Summer 2021 Event Re-Cap

2021 STARS SUMMER LECTURE SERIES

The COVID-19 pandemic crisis continues to be a test of innovation and creativity across the country and in our local communities.

By utilizing a hybrid work environment this summer, the STARS Team produced an active programming schedule to provide educational STEM opportunities to not just North Texas students and teachers, but to those who live across the United States.

Hundreds of people attended our Summer Seminar Series via Zoom webinars to learn about the research that is being performed by UT Southwestern and UTSA faculty members.

The Summer Seminar Series is a collection of talks that historically were reserved for Summer Research Program interns however due to the pandemic, we transitioned this event to be accessible to the public.

If you are interested in viewing our vast library of virtual lecture recordings, we would like to invite you to go to our Past Presentation Archive.

Since one of the main goals for any STARS Symposium is to promote networking and engagement with science communicators, students and teachers utilized the Zoom webinar Q&A feature to ask a wide variety of questions ranging from the biochemical how’s to the overarching clinical impacts and next steps.

Speaker List:

1. Dr. Michael Reese, Department of Pharmacology, “Evolutionary arms races produce unusual weapons or How I learned to stop worrying and love a pseudokinase.”

2. Dr. Michael Brown, Department of Molecular Genetics, “Why Hearts Attack.”

3. Dr. Kathryn O’Donnell, Department of Molecular Biology, “Dissecting new mechanisms of lung cancer pathogenesis.”

4. Dr. Jenny Hsieh, Department of Biology UTSA, “Stem cell approaches to understanding acquired and genetic epilepsies.”

5. Dr. Joseph Takahashi, Department of Neuroscience, “The circadian clock in your cells and its implications for physiology, health, and aging.”

6. Dr. Michael Buszczak, Department of Molecular Biology, “Genetic Dissection of Germ Cell Biology.”

Dr. Michael Brown, 1985 Nobel Laureate, explains his research into cholesterol during his lecture “When Hearts Attack.”
In 2021, the STARS Program hosted the Summer Research Program for 41 students and six teachers virtually. At the end of the internship, the students and teachers presented their posters over their research in a virtual conference where attendees could ask live questions and see a catalogue of all the different projects. Many people were interested in the clinical impacts of the studies and also wanted to know about the chemistry behind different biomechanical processes.
## 2021 STARS Summer Research Program Students

