



A Teacher's Quest

Biologist Steve Robinson is leaving a high-level White House post for a high school in New York City in a career-long quest to understand the secret behind great teaching

SOME SCIENTISTS COME TO WASHINGTON and contract Potomac fever—a disease triggered by the proximity to power that produces a hunger for national attention. And then there's Steve Robinson.

What motivates the former university biology professor turned secondary school science teacher turned education policy-maker isn't power. It is figuring out what it takes to be a good teacher. He has looked for answers at every stage of his unusual career arc, both to improve his own skills and to contribute to the ongoing debate about how to boost the quality of the nation's teacher corps. And this week, at the age of 62, Robinson begins his latest quest.

Last month, Robinson walked away from an influential education policy position at the White House to teach science to disadvantaged students attending Democracy Prep Charter High School in New York City's Harlem neighborhood. (Charter schools are run by private organizations but receive govern-

ment money to teach students who would otherwise attend public schools.) He hopes to make use of what he's learned in Washington and as a teacher at both the secondary and college level to hit an educational trifecta: Prepare his students for college and career success, make himself into a better teacher, and foster Democracy Prep's role as a test-bed for improving U.S. K–12 education.

"There are lots of things I could have done," Robinson says about his decision. "But I wanted to teach. I want to see whether I'm a good teacher."

Those who know him are not surprised by his latest career twist. "Steve is a person who would follow his star," says Edward Klekowski, a retired plant biologist at the University of Massachusetts (UMass), Amherst, who 25 years ago was Robinson's departmental colleague and running partner. "He was always an idealist. And it sounds like he still is."

Robinson's biggest challenge will be

Gearing up. Steve Robinson (*center*) trains with Democracy Prep assistant principal Brian Martin and fellow physics teacher Dipti Dedhia.

applying his policy experience to the day-to-day problems of teaching in an urban school, says another friend, George Sugai, an education professor now at the University of Connecticut, Storrs, who taught Robinson while he was earning a master's degree in 2002 at the University of Oregon. "It's the handshake—how to transfer his knowledge of what works to these kids," Sugai says. "But I don't think it'll take him long."

Be like Benton

Growing up in a wealthy suburb of Chicago, Illinois, Robinson says that he never envisioned working at the White House. But he did think a lot about becoming a science teacher. In fact, last year Robinson recorded a public tribute to his former high school biology teacher (StoryCorps.net).

“Mr. Benton, I always wanted to grow up and be you,” Robinson told James Benton, now 81, who taught for 37 years at Lake Forest High School before retiring in 1994. In addition to thanking Benton “for making science fun,” Robinson praises his Socratic approach to teaching. “You would often answer my question by saying, ‘Well, think about it.’ Perhaps it was your way of saying that science is not a group of facts, but rather a different way of thinking about things.”

Benton’s influence helped steer Robinson toward an undergraduate degree from Princeton University and a Ph.D. in cell and molecular biology at the University of Michigan. “People said I was pretty good at research, so I stuck with it,” says Robinson in a matter-of-fact tone that reflects his no-frills personality.

In 1984, he landed a tenure-track position in the botany department at UMass.

But once there, he realized that being a successful academic required more than a love of bench science. “I didn’t like running a small lab and scrounging for research funding.”

Robinson says that he chose not to go up for tenure because he couldn’t imagine spending his entire career as an academic. Former colleagues say that his modest research productivity would have made it extremely difficult for Robinson to meet the university’s benchmark. At the same time, however, his classroom skills generated rave reviews.

“He was one of those gifted teachers who could explain something complex really clearly,” says Klekowski, who taught a seminar with Robinson and sat in on one of his courses. “He was on the cutting edge of plant molecular biology, and there should have been a place for him at the university as a distinguished teaching professor. But there wasn’t.”

Once Robinson decided to leave academia, he headed west and eventually settled in Eugene, Oregon. (His wife, Jan Cuny, was a member of the computer science department at UMass, and in 1993 she joined the University of Oregon faculty.) Robinson worked in a university lab and helped raise the couple’s three children. But soon the itch to teach returned.

He tried to scratch it by spending 5 years as the only science teacher at a small private school. But it wasn’t quite what he wanted. “I’d always been a public school person,” he says. “It’s one of the great American innovations.”

