

## STAFF

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UT Southwestern is an equal opportunity  
institution. Core funding for the STARS  
program is provided by the state of Texas.

Visit our web site at  
<http://www.utsouthwestern.edu/stars>

## STARS

UT SOUTHWESTERN  
MEDICAL CENTER  
5323 Harry Hines Blvd.  
Dallas, TX 75390-9137

## PROGRAMS

SYMPOSIA  
Basic Science Symposia  
Mini-Symposia

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

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

INSERVICE SESSIONS  
Proteins & Enzymes  
Protein Crystal Growth  
Genetics  
PCR & Gel Electrophoresis  
Suturing Techniques

SCIENCE TRIATHLON  
Supported by  
Howard Hughes Medical Institute

## Summer Stock 2007 Available

A compilation of the classroom activities  
developed by the participants in the  
STARS Summer Research Program for  
Teachers is available free of charge.  
The activities range in level of  
applicability from middle school science  
to Advanced Placement classes.  
You may obtain a FREE copy of  
Summer Stock 2007 by contacting  
the STARS office.

## Missed it or Want to See it Again?

If you missed a STARS Basic Science  
Symposium / Mini-Symposium or want  
to share it with your students and/or  
colleagues, you can order a FREE DVD  
of the event(s). Just give us a call or  
email.

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# STARS NOTES

SCIENCE TEACHER ACCESS TO RESOURCES AT SOUTHWESTERN

## Spring 2007 STARS Events

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

STARS symposia consist of a series of lectures given by  
scientists and physicians currently doing research at  
UT Southwestern Medical Center and affiliated institutions.  
The science symposia and inservice sessions are excellent  
resources for teachers to learn about cutting-edge research  
in the biomedical sciences, to discover 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](http://www.utsouthwestern.edu/stars)

Mini-Symposium: *New Advances in Cancer  
Treatment* – Jan. 8, 2007

*Towards the Development of Targeted Therapy in  
Childhood Cancer* by Gail E. Tomlinson, M.D., Ph.D.,  
Associate Professor of Pediatrics  
*Redesigning Nature's Poisons for Biomedicine and Biodefense*  
by Ellen Vitetta, Ph.D., Professor & Director of the Cancer  
Immunobiology Center

Special Event: *Body Worlds* – Jan. 23, 2007  
A Special Thanks to the Museum of Nature and Science for  
partnering in this special event.

The theme of the month was the Digestive System. After  
a free viewing of the Body Worlds Exhibit and poster pre-  
sentation by UT Southwestern post-doctoral fellows and  
graduate students, Robert M. Genta, M.D., Professor of  
Pathology & Internal Medicine-Gastroenterology, gave a  
presentation that tied the theme of the evening to current  
research with his talk on *Butterflies in the Stomach and other  
Alimentary Tales*.

Special Symposium: *Women In Science and Medicine*  
– Feb. 3, 2007

Thank You to the *Women in Science and Medicine* Advisory  
Committee (WISMAC) for organizing this event.  
Speakers included: Carole Mendelson, Ph.D., Co-Chair,  
WISMAC, Professor of Biochemistry; Susanna Parker, M.D.,  
Associate Dean, Student Affairs; Kalpana Manthiram,  
Second Year Medical Student; Dennis McKearin, Ph.D.,  
Associate Dean, Medical Scientist Training Program;  
Maggie Waung, Medical Scientist Training Program  
(M.D./Ph.D) Student; Melanie Cobb, Ph.D., Dean,  
Southwestern Graduate School of Biomedical Sciences,  
Professor of Pharmacology; Nicola Reading, Graduate  
Student, Graduate School of Biomedical Sciences; Raul  
Caetano, M.D., Ph.D., Dean, Southwestern Allied Health  
Sciences School; and James Mosby, MPT, Faculty Associate,  
Dept. of Physical Therapy, Allied Health Sciences School.



