

STARS NOTES

SCIENCE TEACHER ACCESS TO RESOURCES AT SOUTHWESTERN

SOUTHWESTERN
THE UNIVERSITY OF TEXAS
SOUTHWESTERN MEDICAL CENTER
AT DALLAS

STARS Notes
January 2001
Volume VI, Number 1

Stars Tours

"Supposing is good, but finding out is better," said Mark Twain in his autobiography, *Eruption*.

Each year over 1,500 middle and high school students and teachers from all over North Texas travel to The University of Texas Southwestern Medical Center campus for a custom-designed tour that gives real-life application to the traditional classroom curriculum. We welcome groups of all sizes; however, those of up to 20 students allow us to provide a greater variety of learning opportunities and activities. Much larger groups will mainly be limited to more general tours and lecture presentations. In addition, tours are limited to students in grade 7 and above.

The goal of STARS tours is interaction – letting students experience the real world of science and medicine, as well as learning about career options in healthcare fields. How do we do that? Here's an example. This past November, fifty 7th and 8th graders from Highland Middle School in Saginaw visited UT Southwestern. Their tour began with a trip to the Physical Therapy Department in Southwestern Allied Health Sciences School, where they met with Dr. Judith Hembree and a number of Physical Therapy students who led them through 9 different 'hands-on' activities that are actually used with patients. The group then moved to the North campus to visit several labs and learn about research on sleep disorders, developmental biology, and molecular biology and genomics. The students then heard a presentation about medical illustration, a career that



A student from Highland Middle School in Saginaw, Texas is hooked up to sensors in Dr. Bob Hoffman's sleep lab.



Students from the Physical Therapy Program at UT Southwestern Medical Center show two Highland Middle School students from Mr. Max Gerloff's 7th grade class, how to do a lifting technique called a sheet transfer.

combines art, computer skills, and an interest in science and medicine. As with many of the tours, this one concluded with the students having lunch in the Medical Center cafeteria.

To schedule a tour, please call **Pat Bleigh** at 214-648-9505 or patricia.bleigh@utsouthwestern.edu.

Please be prepared to provide some preliminary information, such as, date(s) preferred, number of students, number of teachers/chaperones, class name, time of arrival, time of departure, and topics preferred.

Visit our website at:

<http://www.utsouthwestern.edu/stars/programs/tours.html>

for a listing of tour topics. Since presentations are conducted by volunteers, topics of interest are not always available.

STARS Tours are scheduled on a first come, first serve basis, and there is a limit to the number of tours that we can schedule during the year. Please call early to reserve a spot.

New Ethics Question Posted

The Program in Ethics and Medicine at UT Southwestern maintains an Interactive Ethics page that periodically posts an ethics discussion case for high school students. These cases are a great way to illustrate some of the tough decisions that must be made by medical practitioners and to spark discussions on ethics topics in the classroom. Students are encouraged to send in their comments on these cases via

email, which will then be posted on the page for everyone to see. After several weeks, the overall results will appear and UT Southwestern faculty and students will give their commentary on the case. In fact, 94 students from 14 schools responded to the Oct/Nov ethics dilemma, which is our best response to date. The next case will be posted on February 1. To make comments on the new case, or to see previous questions and comments, visit the Interactive Ethics page at www.swmed.edu/home_pages/ethics/interact.htm.

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Practice What You Teach: Summer Research Program Applications Now Available

Applications for the 2001 Summer Research Program For Teachers are available. They were mailed out this month to over 2600 secondary science teachers in Texas. Teachers selected for this program will spend 8 weeks working in a research laboratory under the guidance of a mentor on the UT Southwestern faculty. This program provides teachers with a great opportunity to get a first-hand look at the "cutting edge" of biomedical research. In addition to their laboratory duties, participants will produce a scientific poster that is based on their research project and develop a hands-on activity for use in their classroom. Overall, this program has demonstrated a very positive effect on teachers by increasing their knowledge base and giving them a better perspective on "real" science in action. Along with this incredible opportunity to help bring new ideas into the classroom and rekindle your interest in science, you will receive a \$4000 stipend, and \$1000 for classroom supplies for participation in the program. If you are interested in the Summer Research Program but did not receive an application, please call the STARS office at 214-648-9505.

