

News

Office of Medical Information
The University of Texas Southwestern Medical Center at Dallas

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****High-school science teachers
pass up sun for lab research

DALLAS -- Some high-school teachers spend the summer trying to rest their weary minds. Elizabeth Hannon spent her summer studying smooth-muscle contractions. Some teachers pass their days by the pool. Jay Sylvester spent his amplifying protein production in eukaryotic cells. Some teachers spend the summer as full-time moms or dads. Sandra Ross spent hers studying actin filaments. Some teachers take a summer job. Dr. Betty Anderson spent her summer in a research lab, identifying the Pmp47B gene.

These four high-school science teachers assisted with basic research projects at The University of Texas Southwestern Medical Center for eight weeks this summer. Professors at the medical center acted as their mentors. Dr. James Stull, professor and chairman of physiology, sponsored Hannon through the American Physiological Society's High School Teachers Research Program. Dr. Helen Yin, professor of physiology, sponsored Sylvester through the American Society for Cell Biology's Teacher Research Fellowship Program. Dr. Joel Goodman, associate professor of pharmacology, and Dr. Joseph Albanesi, assistant professor of pharmacology, sponsored Anderson and Ross through the National Institutes of Health's Summer Research Program for Minority High School Students and Teachers.

(More)

Elizabeth Hannon
Physiology and Anatomy Teacher
W.T. White High School

Elizabeth Hannon usually spends her summers teaching swimming to teen-agers. This summer she elected to stay out of the sun and dive into the world of cellular regulation.

Earlier this year, Hannon had toured UT Southwestern with her physiology class. During that visit, Dr. James Stull spoke with the class and Hannon. Shortly afterwards he received an announcement about the summer fellowships and sent the application to Hannon. After reviewing applications from all over the United States, the American Physiological Society granted Hannon a fellowship.

"I learned more in the 10 weeks I spent in Dr. Stull's lab than I did in all my undergraduate science classes," Hannon said. "I have a greater appreciation for research now."

As Stull explained, "I think this program teaches high-school teachers what it's like to set up and evaluate a research project. She didn't do cookbook science. She worked on projects that didn't have known outcomes. She was part of the process of discovery."

Jay Sylvester
Biology Teacher
St. Marks School of Texas

When Dr. Helen Yin learned about the American Society for Cell Biology's Teacher Research Fellowship program, she sent the information to the head of the science department at St. Marks School of Texas. Biology teacher Jay Sylvester applied and won a fellowship. The 25-year veteran of high-school science worked in Yin's lab, assisting her in developing a cDNA plasmid that allowed them to amplify protein production in eukaryotic cells to study the effects on cell motility.

Before participating in the program, Sylvester said he knew very little about UT Southwestern. Now, he hopes to return next summer to learn more about research.

"I was very intimidated my first week here. It had been 20 years since I had tried to convert weights to nanomoles and picomoles," he recalled. "With practice, it all came back to me. I can appreciate the frustration that scientists have to put up with every day when they don't get a lot of positive reinforcement from their research projects. This, however, makes success all the more sweet."

Funding for Sylvester's summer fellowship came from the American Society for Cell Biology and the Austin-based RGK Foundation. A total of 14 grants were awarded throughout the United States.

Sandra Ross
Biology Teacher
James Madison High School

When Sandra Ross reads the latest high school science textbook, "actin filaments" and "myosin" are more than strange words on a page. That's because she spent the summer in Dr. Joseph Albanesi's lab studying how actin filaments and myosin interact to regulate cellular secretion of adrenalin.

"Now when I see those words it really means something, and I feel I can make the subject more exciting for my students," said Ross.

Ross said the summer taught her what it is like to be a scientist. "Mostly, I've seen that it takes a great deal of patience," she said. "The experiments we perform with our students take one or two days. In real life, a person often spends years with one experiment. Sometimes we lose sight of that fact teaching high-school science."

Ross said the summer program also helped renew her love for science. "I was wrestling a little with teacher burnout, but this summer has shown me that science is still exciting."

Another benefit for Ross was working with Albanesi, who she said helped her think of ways to make studying the endocrine system more exciting for her students.

Dr. Betty Anderson
Biology Teacher
South Oak Cliff High School

A broken arm was not a good enough excuse for missing work. That's what Dr. Joel Goodman told Dr. Betty Anderson when she called him the day before she was to begin work at UT Southwestern in the Summer Research Program for Minority High School Students and Teachers. She had hoped he would let her drop out of the program. Instead, the science teacher spent eight weeks in Goodman's lab studying peroxisomes in yeast cells in an effort to identify the Pmp47B gene. She said they were 90 percent sure they had succeeded in identifying the gene.

"This summer was a wonderful experience. My experience at UT Southwestern elevated my enthusiasm for science and for teaching," she said. "This is such a valuable program for teachers. It was so stimulating being around people doing real research. We used technologies and looked at things that aren't even in the textbooks yet. I thought I knew about molecular biology, having taken a few workshops on the subject. After I got here, I found out how much I really knew. Now, I know I can actually teach it to my kids."

Anderson, who is entering her 30th year of teaching, said she felt very intimidated the first two weeks of the program and wanted to quit. "Even though I have a doctorate in biology, I often felt foolish and frustrated," she said. "But I'm not a quitter, so I stuck with it, and I'm glad I did."

Anderson believes many teachers are unaware of the opportunities that UT Southwestern provides. "I can't wait to bring students over here for tours and to meet some of the researchers I met this summer.

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I think it will heighten the interest of many of my students about the possibility of a career in science."

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NOTE: The University of Texas Southwestern Medical Center at Dallas comprises Southwestern Medical School, Southwestern Graduate School of Biomedical Sciences, Southwestern Allied Health Sciences School, affiliated teaching hospitals and outpatient clinics.

Photos enclosed.