<table>
<thead>
<tr>
<th>Name</th>
<th>School</th>
<th>Lab</th>
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<tbody>
<tr>
<td>Adetoye Adebayo</td>
<td>Grand Prairie Collegiate Institute</td>
<td>Kevin Williams, Ph.D.</td>
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<tr>
<td>Shree Allada</td>
<td>The Hockaday School</td>
<td>You Zhang, Ph.D.</td>
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<tr>
<td>Soli Ateefa</td>
<td>Young Women’s Leadership Academy at Bill Arnold</td>
<td>Sujir Pritha Nayak, M.D.</td>
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<tr>
<td>Sifallah Bouyadjera</td>
<td>Billy Ryan High School</td>
<td>Benjamin Chen, Ph.D.</td>
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<td>Gissell Chapa</td>
<td>School of Health Professions at Townview</td>
<td>Joel Goodman, Ph.D.</td>
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<td>Christopher Dao</td>
<td>James Martin High School</td>
<td>Chen Liu, Ph.D.</td>
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<td>Natalie Druffner</td>
<td>John Paul II High School</td>
<td>Sherwood Brown, M.D., Ph.D.</td>
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<tr>
<td>Ella Dzialowski</td>
<td>Greenhill School</td>
<td>Danielle Robertson, O.D., Ph.D.</td>
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<td>Belal Elsiesy</td>
<td>Uplift Williams Prep</td>
<td>Guanghua Xiao, Ph.D.</td>
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<td>Viviana Esquivel</td>
<td>Ursuline Academy of Dallas</td>
<td>Zhao Wang, Ph.D.</td>
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<td>Rithvik Ganesh</td>
<td>Plano West Senior High School</td>
<td>Genevieve Konopka, Ph.D.</td>
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<td>Mrigayu Ghosh</td>
<td>Uplift North Hills Preparatory</td>
<td>Helmut Kramer, Ph.D.</td>
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<td>Jothi Gupta</td>
<td>Greenhill School</td>
<td>Jing Cao, Ph.D.</td>
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<td>Biyanka Hati</td>
<td>Liberty High School</td>
<td>Fernando U. Kay, M.D.</td>
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<td>Rikhil Kalidindi</td>
<td>Flower Mound High School</td>
<td>Kendra Frederick, Ph.D.</td>
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<td>Modupe Karimi</td>
<td>Lakeview Centennial High School</td>
<td>Tamia Harris-Tryon, M.D., Ph.D.</td>
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<td>Anekah Kelley</td>
<td>New Tech High at Coppell</td>
<td>Ralph DeBerardinis, M.D., Ph.D.</td>
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<tr>
<td>Ruth Kinyua</td>
<td>West Mesquite High School</td>
<td>Asaithamby Aroumougame, Ph.D.</td>
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<td>Thu Le</td>
<td>School of Science and Engineering at Townview</td>
<td>Yee Seng Ng, M.D.</td>
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<tr>
<td>Maria Marga Lee</td>
<td>Trinity Valley School</td>
<td>Miriam Osterfield, Ph.D.</td>
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<tr>
<td>Anna Leo</td>
<td>Uplift North Hills Preparatory</td>
<td>Maralice Conacci Sorrell, Ph.D.</td>
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<td>Justin Li</td>
<td>Highland Park High School</td>
<td>Melanie Cobb, Ph.D.</td>
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<td>Cassie Liu</td>
<td>The Hockaday School</td>
<td>Sreekanth Cheruku, M.D.</td>
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<td>Axel Livia</td>
<td>Skyline High School</td>
<td>Jacqueline Gallet, Ph.D.</td>
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<td>Ethan Lotan</td>
<td>Westlake Academy</td>
<td>Genevieve Konopka, Ph.D.</td>
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<td>Isabella Malick</td>
<td>Coppell High School</td>
<td>Jim Collins, Ph.D.</td>
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<td>Noah Mathai</td>
<td>Plano West Senior High</td>
<td>Ivan D'Orso, Ph.D.</td>
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<td>Angela Morka</td>
<td>Lake Ridge High School</td>
<td>Dayoung Oh, Ph.D.</td>
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<td>Tanaz Muhammed</td>
<td>Plano East Senior High School</td>
<td>Kikelomo Babata, M.D.</td>
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<tr>
<td>Pranav Mukund</td>
<td>Greenhill School</td>
<td>Prasanna Alluri, M.D., Ph.D.</td>
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<tr>
<td>Alina Nguyen</td>
<td>Wylie High School</td>
<td>Alice Ann Holland, Ph.D., ABPP</td>
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<td>Danh Nguyen</td>
<td>Sachse High School</td>
<td>Rami Hallac, Ph.D.</td>
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<td>Akash Pagadala</td>
<td>Jesuit College Preparatory School</td>
<td>Matteo Ligorio, M.D., Ph.D.</td>
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<td>Alma Perez</td>
<td>Waxahachie Global High School</td>
<td>Ram Madabhushi, Ph.D.</td>
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<td>Yee Hong Pua</td>
<td>Lebanon Trail High School</td>
<td>Ping Mu, Ph.D.</td>
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<td>Tom Punnen</td>
<td>Liberty High School</td>
<td>Joseph Takahashi, Ph.D.</td>
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<td>Sampath Rapuri</td>
<td>St. Mark's School of Texas</td>
<td>Oganes Ashikyan, M.D.</td>
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<tr>
<td>Aurora Tong</td>
<td>Grapevine High School</td>
<td>Dominika Borek, Ph.D.</td>
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<tr>
<td>Victoria Valdez</td>
<td>School for the Talented and Gifted at Townview</td>
<td>Kim Reynolds, Ph.D.</td>
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<tr>
<td>Gabriella Williams</td>
<td>Wylie High School</td>
<td>Daisuke Hattori, Ph.D.</td>
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<tr>
<td>Derek Zhang</td>
<td>Jesuit College Preparatory School of Dallas</td>
<td>Christoph U. Lehmann, M.D.</td>
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“My understanding of medical imaging technology has been enriched by participating in the STARS Summer Research Program. As part of the Prognostic Imaging Research Lab (PIRL), I was able to see the scientific process in action, have questions answered by dedicated individuals, and gain a newfound appreciation for the complexities of radiology. I look forward to taking this invaluable experience back to the classroom by integrating the topical concepts in relevant and meaningful ways. Thank you to my mentor, Dr. Ralph Mason, for the fascinating and stimulating discussions!”

