

# 2022 STARS Summer Research Program for Students

The 2022 STARS Summer Research Program for Students included 47 students from Dallas-Fort Worth and surrounding areas. This 8-week program gave students an opportunity to work side-by-side with a faculty host. It consisted of activities, seminars, and an individualized research project that contributed to the advancement of science. The students were able to showcase and share these advancements during the end-of-program scientific poster session.

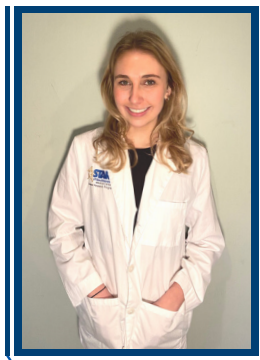


**Samatha Belatur**

Lovejoy High School

Mentor: [Steven Gray, Ph.D.](#)

*Comparison of AAV9/CLN7V1 and V2 Vectors in Cell Cultures: Transgene Expression and Lysosomal Restoration Circuit*



**Juliana Blazek**

The Hockaday School

Mentor: [Raquibul Hannan, M.D., Ph.D.](#)

*Uncovering Gene Mutations that May Interfere with cGAS-STING-IRF3 Pathway Activation in Cancer*



**Ashley Boscco**

Grand Prairie Collegiate Institute

Mentor: [Michael Reese, Ph.D.](#)

*Understanding the Binding Partners of the ERK7 MAPK in Toxoplasma Gondii*



**Millie Castoldi**

Lakehill Preparatory School

Mentor: [Yuki Obata, Ph.D.](#)

*The Effects of Circadian Rhythm on the Gene Expression of the Enteric Nervous System in Mice*



**Biya Cham**

Ursuline Academy of Dallas

Mentor: [Christoph Lehmann, M.D.](#)

*Identifying Patients Whose COVID-19 Vaccination Records Have Been Matched Incorrectly by Immunization Registries*

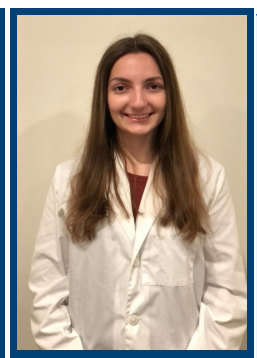


**Emyah Cox**

Irma Rangel Young Women's Leadership School

Mentor: [Kevin Williams, Ph.D.](#)

*Food Intake is Increased by GHSR cre Activation in the aDCN*



**Elizabeth Craig**

J.J. Pearce High School

Mentor: [Hume Stroud, Ph.D.](#)

*Differences in Post-Translational Modification of TET2 Between Adult and Young Mice*



**Vipin Eapen**

Hebron High School

Mentor: [John Hulleman, Ph.D.](#)

*Evaluating Activity-Based Protein Profiling as a Chemoproteomic Technique in Analyzing Enzymatic Shifts of Retinal Degeneration*

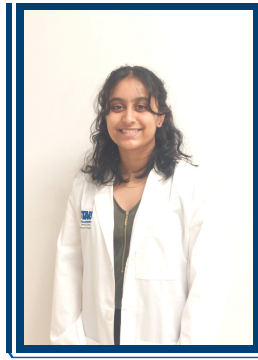


**Husam Elnager**

Brighter Horizons  
Academy

Mentor: [Genevieve  
Konopka, Ph.D.](#)

*Foxp1 in Striatal D1 and D2 Spiny  
Projection Neurons*

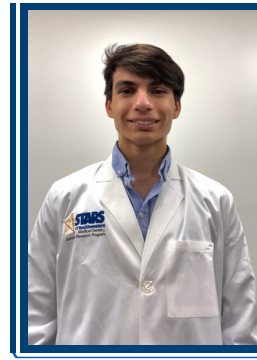


**Sachi Hansalia**

Texas Academy of Math  
and Science

Mentor: [Venuprasad  
Poojary, Ph.D.](#)

