STARS
A Valuable Resource for Health Science Teachers

2006 Health Science Technology Education Professional Development Conference
July 19, 2006

Joel M. Goodman, Ph.D.
Professor of Pharmacology
STARS Director
Today’s agenda

Introduction to STARS
Suture clinic
What is STARS?

- **Science Teacher Access to Resources at Southwestern**

- Developed at UT Southwestern in 1991 to improve science teaching in north Texas.

- Currently offer 17 programs and activities for secondary school teachers and students.

- In 2005-06, 555 teachers and 2550 students from 131 schools took part in STARS programs and activities.
UTSW - South Campus
UTSW
North
Campus
Goals of STARS

• Increase science awareness
• Stimulate an appreciation of health-related careers
• Provide ongoing support for science teachers and students
• Improve science education by broadening the knowledge base of teachers
• Assist science education by providing instructional aids
Funding

• Core funding is provided by the state of Texas
• Jan and Bob Bullock Endowment for Science Education
• Greater Dallas Chamber of Commerce
• CitiGroup
STARS Programs

• For teachers
  – Symposia, In-services, Summer research, Workshops, Lab kits

• For students
  – Science fair judging, Science ambassadors, Tours of medical school, Explorer program, Summer research

• OTHERS IN DEVELOPMENT
  • Google: STARS UT Southwestern
Symposia
STARS Symposia

• **Symposia**
  – On Saturdays, 9:00 to 3:00
  – Breakfast and lunch provided

• **Minisymposia**
  – On Monday nights 5:30-8:00
  – Boxed dinner provided

• **Speakers are UT Southwestern faculty and guests**

• **Freebies, door-prizes**
2006-2007 Symposia

• Symposia (Saturdays)
  – Cell Membranes  October 4
  – Viruses  April 28

• Minisymposia (Monday evenings)
  – Gene Silencing  September 11
  – Antibiotic Resistance  November 6
  – Novel cancer treatments  January 8
  – The Kidney  March 5

• Special symposium
  – Women in Science and Medicine - February 3
    • In collaboration with the Women in Science and Medicine Advisory Committee (WISMAC)
In-services

- On Saturdays, 9:00-3:00
- Past topics: DNA isolation, gel electrophoresis, genome databases, suturing technique, Wildlife CSI (with Museum of Natural History)
- Planned in-service Dec. 2, 2006. Subject TBA (maybe polymerase chain reaction)
- Limited to 24 teachers; first come, first served.
Summer Research Programs
Summer Research
Summer Research

- Eight-week program
- Each teacher is assigned for a laboratory on campus - basic or clinical research.
- Full participation in all laboratory activities
- Competitive - 10 teachers/year are selected from applications (forms available February)
- Teachers make and present posters to show to their classes, and write an action plan
- All teachers receive stipends
- Similar program for high school students
Summer Research Program
In Development

• Grants are being written to support
  – 2-week summer workshop for biology teachers to hone your lab teaching techniques
  – Prepare teachers and students for pre-AP and AP classes, especially biology
  – Collaborate with the Museum of Nature and Science to design new science exhibits and create new programs and museum tours
Tours of UT Southwestern
Special Symposium:
Women In Science & Medicine

Organized by the Women In Science and Medicine Advisory Committee (WISMAC)

Program

9:00 – 9:05 a.m.  Dr. George Ordway  Director, STARS Program
9:05 – 9:10 a.m.  Dr. Ellen Vitetta  Chair, WISMAC, Prof., Dir., Cancer Immunobiology Center
9:10 – 9:30 a.m.  Dr. Mark Lehrman  Prof., Pharmacology
9:30 – 9:50 a.m.  Ms. Molly Skelley  Graduate Student, Graduate School of Biomedical Sciences
9:50 – 10:10 a.m.  Dr. Susanna Parker  Assoc. Dean, Student Affairs
10:10 – 10:30 a.m.  Ms. Alexandra Pratt  Second Year Medical Student
10:30 – 10:50 a.m.  Break
10:50 – 11:10 a.m.  Dr. Rod Ulane  Assoc. Dean, Medical Scientist Training Program (MSTP)
11:10 – 11:30 a.m.  Dr. Dara Alsuwee  MSTP (MD-PhD) student (PhD completed)
11:30 – 11:50 a.m.  Dr. Nancy Fahn  Assoc. Dean, Allied Health Sciences School
11:50 – 12:10 p.m.  Ms. Judy Pena  Prosthetics-Orthotics student, Allied Health Sciences School
12:10 – 1:10 p.m.  Lunch
1:10 – 1:35 p.m.  Dr. Susanne Mamby  Assoc. Prof., Pharmacology
1:35 – 2:00 p.m.  Dr. Margaret Pearle  Assoc. Prof., Urology
2:00 – 2:25 p.m.  Dr. Cynthia Rutherford  Prof., Internal Medicine
2:25 – 2:55 p.m.  Panel Discussion – All Participants
2:55 – 3:00 p.m.  Closing Remarks  Dr. George Ordway
Mini-Symposium:

Physiology at the Extremes

The University of Texas Southwestern Medical Center at Dallas
Monday, September 9, 2002
Richardson Hall D1.502
5:30 – 8:00 p.m.