- Aaron Chila, Harlingen HS  
Lab: Ralph Mason, Ph.D.

Project: Implications for the Use of Melatonin as a Reporting Agent for the Observation of Neurodegenerative Diseases

“This summer research was much different from my previous year. Although I still worked with the same doctors my project did change. This added onto the knowledge I gained my first year of research. I am very thankful to Dr. Hsia and Dr. Moe for their mentorship and allowing me to do research in their respective labs. This is an experience I will share for years to come to hopefully encourage students into the STEM fields.”

- Briana Harry, Skyline HS  
Lab: Connie Hsia, M.D., Orson Moe, M.D.

Project: The Cytoprotective Protein, Alpha-Klotho, Contributes to Resilience and Recovery in Lungs

Through participation in the Summer Research Program, teachers not only learn new techniques, but also rekindle their interest in science, which positively affects their students.

In addition, teachers use their newfound knowledge and skills to develop classroom activities that relate to their areas of research.

The STARS Summer Research Program for Teachers is open to any teacher in Texas. The application dates for the 2022 Summer Research Program can be found on our Symposia Event Calendar.
“The UT Southwestern STARS program put me back into the student role. As a teacher, I forgot how it felt to be put into an environment where I do not know the answers and I am not in control. At times, I was a little frustrated and I thought there was no way I would finish, but I did. This opportunity challenged me and allowed me to see what I am capable of. It has allowed me to reflect on how I can build resiliency and grit in my own classroom by challenging my students enough to help them realize their own potential.”

- Laura Hopkins, Moises Molina HS
Lab: John Waters, M.D.
Project: Single Surgeon Experience with Paraesophageal Hernia Repair (PEHr) Performed through a Left Posterolateral Thoracotomy

“The STARS program has reinvigorated my passion and devotion to the inquiry process. A lot of times when teaching state-tested and standard-based science courses, we lose sight of the real-world application of science, innovation, wonders that the inquiry process has to offer a curious mind, and the overall nature of science. This program grounded me in my passion and reasoning for teaching science again and I was able to acquire new skills and applications I potentially would never have access to explore otherwise. In this short time, I was able to expand my knowledge base so much and under the collaboration of the radiology lab team, mentorship and guidance from my P.I. Dr. Liu, resources from Dr. Mason, I was able to create new learning experiences for my students and guide my students into new pathways for science careers and areas of interest.”

- Jasmine Jones, Skyline HS
Lab: Li Liu, Ph.D.
Project: Multispectral Optoacoustic Tomography (MSOT) Applications for the Imaging and Quantification of Oxygenation in HSP2 and CycT Treated Tumors
““Being afforded the opportunity to participate in the STARS Summer Research Program was a unique and rewarding experience. Each day, for eight weeks, I was able to work alongside passionate and brilliant individuals, who were eager to help me grow as a scientist. It was an honor to be a part of Dr. Qin’s lab. Each day in the lab offered a new opportunity to expand upon my scientific knowledge, work hands on with the latest technology, and create ways to take these ideas back into the classroom. Thank you STARS SRP for allowing me to be a part of something so great.”

- Cherrie Lemon, Hector P. Garcia MS
  Lab: Tian Qin, Ph.D.
  Project: Novel Drug Development Using Saturated Bioisosteres of Benzene

“This experience will impact my teaching for years to come. Being online this year enabled me to participate. In the past I would receive enticing the emails announcing STARS events only to be disappointed that I could not attend from San Antonio. When STARS went virtual, I was thrilled and attended every event that I possible could. We even organized a “watch party” and created a special interest group at our school for the Women in Science and Medicine Symposium. The summer research experience enhanced my knowledge beyond the textbook. I can now provide a much more applicable experience for my students. I also gained valuable firsthand experience with research that will also enrich my student’s classroom experience. I believe every teacher should spend time contributing to scientific research. I know that this tactile encounter with the scientific community will translate to my students in such a vivid way that it will impact our world through them. I am so grateful for STARS for all that they contribute to student and teachers in Texas. I am also so appreciative of the brilliant Dr. Jay Shah who navigated me through my research summer where I learned more than I ever imagined and provided me the opportunity to participate in a project that will benefit his work for years to come.

