ACS Women Chemists of Color Summit

— John Simpson

You don't need to tell a distinguished panel of guests that a long journey begins with a single step. Rather than tell them anything, it would probably be better to sit still and listen. They've begun the journey already.

And while their first steps might differ from their colleagues, any one of them can teach us something. You might learn about the value of persistence, about the foresight and strength necessary to endure hardships, about having the cards stacked against you.

In the case of the panel assembled at the 240th National Meeting of the American Chemical Society, you would come to understand something about chemistry and how a fondness for science makes you different. It makes you a minority. If you're a woman interested in chemistry? Well, you're part of an even smaller minority.

But what if you're a woman of color interested in chemistry? Your comfort zone might shrink further still. After all, there aren't too many of you around. How treacherous and lonely might your journey be to carve out a slice of security and happiness in the world? And how do you position yourself for it? There's unlikely to be an established blueprint or roadmap for that.

With support from the National Science Foundation, the ACS hosted a Women Chemists of Color Summit in Boston, Mass, to address these issues. It explored paths taken by women of color — African Americans, Native Americans, Hispanic/Latinas and Asian Americans — who are pushing the envelope of gender and ethnicity.

The discussions included a morning symposium on early career issues, called Getting to the Table, and an afternoon symposium, titled Staying at the Table, addressing challenges found further down the road. The talks featured minority women chemists from academia, government, and industry revealing insights and anecdotes that helped them survive when times were trying and persevere when they were lonely.

Find a mentor

The question of how to generate a foothold in such a daunting environment is raised: How does a minority go about putting herself in a suitable position — establishing herself — to be noticed?

"You have to discern your true calling, and don't accept an alternative," says Sharon Haynie, a research scientist for the DuPont Co. "Finding your gift to the world is one of the challenges everyone must have."

Haynie fell in love with chemistry in junior high while participating in a nationally piloted chemistry course. There she became mesmerized by the molecular world and has been ever since. Although she realized her passion early, she knows it usually doesn't come that easy.

"Sometimes your own inner voice can get drowned out by others," she says, "but don't give in to what you feel is right."

But what if your own inner voice is skeptical? Remember that someone has been in your shoes before, says Kris Prather, assistant professor at Massachusetts Institute of Technology (MIT) in Chemical Engineering. “They have found an answer.

“It’s your job to find that person. In other words, find someone who is doing exactly what it is you want to do. And then find out how she got there.”

It turns out that Prather didn’t exactly follow her own advice. She was inspired to teach from her world history teacher in high school — a reminder that good advice sometimes comes in circles outside your own. “All that matters,” she says, “find someone interested in your well-being who can help you get where you’d like to be.”

Learning to Fit In

To get where you’d like to be inevitably entails sweat, tears and hard work. Imagine this predicament: On your first overseas assignment representing a global oil company, you find yourself in a sea of men who don’t understand you. They don’t speak English. All they do is stare at you bewildered, mistaking you for a camera-carrying tourist — they don’t know you’re the boss. They don’t believe you could be.

So you learn to speak their language. And you show them who’s boss.

This was the experience of Shu Shu, a half-Japanese, half-Chinese chemical engineer who works at Shell Oil Co. Sent to Amsterdam, she earned respect the hard way: She studied Dutch.

“I decided I’d learn some hardcore technical terms,” she says. “By studying the language, I found I could survive in the all-white, male Dutch environment.” She survived. She even made some lasting friendships.

Like Shu, other panelists say they are burdened by the need to prove something — worthiness, intelligence, preparedness... Some have a quiet confidence. Others have a little something extra. Prather has her MIT class ring. She wears it while teaching on the first day. Its message comes through loud and clear.

“It says I’ve paid my dues. It says I’m credentialed, so don’t test me,” she says. “That you don’t have a right to question my right to be here instructing you.”

Although some on the panel say they never felt odd or different where they were the lone minority, this wasn’t the case with Novella Bridges. Born and raised in Detroit, Mich., she found herself in 2001 working at the Pacific Northwest National Laboratory in Washington state, where only three percent of the population is African American.

Bridges found ways to adjust. She found company in unexpected ways. She’d take breaks just to greet herself in the bathroom mirror. It was usually the only time she’d get to see another minority.

So when it came to selecting mentors, Bridges knew they would not be like her, not black women. Instead she sought those who shared her focus and her commitment to excellence.

“When you are establishing yourself,” she says, “you want to make a strong argument that you are supposed to be there and there is no reason why you shouldn’t be in charge. You want to make sure your reputation is what it should be and not maybe what they assume it to be.”

