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

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<http://www.utsouthwestern.edu/stars>

STARS

UT SOUTHWESTERN
MEDICAL CENTER
5323 Harry Hines Blvd.
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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
Zale-Lipshy University Hospital
St. Paul University Hospital

INSERVICE SESSIONS
Cell-ebriation
Biomechanics
Kidney Under Pressure
Genetics
Biotechnology
Exercise Physiology
Gel Electrophoresis
Human Physiology in Space
Muscle Physiology
Suturing Techniques

Summer Stock 2006 Available

A compilation of the class-
room 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 2006 by
contacting the STARS office.

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STARS NOTES

SCIENCE TEACHER ACCESS TO RESOURCES AT SOUTHWESTERN

STARS/DISD Two-week Summer Workshop for New Biology Teachers

Thanks to a grant from Citigroup and space provided
by the Department of Pharmacology, STARS and
DISD were able to partner for a two-week program
designed to give teachers an opportunity to practice
and learn various techniques, laboratory activities,



and units that can
easily be imple-
mented into the
classroom. In
order to facilitate
the implementa-
tion of these labs
and activities,
each teacher was
given an allotted
amount to funds

to order supplies for their classes. They were also
exposed to the numerous opportunities and resources
available through STARS, UT Southwestern, and
Dallas ISD. The participants were required to present
a modified or original lesson at the end of the work-
shop. When asked to comment about how they
would describe their experience, this is an excerpt of
what a few of them had to say...

"The program was a learning experience, which I

enjoyed. The information is useful and very helpful
for my classroom labs. We have developed long term
relationships that will benefit us in the future."

"The labs were outstanding and provided me with
the opportunity to know what to expect when I do
the labs in class with my students. This is a must
have, must attend workshop; the best staff develop-
ment opportunity available to DISD teachers."
"The STARS workshop was a wonderful opportunity
to learn from other teachers and create a better expe-
rience for students. The program itself allows the
teacher to use resources to aid in learning."

Participants:

Don Porter, WT White High School –
Instructor for STARS workshop
Susan Attebury, Bryan Adams High School
Gay Bingham, Seagoville High School
Kamilah Crouch, Skyline High School
Eburn DeBase, Lincoln High School
Jennifer Martinez, WT White High School
Maria Spencer, Roosevelt High School
Timothy Spencer, Carter High School
Aidan Raniere, Irma Lerma Rangel High School
Mary Rivers, WT White High School
Rudolph White, Skyline High School

Spring 2006 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 at Dallas 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 develop-
ment credit at the same time. If you wish to attend any
up-coming events, please pre-register by calling
214-648-9505 or visiting our online registration page at
www.utsouthwestern.edu/stars.

Mini-Symposium: Neural Development & Disease – Jan. 9, 2006

Neural Development: Lessons from the Spinal Cord by Jane
Johnson, Ph.D., Associate Professor of the Center for Basic
Neuroscience

Neurodegenerative Diseases: Alzheimer & Parkinson by
Dwight German, Ph.D., Professor of Psychiatry



Streaking plates

Teacher Inservice: Biotechnology in the Post-Genomic Age – Feb. 4, 2006

This inservice focused
on a series of activities
that used genome
resources to identify
mutant yeast strains.

By: Joel Goodman,
Ph.D., Professor of

Pharmacology, and members of his lab, Derk Binns, Ph.D.,
and Kimberly Szymanski.

Mini-Symposium: Drugs & Bugs – Mar. 6, 2006

Antibiotics by Joel Goodman, Ph.D., Professor of
Pharmacology
Anti-malarial Drug Discovery
by Jeff Baldwin, Ph.D., Instructor of Pharmacology

Continued on Page 5

WHAT'S INSIDE

Summer Yearbook.....	3 & 4
Fall Calendar.....	5
Spring & Summer Events cont'd.....	5
Eastfield/STARS Summer Cohort.....	2
Staff & Programs.....	6

Summer 2006 Eastfield-UT Southwestern STARS Cohort

Eastfield College and UT Southwestern selected four of Eastfield's top science and mathematics students to participate in the STARS Summer Research Program for students. A \$1.4 million grant from the National Science Foundation to Eastfield is funding the \$3,000 stipends, college credit, and year round access to research opportunities in the new scanning electron microscopy laboratory at Eastfield.

