

# STARS Notes

September 2021  
Volume 18, Issue 7



## Science Teacher Access to Resources at Southwestern

### 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.

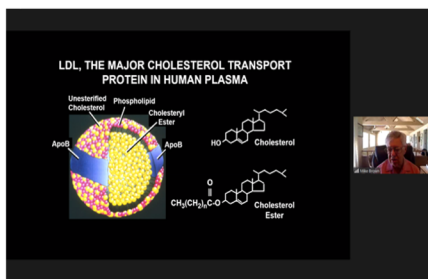
If you are interested in viewing our vast library of virtual lecture recordings, we would like to invite you to go to our [Past Presentation Archive](#).

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 ques-

tions 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".

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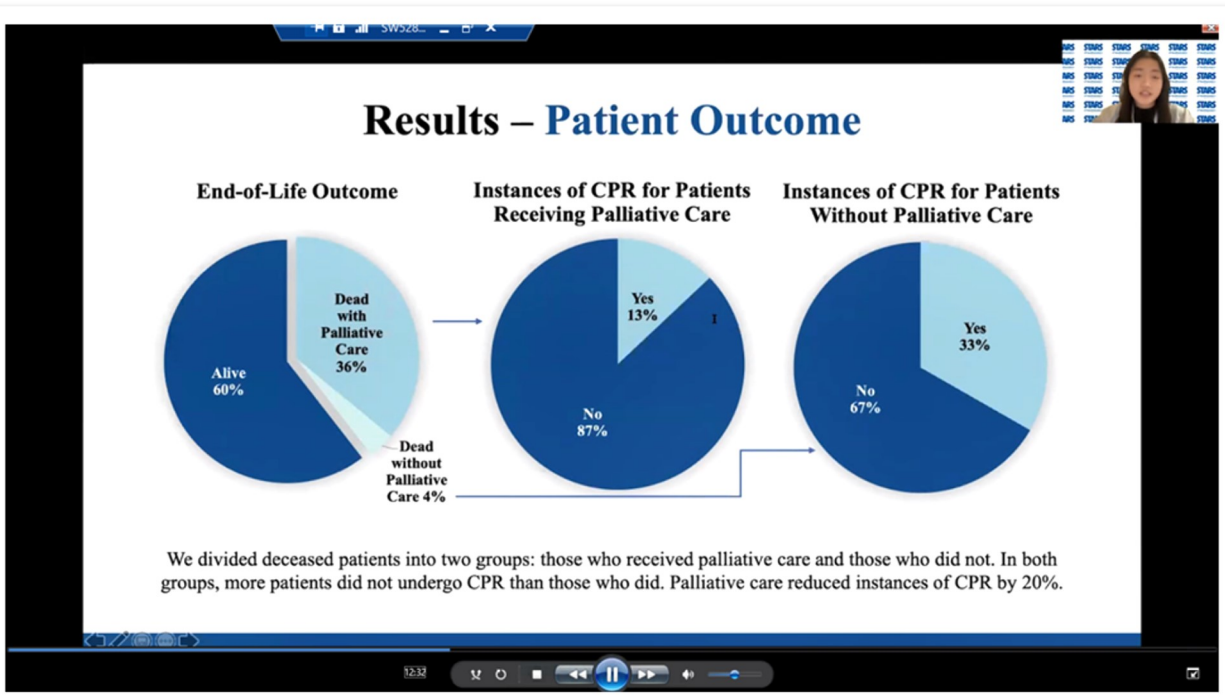
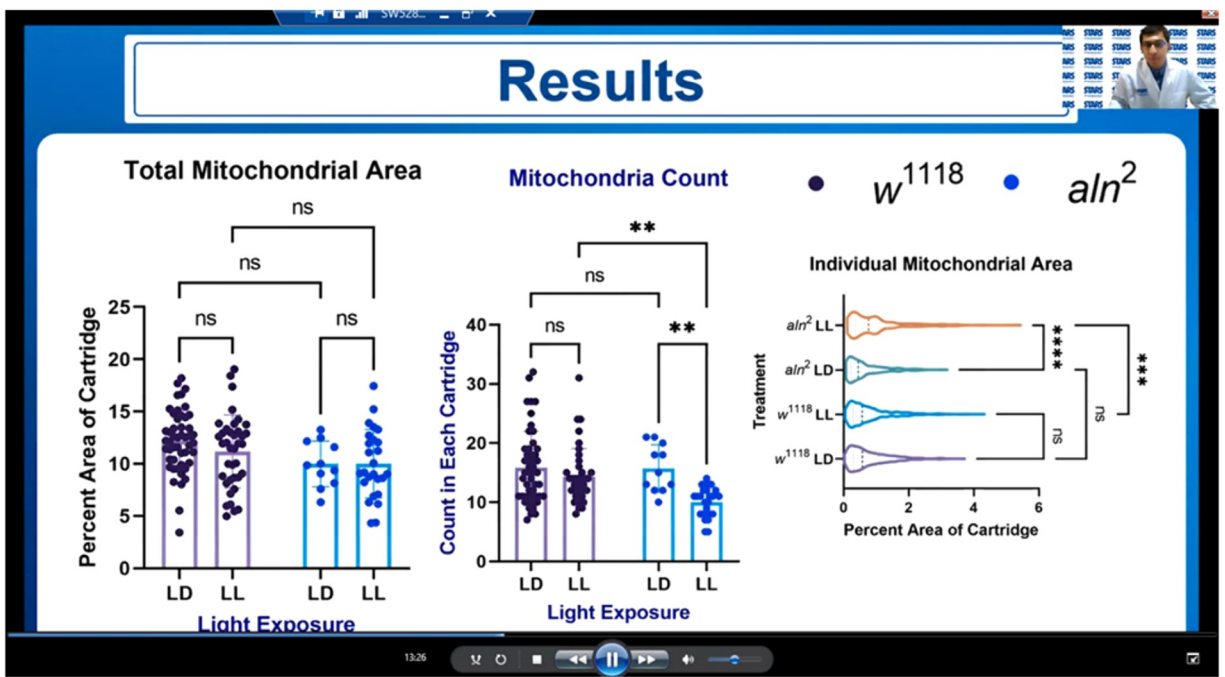
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#### SPECIAL POINTS OF INTEREST