Appreciating a Foreign Culture

A Native American, Robyn Hannigan is now Chair of the Environmental Earth and Ocean Sciences Department at the University of Massachusetts at Boston. She grew up on the Narragansett Reservation in Rhode Island, was the first in her family to attend college and earned her Ph.D. in geochemistry from the University of Rochester in New York.

Throughout her career, she says, having her foot planted foot firmly in a unique culture — this “other world” where no one attends college, where people don’t even leave the comforts of the reservation — has helped to shape her decisions.

“Being raised on a reservation taught me from a very early age,” Hannigan says, “that when someone is more senior to you, you don’t voice your opinion. You don’t have one. They are the ones who are right, and you only speak when you’re spoken to.”

But what happens when you leave that world to enter another? One where certain norms are contrary to those that you learned growing up.

Hannigan confronted that question soon after her career in adademia began. During her first faculty appointment, she was hand-picked to speak — an eye-opening prospect to her, no doubt — on behalf of Native Americans regarding the university’s mascot, the Indians.

It was an awkward situation. On one side of the coin — the side defined by values learned on the reservation — she was prohibited by authorities to speak on behalf of the Narragansett tribe. On the other, however, a different set of authorities, namely the president of her university, requested that she weigh in on a controversial and sensitive matter.

“It was very difficult to learn,” she says, “that outside of my other world, I’m expected to have an opinion, an informed opinion, and that it’s actually because of what experiences I bring to the table.”

Like Hannigan, Linette Watkins has adjusted to an unfamiliar code of conduct when entering the world of academia. She, too, has made a daring leap to a different, sometimes frustrating environment.

While growing up, Watkins, from a self-described traditional Hispanic family, was not allowed to be around men without adult supervision. Breaking this rule was a punishable offense.

Now an associate professor at Texas State University, although much older and freed from those restrictive social mandates, Watkins is still uncomfortable when she’s the only woman in the room.

“When I walk into a room and it’s all men, I panic,” Watkins says. “I have to fight it. And I haven’t been able to stop it yet.”

The problem has plagued her for years. Entering graduate school, she had no female faculty members on staff to serve as a buffer. Even now, she has reservations about speaking engagements or business meetings where no other women are present.

“It gets into the culture of chemistry,” she says. “When you go into science, you enter into a culture that’s very different from the rest of society.”

When Watkins entered science, like Hannigan, she had to discard parts of her own upbringing to fit in with her peers and to become successful. “I had to leave what I knew as a child,” she says, “and enter into a place that was foreign to what I was taught was appropriate.”

Be Opportunistic

“Staying in front of the curve in science,” Novella Bridges says, “is like an Easter egg hunt. If you’re smart, every time you pick up an egg, you keep it. You don’t throw it back just because you don’t like it - you don’t know when there may come a time when you need it.”

The meager numbers of women professors of color in major college programs — and the few chances awarded them — speaks to the benefits of being opportunistic. The problem, though, is that minorities still seem to be lacking chances to stick their feet in the door.

Donna Nelson should know. A professor at the University of Oklahoma, Nelson has studied changes in demographics of minorities and women in science and engineering in the top 50 universities in America over the past decade. The data leads her to ask a pointed question: Where are the underrepresented minority women chemistry professors?

“There are very few minorities and far fewer minority women among top institutions,” she says. “Chemistry had the lowest increase in the representation of women between 2002 and 2005 across all 15 disciplines studied.”

Over the past few years, Nelson has found a small rise in minority women professors, but she adds the depressed numbers are still a concern, she says.

Her study found in 2002 across 15 disciplines surveyed there were nine African American women professors in all top 50 universities, 33 Hispanic women professors and one Native American woman professor. In 2007, there were 35 African American women professors, 50 Hispanics and zero Native Americans.

The numbers reflect in part what the panelists say they’ve understood for years. Bridging the gap between where minority women chemists stand now and where they wish to be takes time and patience, commitment and even strategic planning. The panelists also agree they haven’t reached the point where they are comfortable with their status as a whole.

“This is a very small community,” Haynie says. “There aren’t the typical six degrees of separation you’d normally find. It’s a very, very small community.”

Although the group size of minority women chemists is small, the leadership present at the Women Chemists of Color Summit guarantees it is in gifted hands. A new generation of minority scientists can walk down the path already taken with less worry and less self-doubt. These chemists are certain to have unique challenges ahead, and their winding journey will still begin with a single step.

But that step should be less perilous and maybe a little lower to the ground — thanks to those who have come before them.