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Lab Program Turns Theory Into Reality

By [ALLISON COHEN](#), Special to The Times

Summer's been well-spent for five San Fernando Valley high school students who have been holed up for five weeks in UCLA research labs splitting DNA, evaluating mutant fruit flies and seeing if Chinese herbs affect mouth bacteria.

The students are part of a new program, funded by a Howard Hughes Pre-College Education grant that pairs high school students and their science teachers each summer with UCLA professors and research students.

The student-teacher teams from the Valley are Rana Sharif, 17, of Reseda High School and teacher Barbara Levi; Shalom Kim, 17, of Polytechnic High School in Sun Valley and teacher Donna Vaughan; Malika Chowdhry, 16, of Reseda High School and teacher Vicki Arnold; Andrea Steely, 16, of Grant High School in Valley Glen and teacher Mel Stave; and Adam Nagoshiner, 16, of Monroe High School in North Hills and teacher Marjorie Weitkamp.

Students gain experience working on studies that may lead to a cure for cancer or the HIV virus, for example. High school teachers gain up-to-the-minute scientific knowledge, too.

Reseda High science teacher Arnold plans to take what she and Malika learn this summer and use it in classroom lectures next year.

"[My other students] can't all be in the lab, but I can try to bring these experience back to them," she said. "By [doing that], it shows them that what they are learning is real."

On a recent day, Malika peered into a microscope to evaluate changes in the internal organs of crossbred mutated fruit flies. Such research can lead to a better understanding of human gene development and provide insight into preventing birth defects and colon cancer.

"What [Malika] is doing now, I would have loved to have done when I was [her age]," said Judith Lengyel, a UCLA professor of molecular, cell and developmental biology overseeing the fruit fly research.

Malika has collected and cataloged flies, recorded data and learned the inner workings of a college research lab, where concepts she's only read about in textbooks come to life.

"I studied it in school, but not nearly what I've learned here," said Malika, who will be a senior in the fall.

The student-teacher pairs work five days a week, often from morning until night.

Andrea of Grant High School is currently manipulating DNA for use in gene therapy. She often puts in 10-hour days.

Andrea looks at home in the college lab using a pipette--a hand-held dispenser--to insert liquids into a plastic vial containing DNA.

"I've learned a lot in a short time here," she said. "I know this experience will prepare me for the future."

Andrea and teacher Stave plan to continue the DNA research one-on-one at their high school lab in the fall.

Program director and founder Dan McDonnell said he saw the benefits of a teacher-student collaborative program in 1997, when one of his students from Sherman Oaks Center for Enriched Studies in Reseda assisted him with DNA research, also at UCLA.

* * *

The collaboration went so well that McDonnell convinced UCLA professor Ronald Stevens to fund the program, using part of a \$475,000 grant from the Howard Hughes Medical Institute.

"When [these students] go back to school and other students see what they've done over the summer, it'll show [their peers] that they have the ability to do this too," McDonnell said.

Los Angeles Unified School District students must be between their freshman and junior year to apply for next year's program. Applications are due in February. No minimum grade point average is required.

"We're just looking for a level of enthusiasm and for students and teachers that work well together," McDonnell said.

For details, contact Dan McDonnell at dmcdonne@lausd.k12.ca.us or visit <http://www.immex.ucla.edu/HHMI>.

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