

Triscia Wharton Hendrickson

It was their second trip together to Africa for a special ASCB workshop on how to teach cell biology, so Martha Cyert had watched Triscia Hendrickson run a demonstration lab before. Yet Cyert still remembers the moment in Ghana last July when Hendrickson's students finally switched on the UV lamp, illuminating the glowing bands of fluorescently labeled proteins that they had labored all afternoon to purify. "I was just struck by the sheer excitement," recalls Cyert, who is at Stanford. "There was this huge crowd clustered around, looking at the bands and getting more and more enthusiastic. The way Triscia used active-learning methods and how she built a relationship with students, I could see just how really gifted she is as a teacher."

For Hendrickson, who teaches at the all-male, all-undergraduate, and historically African-American Morehouse College in Atlanta, GA, the lab is critical ground. It is where the next generation of scientists will discover themselves, she says. It's where Hendrickson discovered herself, she says.

Hendrickson was born on the Caribbean island of Dominica but grew up on St. Thomas in the U.S. Virgin Islands. She got her unusual first name (pronounced "TRIS-ee-ah") from her mother's love for all things French and her educational drive from her grandmother, several aunts, and her father, who all worked as teachers. Still, when Hendrickson entered the University of the Virgin Islands (UVI) as an undergraduate, her goal was medicine. Her career took a detour into the lab through a National Institutes of Health (NIH)-funded Minority Access to Research Careers (MARC) program at UVI. "I got into a research lab and never looked back," Hendrickson recalls. "I loved scientific discovery and the intellectual freedom of it. I just knew that this was what I wanted to do."

As an undergraduate, she joined the UVI laboratory of Robert Wyatt but was also fired up by courses taught by marine biologist Teresa

Turner. Contact with working scientists made the difference, she says. "Having that experience at the undergraduate level is unequivocally what made me a scientist, but I also knew that I wanted to be involved in bringing other undergraduates, particularly minorities, into science. Even though I had such a wonderful experience [at UVI], I couldn't help noticing that there weren't many minority professors or minority mentors."

From Yeast to Alga

Through MARC, Hendrickson attended scientific meetings in Atlanta and San Francisco and then spent a summer doing research at

Purdue University in Indiana. Her final choices for graduate school came down to Emory and Purdue. Weather tipped the balance—"It was spring in Atlanta when I interviewed," she explains with a sigh—but Emory turned out to be perfect for her long-term plans. She started in developmental biology, but a rotation in cell cycle regulation led her into cell biology and the yeast-based lab of Harish Joshi. There she did her thesis using *Schizosaccharomyces pombe* mutants to get at the role of γ -tubulin in chromosome

segregation. Small and portable lab organisms made sense to Hendrickson, who saw herself, PhD in hand, teaching at a small college while keeping a small lab going. She needed something compact. Her postdoc at Emory revealed the advantages of another highly portable model creature, *Chlamydomonas reinhardtii*, during her work with Win Sale on dynein in flagellar bending.

Today, with all undergraduates in her research lab at Morehouse, Hendrickson says that "Chlamy" has stood her in good stead. "One semester all of my Chlamy stocks got contaminated," she remembers with surprising good humor. "I had an undergraduate who didn't fully appreciate sterile techniques. But you live through these things. It's not the

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end of the world.” It helped that the greater Chlamy community immediately responded to Hendrickson’s SOS, rushing replacement stocks to her.

A research environment is critical to making undergrad science education effective, says Hendrickson, and lab disasters are just part of the overhead. “Let’s face it. You’re never going to be as productive as you would be doing the experiments yourself or if you had postdocs,” she admits. “But we are training the next wave of scientists, and I don’t think you can take that responsibility lightly.”

An alphabet soup of programs designed to encourage minority students to stay in academic science smoothed Hendrickson’s transition to researcher-educator. She was picked for Emory’s postdoctoral Fellowship In Research and Science Training (FIRST) program, which was funded by an Institutional Research and Academic Career Development Award (IRACDA) made by the National Institute of General Medical Studies (NIGMS) at NIH. In FIRST, Hendrickson was assigned mentors for both the lab and the classroom. At Emory, Sale was her research mentor. At Morehouse College, J.K. Haynes, Dean of the Division of Science and Mathematics, served as her teaching mentor.

Science Heroes

At Emory, Sale was struck by Hendrickson’s determination. “People who can manage to be really good educators as well as manage a first-class research program, these are my heroes.” Moreover, says Sale, Hendrickson has pursued this goal with three small children and a husband whose Army Reserve unit has been deployed overseas. “Triscia is one of many women like this in ASCB, but she is a really wonderful example of someone who has been successful in managing service, education, and mentoring while still thinking about her science.”