- Core funding for the STARS Program is provided by the State of Texas
- All STARS Programs are provided free of charge to students and teachers

# 2021 STARS Summer Research Program

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

Name	School	Lab
Adetoye Adebayo	Grand Prairie Collegiate Institute	Kevin Williams, Ph.D.
Shree Allada	The Hockaday School	You Zhang, Ph.D.
Soli Ateefa	Young Women's Leadership Academy at Bill Arnold	Sujir Pritha Nayak, M.D.
Sifallah Bouyadjera	Billy Ryan High School	Benjamin Chen, Ph.D.
Gissell Chapa	School of Health Professions at Townview	Joel Goodman, Ph.D.
Christopher Dao	James Martin High School	Chen Liu, Ph.D.
Natalie Druffner	John Paul II High School	Sherwood Brown, M.D., Ph.D.
Ella Dzialowski	Greenhill School	Danielle Robertson, O.D., Ph.D.
Belal Elsiesy	Uplift Williams Prep	Guanghua Xiao, Ph.D.
Viviana Esquivel	Ursuline Academy of Dallas	Zhao Wang, Ph.D.
Rithvik Ganesh	Plano West Senior High School	Genevieve Konopka, Ph.D.
Mrigayu Ghosh	Uplift North Hills Preparatory	Helmut Kramer, Ph.D.
Jothi Gupta	Greenhill School	Jing Cao, Ph.D.
Biyanka Hati	Liberty High School	Fernando U. Kay, M.D.
Rikhil Kalidindi	Flower Mound High School	Kendra Frederick, Ph.D.
Modupe Karimi	Lakeview Centennial High School	Tamia Harris-Tryon, M.D., Ph.D.
Aneka Kelley	New Tech High at Coppell	Ralph DeBerardinis, M.D., Ph.D.
Ruth Kinyua	West Mesquite High School	Asaithamby Aroumougame, Ph.D.
Thu Le	School of Science and Engineering at Townview	Yee Seng Ng, M.D.
Maria Marga Lee	Trinity Valley School	Miriam Osterfield, Ph.D.
Anna Leo	Uplift North Hills Preparatory	Maralice Conacci Sorrell, Ph.D.