Dr. Genta &  
Dr. Goodman



Poster Viewing  
Session at Body  
Worlds



Kimberly Wilson,  
Graduate Student,  
shows teachers her  
research project in  
the Porteus Lab.

### Break out sessions:

#### What It's Like to Be a Physician.

Alison Dobbie, M.D. Professor of Family & Community  
Medicine, Christy Drew, Family Medicine Interest Group

#### What It's Like To Be a Basic Scientist.

Malu Tansey, Ph.D., Asst. Prof. Physiology, Shondra Prueett,  
graduate student, and three lab demonstrations

#### What It's Like to Be a Prosthetist-Orthotist, Clinical Dietician or Physician Assistant.

George Ordway, Ph.D., PA student, Brittany Stresing,  
Prosthetics/Orthotics student, Maressa Valdez and Carmen  
Ordonez – Clinical nutrition students

### Mini-Symposium: *The Kidney* – Mar. 5, 2007

*Renal Function and Sodium Homeostasis* by Orson Moe,  
M.D., Professor of Internal Medicine – Nephrology  
*Genes, Diets, & Hypertension: A Kidney and Heart Story* by  
Chou-Long Huang, M.D., Ph.D., Professor of Internal  
Medicine - Nephrology

### Basic Science Symposium: *Viruses* – April 28, 2007

*Viral and Host Factors that Influence Poliovirus Diversity* by  
Julie Pfeiffer, Ph.D., Assistant Professor of Microbiology  
*HIV & Disease Progression: Lessons from the Monkey Models* by  
Donald Sodora, Ph.D., Assistant Professor of Infectious Diseases  
*Bird Flu* by Robert Munford, M.D., Professor of Infectious Diseases  
*Viral Hepatitis* by Mamta Jain, M.D., M.P.H., Assistant  
Professor of Infectious Diseases

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# HHMI Grant to UT Southwestern to Give DISD Schools New Avenues to View Science

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.

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, who holds the Jan and Bob Bullock Distinguished Chair for Science Education. "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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# STARS staff is Growing!

The past few months have been an exciting time at STARS! We welcomed a new staff member, Gwen Johnson, to help meet the demands of our program's continued growth and expansion.



Gwen Johnson

Gwen came on board with STARS as an Education Assistant in late May. Prior to her most recent work as a Paralegal, Gwen worked at UTSW in the Neurology department for several years. Though she enjoyed her role in Neurology, she decided to pursue training in another field. After earning her certification as a Paralegal from El Centro College and the University of North Texas, she went on to work for a large firm in Dallas and played a key role in assisting the legal team while working on a large variety of cases. Gwen has the experience and qualifications necessary to greatly contribute to the success of the STARS program.

Gwen is thrilled to have joined STARS and share her knowledge of the medical center and its vast resources with students and teachers alike. From working at UTSW previously, Gwen has many contacts with faculty and staff throughout the campus and says "I want to continue to develop and utilize those relationships to enhance opportunities offered by STARS." She has enjoyed meeting students and their teachers and says she has "already learned a lot just by visiting the different labs and lecture presentations!" As a mother of a teenager herself, she knows firsthand "how important it is to provide students with opportunities to enhance their education" and states, "that exposure is the first step in showing students how exciting and valuable science and medicine really are!"

Feel free to contact Gwen, to welcome her to the STARS Program, to set up medical center tours, request Science Ambassadors or Science Fair Judges, or to register for the basic science symposia and teacher inservice sessions. She is here to help you or your students in any way.