Application Deadline is by 5 p.m. on February 2, 2001.

Photos of SRP participants are posted on the STARS webpage at www.utsouthwestern.edu/stars/programs/srp.html.

Summer Stock 2000 Available

A compilation of the classroom activities developed by the participants in the 2000 STARS Summer Research Program for Teachers is now available free of charge. The activities range in level of applicability from middle school science to Advanced Placement biology in areas of molecular biology, genetics, and anatomy and physiology. Some of the titles include *Cloning: Using Bacteria To Replicate DNA*, *Microarrays Send False Treatments Away*, and *Determination of Oxygen Use During Exercise*. To obtain a free copy of *Summer Stock 2000* contact the STARS office at 214-648-9505, or you may download these and other activities from the STARS homepage at www.utsouthwestern.edu/stars/resources.html.

Summer Research Program for Students



Pamela Gant of Seagoville High School shares her experiences from the STARS Summer Research Program for Students 2000 with her classmates. She

worked on a clinical research project under the guidance of Sherwood Brown, Ph.D., M.D., Assistant Professor of Psychiatry at UT Southwestern. Pam was among 10 students from the Dallas Independent School District who spent the summer on the UT Southwestern Medical Center campus learning about and participating in real-life science. As part of their summer experience, the students are required to give a formal presentation to their peers during their senior year to

inform others about the program and spark interest in careers in science.

New Education Coordinator



Say hello to Jeannie Han! Jeannie joined the staff of the STARS Program as Education Coordinator this past August. She replaces David Holland, who took "early

retirement" to become science supervisor for Birdville ISD. After graduating from the University of Texas at Austin with a degree in molecular biology, Jeannie taught 9th grade Physical Science for one year at Hurst Junior High School. She then moved to Grapevine High School, where she taught Chemistry and Geology-Meteorology-Oceanography for two years. Despite her love for classroom teaching, Jeannie accepted the position as Education Coordinator because she felt it would allow her to help an even greater number of students through the various programs and activities that STARS offers. "Education has always been a high priority throughout my life. I'm especially excited about being able to help my teaching colleagues share in the resources that UT Southwestern can offer them," she commented. "By assisting other teachers, hopefully, I'll be helping indirectly all of the students with whom they're in contact." Please feel free to contact Jeannie if she can help you or your students in any way, and to welcome her to the STARS Program.

STARS Webpage Update

A number of new links have been added to the STARS Webpage. <http://www.utsouthwestern.edu/stars/websites.html>
Here's a few that you might want to check out.

Science NetLinks: They strive to be a comprehensive homepage for K-12 science educators. The Aug. 4, 2000; vol. 289, p.691 of Science reports this site as a "K-12 education Web directory from AAAS listing scores of great science and math links, from astronomy to aquariums, all screened for quality by an expert review board.
<http://www.sciencenetlinks.com/index.html>

Immunex Corporation: A biopharmaceutical company – Immunex is involved in science education with the goal of supporting scientific literacy in our community. They are involved in various programs, including: scientist visits to local classrooms that feature hands-on science, tours of our research facilities, and job shadows for teachers and students. Immunex also offers summer internships for teachers through participation in the Science Education Partnership (SEP) program initiated through the Frederick Hutchinson Cancer

Research Center. The site has several pages for educators and students, including lessons, ask a scientist, site reviews, and a virtual lab tour. http://www.immunex.com/educator_fs.html

Summer Research Program For Science Teachers at Columbia University: Great site for lessons and ideas... Learn about the SWEPT Multi-site Student Outcomes Study – 7 SWEPT Programs are collaborating in a NSF-funded study to determine if these programs are having an impact on the students in their classes. <http://www.scienceteacherprogram.org> and <http://www.scienceteacherprogram.org/SWEPTSTUDY>

Crimes & Clues: The Art and Science of Criminal Investigation. <http://www.crimeandclues.com>

