

The Chairman: John Matsui and the Biology Scholars Program

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The Coalition for Excellence and Diversity in Mathematics, Science and Engineering is the "Justice League" of programs on campus confronting the problems of underrepresentation in math, science and engineering. The following post is one in a series, kicked off by this introduction, highlighting the work of each of the Coalites and the programs they represent.

If the traditional path to joining the UC Berkeley faculty is a well-traveled, strenuous uphill climb, John Matsui hacked his way up the side of K2 with a machete. “No matter where I’ve gone, I’ve had to create what I wanted to see in education,” he says. Some of the places John has gone, few of his faculty peers have ever been.

“My educational pathway has been anything but a straight line. The way they taught science in high school wasn’t in a way I was able to learn. So I came out disinterested in science and generally unprepared for a four-year college,” says John. So instead he spent three and a half years at community college before transferring to a four-year university. He would go on to earn a Master’s degree in Biology from UC Berkeley and a Ph.D. from UC Santa Barbara, but during that time he took another unusual detour.

While finishing his dissertation at UC Santa Barbara, John took a teaching position at a local community college. Noticing a glaring lack of support for scientifically-inclined Latino students, John founded a bilingual biology program at the college, despite speaking no Spanish himself. This knack for taking the initiative, for creating, didn’t come naturally to John Matsui. “I’d always been told ‘You can’t. You’re not capable. That’ll never work.’ And I believed them because I was afraid, and I didn’t trust myself. But at some point I started saying ‘No, they’re wrong.’”

Impressed with his vision and his passion for addressing the needs of underserved populations, the Student Learning Center at UC Berkeley hired John to help run their academic programs. His work there grabbed the attention of the Dean of Biology, (now Emeritus) Professor Caroline Kane, and an investigator at the Howard Hughes Medical Institute. They recruited John in 1991 to help develop what would become the nationally-renowned Biology Scholars Program (BSP).

Building a scholarly community

Currently, BSP supports 650 scholars, many of whom have aspirations to go on and serve their communities as doctors, researchers, and policy advocates. The program offers tutoring, study groups, research opportunities, personally-tailored advising, and, most importantly, a diverse and supportive community. BSP also boasts a staggering set of statistics. To give just two: 90% of BSP students applying to medical school are admitted (versus only 50% nation-wide), and 10% of all African-Americans enrolled in a medical program in California between 2006 and 2009 came from BSP.

This highly successful, comprehensive program began in 1991 with John and Caroline, the principal co-authors of the original BSP proposal, and a blank sheet of paper. “When we were working on the original proposal, we didn’t have a map,” says John. “We were in the woods, in the wilderness. So I started constructing my own map, informed by the reality of what I had to deal with as a different learner. I was looking for the gaps—the places where students who came from different backgrounds or learned in different ways would fall.”

Where John found gaps, he designed BSP to plug them with techniques informed by his years of experience in student support. Rather than simply provide services, John wanted the program to focus on helping students develop themselves and fulfill their potential. “My goal with BSP is to create independent problem-solvers,” he says. “We don’t have much in the way of ‘on-a-platter’ help. When we started out, it was just a lot of personally-tailored, quality student advising. It was about, ‘Here’s your responsibility; here’s my responsibility. Let’s build something together.’”

John recalls conversations with some of his first students as they were building BSP: “My students said ‘We need tutoring, John.’ So I told them, ‘Ok, I’ll set you up with some tutoring on campus.’ But my students came back and said, ‘We go over there, and it’s like discussion section. We’re afraid to ask questions because we’re the only black and brown ones in the room. Everyone thinks we’re stupid to begin with, and if we ask a question, that’s just going to reinforce the stereotype.’” So John hired a tutor specifically for BSP, and he provided a space for tutoring and eventually group study sessions led by upper-division undergraduates in BSP—another innovation generated by discussions with students.

