STARS Summer Research Program 2012

Our SRP 2012 was a huge success! See what the Teachers had to say:

“IgE Cross-Linking Induces IL-1ß and IL-23 Secretion in Human Monocytes”

Lorene Sandifer
Seagoville High School

Hosted by:
Michelle Gill, M.D, Ph.D.
Pediatrics

“The STARS program has been an exciting and challenging experience. I believe the experience will most definitely help me to be a better teacher in the lab as well as the classroom. The program is such a blessing to science teachers and I wish it could expand to all areas of teaching, as it is truly an exciting, invigorating and productive 8 weeks. Thank you STARS!”

“Mammalian PEN-2 expression in the central nervous system”

Lisa O’Connor
Birdville Center of Technology & Advanced Learning

Hosted by:
Weichun Lin, Ph.D.
Neuroscience

“A full summer in a research lab working on my own research project has been a life altering experience! The Lin Lab staff welcomed me and gave me opportunities to learn more than anyone would have thought possible in eight weeks. I get to take back to my classroom a new found confidence in technical skills and the ability to bridge TEKS to real world experiences for my students benefit. I am humbled to have worked here and hopeful that my research will in some small way contribute to an Alzheimer’s disease cure. I’ll be forever grateful to UT Southwestern STARS and the Lin Lab, especially my amazing mentor Yun Liu!”

“FLPO-Conditional Mutant Recombinase Gene”

Brook Varner
Woodrow Wilson High School

Hosted by:
Kent Hamra, M.D.
Pharmacology

“When my grandfather was going through chemotherapy seven years ago I promised him that I would complete a triathlon in his honor because if he had the courage to push his body as far as it could go, I wanted to just get a small glimpse of what he was experiencing. I had no idea that my triathlon would be one that tested my mental capabilities and strength. Just like a test of physical endurance the STARS triathlon gives teachers the opportunity to see what they are really made of by exposing them to the front line of medical research. We hear about new discoveries and read about them but to see them first hand is truly amazing. Thank you to all the people in Dr. Hamra’s lab that took the time and patience to teach me the mind-blowing science behind those discoveries. The lessons I learned will greatly benefit all my students. Also thank you very much to the STARS staff for supporting me along this life changing journey, I will always be grateful. And to John Long, former STARS participant, for teaching me everything he knows and helping me make my classroom one where students get the chance to push themselves and see what they truly can do.”
“I have learned a lot this summer. Everyday, there is a new lesson to learn. I would love to do it all over again.”

“18F-Labeled Hydroxyquinoline: An Imaging Agent for Alzheimer’s Plaques”

Nina Mai
H. Grady Spruce High School
Hosted by:
Padmaker Kulkarni, Ph.D.
Radiology

“The STARS program has given me a fresher perspective on the teacher – learner relationship. Throughout my eight weeks with STARS I had made many mistakes and had multiple failures but my mentor was able to take every one of those self perceived failures and twist them into a learning experience and a new direction for my research. I know that I can use that mentality with my students to help them love science more for the failures they will have than for their successes they think they should have.”

“The STARS Summer Research Program (SRP) has done more to inspire me as a teacher, than any other program that I have attended. The program will challenge you to go beyond your level of comfort and to really delve into science. I feel that I am much more compelled to create even more exciting and challenging lessons for my students. I now have a greater appreciation for the dedication and hard work that goes into research. As a result of this experience, I am determined to better prepare and to encourage students to enter the health and science fields.”

“The effect of Exogenous Lactate Pool Size on Myocardial Metabolism of Pyruvate: A13C NMR Isotopomer Study”

Aaron Anderson
Alex W Spence Middle School
Hosted by:
Chalermchai Khemtong, Ph.D.
Advanced Imaging Research Center

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“IL1-beta and Hyaluronan as Biomarkers of Bronchopulmonary Dysplasia in Preterm Infants”

Patricia Dailey
Sunset High School
Hosted by:
Rashmin Savani, M.D.
Pediatrics

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“Antibody genetics of myelin basic protein reactive B cells”

Bryan Bolster
Bryan Adams High School
Hosted by:
Nancy Monson, Ph.D.
Neurology & Neurotherapeutics

“This has been my second year to participate in the STARS summer research program. It has been an incredible experience. I was able to learn cutting-edge laboratory techniques. We are treated to talks from some of the most distinguished scientists including a Nobel Laureate. The STARS program affects the classroom at the most basal level, by increasing a teachers’ ability in science. It allows us to be better informed about the scientific process and pass that learning on to our students. There is nothing better a teacher can do during the summer to improve.”