At Morehouse, Haynes liked Hendrickson’s approach to research, her rapport with students, and her ability to make connections all over Atlanta and the wider research community. Haynes also thought a Chlamy-based lab would be ideal in a small undergrad institution where

research often has to be carried out “on the skinny,” as Haynes put it. When Morehouse started looking for a cell biologist, Haynes confesses that he moved her résumé to the top of the pile.

Haynes hasn’t been disappointed since Hendrickson joined the Morehouse faculty in 2004. Haynes likes what he hears from Morehouse students about her lab classes and her research lab. He likes Hendrickson’s focus on international programs and her growing involvement in ASCB. Besides her two African trips, Hendrickson has just finished a term on the ASCB Education Committee and started a new one with the Women in Cell Biology (WICB) Committee. (WICB was a natural choice, says Hendrickson, who remembers her first ASCB Annual Meeting in 1997 and a WICB panel made up of “the rock stars of cell biology.”)

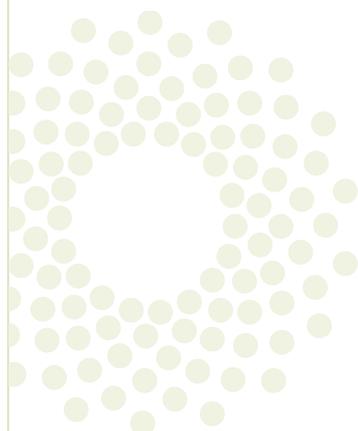
“Triscia’s a no-nonsense person who takes her work very seriously and expects her students to respect it too,” says Haynes. She’s also become a spokeswoman for junior science faculty who are “trying to push the envelope” at Morehouse, according to Haynes, and strengthen the college’s research infrastructure.

A Taste of the Islands

In addition to pushing her many envelopes, Hendrickson, and her husband (who happens to be her high-school sweetheart) are the parents of three boys—a nine-year-old and four-year-old twins. It was living in Atlanta that awoke her inner West Indian tastes. “I love to cook now,” Hendrickson explains, “but I admit that when I was growing up [on St. Thomas] I just wasn’t interested in cooking. Then when I moved to Atlanta, I was suddenly yearning for food from the Islands. So then I’m constantly on the phone to my mom and my aunts, who are amazing cooks, and asking, ‘How do you make this or that?’” Her specialty now is cooking “big” for the holidays, putting out a lavish spread piled with ham, turkey, and, of course, fish. Her current sit-down record at Thanksgiving is 18, which she hopes to break soon.

In the meantime, Hendrickson has her students, her labs, and a new collaboration with Susan Dutcher at Washington University

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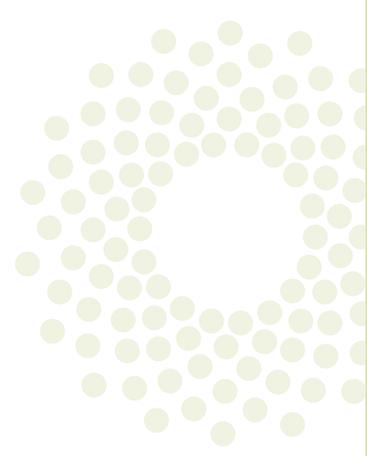
in St. Louis. They met through Win Sale, who is a kingpin of the cilia/flagella community. Eventually Hendrickson sent a Morehouse student to the Dutcher lab for the summer. The summer students mounted a big screen for Chlamy mutants with defects on the inner dynein arm of their flagellum. The mutant bounty left Dutcher in need of someone to help tackle the dynein biochemistry, which Hendrickson knew well, having learned it in the Sale lab.

With that, Dutcher came down to Morehouse to give a seminar and hash out the collaboration. But the seminar schedule clashed unexpectedly with a national meeting for schools participating in the Howard Hughes Medical Institute undergraduate education program, so Dutcher missed Hendrickson entirely but got a good

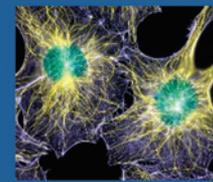
look at her students. While Hendrickson flew off to represent Morehouse in Washington, DC, Dutcher arrived in Atlanta to talk about the assembly and function of centrioles and cilia. Hendrickson's students, particularly her juniors, were waiting. "They were *primed*," Dutcher recalls with a laugh.

The juniors knew the key papers in the field. They'd already heard talks from cilia experts like Greg Pazour, Beth Smith, and Sale. "Coming into cilia can be very intimidating," Dutcher explains, "but Triscia's students were up to date and ready to go, so I didn't have to do any heavy lifting. And believe me, I have definitely had undergraduates who were not up to speed on cilia. Triscia had clearly been getting her students ready." ■

—John Fleischman



Director, National Institute of General Medical Sciences, National Institutes of Health



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