Eastfield College and UT Southwestern program officials selected these students based on an evaluation of essays, faculty recommendation letters, academic records, and personal statements and interviews. The following students comprise the Summer 2006 Eastfield-UT Southwestern STARS Cohort:



Funmi Afolayan, Pre-Med sophomore from Nigeria who is a recipient of the Phi Theta Kappa STAR Scholarship for 2005-2006 and member of the Eastfield President's Honor Roll from 2004-2006.

Ms. Afolayan worked with Dr. Jerry Shay, Professor of Cell Biology at UT Southwestern. Dr. Shay is a pioneer in the field of telomere biology and his research has broad, direct applications to cancer pathology and treatment. Afolayan, a resident of Garland, is seeking a career in medical research and believes that the STARS program and mentoring by Eastfield and UT Southwestern faculty will help her "unlock her potential."



Dang Huynh, sophomore from Mesquite, is a Science major who plans to transfer to a four-year university in pharmaceutical research. Huynh worked with Dr. J. R. (Camille) Falck, Professor of Biochemistry at UT

Southwestern. Dr. Falck's research focuses on the chemistry and biochemistry of small organic molecules that have broader implications in pharmacology and oncology.



Jordan McHone, sophomore from Rockwall, is majoring in Science. McHone is a member of Phi Theta Kappa International Honor Society and plans to pursue a degree in biology. McHone worked with Dr. Carole

Mendelson, Professor of Biochemistry at UT Southwestern. Dr. Mendelson mentored McHone in his research assignment on the regulation of genes and proteins that trigger notification of labor in expectant mothers. McHone believes that "this opportunity will allow me to gain valuable research experience, helping to form my career path and giving me a better chance to succeed in the future."



Katarina Solberg, is a sophomore from Sweden who currently lives in Garland. Solberg is majoring in science and plans to earn a degree in biology. She performed her summer research under the supervision of

Dr. Julie Pfeiffer, Assistant Professor of Microbiology at UT Southwestern's Center for Immunology. Dr. Pfeiffer's research uses hepatitis C and poliovirus to study viral genome evolution and drug resistant mutations and the effect of viral diversity on pathogenesis. Solberg sees this research opportunity as "a major steppingstone to let me experience the world of research."



A Special Thanks:

STARS is thrilled to have the help of Stuart Ravnik, Ph.D., Assistant Dean of the graduate school, for several of its programs. In particular,

Dr. Ravnik was crucial to the success of the summer research programs. He was responsible for support of the Eastfield initiative on campus, and was very helpful in working with the other students and teachers in the summer programs.



Physiology at the Extremes: Four years ago, Dr. Shane Kanatous went to Antarctica to conduct research and kept in touch with hundreds of students across the US by sending photos and messages about his research and personal observations. He will be departing for his fifth trip to the one of the world's coldest places in October 2006 to continue his research.

Check Out his website to learn more about his project and get your students involved in this scientific adventure by learning about his journey, trying to answer his weekly questions, and submitting questions for him to answer during his stay in Antarctica. (<http://www.utsouthwestern.edu/stars>)

Spring 2006 STARS Events— Continued from Page 1

Basic Science Symposium: The Immune System – April 1, 2006

Good Fences Make Good Neighbors by Lora Hooper, Ph.D., Assistant Professor of the Center for Immunology
Cells of the Inmate Immune System: Soldiers on the Front Line by Michelle Gill, M.D., Ph.D., Assistant Professor of Pediatrics
Even T Cells Need to Go to School by Nicolai Van Oers, Ph.D., Assistant Professor of the Center for Immunology
Genes That Control Autoimmune Diseases by Edward Wakeland, Ph.D., Professor & Director for the Center for Immunology