“The development of mycobacterial strains expressing high levels of M. tuberculosis-encoded efflux pumps”

Scott Sharp
Bishop High School
Hosted by:
Nicolai van Oers, Ph.D.
Immunology

“UT Southwestern’s STARS program is a summer internship that every teacher needs to look into. You partake in hands on research at a world-renown facility, collaborate with groundbreaking researchers, and re-install a zeal for science. You are brought back to the days of being a student and having to learn something and apply it, but that something in my case was the “high level expression of Mtb-encoded efflux pumps on non-pathogenic strains of mycobacterium”. So, even though the task is challenging, it is an extraordinary way to go to the next level in your teaching.”
It has always been my dream to be apart of the ground breaking research at UT Southwestern Medical Center and the STARS Program has made my dream come true. For the past year I have anticipated working in the research lab; it's all I ever wanted to do and now that the end is near, I wish I could start the summer program over again. I received my degree in Biology 3 years ago but I lacked experience, so I did not qualify for jobs in research. Thanks to STARS, now I am.

“Thanks to the STARS program I have developed a new appreciation for the learning that students participate in everyday. The opportunity to questions, solve problems and create new skills gave me a new appreciation for the science I teach on a daily basis.”

The Role of Adipocyte Size in Facial Aging

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“The STARS program has been an outstanding and enlightening program. What other program allows you to work with and learn from some of the world's most wonderful and brilliant minds? I had the opportunity to pick the brain of a Nobel Prize and help contribute to world impacting research. How many people get to do that? I loved this experience. It sometimes challenged me beyond my comfort level; however I'm fortunate to have grown from this great opportunity. I now feel re-energized and inspired; I have so much more to offer my students thanks to the STARS program.”

“LDL and VLDL Uptake in Fibroblast Cells”

“Enhancing the β-cell Mass Imaging Signal Readout By Multivalent Probe Design”

Brian Torres
South Garland High School
Hosted by:
Xiankai Sun, Ph.D.
Radiology

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“When you feel that you have taken all the professional development classes to be a better teacher, join the STARS program. Especially, if you feel like a master teacher of the classroom, and once you have completed the program, come ask me if you feel the same way.”
<table>
<thead>
<tr>
<th>Students Name</th>
<th>School</th>
<th>Host</th>
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<tbody>
<tr>
<td>Chandon Adger</td>
<td>W.T. White High School</td>
<td>Matthew Lewis, PhD</td>
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<tr>
<td>Jacqueline Ayala-Ibarra</td>
<td>Williams Preparatory</td>
<td>Akta Ali, PhD</td>
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<td>Daryl Barth</td>
<td>Booker T. Washington High School for the</td>
<td>Gomika Udugamasooriya, PhD</td>
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<tr>
<td>Sarah Baxter</td>
<td>J. J. Pearce High School</td>
<td>Vitaly Margulis, MD</td>
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<tr>
<td>Rebekah Bell</td>
<td>School for the Talented and Gifted</td>
<td>Christian Forst, PhD</td>
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<tr>
<td>Sheridan Cavalier</td>
<td>Booker T. Washington High School for the</td>
<td>Dwight German, PhD</td>
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<tr>
<td>Hirsh Elhence</td>
<td>Greenhill School</td>
<td>Yonas Getachew, MD</td>
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<tr>
<td>Rachael Essman</td>
<td>Thomas Jefferson High School</td>
<td>Yu-An Zhang, PhD</td>
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<tr>
<td>Edem Fagbolagun</td>
<td>Trinity High School</td>
<td>Dean Smith, MD, PhD</td>
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<tr>
<td>Zainab Fatimaa</td>
<td>School of Health Professions</td>
<td>Chandra Mohan, MD, PhD</td>
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<tr>
<td>Mike Garcia</td>
<td>School of Government, Law, &amp; Law Enforcement</td>
<td>Tawanda Gumbo, MD</td>
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<tr>
<td>Pardis Ghamasaee</td>
<td>North Hills Preparatory</td>
<td>Ganesh Raj, MD, PhD</td>
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<td>Andres Hernandez</td>
<td>Peak Preparatory</td>
<td>Beverly Rothermel, PhD</td>
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<td>Rachel Hodge</td>
<td>Plano Senior High School</td>
<td>Andrew Pieper, MD, PhD</td>
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<td>John La</td>
<td>School of Science and Engineering Magnet</td>
<td>Chuo Chen, PhD</td>
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<tr>
<td>David Larson</td>
<td>Richland College</td>
<td>Orson Moe, MD</td>
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<tr>
<td>Daniel Larson</td>
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<td>Nikhil Munshi, MD, PhD</td>
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<td>Caroline McLeod</td>
<td>Cambridge School of Dallas</td>
<td>Amal Dutta, MD, PhD</td>
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<td>Katherine Mejia</td>
<td>Thomas Jefferson High School</td>
<td>Michi Umetani, PhD</td>
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<td>Lisa Michaels</td>
<td>Shepton High School</td>
<td>Joe Takahashi, PhD</td>
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<td>Simon Mogendi</td>
<td>Summit International Preparatory</td>
<td>Connie Hsia, MD</td>
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<td>Taelor Oppliger</td>
<td>Newman Smith High School</td>
<td>Vishal Patel, MD</td>
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<td>Maria Pacheco</td>
<td>North Side High School</td>
<td>Sherwood Brown, MD, PhD</td>
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<td>Sydney Pedigo</td>
<td>Hillcrest High School</td>
<td>Benjamin F. Chong, MD</td>
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<td>Lupita Rios</td>
<td>Bryan Adams High School</td>
<td>Genevieve Konopka, PhD</td>
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<td>Josee Santiago</td>
<td>Woodrow Wilson High School</td>
<td>Xuewu Zhang, PhD</td>
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<td>Brittany Stewart</td>
<td>Forney High School</td>
<td>Massimo Attanasio, MD</td>
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<tr>
<td>Betty Tong</td>
<td>Fossil Ridge High School</td>
<td>Deborah J. Clegg, PhD</td>
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<tr>
<td>Maria Torres</td>
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<td>Michael Buszczak, PhD</td>
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<td>Cynthia Torres</td>
<td>Thomas Jefferson High School</td>
<td>Joel Goodman, PhD</td>
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<tr>
<td>Stephen Tung</td>
<td>iSchool High (A Science, Technology, Engineering &amp; Math Academy)</td>
<td>Shusheng Wang, PhD</td>
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<tr>
<td>Miguel Velasco</td>
<td>North Dallas High School</td>
<td>Tom Carroll, PhD</td>
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STARS Summer Research Program 2012
For Students—STARS Associates