# 2021 STARS Summer Research Program Students

Name	School	Lab
Justin Li	Highland Park High School	Melanie Cobb, Ph.D.
Cassie Liu	The Hockaday School	Sreekanth Cheruku, M.D.
Axel Livias	Skyline High School	Jacqueline Gallet, Ph.D.
Ethan Lotan	Westlake Academy	Genevieve Konopka, Ph.D.
Isabella Malick	Coppell High School	Jim Collins, Ph.D.
Noah Mathai	Plano West Senior High	Ivan D'Orso, Ph.D.
Angela Morka	Lake Ridge High School	Dayoung Oh, Ph.D.
Tanaz Muhamed	Plano East Senior High School	Kikelomo Babata, M.D.
Pranav Mukund	Greenhill School	Prasanna Alluri, M.D., Ph.D.
Alina Nguyen	Wylie High School	Alice Ann Holland, Ph.D., ABPP
Danh Nguyen	Sachse High School	Rami Hallac, Ph.D.
Akash Pagadala	Jesuit College Preparatory School	Matteo Ligorio, M.D., Ph.D.
Alma Perez	Waxahachie Global High School	Ram Madabhushi, Ph.D.
Yee Hong Pua	Lebanon Trail High School	Ping Mu, Ph.D.
Tom Punnen	Liberty High School	Joseph Takahashi, Ph.D.
Sampath Rapuri	St. Mark's School of Texas	Oganes Ashikyan, M.D.
Aurora Tong	Grapevine High School	Dominika Borek, Ph.D.
Victoria Valdez	School for the Talented and Gifted at Townview	Kim Reynolds, Ph.D.
Gabriella Williams	Wylie High School	Daisuke Hattori, Ph.D.
Derek Zhang	Jesuit College Preparatory School of Dallas	Christoph U. Lehmann, M.D.

# SRP Teacher Thoughts

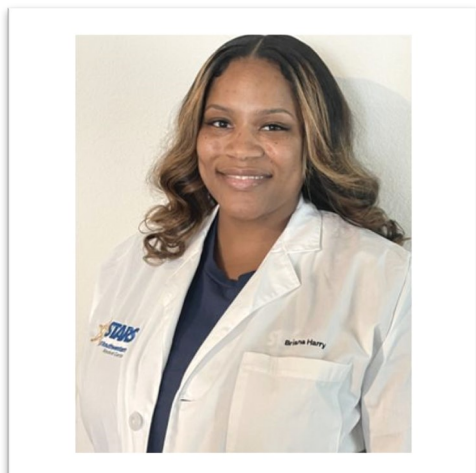


“My understanding of medical imaging technology has been enriched by participating in the STARS Summer Research Program. As part of the Prognostic Imaging Research Lab (PIRL), I was able to see the scientific process in action, have questions answered by dedicated individuals, and gain a newfound appreciation 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.

# SRP Teacher Thoughts



“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



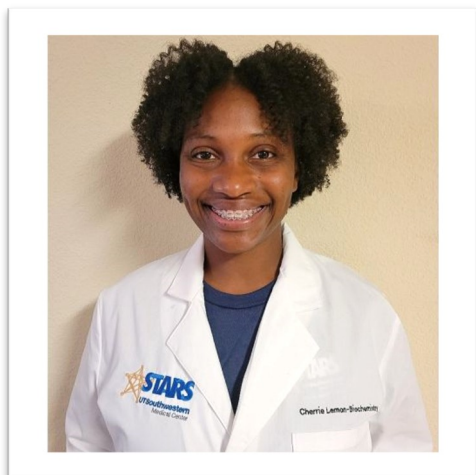
“The STARS program has reinvigorated my passion and devotion to the inquiry process. A lot of times when teaching state-tested and standard-based science courses, we lose sight of the real-world application of science, innovation, wonders that the inquiry process has to offer a curious mind, and the 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