Special Family Event: Forensic Pathology – April 27, 2006

STARS and the Dallas Museum of Nature & Science had another successful collaboration with this Special Family Event on Forensic Pathology. The teachers and parents learned about how and what medical examiners really do from Reade Quinton, M.D., Assistant Professor of Pathology. Simultaneously, students were in a session with Melinda Ludwig from the Dallas Museum of Nature & Science, working on hands-on activities that took them through an adventure regarding Wildlife CSI.



Testing the cloth to see if it's really blood or just colored red.



Teachers & Parents Session

UT SOUTHWESTERN
MEDICAL CENTER

STARS

Mark your Calendars! Fall 2006

Sept. 11, 2006 Monday 5:30 pm - 8:00 pm
Mini-Symposium: Gene Silencing
Lecture Hall, D1.502

Oct. 14, 2006 Saturday 9:00 am - 3:00 pm
Basic Science Symposium: Membranes
Lecture Hall, D1.502

Nov. 6, 2006 Monday 5:30 pm - 8:00 pm
Mini-Symposium: Antibiotic Resistance
Lecture Hall, D1.502

Dec. 2, 2006 Saturday 9:00 am - 3:00 pm
Teacher Inservice: Proteins & Enzymes
Meeting Room, NG3.202
Limited Enrollment
*NOTE: Room located at 6001 Forest Park Blvd.
Dallas, TX 75390*

Other Important Dates to Remember

Jan. 19, 2007 Friday
Deadline to submit requests for Science Fair Judges

Feb. 2, 2007 @ 4pm Friday
Application Deadline for the Summer Research Program

June 4, 2007 Monday
Summer Research Program Begins

All events are held on the UT Southwestern South Campus at 5323 Harry Hines Blvd. Dallas, TX 75390. For directions, call the STARS office or visit the STARS web page.

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 video of the event(s). Just give us a call or email.

Summer 2006 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

Instead of taking advantage of their well deserved summer break by resting and relaxing, a group of 8 teachers, 16 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 2007 Summer Research Program will be available in December and will be due on Feb. 2, 2007, at 4 pm.



Marguerite Bagwell of Alvin High School, Alvin.
Host: Zhi-Ping Liu, Ph.D., Internal Medicine

"It isn't often in life that one is given unique opportunities for growth, not only professionally, but also personally. The STARS Summer Research Program for Teachers has blessed me with that gift. Working in Dr. Zhi-Ping Liu's lab has reminded me of what it is like to be a student again. Certainly, the excitement of learning and working with the latest laboratory protocols and genetic advances is thrilling. More importantly, however, I also experienced the frustration of not knowing all the answers, the merit of researching and learning on one's own, and the significance of working on a team where everyone's thoughts are valued. Being the student again reminded me that as a teacher, I am not called to just pass on information. I am called to make education an experience. I know the STARS program has made that kind of experience for me. I hope to do the same for my students."



Benjamin Cruz of Inspired Vision Academy II, Mesquite.
Host: Kim Orth, Ph.D., Molecular Biology

"During my summer research, I worked on cloning sequences of genes that are associated with virulence in a bacterial species (*Vibrio parahaemolyticus*). After cloning, I would take these cloned genes and perform a knockout to observe phenotypic changes. When I started this program, I was a bit unsure of how I would fit in with everyone in the lab. The caliber of work that was going on was way out of my league, and I was struggling to keep up. Once I started asking lots and lots of questions and learning from all of my mistakes (and boy were there a lot), I started to see the big picture. I was able to talk with everyone about their individual project and listen in on weekly lab meetings. I really saw how important collaboration is not only to individuals in the lab, but with other labs in the department or in other departments. I think as teachers we get caught up with all of our work and forget to see how important collaborating with other teachers of other subjects can be. Also, I am now more aware of how students can feel when they are bombarded with so much information and we expect them to keep up. There were times when felt overwhelmed, but everyone in the lab made every possible effort to help me out and make sure I understood. I had so much fun with everyone and looked forward to going into the lab everyday. I am very grateful that the STARS program gave me the opportunity to work in such a high tech facility with top notch researchers. I will always remember everyone I worked with and recommend this program to everyone."