Public school teachers need to be certified by the state, however, and for Robinson that meant going back to graduate school for the additional course work he needed to become eligible. But the classes and student teaching brought him no closer to his goal of “becoming a more effective teacher, whatever that means.” Nor did the next 3 years he spent at North Eugene High School.

Robinson believes that many teachers fail to convey the essence of how science is actually done. “Everybody teaches the scientific method—developing a hypothesis and then doing the experiments to test it,” he says. “But scientists don’t actually follow the scientific method.” Instead, Robinson’s academic training has taught him the importance of the right hypothesis in making progress. “Most of the time when you do an experiment, it says to you, ‘Hey buddy,

that wasn’t the right experiment.’ You didn’t ask the question well enough, or there’s something that you just didn’t think about.”

Of course, knowing the subject matter is also important, and he says teachers who lack that knowledge can do serious harm. “I would even go so far as to say that many of my students would be better off if they never had a science teacher before me because they have to unlearn so many bad things” from elementary school teachers who were afraid of science.

Robinson is confident that he understands what he is trying to teach: “It’s pretty hard to stump me on content,” he says. But he was disappointed in the lack of pedagogical guidance that he received during his high school teaching career. “Three times a year I’d be asked when I wanted to be evaluated, and I’d say, ‘Why don’t you come next Wednesday?’ You’d have to be a total idiot not to have three good days of lessons in your back pocket. And the other 177 days I could do anything I wanted.”

The follow-up was no more rigorous, he adds. “There’d be a checklist, with a scale of 1 to 5. I’d get mostly 5s, and a few 4s. When I asked about the 4s, they’d say, ‘Well, there’s always room for improvement, right?’”

Obamaworld

In 2004, Cuny, his wife, decided to come work at the National Science Foundation to start a program on broadening participation in computer science. Looking for a way to

join her in Washington, Robinson applied for and won a federally funded fellowship allowing classroom teachers to work for Congress or a federal agency. In the fall of 2005, he lucked into a job with the newly elected Democratic senator from Illinois, Barack Obama. “They were looking for someone who knew something about education, and I was free,” Robinson says.

Within 2 weeks, Robinson was helping to write a speech in which Obama previewed many of the policies that have marked his administration’s approach to education. They include incentives for school districts to raise standards, linking teacher evaluations to student performance, and creating better tools to assess learning. He also emphasized the importance of a well-trained teacher workforce, including the use of alternative certification, a popular tool for charter schools to attract people who might not otherwise consider teaching.

Those ideas resonated with Robinson, who quickly fell in love with the job. “I thought I would be here a year,” he says. “But [Obama’s] office was a great place to work. There was an amazing group of talented people. If I had been in another office I probably would have returned [after the fellowship ended] to Oregon.”

Robinson rose swiftly in the Washington policy world. After the 2008 election, he became special adviser on STEM (science, technology, engineering, and mathematics) education to Education Secretary Arne Duncan. In September 2009, he became special assistant on the White House Domestic Policy Council, where STEM education was part of his portfolio.

That position—“I had the best policy job in Washington”—gave him a front-row seat in the political tug-of-war with Congress over revising the Bush administration’s unpopular No Child Left Behind Act, the 2002 law that spells out the federal government’s role in elementary and secondary education. He also worked closely with officials from a dozen federal agencies to develop a strategic plan to improve the government’s \$3 billion investment in STEM education.

Despite his loyalty to Obama and his policies, Robinson was upset earlier this year when the administration proposed to reshuffle the federal STEM portfolio by designating three lead agencies and drastically cutting back the involvement of other agencies (*Science*, 26 July, p. 338). “I’ll be honest,” he says. “It’s hard for me to defend [that proposal] because I argued against it pretty strongly.” But he emphasizes that the budget proposal “is not the reason I’m leav-

“Sure, working at the White House means long hours. But teaching is just plain exhausting.”

ing. I want to make that really clear.”

Robinson says that he definitely wasn't looking for a new job last September when he heard Seth Andrew, a former teacher and the founder of Democracy Prep, talk about improving K–12 education at an event that included Duncan and other education luminaries. But what he heard that day at the Brookings Institution rekindled his passion for the classroom.

