



Leading a Large Lab

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It is probably a safe bet that genomics would be a slightly different place had Richard Myers pursued his original path. Myers — now president and director of the Hudson-Alpha Institute for Biotechnology in Huntsville, Ala. — began his academic career as a sociology major at the University of Alabama in the mid-1970s. But halfway through, he ended up in a chemistry class that captured his interest and caused him to drop the softer science cold. And it's a good thing, too, because Myers went on to play a major role in the Human Genome Project, among many other large-scale collaborations. From 1993 until 2008, Myers was a professor in the department of genetics at Stanford University School of Medicine, where he also directed the Stanford Human Genome Center. In fact, Myers and his genome center contributed roughly 11 percent of the human sequence — chromosomes 5, 16, and 19.

But in 2008, with much ado that included a glowing endorsement from Alabama Governor Bob Riley, Myers officially made the move to HudsonAlpha. In addition to being handed the steering wheel of a new institute, this was a homecoming of sorts for the Tuscaloosa native.

Myers' lab continues to work with the Joint Genome Institute and has sequenced the genomes of more than 40 organisms related to bioenergy, agricultural, and environmental problems. His lab is also part of the Pritzker Neuropsychiatric Disorders Research Consortium, which studies mood disorders with gene expression studies, and the Cancer Genome Atlas project. And in case those commitments don't keep him busy enough, Myers also finds time to serve on the HapMap Advisory Committee and the Review Group for Large-Scale DNA Sequencing Centers of the National Human Genome Research Institute, as well as on the Biology and Biotechnology Program Advisory Committee for the US Department of Energy.

A family lab

Myers prides himself on maintaining a close-knit family in his lab that is as big as it is diverse. Back in the 1990s, the Myers lab was made up of more than 50 people with a wide array of specialties and at different stages of their career. "I've had a fairly good-sized lab for the last 20 years because of the genomics aspects to it — and that's been a combination of students and postdocs, but also what I call senior scientists and compute technicians and computer scientists," Myers says. "So I train at the level of people getting the PhDs and postdocs, but also these big projects that work collaboratively with lots of different groups."

Myers admits that he was a workhorse during his early career, but he doesn't crack the whip on his own students — they are the only ones who can decide how hard to work. "I have always worked really hard myself. In the labs I worked in before, people worked ridiculously long hours, but I never push people to work specific hours," he says. "I just think people should work the way that fits their careers, and people who worked hard and had the capability were going to do well and people who didn't may not do as well."

Collegiality is also high on his list of requisite qualities for potential applicants. "Just the thought of having someone in your group who is going to be greedy or disruptive or selfish all the time would not go over well, and would make the lab an unpleasant place to be, so that was always important to me," Myers says. "The idea of pitting one student against another, I saw a little bit of that in some of the places I've been earlier and thought it was pretty repulsive, so I really worked hard not to do that."

Myers says that handling whatever personalities come his way in the lab is something he learned over time, and it was not always easy — especially when he first started and had postdocs who were almost the same age as he was. But like any good leader, Myers has developed some tricks to deal with the myriad personality types that step through the door of his oftentimes crowded lab. "I'm a pretty social person and have reasonably good instincts and decent people skills, but I was all over the place — I had people who were wonderful and people who were incredibly disruptive who the lab wanted to throw out the window, and I had to deal with all of that," he says. "By now I've learned some rules I try to follow. The most important thing is to insist that people treat each other well because you're in a tight environment and often the lab

spaces are quite crowded. ... One of the things that I try to do is to not make it feel tense."

When it comes to preparing his students to go out into the world, Myers says confidence is key, but that some students don't have the self-confidence they should. "I remember one student telling me he wasn't good enough to be in academia, whatever that meant, and he's now a professor at a prominent university [and] doing very well," Myers says. "So part of that is trying to overcome this perception that life is way too hard in academia doing research. There's so many different venues to do it, and yes there are some fields that are much tighter than others, and the field we're in is still in quite a large demand and [that] may not last forever."

In addition to having self-confidence, Myers really wants his students to be good "scientific citizens" with an appreciation for the opportunities public funding allows them, as well as having integrity and strong communication skills. "I very much encourage my students and postdocs to feel that they owe the world something because we're getting to do this," he says. "And I certainly want them to be good experimentalists, good at analyzing their data and being straight and honest about that, and then also I really try and encourage people to enjoy it. There is a lot of fun and joy in making a discovery and you don't have to be a superhero to make a real contribution."

Naming Names

Over the last 20 years of having a large lab, Myers' tutelage has been critical to many scientists learning the ropes. Here are some of the names you might recognize.

Shelley Force Aldred

During her graduate years with Myers, Aldred studied how stretches of DNA regulate when and where a gene is used. Aldred co-founded SwitchGear Genomics with Myers and now serves as the company's president and chief operating officer.

Jun Li

Li cut his teeth on human genetics during his postdoc position with Myers, in which he learned the value of large-scale association studies. He is now an assistant professor at the University of Michigan, where he takes part in several collaborative studies on bipolar disorder, cardiovascular disease, and cancer.

James Noonan

Noonan obtained his PhD under Myers' guidance. He is now an assistant professor at Yale University, where he uses computational and experimental approaches to study the genetic mechanisms that underlie the phenotypic divergence of humans from other primates.

Len Pennacchio

Currently a senior staff scientist at Lawrence Berkeley National Laboratory, Pennacchio was a graduate student under Myers when he helped to uncover the genetic cause for a rare form of epilepsy.

Holly Tabor

Tabor first came to know Myers while a graduate student studying epidemiology and genetics. After completing her degree, she became a senior scientist in his lab. Tabor is now an assistant professor at the University of Washington School of Medicine and the Treuman Katz Center for Pediatric Bioethics.

Nathan Trinklein

After finishing his PhD with Myers, Trinklein went on to manage the Stanford part of the ENCODE project before co-founding SwitchGear Genomics. Trinklein is currently the chief executive officer of SwitchGear, where he manages all technology development in the area of regulatory network/pathway analysis.

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