Tony Dickensheets of Dealey International Academy, Dallas.



Host: Mounir Erami, Ph.D., and Harold Garner, Ph.D., McDermott Center for Human Growth & Development

"I had a very productive and enjoyable summer working in the McDermott Center for Human Growth. Skip Garner and Mounir Errami were great hosts and mentors and made me feel as if I was part of the lab team. My research project was working with mice and 2 drugs that are

currently being tested as possible remedies for those suffering from hypertension and pathological cardiac hypertrophy. In my experiment, I had to regularly administer drugs to the mice, make them swim twice a day, measure their heart rates weekly as well as monitor their weight. Coming from a family that has a history of hypertension, I took this research personally. I am very thankful to the STARS program for giving me an opportunity to work, study, and learn in a world-renowned science and medical institution like UT-Southwestern Medical Center. It is truly a university that exudes confidence, competence, and a dedication to making the world a better place through the miracle advances of science and medicine."



Tabitha Gaudet of Bishop Lynch High School, Dallas.
Host: Rob Rawson, Ph.D., Molecular Genetics

"I am grateful to the UT Southwestern STARS program for choosing me to be a part of this great program. I have been able to be a part of a research lab in Molecular Genetics. I have learned a great deal about fruit flies, the genetics of fruit flies, and fatty acid synthesis in mammals. I had the ability to use tools that I didn't realize existed and was able to brush up on my Chemistry. Being part of this program made me feel like a student learning new skills. I feel that I understand how my students may feel at times about learning science. I am excited about getting back into the classroom and sharing my experience with my colleagues and students. I have gained valuable experience in a lab setting, met wonderful people, and learned a great deal in the process. Every science teacher should want to be a part of the unique experience offered by the STARS program."



Christian Gehman of Lamar High School, Arlington.
Host: Helmut Kramer, Ph.D., Center for Basic Neuroscience

"The STARS program at UTSW has afforded me an opportunity to experience science as it is actually being practiced. It is quite different in ways from the artificial environment of the high school classroom. What stood out to me the most is the "messiness" of real-world science. I often design

(continued on other side)

Summer 2006 Yearbook (continued)

labs to teach a specific concept; in order for this to happen, I am dependent on the lab turning out exactly as expected. This summer, the lab work I did rarely turned out exactly as we expected. Nevertheless, we were able to move forward because we gleaned what we could, tried to learn from the unexpected outcomes, and adapted to circumstances. Even more surprising to me was how little my principal investigator seemed bothered by the anomalies—in fact, he was often quite interested in them, thinking they might reveal something new. It is this unpredictability of practicing science that I would like to take back to the classroom. There is a tremendous opportunity for honing analytical skills and creative thinking when students are confronted with an unexpected outcome. Rather than treating malfunctions or surprise data as an annoyance, I want approach them as additional opportunities for teaching and learning.”



Randall Harris of Grapevine Middle School, Grapevine.
Host: Helen Wood, Ph.D., and Tony Babb, Ph.D., Internal Medicine

“I have been fortunate to work at the Institute for Exercise and Environmental

Medicine under Dr. Helen Wood and Dr. Tony Babb through the STARS program this summer. The experience has been a tremendous educational opportunity for me as a teacher of life science. To see and participate in the dynamic of research in the studies around me everyday at the IEEM (Institute for Exercise & Environmental Medicine) is invaluable. The cooperation and coordination of so many working together to answer the questions of the ever-changing science of exercise physiology is an exciting experience. I am so appreciative of the time and resources afforded me through this time. I will be able to bring to the classroom a different perspective of how science works in the research setting. Students in my classroom will gain a better understanding of inquiry moving to experimentation, resulting data communicated to others, and conclusions of one study being only a spring board to initiate the next.”