Charter schools are a rapidly growing part of the U.S. education landscape. Their flexibility pleases many conservatives, who want to reduce the federal role in education. But their autonomy worries some liberals, who fear that the charter movement threatens a 200-year tradition of public education.



Role model. Steve Robinson thanks his high school biology teacher in a StoryCorps event at the White House.

Democracy Prep, which began in 2006 and now operates eight schools in Harlem and one in Camden, New Jersey, is part of a wave of so-called no excuse charters that has attracted national attention by sharply raising test scores among traditionally low-achieving populations. “One of their schools is the highest performing charter in New York City,” Robinson notes. The organization is also growing rapidly: Last year, it received a 5-year, \$9.1 million federal grant to train the additional staff members needed to open or expand another 15 schools in New York City and elsewhere.

School officials say that their success is based on a five-part formula—more time in the classroom, targeted interventions for students who need them, an extensive use of student performance data to improve prac-

tices, a culture of high expectations, and high-quality teaching. Their approach to teacher development has a special allure for Robinson. “People think it’s just about setting high standards and firing bad teachers,” he says. “But it’s really about how to cultivate good teaching.”

Invited to deliver a 40-minute practice lesson to students as part of the school’s hiring process, Robinson was impressed by the extensive feedback that he received from staff and school administrators. “They gave me a very thorough debriefing of what I had done well and poorly,” he says. “They asked me how I would have taught the class differently if I had to do it again tomorrow and next week. Nobody had ever asked me that

question. One of the things that schools like Democracy Prep do well is to create a culture in which teachers support each other and offer constructive criticism.”

Katie Duffy, who succeeded Andrew this year as the organization’s CEO, says that culture is critical to what the school hopes to achieve. “It isn’t enough to come in as a good teacher,” says Duffy, who has been with the school since its early days. “We want to be sure they continue to get better.” The absence of tenure for teachers may also play a role.

Robinson says the school’s emphasis on civic engagement was another attraction. “That civic mission appealed to me because of all the time I’ve spent in Obamaworld,” he says. “I also think that teaching in Harlem is very much of a public act.”

In fact, Robinson hopes that working

at Democracy Prep will also promote one of the original goals of the charter school movement. “The promise of charter schools was that they would be laboratories for innovation that would help us improve public schools,” he says. “But we’ve failed to do that. Instead, we’ve allowed an amazing variability in the system—many schools are terrific, and some are horrible.

The solution, according to Robinson and many educators, lies in improving the quality of the professional workforce. And despite his admiration for his former high school teacher, Robinson takes issue with Benton’s assertion during last year’s recorded conversation that “a good teacher is born, not made, and that most teaching is intuitive.” Likewise, Robinson says, studies that show a teacher with a master’s degree is no more effective in the classroom than someone with an undergraduate degree are flawed.

“First of all, a master’s degree is a very large variable,” Robinson says. “You can get one off a matchbook cover, or you can get one in math education from Deborah Ball [dean of education at the University of Michigan]. And you can’t convince me that studying with Deborah Ball for a year doesn’t make you a better teacher.

“As educators, we have to believe that making people smarter can help. So if the studies don’t show an effect, all it means is that we’re not doing a good job of teaching those people what they need to know.”

The poor quality of most teacher professional development—improving the skills of those already in the classroom—aggravates the problem, he believes. “As a teacher, if I said I was going to teach all my students the same way, it would be considered professional malpractice,” Robinson says. “But that’s what we do with most professional development.

“We assume they all need the same thing. And that’s why almost no professional development works. It needs to be differentiated, but to do that, you need a good evaluation system. And that’s been a hard political battle.”

Robinson acknowledges that he is taking a big risk by returning to the classroom after 8 years in the political arena. But he says that it feels like the right thing to do. In the meantime, he scoffs at former colleagues who teased him about deciding to take it easy. “Sure, working at the White House means long hours,” he says. “But teaching is just plain exhausting.” And while he may be under less scrutiny in Harlem than in the White House, Robinson hopes that his work will have just as big an impact on U.S. education.

—JEFFREY MERVIS