- Shawna Lopez, Cornerstone Christian Schools
  Lab: Jay P. Shah, M.D.
  Project: A Systematic Review of Patient Reported Outcomes Leads to More Effective Reporting
Physics Summer Camp

ABOUT THE CAMP

Physics Camp was the first camp that the STARS Program put on this summer. There were 27 students who participated along with nine classroom teachers.

Some of the topics that were covered include:

- Motion
- Simple Harmonic Oscillation
- Resonance
- Electricity

Our master teachers for the Physics Camp are Dr. Kenneth Hahn (John Brown University) and Fred Hurst.

TEACHERS

Bertha Allen
Irving HS

John Dragoo
Molina HS

Jo Garza-Contreras
MacArthur HS

Marilen Juntado
Bland HS

Martin Osae
OWH Academy

Vickie Reed
Life HS Waxahachie

Irma Tovar
La Feria HS

James Zapp
LG Pinkston HS

Tahira Zarrin
Skyline HS
ABOUT THE CAMP

The Middle School Camp was second on our list of virtual summer programs conducted via Zoom. In this program, 29 6th and 7th grade students were chosen to participate along with nine classroom teachers.

Some of the topics that were covered include:

• Virtual Microscope Use
• Dichotomous Keys
• Phylogenetic Tree Creation
• Law of Conservation of Mass

Our master teachers this year are Ms. Rebecca Bottin (Schmelpfenig Middle School) and Ms. Jennifer Beall (Renner Middle School).

TEACHERS

Kathleen Malooly
GB Dealy Montessori and International Academy

Jamie Ringgenberg
Fort Worth Country Day School

Jerrica Cleveland
Young Men’s Leadership Academy

Julie Rhea
Bland MS

Emma DeVine
Greenhill School

Amber Dobbins
Stafford MS

Anju Bisht
Imagine International Academy – McKinney

Danna Arbuckle
Clark MS

Katie Lavelle
Scoggins MS
ABOUT THE CAMP

The Chemistry camp was the third camp that STARS hosted this summer. There were 31 students who participated along with eight classroom teachers.

Some of the topics that were covered include:

- Chemical Reactions
- Mole Concepts
- Stoichiometry
- Thermodynamics

Our master teachers for the Chemistry Camp are Mr. Rachmad Tjachyadi (Hebron High School) and Dr. Beverly Lawson.
ABOUT THE CAMP

Our new Anatomy and Physiology camp was the third camp that STARS hosted this summer. There were x students who participated along with 10 classroom teachers.

Some of the topics that were covered include:

- A&P Terminology
- Body Systems
- Long bone measurement lab
- Sensory exam lab

Our master teachers for the Anatomy and Physiology camp are Ms. Carolyn Hess and Ms. Yvonne Morgan (School of Health Professions at Yvonne A. Ewell Townview Center).

TEACHERS

Quinton Barnes
Bill R. Johnson CTE Center

Kametrice Gray
Village Tech Schools

Keona Lambert
Skyline HS

Angela Lee
Castleberry HS

Stacey Malone
Cornerstone Christian School

Marie Mathai
Universal Academy Coppell

Dr. Adriana Popa
Sudie L. Williams TAG

Farhana Razzaque
Imagine International Academy of North TX

Vickie Reed
Life HS Waxahachie

Manisha Singh
Harmony Science Academy — Carrollton
Biology Summer Camp

ABOUT THE CAMP

The Biology Camp was the fifth and final camp that STARS hosted during the summer of 2021. There were 28 students and eight classroom teachers.

Some of the topics that were covered include:

- Cell Transport
- Energy, Chemical Reactions, and Enzymes
- Cellular Respiration
- Protein Synthesis

Our master teachers this year are Ms. Cathy Toups (Wakeland High School) and Ms. Susan Moran (Lebanon Trail High School).

