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Summer Students Successfully Complete Janelia Undergraduate Research Program

Olga Botvinnik has been transformed.

During the school year, she is a math and biological engineering major at MIT, who doesn't work in a lab. But during the summer as an undergraduate researcher at the Janelia Farm Research Campus, her mentors convinced her to try something new. I'm not actually a programmer, but they are turning me into one, she says.

Botvinnik is not the only one who has been changed by working at Janelia. The Janelia Undergraduate Scholars Program, which is in its first year, hosted 14 undergraduate students from the U.S. and U.K. The students worked on research projects under the guidance of Janelia Farm scientists. They were a great group of students. They were a lot of fun to have around. And many of them made useful scientific contributions, said Gerald M. Rubin, director of Janelia Farm.

The students were selected from a highly competitive group of 1,080 applicants. As part of the application, each student was required to propose a project that he or she would work on with a specific scientist at Janelia Farm. Some ended up pursuing their original ideas, while others switched their focus to other research projects in their mentor's lab. Their projects ranged from studies of fruit fly movement to mouse vocalizations to worms' response to vibration.

And their work didn't stop in the lab. Once a week, the students would meet to present their work to their peers and answer questions. In the middle of the summer, Philip Coen and Balaji Ravichandran were grilled by their fellow undergraduates. While the others munched on their lunch, both students explained their science using a combination of well-thought-out drawings and spur of the moment sketches on the large white board—then cracked jokes when they felt nervous. I thought we had agreed not to prepare for this, Coen accused Ravichandran with a smile.

But surprisingly, it was clear from the evaluations that the students turned in at the end of the program that they were fine with the grilling and some even asked for more, in the form of a journal club.

For many of the students, the small research groups at Janelia —six people or less—were a welcome contrast to the size of the labs they had been used to working in. Maria Purice works in a large lab at the University of Oregon, where she usually sees her lab head typing in his office. Her lab-mates in Oregon said, 'This is a good opportunity for you, but don't get too used to it because no other lab in real life will be like that.

The undergraduate students learned about Janelia's program in different ways. Some heard about it at conferences, while others were referred by their teachers. I first heard about Janelia before it was even built. One of my professors said it was going to be the place to do neuroscience research, said Kelli Carroll, a student at Davidson College.

Jenny Brown of Oxford University in the United Kingdom was originally attracted by a chance to see America, but was impressed once she arrived at the Janelia campus. The equipment here and the rate at which you can get help are great, says Brown, who has research experience.

Once they arrived, the students lived together in houses on campus, ate together at the cafeteria or at the Pub, and worked in adjoining labs. They would come in at night, or take a break for a dance class in the gym during the day.

I really like being able to devote all of my time, all of my energy to this one project, Botvinnik says. It's really rewarding, and I've made a lot of progress since I've been here. It's really rewarding to know that this is my job for the summer.