# SRP Teacher Thoughts



““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

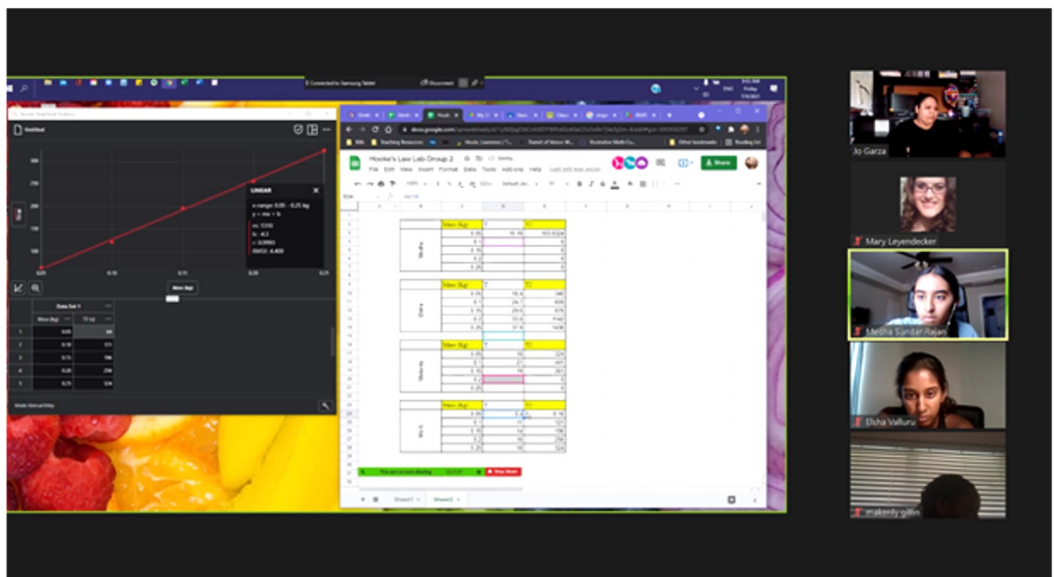
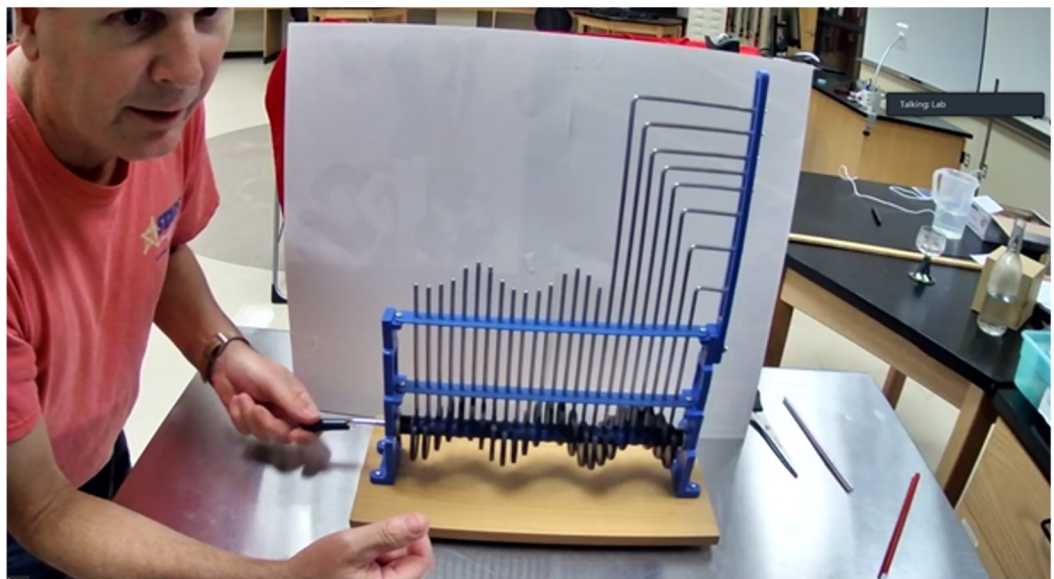
Martin Osae  
OWH Academy