*Transcriptomic Analysis of  
Exhausted CD4+ T-cells in  
Colon Cancer Models*



**Dimitri Ivanov**

Founders Classical Academy

Mentor: [David Corey, Ph.D.](#)

*Investigating Argonaute 2's Function in  
Colorectal  
Cancer Model*

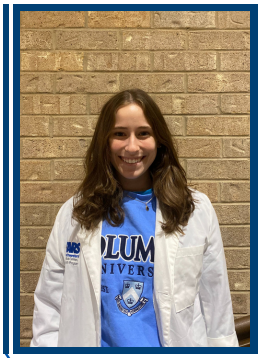


**Anjali Iyer**

Plano Senior High School

Mentor: [Tao Wang, Ph.D.](#)

*Deep Learning-Based Prediction of  
the T Cell Receptor-Antigen Binding  
Specificity*

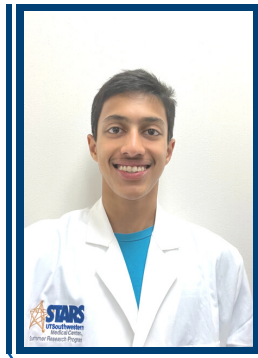


**Miranda Jefferds**

The Hockaday School

Mentor: [Kim Orth, Ph.D.](#)

*Verifying VPA0226 Localization  
Pattern in HeLa Cells*



**Amav Khambete**

Coppell High School

Mentor: [Mark  
Henkemeyer, Ph.D.](#)

*Determining the Effects of  
Novel Drugs on Eph - Ephrin  
Protein Interactions and  
Analyzing Neuron Activation in  
Mice for Pain Inhibition*



**Eman Khan**

Harmony Science

Academy

Mentor: [Chen Liu, Ph.D.](#)

*Ablation of Peripheral Serotonin  
Protects Diet- Induced Obesity  
and Glucose Tolerance*

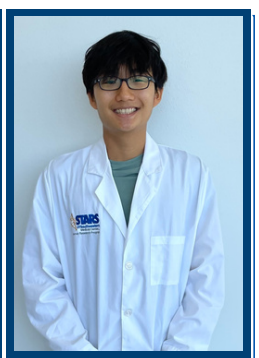


**Veda Kutagula**

Allen High School

Mentor: [Jacqueline  
Gallet, Ph.D.](#)

*Creating a 3D-printed Lumbar  
Vertebral Model for Simulation  
Training of Image-Guided  
Spine Procedures*

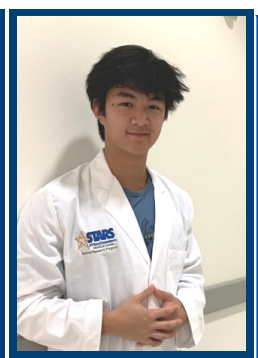


**Jiwang Lee**

Coppell High School

Mentor: [Prassana Alluri,  
M.D., Ph.D.](#)

*Targeting Mechanisms of  
Resistance in CDK6 Inhibitor  
Resistant Breast Cancer*



**Leo Li**

Townview TAG

Mentor: [Melanie Cobb, Ph.D.](#)

*ERK1/2 Activity and Regulation in  
MEK Inhibitor- Insensitive Lung  
Cancer Cells*



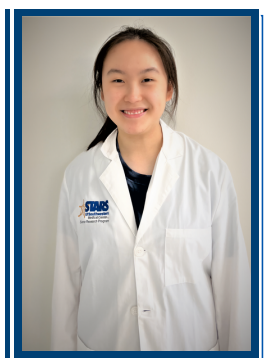
**Aldo Lomas**

Barack Obama Male

Leadership Academy at a  
Maceo Smith

Mentor: [Todd Roberts,  
Ph.D.](#)

*Unraveling the Fitness Signals of  
Courtship Behavior*



**Angela Lu**

School of Science and  
Engineering at Townview

Mentor: [Maralice Conacci-  
Sorrell, Ph.D.](#)

