing her residency in 1987, Merchant began a three-year fellowship in Stephen Brand's laboratory at MGH, where she learned molecular biology. Her project involved exploring the DNA elements associated with the expression of gastrin, a hormone that drives acid production in the stomach. By the second year of her fellowship, Merchant published her first paper on the subject and won a four-year career development grant, both of which worked wonders for her self-confidence. The gastrin project would also become the longest running research program in her lab, spawning over the next 27 years many new avenues of research, including her studies on ZBP-89 and gastrin's role in gastric cancer initiated by *H. pylori* infection.

That project also took Merchant to a scientific meeting in Montreal, Canada, where she met the most important mentor of

her career, the late Tadataka “Tachi” Yamada, a prominent researcher in her field and chair of internal medicine at the University of Michigan, Ann Arbor. After Merchant completed a fellowship in gastroenterology at the University of California, Los Angeles, in 1991, Yamada recruited her to his department, including with the formal offer a handwritten note: “I am committed to seeing you successful in your career.” He remained true to his word, nominating Merchant for awards and membership to influential committees, helping to enrich and advance her career.

GETTING AHEAD

Indeed, getting a seat in professional decision-making bodies—like editorial boards and academic committees—is a critical component of career advancement, Merchant notes, and not just because it enhances your professional profile. “If you aren't at the table, you're on the menu,” she says, quoting her longstanding friend Ivor Benjamin, a past president of the American Heart Association who was an intern at Yale when she was a student there and is today director of the Cardiovascular Center of the Medical College of Wisconsin. Further, she notes, women at the table can also help level the playing field—say, by inviting other women to speak at conferences, advocating for their hiring to faculty positions or appointment to leadership posts, or assigning journal essays and reviews to them.

Merchant has, of course, faced her share of challenges in leadership. She notes, for example, that bias frequently shapes the experience of women in such positions. “There are still challenges for women, regardless of the accolades they may have,” she observes. “Women's leadership style is often different from that of men. It's usually not as top-down, but a bit more collaborative. Sometimes I find that people will try to push the woman leader to see how hard she will push back. You have to learn how to draw that line in the sand.”



Photo by Noelle Haro-Gomez

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Merchant also emphasizes that a history of excellent research and publications in top-notch journals is necessary but not sufficient for career advancement, especially into leadership positions. “You have to get out and sell your work,” she says. “When you get invited to deliver important, high-profile talks, you need to show up.”

This can be an issue for researchers who have children, especially women, who may worry about not being with them enough, Merchant concedes. But Merchant, who raised her daughter alone—admittedly with plenty of mutual support from a network of friends in Ann Arbor—tells young parents that, in her own experience, what children value and remember most is the quality time you spend with them. If you’re there when it counts, she believes, children appreciate why you have to be absent at other times. For Merchant, this meant helping her daughter with her homework and being present for major social, educational or sport events. But it also sometimes meant taking her to meetings to far flung locations, like Copenhagen or Istanbul. Such experiences, Merchant says, enriched her daughter’s life in countless ways.

Finally, self-confidence is a vital ingredient of success, says Merchant. Mentors and advocates can help you build that confidence. She recalls, for example, that when she returned to the clinic after completing her doctoral research at Yale, Benjamin, an intern at the time, helped shore up her confidence in her abilities. But more often, Merchant notes, you have to help yourself. “I do a lot of yoga, so I think of it as ‘strengthening your core,’” she says. “Having confidence and believing in yourself.”

Passion for your work goes a long way in having a successful academic career, Merchant says. It can carry you through the many failures—and ensuing self-doubt—that are typically par for the course in a life of scientific inquiry. “This is why I tell trainees that, above all, you have to feel the love for whatever it is you plan to pursue in your career,” she says. “In the end, even though I’m clinically trained and seeing patients, what really gets me up in the morning is, first, that I love to talk about science and, second, I love teaching and mentoring trainees. I just love seeing that light bulb turn on, that look in somebody’s eyes that says, ‘I really get it now.’”