Basics of DNA Fingerprinting: By Kate Brinton and Kim-An Lieberman: This page was created as a class project at the University of Washington to provide to the Internet basic information on the structure and function of DNA as it relates to DNA fingerprinting. This topic is especially pertinent in today's society because of the rising use of DNA fingerprinting as evidence in court cases.
<http://www.biology.washington.edu/fingerprint/dnaintro.html>

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Fall STARS Events

Mini-Symposium: Medical Forensics – Sept. 11, 2000



Dr. Sheila Spotswood provided information about the true role of a medical examiner at the Mini-Symposium on Medical Forensics.

“Great presentations, very interesting, and challenging – a program that made me think and kept my attention at the end of a long day,” were some of the comments made by Stacy Williams from Bedford Heights about our first symposium of the new school year. With all the new movies and television shows about crime investigation, as well as some of the real life stories that have peaked our interest, we had over 100 participants at this event, a record number for a STARS Mini-Symposium. It also caught the attention of the *Dallas Morning News*, which featured the event in a story on the STARS Program that appeared in the *MetroDiary* section on September 27, 2000. Sheila Spotswood, MD, Instructor in the Pathology department, began the evening with an examination of *Fact vs. Fiction: Misperceptions of the Role of the Medical Examiner*. Her explanation of the duties and cases that are handled by medical examiners enlightened us on the differences between what you see in the movies and real life. “Dr. Spotswood’s presentation was awesome and very informative. I have lots of ideas to incorporate into my classroom,” said Keri Russell of Shepton High School. Timothy Sliter, Ph.D., Assistant Professor of Pathology then spoke on the *Analysis of Biological Evidence in Forensics*. He showed the ins and outs of how a DNA analysis is run, read, and used in such places as research laboratories, crime scene investigations and a court of law. “Dr. Sliter explained his subject well and his slides were excellent,” commented William Bryant of Richardson Junior High School.

Basic Science Symposium – Cardiovascular Disease – Oct. 14, 2000

Focus on the heart. We began the day with an *Introduction to the Heart, Circulatory System and Hypertension* by Nina Radford, MD, Assistant Professor of Internal Medicine. As President of the Dallas Chapter of the American Heart Association, she also provided information and handouts about the AHA and their programs. Our next speaker was Ralph Shohet, M.D., Assistant Professor of Internal Medicine.

STARS Webpage Update

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Mayo Clinic: Heart Center: This informative site offers a wonderful look at the heart via the Interactive Heart Guide, a Blood Pressure Tracker, News Briefs, articles, and a Heart Knowledge Quiz.

<http://www.mayohealth.org/mayo/common/htm/heartpg.htm>

NOVA: The Electric Heart: Welcome to the companion Web site to the NOVA program “Electric Heart,” broadcast on December 21, 1999. The program tells the story of a handful of brilliant, obsessed surgeons and researchers who have pursued the target of a practical artificial heart for decades. Here’s what you’ll find online: Map of the Human Heart, Amazing Heart Facts, The Artificial Human, Pioneering Surgeon: O. H. Frazier, Operation: Heart Transplant (Hot Science), and Resources. <http://www.pbs.org/wgbh/nova/eheart>

American Heart Association: This official website of the AHA is a great starting point for cardiovascular information. Learn more about AHA programs for schools and the community, as well as, health.

<http://www.americanheart.org>

He spoke about *Transcriptional Analysis of Heart Disease*. Stanley Watkins, M.D., Reynolds Project Fellow, gave a very informative overview of the Reynolds Project, a major research study of genetics and cardiovascular disease currently taking place here at UT Southwestern. Our final speaker of the day was Mark Drazner, M.D., Assistant Professor of Internal Medicine. He spoke about *Heart Failure* and included videos of real patients suffering from heart failure. Joy Key from Lamar High School commented “...How fortunate we are to have such excellent presenters who are willing to come on Saturday to teach us. Thanks so much.”