TEACHERS

Dr. Anju Bhalla
Lone Star HS

John Dragoo
Molina HS

Smita Jha
Imagine International Academy of North TX

Hillary Ludwig
Cornerstone Christian Schools

John McKenzie
John W. Carter HS

Sandra Muhitch
Frisco HS

Veronica Roa
Weiss HS

Vicki Wong
Lebanon Trail HS
Calendar of Events 2021 — 2022

Mini-symposium
New Ways to Study Cell Signaling
Monday, Sep. 13, 2021
6:00pm — 8:00pm
Zoom

Mini-symposium
The Brain I: Neural Control of Energy Metabolism
Monday, Nov. 15, 2021
6:00pm — 8:00pm
Zoom

Mini-symposium
The Brain II: Circuitry that Controls Behavior
Monday, Jan. 10, 2022
6:00pm — 8:00pm
Zoom

Mini-symposium
Understanding and Treatment of Female Cancers
Monday, April 4, 2022
6:00pm — 8:00pm
Zoom

Basic Science Symposium
STARS x Texas A&M Engineering Careers Symposium
Sat. Oct. 9, 2021
9:00am — 1:00pm
Zoom

In-Service
STARS x UT Dallas Zebrafish Teacher Workshop I
Saturday, Dec. 4, 2021
9:00am — 3:00pm
UT Dallas
Limited Enrollment

In-Service
STARS x UT Dallas Zebrafish Workshop II
Sat. Feb. 5, 2022
9:00am — 3:00pm
UT Dallas
Limited Enrollment

Special Symposium
2021 Careers in Biomedical Sciences
Sat., Oct. 23, 2021
9:00am — 1:00pm
Zoom

Special Symposium
Women in Science and Medicine
Sat., Feb. 26, 2022
9:00am — 1:00pm
Zoom
All genders welcome

STARS x Texas A&M Basic Science Symposium
STARS x Texas A&M Engineering Careers Symposium
Sat. Oct. 9, 2021
9:00am — 1:00pm
Zoom

Social Media Channels:
FB: @utswstars
Twitter: @utswstars
IG: @stars_utsw

To Register for an Event
STARS events are offered FREE of charge to Texas teachers.
Please register for an event at least two weeks in advance on our website utsouthwestern.edu/STARS/register

Other Important Dates:
Wednesday, December 1, 2021
Application opens for STARS Summer Research Program

Tuesday, Feb. 1, 2022
Application deadline for STARS Summer Research Program

TBA
Summer Research Program begins

TBA
Summer Research Program ends

STARS x Texas A&M Basic Science Symposium
STARS x Texas A&M Engineering Careers Symposium
Sat. Oct. 9, 2021
9:00am — 1:00pm
Zoom

QR Code for STARS linktree

S c i e n c e  T e a c h e r  A c c e s s  t o  R e s o u r c e s  a t  S o u t h w e s t e r n
The University of Texas Southwestern Medical Center
utsouthwestern.edu/stars | Ofc: 214-648-9505
UT Southwestern
Exploring Post and Club

Upcoming Meetings: 6:00PM – 7:30PM

9/27/2021: Speech Language Pathology
10/25/2021: Occupational Therapy
11/8/2021: Surgery
12/13/2021: Pediatric Gastroenterology
1/24/2022: Clinical Nutrition
2/28/2022: Parasitology
3/21/2022: Cardiology
4/25/2022: TBD
5/16/2022: Abbott - Medical Devices

- Learn about diverse careers in STEM fields.
- Meet professionals in different areas of medicine and research.
- Network with students from different DFW schools that share a passion for health careers and science.

The explorers will meet monthly using Zoom. Online membership registration is available. Parents are welcome to view the presentations!

For more information visit: www.utsouthwestern.edu/stars

Programs > Exploring Club and Post
STARS Programs

SYMPOSIA
Basic Science Symposia
Mini-symposia

OUTREACH
Bureau of Science Fair Judges
Research Assistance
Science Ambassadors
Informational Interview Matching

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

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

IN-SERVICE SESSIONS
Zebrafish Workshop I
Zebrafish Workshop II

SUMMER SCIENCE CAMPS
Middle School
Biology
Chemistry
Physics
Anatomy and Physiology

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