*The Role of ZNF692 in  
Mitochondrial Translation and  
Protein Expression*

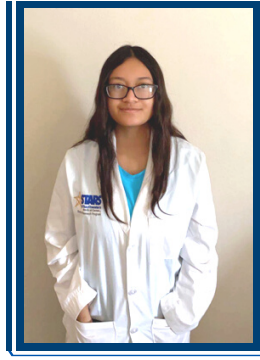




**Srinidhi Mahadevan**

Rick Reedy High School  
Mentor: [Shin Yamazaki, Ph.D.](#)

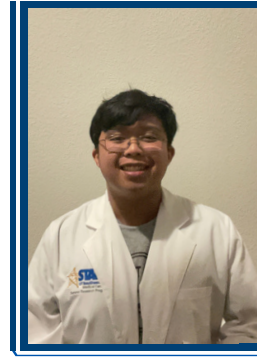
*Constant Light Reveals Residual Circadian Behavior Rhythms in Arrhythmic Per1-/- ; Per2-/- ; Per3-/- Mice*



**Natalie Martinez**

Harmony School of Excellence - Laredo  
Mentor: [Michael Reese, Ph.D.](#)

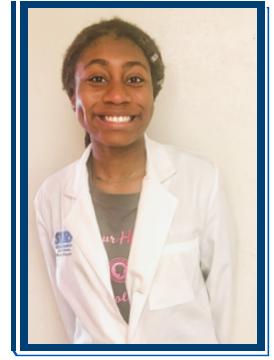
*Understanding the Components of the Nuclear Pore Complex of Toxoplasma gondii*



**Jon Noquil**

Jesuit Dallas  
Mentor: [Chunyu Cai, Ph.D.](#)

*Viewing Neurodegeneration in Aging Mice with Alzheimer's Disease*



**Doris Onyedionu**

MacArthur High School  
Mentor: [Mustafa Husain, M.D.](#)

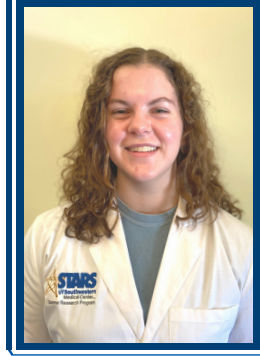
*Sickle Cell Disease: Prevalence, Mental Health Effects, Psychotherapy, and Quality of Life*



**Manas Patel**

Wylie High School  
Mentor: [Jacques Lux, Ph.D.](#)

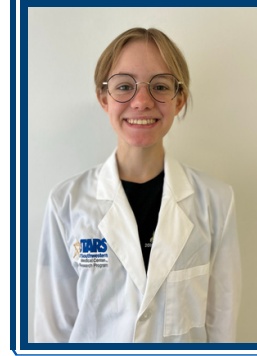
*Acoustic Behavior of Phospholipid/Perfluorocarbon Microbubbles in Response to Changing pH*



**Kaylee Pfister**

Flower Mound High School  
Mentor: [Jim Collins, Ph.D.](#)

*ZFP383 Regulates Stem Cells in the Parasitic Flatworm Schistosoma mansoni*



**Charlotte Purcell**

Greenhill School  
Mentor: [Danielle Robertson, O.D., Ph.D.](#)

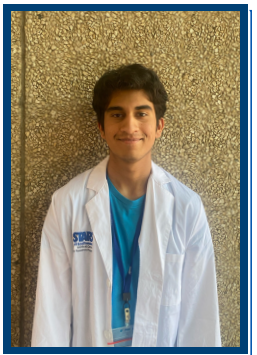
*The Optimization of Fixation and Immunostaining Protocols for Evaluation of the Mouse Meibomian Gland*



**Jennifer Ramirez-Mendoza**

Irma Lerma Rangel YWLS  
Mentor: [Dominika Borek, Ph.D.](#)

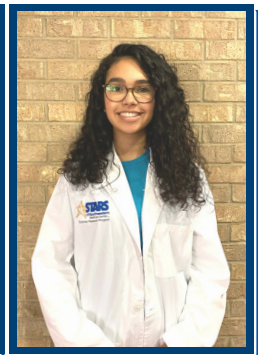
*Glucose Isomerase as a Standard for Cryogenic Electron Microscopy Single Particle Reconstruction (cryoEM SPR)*