Mini-Symposium: Transplantation – Nov. 13, 2000

This program, which continued our focus on the heart, began with an introduction to transplantation called *Transplantation of Solid Organs and Bone Marrow* by Dr. Michael Bennett, Professor of Pathology. *Heart Transplantation: Current Status and Future Trends* was our final topic of the evening, given by Dr. Dan Meyer, Associate Professor of Thoracic and Cardiovascular Surgery. Barbara Stock of Hedrick Middle School said of Dr. Meyer’s presentation, “it was so fascinating, I’ll find a place for it in my class,” and he had a “great sense of pacing and humor.”

Teacher Inservice: Kidney Under Pressure – Dec. 2, 2000

Twenty-five teachers participated in a new teacher inservice from the American Physiological Society dealing with some basic concepts of the kidney and the renal system. The day-long program began with some background information presented by STARS Coordinator, George Ordway, PhD. The teachers then had a lecture and tour of the dialysis unit at Parkland Hospital by Biff Palmer, M.D., Professor of Internal Medicine and Director of Clinical Nephrology. Dr. Palmer taught them about the different types of dialysis and how it works. After the tour, teachers began this problem-solving unit, *A Kidney Under Pressure*, which introduces students to eight patients who suffer from kidney disorders. The students are then provided with an active learning experience as they are asked to design experiments, collect data, and perform differential diagnoses to determine the source of their patient’s ailment. Loretta Loykasek commented that “this is an excellent workshop, as usual. Great activities for use in the classroom on Monday.”

Spring Calendar of Events

January 22	Monday	Mini-Symposium: Developmental Biology 5:30 - 8:00 p.m.	Richardson Lecture Hall, D1.502
February 10	Saturday	Teacher Inservice: Genetics 9:00 a.m. - 3:00 p.m.	Meeting Room NA8.102
March 5	Monday	Mini-Symposium: Learning Disorders 5:30 - 8:00 p.m.	Richardson Lecture Hall, D1.502
April 7	Saturday	Basic Science Symposium: Aging 9:00 a.m. - 3:00 p.m.	Richardson Lecture Hall, D1.502

Other Important Dates To Remember

January 20	Friday	Deadline to submit requests for Science Fair Judges
February 2	Friday	Application Deadline for Summer Research Program
June 1	Friday	Summer Research Program Begins
July 26	Thursday	Summer Research Program Ends

All events are held on the UT Southwestern South Campus. For directions, call the STARS office or visit the STARS webpage at: www.utsouthwestern.edu/stars/welcome.html.

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opportunity institution.
Core funding for the STARS
program is provided by the state
of Texas. Corporate funding is
generously provided by:



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www.utsouthwestern.edu/stars

STARS

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PROGRAMS

SYMPOSIA

Basic Science Symposia
Mini-Symposia

TOURS

UT Southwestern Allied Health Sciences School
UT Southwestern Medical Center
Parkland Health and Hospital System of Dallas
Children's Medical Center of Dallas

OUTREACH

Bureau of Science Fair Judges
Distance Learning Initiative
Research Assistance
Science Ambassadors
Student Mentoring

SUMMER RESEARCH

Summer Research Program for Teachers
Summer Research Program for Students

INSERVICE SESSIONS

Kidney Under Pressure
Genetics
Biotechnology
Exercise Physiology
Gel Electrophoresis
Human Physiology in Space
Muscle Physiology
Suturing Techniques

STARS Programs for SPRING 2001

All STARS activities and events are offered free of charge to teachers in the state of Texas. The science

symposia and inservice sessions are a great way for teachers to keep in touch with current research in the biomedical sciences, to learn new classroom activities, and to obtain professional development credit at the same time. If you wish to attend any event, please pre-register by calling 214-648-9505 or visiting our online registration page at:

www.utsouthwestern.edu/stars/registration.html.

The STARS symposia consist of a series of lectures given by scientists and physicians currently doing research at UT Southwestern Medical Center and affiliated institutions. Included in the line-up of symposia topics for the spring are Developmental Biology, Learning Disorders, and Aging.

An all-new teacher inservice session, *Genetics*, is planned for February.

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