<table>
<thead>
<tr>
<th>Students Name</th>
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<tr>
<td>Nikita Agarwal</td>
<td>The Hockaday School</td>
<td>Yumin Chook, Ph.D.</td>
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<td>Christine Chen</td>
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<td>Kathryn O’Donnell, Ph.D.</td>
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<tr>
<td>Kevin Chen</td>
<td>Jesuit College Preparatory School of Dallas</td>
<td>Benjamin P.C. Chen, Ph.D.</td>
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<td>Cameron Kerl</td>
<td>Jesuit College Preparatory School of Dallas</td>
<td>Helmut Kramer, Ph.D.</td>
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<tr>
<td>Lee Kubicki</td>
<td>Highland Park High School</td>
<td>Nan Yan, Ph.D.</td>
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<tr>
<td>Geoffrey Smith</td>
<td>Bishop Lynch High School</td>
<td>Robin Hiesinger, Ph.D.</td>
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<tr>
<td>Madeline Smoot</td>
<td>Highland Park High School</td>
<td>Sandeep Burma, Ph.D.</td>
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STARS Upcoming Events
Science Symposia

All events are held on the UT Southwestern Medical Center Campus.
For directions and to register, visit the STARS Web page.
www.utsouthwestern.edu/stars

Exploring Post @ UT Southwestern

Upcoming Meetings:
6pm to 7:30pm
Monday-Oct. 22nd
Monday-Nov. 26th
Monday-Dec. 17th
Monday-Jan. 28th
Monday-Feb. 25th
Monday-Mar. 25th
Monday-April 22nd
Monday-May 20th

2012-2013 Exploring Post Leaders
@Daniel Larson, President
@Ariana Mendoza, Admin. VP
@Kelechi Efochie, Programs VP
@Imari Parham, Secretary

Register For Exploring Post @ explorer@UTSouthwestern.edu
STAFF

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Pearlie Crawford
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Maria Miranda
Education Assistant
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PROGRAMS

SYMPOSIA
Basic Science Symposia
Mini-Symposia

OUTREACH
Bureau of Science Fair Judges
Research Assistance
Science Ambassadors
Student Mentoring

SUMMER RESEARCH
Summer Research Program for Teachers
Summer Research Program for Students

TOURS
UT Southwestern School of Health Professions
UT Southwestern Medical Center
Parkland Health & Hospital System of Dallas
Children’s Medical Center Dallas

IN-SERVICE SESSIONS
Proteins & Enzymes
Protein Crystal Growth
Genetics
PCR & Gel Electrophoresis
Suturing Techniques

SCIENCE TRIATHLON
Supported by
Howard Hughes Medical Institute

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UT Southwestern is an equal opportunity institution.
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Visit our web site at www.utsouthwestern.edu/stars