**Raghav Ramki**

Plano East Senior High School  
Mentor: [You Zhang, Ph.D.](#)

*Developing a Pneumatic-driven, Dual-modal (MR/CT) and Anthropomorphic Breathing Phantom for Image-guided Radiotherapy*



**Giann Ruiz**

Ursuline Academy of Dallas  
Mentor: [Daisuke Hattori, Ph.D.](#)

*Identifying Neural Gates that Cause Social Interest in Drosophila*



**Daisy Sanchez**

Townview School of Health Professions  
Mentor: [Wei Xu, Ph.D.](#)

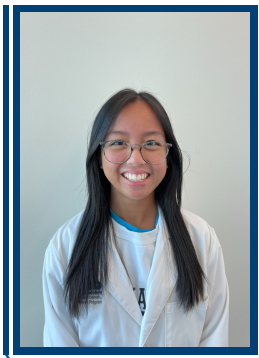
*Using Cell Type-Specific RNA Sequences to Target Cells Inside the Brain*



**Akshara Sankar**

Coppell High School  
Mentor: [Yunsun Nam, Ph.D.](#)

*Biochemical Studies to Probe the Mechanisms Underlying RNA Methylation*



**Emily Santos**

The Hockaday School

Mentor: [Ivan D'Orso, Ph.D.](#)

*Structure-Function Approach Defines Key Determinants of KAP1/TRIM28 in HIV-1 Reporter Activation*



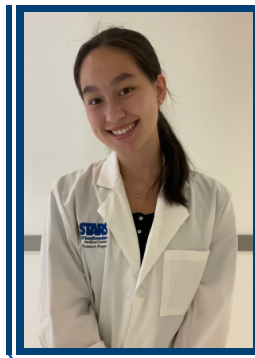
**Medha Sundar Rajan**

Uplift North Hills

Preparatory

Mentor: [Ping Mu, Ph.D.](#)

*Dissecting the Role of UBE2J1 in Prostate Cancer*



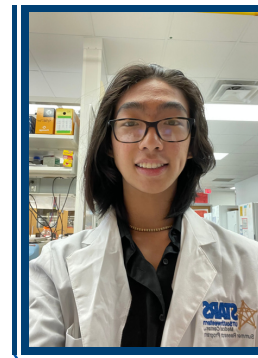
**Grace Swenson**

Allen High School

Mentor: [Evan Nair-Gill,](#)

[M.D., Ph.D.](#)

*Role of Pacs1-Wdr37 in IP3R Expression and Calcium Homeostasis*



**Anthony Tang**

School of Science and

Engineering at

Townview

Mentor: [Ganesh Raj,](#)

[M.D., Ph.D.](#)

*Identification of Compounds as Therapies Against Breast Cancer Brain Metastasis*



**Nikitha Thoduguli**

Greenhill School

Mentor: [Douglas](#)

[Strand, Ph.D.](#)

*A Cellular Anatomy of the Female Urethra*



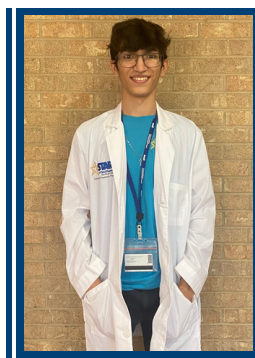
**Vishnu Vasudev**

Liberty High School

Mentor: [Glen Liszczak,](#)

[Ph.D.](#)

*Selection of Site-Specific Nanobodies Against Auto-ADP-Ribosylated PARP1*



**Ryan Virkar**

Jesuit Dallas

Mentor: [Yuh Min Chook,](#)

[Ph.D.](#)