5:30 – 5:55 p.m. Registration and Refreshments
5:55 – 6:00 p.m. Welcoming Remarks
George Ordway, PhD
Professor Physiology & STARS Coordinator
6:00 – 6:45 p.m. "Physiology at the Top of the World—Lessons From Mt. Everest"
Benjamin Levine, MD
Associate Professor, Internal Medicine - Cardiology
6:45 – 6:55 p.m. Questions for Dr. Levine
6:55 – 7:00 p.m. Break
7:00 – 7:45 p.m. "A Life Without Oxygen: Physiology of Diving Mammals"
Shane Kanatous, PhD
Post-Doctoral Researcher, Internal Medicine - Cardiology
7:45 – 8:00 p.m. Questions for Dr. Kanatous
## Agenda
**DISD Biology Teacher Workshop**

### Monday, August 5, 2002
- **9:00am-9:15am:** Breakfast
- **9:15am-9:30am:** Orientation - Workshop expectations (from STARS & teachers’ perspective)
- **9:30am-9:45am:** STARS Program Information
- **9:45am-10:00am:** Parking passes
- **10:00am-10:30am:** Tour - South Campus - library, cafeteria, lecture halls, Parkland
- **10:30am-11:00am:** Icebreaker activities
- **11:00am-11:30am:** Lab safety - share best practices
- **11:30am-12:00pm:** Lunch in cafeteria
- **12:30pm-1:00pm:** Research Lab set-up and visit George’s lab
- **1:00pm-2:00pm:** Scientific Research - How is it done here? & Scientific Inquiry
- **2:00pm-3:00pm:** Tours information; Tour TEM & SEM; Tour North Campus.

### Tuesday, August 6, 2002
- **9:00am-10:00am:** Using a Compound Light Microscope (50 min)
- **10:00am-10:30am:** Lab #10 - Comparing Plant & Animal Cells (40 min)
- **11:30am-12:30pm:** Lunch
- **12:30pm-2:00pm:** Lab #37 - Characteristics of Green Algae (50 min)
- **2:00pm-3:00pm:** Lab #38 - Part A - Examining an Algal Bloom (15 min)

### Wednesday, August 7, 2002
- **9:00am-10:00am:** Lab #9 - Characteristics of Prokaryotic & Eukaryotic Cells (50 min)
- **10:00am-10:30am:** Lab #31 - Identifying Bacteria (50 min)
- **11:30am-12:30pm:** Lunch
- **12:30pm-2:00pm:** Lab #32 - Controlling Bacterial Growth (50 min)
- **2:00pm-3:00pm:** HIV Activity (30 min)

### Thursday, August 8, 2002
- **9:00am-10:00am:** Nucleic Acid Introduction; The Dogma Sisters of Central High School: A classroom demo of protein folding
- **10:00am-10:30am:** Lab #13 - Assembling a Protein Molecule (45 min)
- **11:30am-12:30pm:** Lunch with SRPT
- **12:30pm-2:00pm:** Lab #14 - Simulation Protein Synthesis (45 min)
- **2:00pm-3:00pm:** Science Kit Paper Activities

### Friday, August 9, 2002
- **9:00am-3:00pm:** Science Kit & PCR Demo.
- **11:30am-12:30pm:** Lunch with Narvelia West
- **Check Results - Lab #32 - Controlling Bacterial Growth (15 min)**

### Monday, August 12, 2002
- **9:00am-10:00am:** Genetics Inservice - Human Genome Project
- **10:00am-11:00am:** Lab: Investigating Inherited Human Traits
- **11:30am-12:30pm:** Lunch with Don Porter (Dallas ISD Teacher)
- **12:30pm-2:00pm:** Genome Gallery Activities
- **2:00pm-3:00pm:** Genome Gallery Presentations

### Tuesday, August 13, 2002
- **9:00am-10:00am:** Intro Lecture for Kidney Under Pressure
- **10:00am-11:00am:** Kidney Under Pressure
- **11:30am-12:30pm:** Lab #38 - Part B - Examining an Algal Bloom (30 min)

### Wednesday, August 14, 2002
- **9:00am-10:00am:** Genetic Counseling - Dr. Gail Tomlinson
- **10:00am-11:00am:** Kidney Under Pressure Continued
- **12:00pm-1:00pm:** Lunch & Career Information Presentation by Pat
- **Afternoon Open to work on write-up and presentations**

### Thursday, August 15, 2002
- **9:00am-9:15am:** Breakfast
- **9:15am-10:00am:** Presentations & Evaluations
- **11:30am-12:30pm:** Lunch & Farewells
“UT-Southwestern Medical Center offers a superb resource for science teachers in its Science Teachers Access to Resources at Southwestern program. I have participated in STARS events for years and have never been disappointed. The program is open to any science teacher who wants to attend. I have taken advantage of both professional symposia presented by researchers in various fields and staff development programs that supply us with literature and materials for lab-oriented activities. And they always feed us! And it doesn’t cost anything.”

Melinda Ludwig

Museum of Nature and Science
Ennis High School

The Dallas Morning News
STARS Staff

Joel Goodman, Director
Jeannie Han, Program Coordinator
Traydell Beard, Education Assistant
and with special help from
Stuart Ravnik, Assist. Dean
http://www8.utsouthwestern.edu/utsw/home/stars/index.html
(or Google: UT Southwestern STARS)

For Questions, or to RSVP for an event: Jeannie.Han@UTSouthwestern.edu
Special Thanks to the Faculty, Staff, and Students of:

- Southwestern Medical School
- Southwestern Graduate School of Biomedical Sciences
- Southwestern Allied Health Sciences School
- Parkland Memorial Hospital
- Children’s Medical Center
- Zale Lipshy University Hospital
- St. Paul’s University Hospital
Suture Clinic

Alay Parikh
Dallas Alvey
Kimberly Szymanski
Lili Ngo
Skin anatomy
Suturing

• History: evidence from the Neolithic
• Purpose: to close wound
  – Aids in the healing process
  – Helps reduced the chance of scarring
• Material
  – “Catgut” (collagen) - from animals
  – Synthetics which are absorbable
  – Silk - strong but non-absorbable
Simple Interrupted Suture Pattern

http://www.cvm.msu.edu/courses/VM545/surgery/simint.htm
A Square Knot

First Throw

Second Throw