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EDUCATION

Five Questions With: Amgen Scholars

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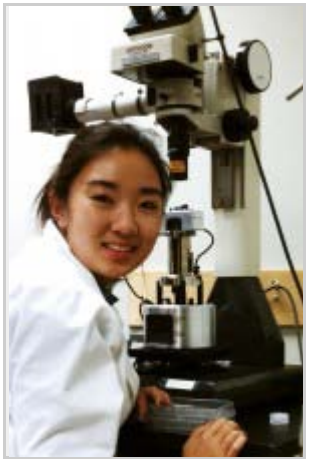
Four Rhode Island students are among the 258 U.S. undergraduates conducting scientific research at 10 universities this summer as participants in the Amgen Scholars Program. Jennie Yoo, Ileana Pacheco, Amy Liu and Jennifer Conti – all Brown University students – hail from San Jose, Calif., Guaynabo, Puerto Rico, Ellicott City, Md., and Cranston, respectively.

Yoo and Conti, both seniors at Brown, are working at the University of California, San Francisco for the summer. Pacheco, a senior, is at the Massachusetts Institute of Technology, and Liu, a junior, is at Washington University in St. Louis.

The Amgen Foundation, the philanthropic arm of California-based biotechnology company Amgen, committed $34 million over eight years to the program, which also includes a summer research program for European students. The program is in its fifth year. Of past program participants who have now received undergraduate degrees, more than 80 percent are working in science or studying for an advanced degree in science.

After returning from the Amgen Scholar symposium at the University of California, Los Angeles in July, Yoo, Pacheco and Liu spoke to PBN about their summer projects and the Amgen Scholars program.



COURTESY JENNIE YOO
"I HONESTLY HAD no idea what to expect from the conference and was completely blown away by the engaging speakers and workshops," said Jennie Yoo.

PBN: Where are you doing research this summer? What are you researching?

YOO: For the first part of the summer at University of California San Francisco, I was doing cardiovascular tissue engineering research in Dr. Randall Lee's lab investigating the use of nanoparticles to create a microscaffold for myocardial repair. My current project in the Department of Preventative and Restorative Dental Sciences in UCSF's School of Dentistry looks into the role of the enamel matrix protein amelogenin and the proteinase enamelysin in enamel formation.

PACHECO: I'm doing fMRI research at the Kanwisher lab in MIT's Brain and Cognitive Sciences department. It has been established that a part of the brain known as the fusiform face area is selectively activated for faces, regardless of whether the faces are alive or not. However, human beings are still able to distinguish between animate and inanimate faces. The goal of my project this summer, then, is to use an fMRI experiment to identify the part of the brain that is responsible for the perception of life in a face.

LIU: I am working at Washington University in St. Louis. I am looking at monkey brain wave (specifically, electrocorticography) data as the monkey learns a kinematic task. One of the things I have done is to compare the ECoG data with the force data and look for what they can tell us about each other, and in particular, whether we can use ECoG data to predict the force exerted on the monkey's hand as he moves a robotic arm.

PBN: Why did you decide to participate in the Amgen Scholars program?

YOO: After studying abroad this past spring and traveling to Switzerland, India and China focusing on public health, I wanted to be close to home for the summer and focus on bioengineering research. The Amgen Scholars program at UCSF allowed me to do just that and gain exposure to various hot topics in a clinical setting.

PACHECO: The Amgen Scholars program seemed like a great opportunity to gain hands-on research experience, which I had none of, and to work at a prestigious institution alongside great professors who are more than willing to help and teach. Another very appealing aspect of the program was the financial help it provides. Though there are numerous opportunities to do research on a college campus, not many of them are paid, for which reason many people cannot afford to stay after the school year is over. The Amgen Scholars program enabled me to do this both by offering an hourly wage and covering several other expenses.

LIU: The Amgen program provides an excellent opportunity for biomedical research. It is very well-organized and provides great resources for learning about research, not just yours, but others' as well.

PBN: Has the program met your expectations?

YOO: The program has exceeded my expectations with weekly career development workshops and faculty research talks that supplement my day-to-day research with new perspectives and insights from professionals in the field. More than anything, it is exciting and extremely motivating to be in a program with a group of intellectual peers from all over the country who are genuinely passionate about their research enough to carry on scientific conversations over dinner and long into the night.

PACHECO: The program has certainly matched my expectations. I have learned a great deal about fMRI, and the people in my lab have been extraordinarily helpful and kind. It lasts nine weeks, which is a fairly short period of time for research, but it is surprising how much you can get done in so little time.

LIU: Working in a lab is great fun and undeniably useful, but we are offered an even broader experience. The coordinators of the program at WUSTL are all genuinely nice and manage to bring in great people (to help us with writing reports, or talk to us about life as a graduate student, and more) and resources. I am so glad that they were the ones to run this program, and so grateful that they paired me up with the mentor of my choice, who turned out to be hilarious, very approachable and somehow instinctively provides just the right amount of guidance for me to be able to work as independently as I like without even once feeling neglected.

PBN: What was your experience at the Amgen Scholars Symposium?

YOO: I honestly had no idea what to expect from the conference and was completely blown away by the engaging speakers and workshops. Not only did the weekend focus on the impact of biotechnology and drug development, but it also focused on providing us a real world glimpse of what it's like to work in industry on a day-to-day basis and the personal journeys of how people got to where they were today.