# Summer 2007 Eastfield-UT Southwestern STARS Cohort



Jeanette Cervantes, Stefanie Boyd, Scott Stephan, and Joshua Lord

The National Science Foundation Science Talent Expansion Program (STEP) at Eastfield College and The University of Texas Southwestern Medical Center at Dallas (UTSW) selected four of Eastfield's top science

## Fall 2007 Calendar of Events

Sept. 10, 2007 Monday 5:30 pm - 8:00 pm  
**Mini-Symposium: Mini-Symposium: Systems Biology: New Insights Into Biology**, Lecture Hall, D1.502

Oct 13, 2007 Saturday 9:00 am - 3:00 pm  
**Basic Science Symposium: Embryonic Development**, Lecture Hall, D1.502

Nov. 5, 2007 Monday 5:30 p.m. - 8:00 p.m  
**Special Family Event: Vital Signs**  
 Lecture Hall, D1.502  
*In Collaboration with the Museum of Nature and Science*

Dec. 1, 2007 Saturday 9:00 a.m. - 3:00 p.m.  
**Teacher Inservice: Microscopy: From Virtual to Reality**, Meeting Room, L4.176  
 Limited Enrollment

**Other Important Dates to Remember**

Jan. 18, 2008 - **Deadline for Science Fair Judge Requests**

Friday, Feb. 1, 2008, at 4 p.m.  
**Deadline for Summer Research Program Applications**

June 9, 2008 - **Summer Research Program Begins**

August 1, 2008 - **Summer Research Program Ends**

*All events are held on the UT Southwestern South Campus.  
 For directions, call the STARS office or visit the STARS Web page.*

and mathematics students to participate in the STARS Summer Research Program for students. The program pairs students with faculty research scientists to conduct an eight-week research project. A \$1.4 million grant from the National Science Foundation to Eastfield is funding the stipends and college credit.

Congratulations to all the participants & Thank you to all their mentors!  
**Stefanie Boyd** - Host: Jeffrey Elliott, M.D., Neurology  
**Jeanette Cervantes** - Host: Paul Blount, Ph.D., Physiology  
**Joshua Lord** - Host: Beatriz Fontoura, Ph.D., Cell Biology  
**Scott Stephan** - Host: Laurie Davis, Ph.D., Internal Medicine - Rheumatology

## Summer 2007 Yearbook

"Nothing ever becomes real till it is experienced – even a proverb is no proverb to you till your life has illustrated it"

-John Keats

A group of 5 teachers, 19 Dallas ISD high school students, and 4 Eastfield College students embarked on a summer of opportunities and embraced the challenge of working with world-class researchers at UT Southwestern Medical Center at Dallas to learn about and gain perspective on how science is done "in the real world." The eight-week program consisted of activities, presentations, and an individualized research project that contributed to the advancement of science. These experiences supplied them with a newfound confidence in their abilities to rise to the challenge and a rejuvenation of their love of science.

The program is open to all secondary Texas teachers and Dallas Independent School District juniors.

Applications for the 2008 Summer Research Program will be available in December and will be due on Feb. 1, 2008, at 4 p.m.



**Constance Adamu**  
*Carter High School, Dallas*  
Host: *Linda Baker, M.D., Urology*

"Thanks to the STARS program, I have gained a world of experience in scientific research this summer at UT Southwestern. As a teacher, I have learned from the department of Urology how a section of a gene can be amplified, how a mutation can be detected on a gene. I learned how to test for the presence of hormones and protein receptors on specific locations, and much more. These techniques have given me more confidence as a science teacher and something to refer (or relate) to when I teach. The warmth and simplicity of the UT Southwestern researchers and other workers is beyond my expression. I wish I could come back for another summer."



**Tiffany Kiser**  
*Ford Middle School, Allen*  
Host: *Fiemu Nwariaku, M.D., F.A.C.S., Surgery*

"I want to thank the STARS Program and Dr. Fiemu Nwariaku for giving me the opportunity to work in a research lab at UT Southwestern this summer. I learned how to cut and stain thyroid tumors to learn more about their angiogenesis. I also saw first hand the processes labs have to undergo in order to be able to do research, like writing grants and then getting a paper published. The people I worked with in my lab, Ian, Chris, Liu, and Tim, were very helpful and willing to show me the ropes, or at least introduce me to someone who could. This experience has opened my eyes toward research. My students will benefit greatly from my experiences."