Vickie Reed  
Life HS Waxahachie

Irma Tovar  
La Feria HS

James Zapp  
LG Pinkston HS

Tahira Zarrin  
Skyline HS





# Middle School Summer Camp

## 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

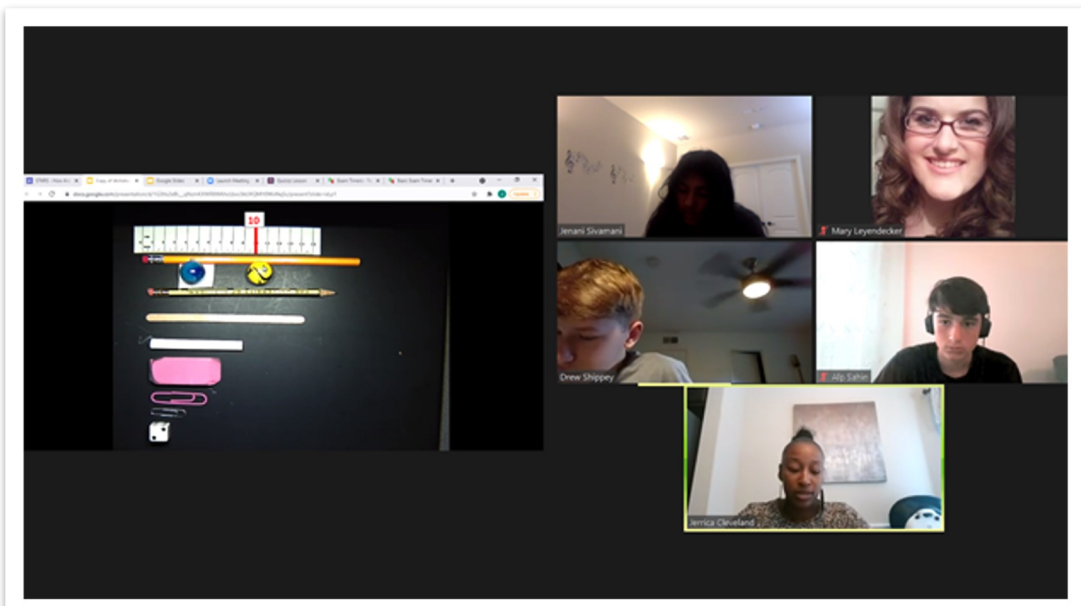
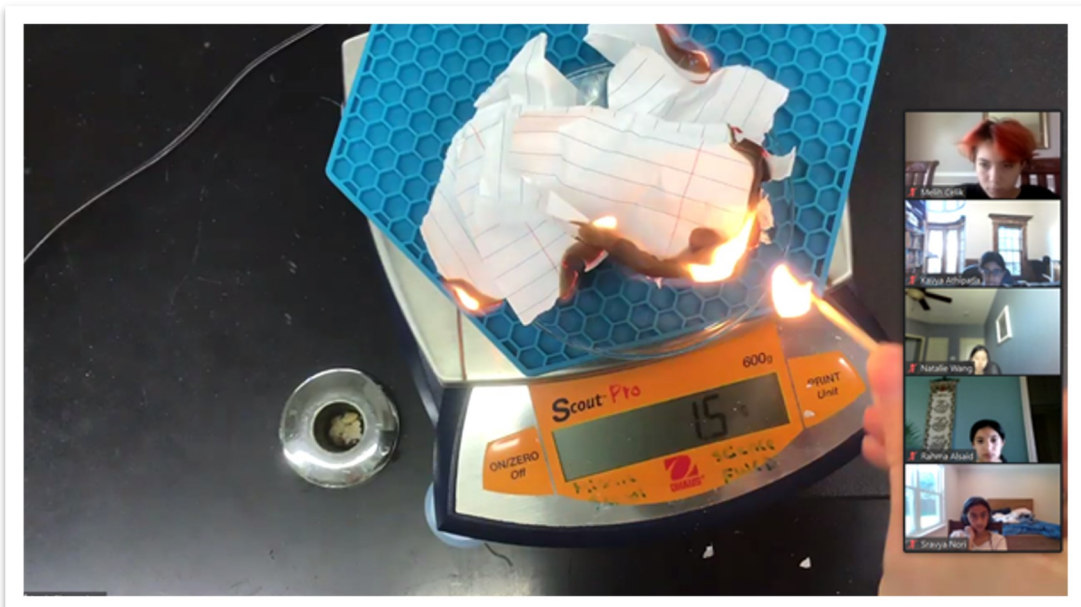
Emma DeVine  
Greenhill School

Amber Dobbins  
Stafford MS

Anju Bisht  
Imagine International  
Academy — McKinney

Danna Arbuckle  
Clark MS

Katie Lavelle  
Scoggins MS



# Chemistry Summer Camp

## 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.

## TEACHERS

Aaron Anderson  
Barack Obama Male  
Leadership Academy

Dr. Ashley Fiamengo  
Roosevelt H-TECH

Julissa Gamez  
Moises Molina HS

Zulema Martinez  
McDonald MS

Rebekah Norris  
MacArthur HS

Mayra Suarez Velez  
Justin Kimball HS

Alejandra Trevino  
Memorial HS

Yang Welty  
Skyline HS

**Acid Base Reaction**

An acid base reaction refers to

- a reaction between an **acid** and a **base**.  
Many **acids** are written as **H<sup>+</sup>** (ex: HCl, H<sub>2</sub>SO<sub>4</sub>, etc)  
Many **bases** are made of **metal ion & OH<sup>-</sup> ion** (ex: KOH, Ca(OH)<sub>2</sub>, etc)
- When **H<sup>+</sup>** is transferred in a reaction, an **acid donates H<sup>+</sup> ions** a **base accepts H<sup>+</sup> ions**

