Rockefeller hosts open house for prospective students

On the first two weekends in March, prospective students will attend an Open House at The Rockefeller University. This is an important step in the admissions process, giving admitted students a chance to learn more about the university, both its research and ambiance.

The students who will be visiting were selected from an applicant pool of more than 500 candidates. "We had many outstanding candidates this year," says Dean Sidney Strickland. After an initial screen of applications, the most competitive were invited to participate in the admissions committee with expertise in the applicants' fields of interest. The members of the admissions committee are Fred Cross, David Gubser, Magda Konarska, Michel Nussenzweig, Michael Rout, Andrej Šalj and Leslie Voshall, with Strickland and Jean Devlin, director of educational affairs, also participating. The committee looks for several factors: students should have a high academic performance in their coursework, some laboratory experience showing commitment to scientific study and strong letters from their advisors. The admissions committee also looks at an applicant's personal statement. "We are always interested in students with unconventional backgrounds who show a commitment to research," says Strickland.

"We are also able to take a number of top international students," he says. At many other schools, government funding limits support to U.S. citizens or green card holders. But because of Rockefeller's central funding, we can admit the best scientists without concern for citizenship," Strickland is pleased that many of the admitted students express an interest in interdisciplinary studies. The university has increased its interdisciplinary programs in the past few years. Among the new initiatives is a tri-institutional program in theoretical neuroscience, with collaborators at the Rockefeller University and Sloan-Kettering Institute, and a collaboration in mathematical biology with the Courant Institute of New York University.

The visiting students will attend poster sessions on Fri., March 2, and Fri., March 9, to learn more about research at the university. This year, about 70 faculty, postdocs and students will present posters about their current laboratory projects. These sessions will take place on the 17th floor of Weiss from 1 p.m. to 5:30 p.m. All members of the campus are encouraged to attend to experience the vitality of research at the university and to meet the prospective students.

BBlobel to give Friday lecture on March 2

Cell biologist Günter Blobel will give the Friday lecture on March 2, Blobel, the John D. Rockefeller Jr. Professor at The Rockefeller University and a Howard Hughes Medical Institute investigator, studies the process by which newly made proteins are transported across the membranes of cell structures called organelles.

Because the accurate distribution of proteins to their proper places in the cell is necessary for a cell to function, these findings have an immediate bearing on many diseases, including cystic fibrosis, Alzheimer's disease and AIDS. Blobel was awarded the 1999 Nobel Prize in Physiology or Medicine for the discovery that proteins have intrinsic signals that govern their transport and localization in the cell.

An average cell possesses about a billion protein molecules that exist in thousands of types and constantly need replacement. Making proteins and shipping them to appropriate destinations, such as the cell's internal organelles, is a vital activity in cells. Proteins are manufactured by cellular structures called ribosomes. Pioneering research by Blobel and his associates revealed how proteins are transported from ribosomes and integrated into other organelles or transported out of the cell.

Weiss in Blobel's laboratory revealed the existence of a ZIP code system in the cell. Each continued on page 2

An alumna sets up lab

When Rockefeller alumna Leslie Voshall came back to campus in October, she was just going to be working in a lab but running it. Voshall, head of the university's new Laboratory of Neurogenetics and Behavior, is trying to understand the molecular basis of olfaction (the sense of smell) in the fruit fly. Scientists know a lot about fruit fly behavior, but little is known about how the flies recognize food sources.

As a graduate student, Voshall worked in Michael Young's Laboratory of Genetics. "Mike Young made enormous strides in understanding how genes impact behavior," Voshall. "In the last 15 years, he's identified many of the important molecular components that regulate the circadian clock. Remarkably, these same components are now also showing up in the analysis of the vertebrate clock."

The fruit fly Drosophila has a very specific olfactory behavior strategy. Like other insects, it is a specialist and has narrow food interests. The fly has a repertoire of 61 odorant receptors, which are distributed among different olfactory neurons in the antenna. "That probably how you get specificity," she says. Fruit flies love ethyl acetate, for example.

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Voshall is looking to associate particular receptors with their corresponding odorants, and to understand how functional olfactory wiring patterns are established in development.

One of Voshall's goals is to understand why some odorants lead to attraction and some to repulsion. It is also important in how odorants interact with olfactory neurons and how this interaction is encoded in the brain to lead to stereotyped behaviors.

"A classic question in neurobiology is whether synaptic activity is required for the development of functional synapses or whatever animals are genetically wired," says Voshall. Using what she calls "genetic trickery," her lab is silencing neurons and allowing the flies to develop, then reactivating the neurons. This allows the researchers to see whether a functional olfactory system can form in the absence of activity.

Behavior is hard to study, she says, but convincing evidence that a complex of neural circuitry. Her lab is now conducting studies with larvae ("They live to eat") to try to determine the range of odors they respond to. The researchers hope to be able to identify reproducible larval behaviors that can be the basis of further genetic studies.

The fruit fly is an appealing study subject because it is relatively simple, has robust olfactory behaviors, and can be genetically manipulated. She knows Assistant Professor Peter Momohara, head of the Laboratory of Developmental Biology and Neurogenetics, is looking at some of the same questions in mice. "Hopefully there can be some cross-pollination," she says.

Voshall is glad to be back on campus. "One great change," she says, "is a real commitment to junior faculty. President Levine is actively recruiting and expanding."

Voshall also appreciates how helpful the university administration was in helping her set up her first lab. "The Rockefeller infrastructure is a well-oiled machine," she says. Starting a new lab involves working with Purchasing, Maintenance, Sponsored Programs and other offices. "Everyone was incredibly helpful," she says. "At other places, I think it can sometimes be more of a struggle. Rockefeller is a real paradise for junior faculty."