**Julia Lawrence**  
*Cedar Hill 9th Grade Center, Cedar Hill*  
Host: *Shuxin Li, M.D., Ph.D., Neurology*

"I am so thankful to the STARS program for the opportunity to be able to perform biomedical research. I enjoyed working with Dr. Li and the Neurology department. I learned a lot. The most important lesson for me is that research is flexible. There is no set time when discoveries are made so you have to be flexible and available. Also, sometimes you do not always get "results" the first time around. You have to be able to re-adjust your thought process and come up with new ways to try and get results. Again, I really had a good time here and learned valuable information that will stay with me for a longtime."



**Dusty Vincer**  
*Williams High School, Plano*  
Host: *Marlyn Mayo, M.D., Internal Medicine*

"The STARS program allowed me to gain insight into the educational and scientific aspects of research. The time I spent with Dr. Mayo learning about primary biliary cirrhosis (PBC), liver cells, and molecular biology was educational and fascinating. I expanded my comprehension of primer design, real-time PCR, RNA and DNA extraction from blood and liver tissue, western blots, and gel electrophoresis. I plan on sharing my summer research project results with all my students and incorporating my protein synthesis activity into my lesson plans."



**Rudolph White, Jr.**  
*Skyline High School, Dallas*  
Host: *Helmut Kramer, Ph.D., Center for Basic Neuroscience*

"Thank you to Dr. Kramer and his lab for a great summer research experience."



2007 STARS Summer Research Program for Students Participants & Associates

<b><u>STARS PARTICIPANTS</u></b>	<b><u>SCHOOLS</u></b>	<b><u>HOSTS</u></b>
Genevieve Armstrong	Hillcrest High School	David Mangelsdorf, Ph.D.
Caleb Brackens	Townview Talented & Gifted Magnet High School	Joel Goodman, Ph.D.
David Briseno	Molina High School	Ondine Cleaver, Ph.D.
Angel Cook	WW Samuell High School	Amelia Eisch, Ph.D.
Katie Fife	Townview Talented & Gifted Magnet High School	Alexander Pertsemlidis, Ph.D.
Anthony Haskins	Townview Talented & Gifted Magnet High School	Alexander Pertsemlidis, Ph.D.
Blesson John	Townview Science & Engineering Magnet High School	Qing Richard Lu, Ph.D.
Elizabeth Kaiser	Woodrow Wilson High School	Dinesh Rakheja, MBBS, M.D.
Kate Kitsumritphol	Roosevelt High School	Kristine Kamm, Ph.D.
Cameron LanCarte	Hillcrest High School	Zbysek Otwinowski, Ph.D.
Priscilla Maya	Townview Talented & Gifted High School	Skip Garner, Ph.D.
Daphne McGee	Roosevelt High School	Vidu Garg, M.D.
Javier Montano	Molina High School	Dominika Borek, Ph.D.
Mary Nguyen	Townview Science & Engineering High School	Jef De Brabander, Ph.D.
Ashley Olivo	WT White High School	Michael Roth, Ph.D.
Luis Serna	Townview Talented & Gifted High School	Diana Tomchick, Ph.D.
Lance Sillings	Adamson High School	Thomas Carroll, Ph.D.
Adriana Vega	Townview Health Professions Magnet High School	Kristine Kamm, Ph.D.
Jordan Wilkie	Townview Science & Engineering Magnet High School	Diana Tomchick, Ph.D.
<b><u>ASSOCIATES</u></b>	<b><u>SCHOOLS</u></b>	<b><u>HOSTED BY</u></b>
Geoffrey Dunham	Lake Highlands High School	Thomas Kodadek, Ph.D.
Natalie Toto	Episcopal School of Dallas	Helen Hobbs, M.D.
Lisa Varghese	Faith Christian School	Robert Hammer, Ph.D.
David Watson	Texoma Christian School	Skip Garner, Ph.D.

For more information about our teachers and students, including their research projects, please visit our website.