Teachers, Students and Researchers Work Side-by-Side at Rockefeller University

By Marie Holmes

Leslie Vosshall, Annenberg Assistant Professor at Rockefeller University, is delivering a lecture on the groundbreaking work done by researchers Linda Buck and Richard Axel, which opened a new chapter in our understanding of the sense of smell. An expert in this particular field of inquiry, Vosshall points at images of olfactory neurons (which are located above the eyes, not in the nose) and employs vocabulary terms that a layperson would likely not recognize, much less comprehend, as though she were delivering a lecture to colleagues which, for all intents and purposes, she is. It just so happens that all 50 of these colleagues are teenagers.

Expertly modeling the Socratic method, Vosshall guides them through to the conclusions. One student suggests an explanation to a question raised by Buck and Axels discoveries, articulating what Vosshall confirms is a very popular theory. Another proposes a method of investigation. If youd been in the lab [in the 1990s], Vosshall informs her, you would have been doing that experiment yourself.

During July and August, and in some cases on into the school year as well, these students, along with a dozen K-12 teachers are, in fact, participating in mentored laboratory research.

Before the Precollege Science Education Program was established in 1992, only a few students and only from Stuyvesant or Bronx Science would be doing research here, says Dr. Bonnie Kaiser, Program Director. There was always a desire to increase the diversity as well as recruit more under-represented and disadvantaged students.

Post-doctoral students interested in mentoring hand-select their mentees from a large pool of applicants. The program has become so popular in recent years that only one in five are offered a summer position at Rockefeller.

Although its NIH funding stopped a couple of years ago, the program remains tuition-free and continues to offer stipends to all participating teachers and some students with the help of private and corporate donations. We do fund every returning student and every disadvantaged
student, Kaiser proudly reports.

As the program has gained recognition and built relationships with more local teachers, its students have become an increasingly diverse group. The current student body is half-female. A number are under-represented minorities, and/or qualify as economically, socially, or educationally disadvantaged.

Teachers commit to spending two summers at the university. Over the course of their second summer, they draft an action plan for bringing their knowledge of inquiry-based learning practices back to their own schools. A teacher might use grant money to run a professional development workshop in his or her own district, or to purchase the equipment to perform electrophoresis experiments with a biology class. Past teachers have established AP Biology and Molecular Biology courses.

Teachers come from other states and even other countries to participate in the program. Last year the university hosted a teacher from Moscow. This summer, Teach for America teachers working in Oakland, California and a Navajo reservation in New Mexico are participating. Tan Aik Ling, a high school biology teacher in Singapore, is also working with a mentor in the labs. Students in Singapore, notes Kaiser, boast the worlds highest scores on math and science examinations.

As for the students in the program, not surprisingly, the majority go on to college. Most have pursued their work in the sciences, entering M.D., Ph.D. and dual-degree programs across the country. When we first started, says Kaiser, we were looking for students who had staying power, who were not just looking for something to put on their college applications. Mentors selected those who really love being here. Some returned for graduate study, having attended college elsewhere. Yelena Fishilevich, a postdoctoral student and former outreach student, now has a mentee of her own.

The students learn very quickly, says Kaiser, they're highly self-motivated. Their stories are also the products of what she describes as the purest conditions for great mentoring—great resources, #