**Gas Laws with Food Lab**

# Anatomy Summer Camp

## 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

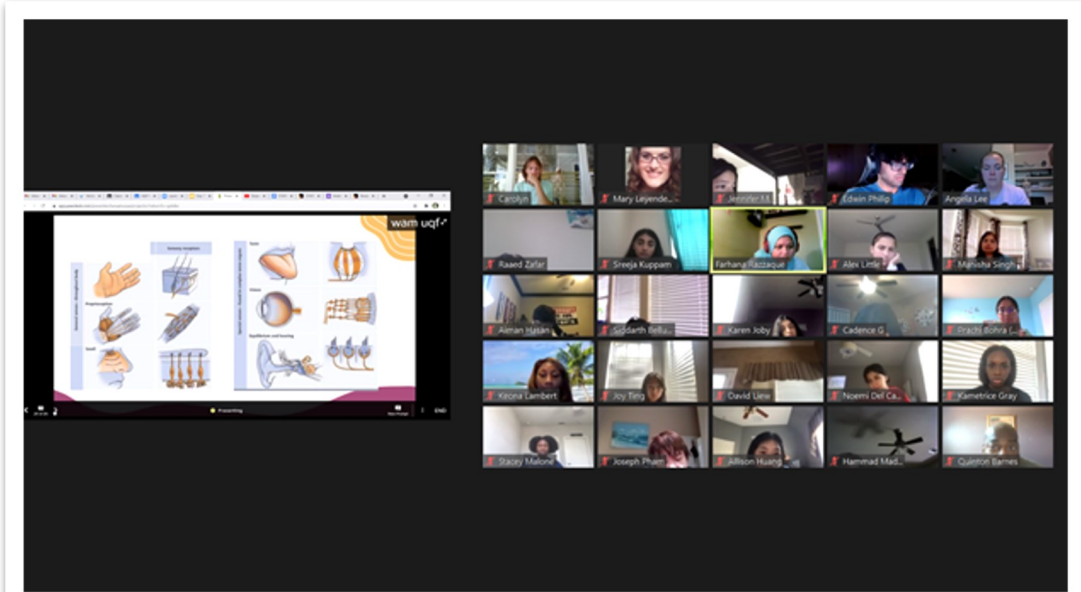
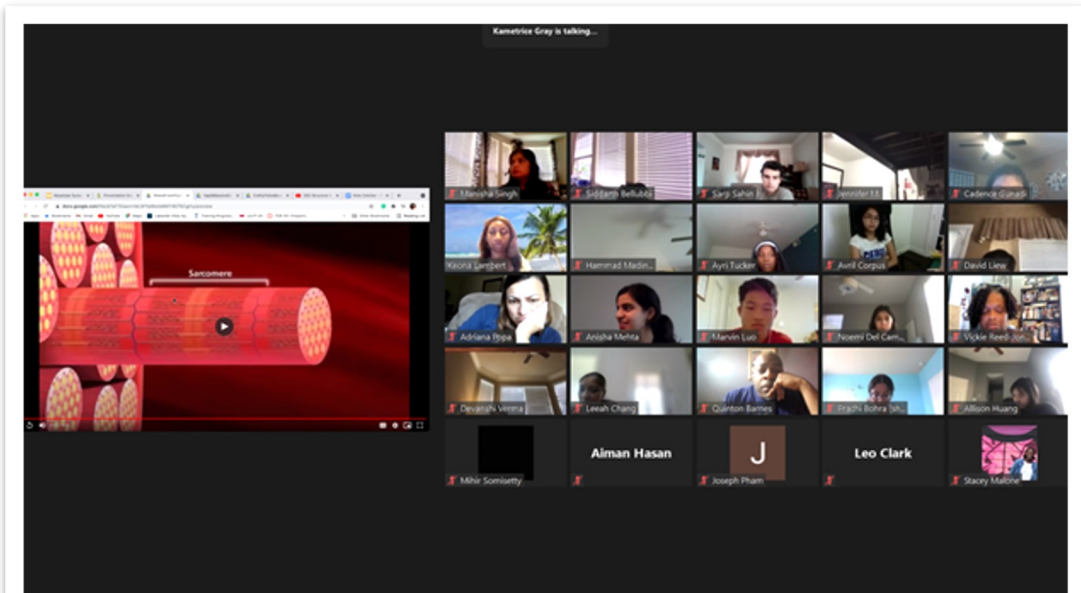
Marie Mathai  
Universal Academy  
Coppell