*Identifying the Binding Regions of Ribosomal Protein S3a to Importin-4*



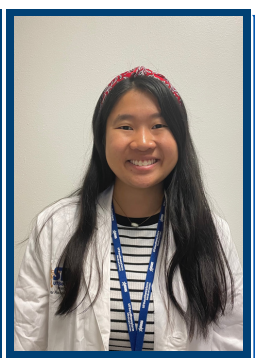
**Zane Wallace**

St. Mark's School of

Texas

Mentor: [Helmut Kramer, Ph.D.](#)

*A Drug Inducing mTor Independent Autophagy by Phosphorylating Acinus Can Improve Motor Neuron Function of Alzheimer's Disease Model Flies*



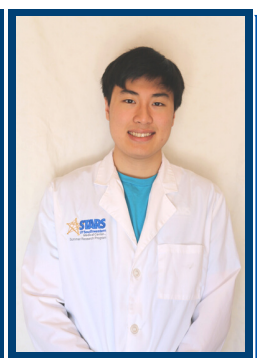
**Catherine Wang**

The Oakridge School

Mentor: [Elisabeth Martinez,](#)

[Ph.D.](#)

*The Effects of SMYD2 on KDM5A in Vivo*



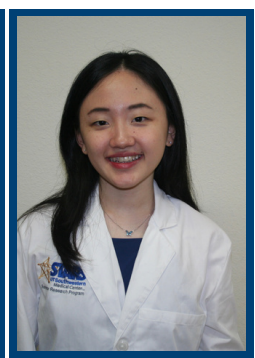
**Leon Wang**

Wylie High School

Mentor: [Matthew](#)

[Petroll, Ph.D.](#)

*An In Vitro Model for Studying Keratocyte Behavior on Aligned Collagen Fibrils Generated Using a Microfluidics Approach*



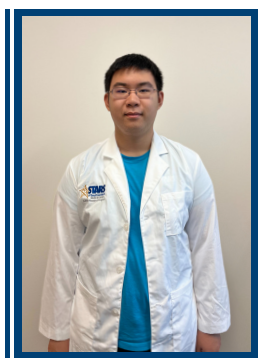
**Michelle Xing**

Highland Park High

School

Mentor: [John Minna, M.D.](#)

*Investigating the Role of CXCR4 in Small-Cell Lung Cancer*



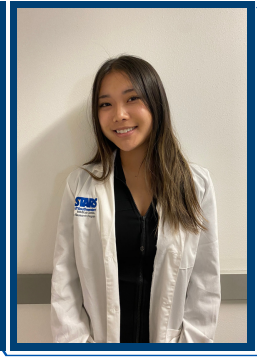
**Jason Xu**

Plano West Senior High

Mentor: [Ralph](#)

[DeBerardinis, M.D., Ph.D.](#)

*Metabolic Alterations Occur in Nucleotide-Related Metabolic Pathways of Upper Tract Urothelial Carcinoma Cells in Response to Chemotherapy*

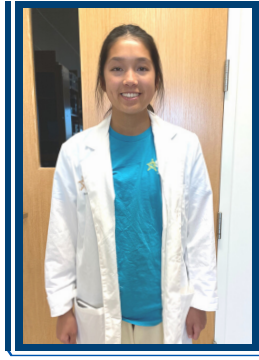


**Jayna Yoon**

Liberty High School

Mentor: [Michael Buszczak, Ph.D.](#)

*Characterizing the SPATA5 Complex Using Drosophila*

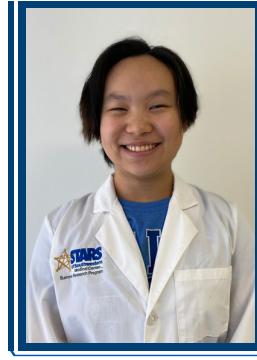


**Ella Zhang**

John Paul II High School

Mentor: [Fei Wang, Ph.D.](#)

*The Role of 14-3-3 Proteins in Regulating Autophagy and Meiosis in Budding Yeast*



**Hannah Zhou**

Greenhill School

Mentor: [Sherwood Brown, M.D., Ph.D.](#)

*Implications of Emotional Climate for Asthma-Related Quality of Life*