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HHMI grant to UT Southwestern to give DISD schools new avenues to view science

DALLAS – Oct. 4, 2007 – Science will be coming to Dallas classrooms in a new way soon, thanks to a recent \$750,000 grant to UT Southwestern Medical Center and a collaboration with the Dallas Independent School District (DISD) and several medical and scientific organizations.

Virtual microscopes operated with the click of a computer mouse, traveling “Science Suitcases” containing portable laboratories and interactive exhibits, and hands-on training in UT Southwestern research labs are about to become available to selected biology teachers and their students at 12 DISD high schools.

Five teachers will be selected the first year and 10 teachers in subsequent years to participate in the new “STARS Science Triathlon” – a series of training events starting in summer 2008. The program will include a 12-day summer workshop, a series of symposia and other activities during the school year, and an eight-week research program the following summer.

The grant was provided by the Howard Hughes Medical Institute (HHMI) and will be administered by UT Southwestern’s STARS (Science Teacher Access to Resources at Southwestern) office in collaboration with Advanced Placement Strategies (APS), Dallas’ Museum of Nature and Science, and National Instruments, an Austin-based producer of software packages that allow computer-simulated interaction with scientific instruments.

“We will be targeting teachers who would like to improve their skill set in teaching biology, as well as developing and maintaining Advanced Placement (AP) biology programs in their schools,” said Dr. Joel Goodman, professor of pharmacology and director of STARS, a program established in 1991 to improve science education in North Central Texas. “It’s a 15-month program and will cycle and repeat for the next five years.”

AP programs are offered at numerous high schools across the country and consist of college-level courses taught in more than 20 subject areas, with students given the opportunity to take advanced final exams to earn college credit. Not all high schools, however, offer AP programs, and there is a need to reach out and assist schools that do not, Dr. Goodman said.

In addition to training Dallas teachers and students, funds will help develop “Science Suitcases” – mobile demonstration modules of scientific principles taught during the Triathlon, including introduction to chemistry, biochemistry, enzymes, membranes, organelles, cell respiration and photosynthesis.

(MORE)

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The suitcases will be created by students in UT Southwestern's Graduate Program in Biomedical Communications, in collaboration with staff from the Museum of Nature and Science. They will include lab equipment, manuals, posters, 3-D models, videos and related Web site information to be used by UT Southwestern graduate students and postdoctoral fellows in classroom presentations at DISD schools.

Some funding will be used to develop four virtual lab instruments, including a virtual optical microscope, which will allow students to use their computers to "operate" the equipment as if it was in the classroom. UT Southwestern is supplementing the HHMI grant with donations received from the O'Donnell Foundation and Chase to assist with development of these instruments. UT Southwestern's Live Cell Imaging Core Facility also will provide archived optical microscopy slides to use with the virtual instruments.

"There are numerous schools that either don't have enough scientific instruments for their students or often have trouble maintaining the equipment they have," said Dr. Goodman. "These virtual instruments will allow students to operate them directly from their computer screens."

Teachers selected to participate in the STARS Science Triathlon will be part of three events:

- A 12-day June workshop held at UT Southwestern, which will include three days of one-on-one training by APS facilitators. The workshop will be followed by nine days of teachers working with 30 rising ninth-grade students in presenting the laboratory training, interaction with UT Southwestern faculty and a final day spent at the Museum of Nature and Science.
- Six symposia on basic science offered at UT Southwestern for teachers as part of the STARS program, including presentations by faculty, a special symposium on careers for women in science and two events at the museum that will involve teachers, students and their families.
- Participation in the STARS Summer Research Program. This calls for teachers to spend eight weeks in individual UT Southwestern laboratories on research projects.

"While the program itself is focused on 45 teachers and their students, its effect will be much broader," Dr. Goodman said. "Assuming each teacher influences 150 young minds each year, in a decade our program can affect nearly 70,000 students. We also hope the Science Suitcases and virtual instruments, which would be broadly available, will extend the program's influence much further."

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