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

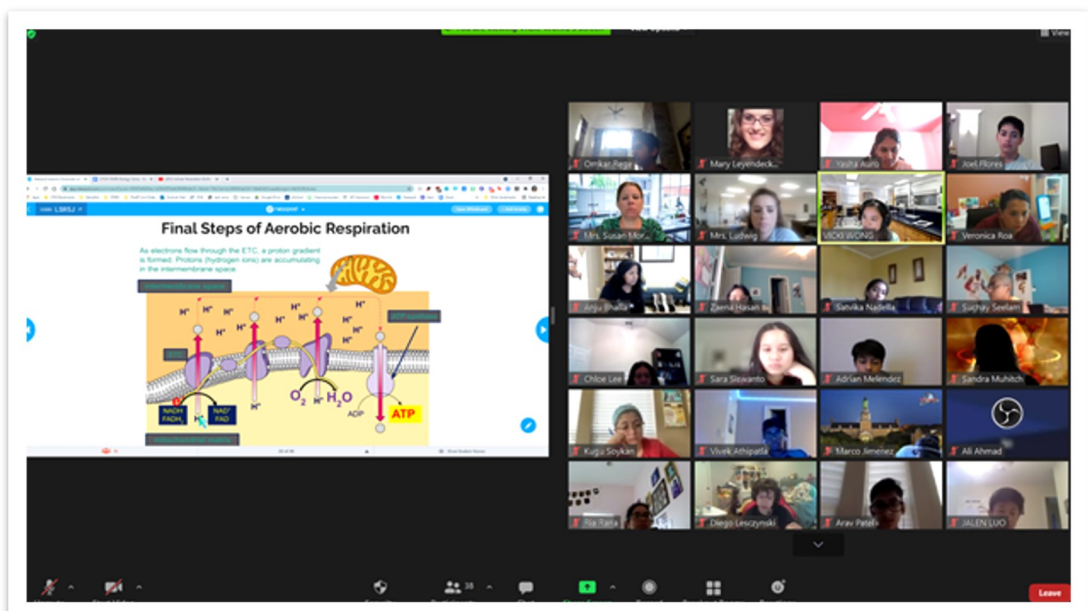
Hillary Ludwig  
Cornerstone Christian  
Schools

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

September 2021						
		1				
		13				
						30

## October 2021

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

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

October 2021						
				1		
					9	
					23	
						31

## Mini-symposium

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

November 2021						
1						
		15				
						30

## December 2021

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

December 2021						
				1		
					4	
						31

## Mini-symposium

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

January 2022						
						1
		10				
						31

## February 2022

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

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

February 2022						
				1		
					5	
					26	
28						

## 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](https://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

March 2022						
		1				
						31

## April 2022

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

April 2022						
					1	
		4				
						30

May 2022						
						1
		31				

## June 2022

June 2022						
				1		
						30

July 2022						
					1	
						31

## August 2022

August 2022						
1						
						31

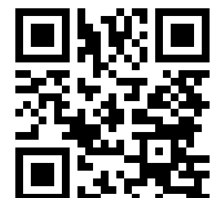


Social Media Channels:

FB: @utswstars

Twitter: @utswstars

IG: @stars\_utsw



QR Code for STARS linktree

Science Teacher Access to Resources at Southwestern

The University of Texas Southwestern Medical Center

[utsouthwestern.edu/stars](https://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

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](http://www.utsouthwestern.edu/stars)

Programs > Exploring Club and Post

- 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.



Facebook: @utswstars

IG: @stars\_utsw

## STAFF

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Mary Leyendecker  
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mary.leyendecker@utsouthwestern.edu

# 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

## UT SOUTHWESTERN STARS PROGRAM

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STARSmal@utsouthwestern.edu



## Follow Us on Social Media



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