Ken Mitchell of Boyd Middle School, Boyd.
Host: John Abrams, Ph.D., Cell Biology

“I am very excited to return to my class and share all I have learned with my students. This was an awesome opportunity to research science. It has been awhile since I have worked in a lab and there

were several new methods that I had to learn. I try to make science educational and exciting for my students and this opportunity allows this. I want to thank the STARS program and my host lab for this experience.”



Heather Skelton of Ferguson Junior High School, Arlington.
Host: Spencer Brown, Ph.D., Plastic Surgery

“This summer through the STARS program I have had the privilege of working in the Plastic Surgery research lab under the direction of Spencer Brown, Ph.D. Dr. Brown has been an incredible mentor and made this summer experience very worth while. Not only was I able to work with Dr. Brown, there were also several medical students who were working in the lab for a summer program. It was great to be able to understand their schooling and work ethic so I can share that with my students. I am pleased there is a program available that allows teachers the opportunity for lab research. I now have more information to encourage my students to pursue a career in science. I would like to thank the STARS program and Dr. Spencer Brown for such fantastic summer.”



2006 Summer Research Program for Students Participants



2006 Summer Research Program Associates

STARS PARTICIPANTS

STARS PARTICIPANTS	SCHOOLS	HOSTS
Cindy Camacho	Townview Health Professions High School	Ray MacDonald, Ph.D.
Gypsy Gavia	Townview Talented & Gifted High School	Yuh Min Chook, Ph.D.
Richard Gomez	Thomas Jefferson High School	Vanessa Sperandio, Ph.D.
Tanya Hendricks	James Madison High School	Nancy Monson, Ph.D.
Jay Hennig	Booker T. Washington High School for Visual & Performing Arts	Alexander Pertsemliadis, Ph.D.
Eneida Male	Townview Science & Engineering High School	Paula Ulery, Ph.D.
Elianne Ortiz	Townview Science & Engineering High School	Jenny Hsieh, Ph.D.
Andrew Palacios	Townview Health Professions High School	Michel Saint-Cyr, M.D., Spencer Brown, Ph.D.
Jorge Pereda	Roosevelt High School	Kristine Kamm, Ph.D.
Nevena Rakonjac	Hillcrest High School	Zbysek Otwinowski, Ph.D.
Chris Renard	Townview Talented & Gifted High School	Skip Garner, Ph.D.
Flor Rojas	Roosevelt High School	Vidu Garg, M.D.
Neri Sandoval	Molina High School	Dominika Borek, Ph.D.
Pooja Sarkar	Townview Science & Engineering High School	Jef De Brabander, Ph.D.
Thuy Tran	WT White High School	Michael Roth, Ph.D.
Patrick Ward	Townview Talented & Gifted High School	Diana Tomchick, Ph.D.

ASSOCIATES

ASSOCIATES	SCHOOLS	HOSTED BY
Honorita Bush	Parish Episcopal High School	Peter Antich, Ph.D.
Catherine Gibson	Greenhill School	Robert Toto, M.D.
Charles Koshy	TAMS	Mala Mahendroo, Ph.D.
Jonathan Lee	Jesuit College Preparatory School of Dallas	Jim Thornton, M.D.
Xavier McCullough	WT White High School	David Mangelsdorf, Ph.D.
Alyssa Pazandak	The Hockaday School	Kim Orth, Ph.D.
Emily Rowan	The Hockaday School	Hiromi Yanagisawa, M.D., Ph.D.
Aatman Shah	Plano Senior High School	Jerry Shay, Ph.D.
Lindsey Smith	Bishop Lynch High School	Dean Smith, M.D., Ph.D.
April Tipton	Kaufman High School	Eric Nestler, M.D., Ph.D., Lisa Monteggia, Ph.D.