The relationships that BSP nurtures between students, faculty and staff are the core of the program. Current fourth-year student and BSP scholar, Verence Bravo, describes herself as “just your average low-income, first-generation student and daughter of recent immigrants.” Though the word “average” really doesn’t belong in that description. “At a place like UC Berkeley, I can go into a lecture hall with 700 other people, and the majority of them won’t look like me,” she says. “The majority of them won’t look at me, won’t talk to me, and definitely won’t ask me for help. But in BSP, I’m surrounded by people like me, with the same types of goals, driven by the same types of experiences, and coming from similar backgrounds. It’s nice to be able to come home to BSP.”

A growing success

Over the course of its first decade, BSP closed the achievement gap for low-income, first-generation, and under-represented minority students in biology at UC Berkeley. “We published a paper in 2003 showing that although our students came in less well-prepared than biology majors at large, they finished with equivalent grade-point averages. And, an equal percentage of our students who came in intending to major in biology finished as biology majors, as compared to those entering UC Berkeley at large. We reached parity! This was huge! It meant our students could go on to graduate school and medical school.”

The landmark study grabbed the multi-million dollar attention of the Gordon and Betty Moore Foundation, which is interested in diversifying the medical field to address health disparities that often correlate with race and socioeconomic status. The foundation awarded BSP \$5.6 million to continue and expand their work preparing a diverse population for the medical fields. About 20% of that money was given explicitly for disseminating the successful BSP model around the country.

The influx of cash gave John the opportunity to hire staff the program so desperately needed, but it also meant John had to spend a lot of time away from Berkeley, planting the seeds of BSP far and wide. In John’s absence, the program drifted away from helping students develop their own problem-solving skills and towards more service providing. “We had started creating opportunities for students instead of helping them create their own opportunities,” says John. “Our students became consumers instead of independent, problem-solving scholars, through no fault of their own.”

These days, John is back in Berkeley as much as possible, interacting with the students he’s loved to serve for so many years and getting the program back to what he likes to call “BSP Classic.” As a BSP student, Verenice knows just what it means to have John more present in the daily activities of the program. “John is so inspirational to me. He just motivates me to do good things. He cares about the program and about each and every one of us so much. If I’m feeling down about school, or anything really, all I have to do is come to an advisory meeting with John. That’s all I need to get motivated.”

The students in BSP, like Verenice, aspire to be role models. “Once I went through Summer Bridge, and I was exposed to all the social injustices my community faces, it totally changed my outlook,” she says. “When deciding what major to pursue, I decided to go the more difficult science route because I felt like, ‘I want to be a Latina with a biology degree.’ I want to be able to go to graduate school or medical school and then come back and help these underserved populations.”

The Summer Bridge program that began Verenice’s change in outlook is one that helps fill in the educational gaps faced by many under-represented minority, first-generation, and low-income students; it also has close ties to the Coalition. And it’s no accident that Verenice found her way from one Coalition program to another. In John’s view, “The Coalition really,

truly connects the dots. Across four different colleges and many different departments, the Coalition helps us support students in every facet of their educational experience.”
Scholarship for PhD is an excellent opportunity for students.

As I spoke with John, it struck me that the principles and skills BSP nurtures in its students are ones that anyone can benefit from. What student wouldn't be better off with the support and guidance of educated staff and faculty who dedicate their time to helping that student develop? Beyond just the constraints of resources, John says, “We keep doing the experiment with the marginalized group of students because the gap between preparation and expectation is huge for them. And if we can improve this institution for a marginalized student, we can improve education for all students. And then we're asking the question of how does the tail wag the dog? How does a program like BSP change the institution? That's what's next.”

Matsui, J., Liu, R., & Kane, C. (2003). Evaluating a Science Diversity Program at UC Berkeley: More Questions Than Answers *Cell Biology Education*, 2 (2), 117-121 DOI: [10.1187/cbe.02-10-0050](https://doi.org/10.1187/cbe.02-10-0050)