

# 2023 STARS Summer Research Program for Students

The 2023 STARS Summer Research Program for Students included 53 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.

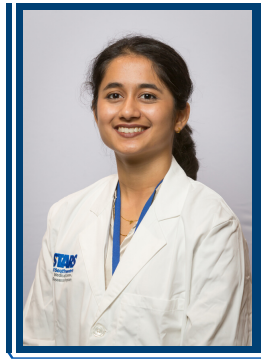


**Sri Achanta**

Coppell High School

Mentor: [Fernando Kay, M.D., Ph.D.](#)

Structured data extraction via natural language processing in chest CT Reports



**Riya Acharya**

R.L. Turner High School

Mentor: [Igor A. Butovich, Ph.D.](#)

Physiological characterization of the effects of *Sdr16c5/Sdr16c6* and *Soat1* inactivation in the eye



**Isabelle Agarwal**

Richardson High School

Mentor: [James J. Collins, Ph.D.](#)

Role of histone deacetylases in schistosomes



**Arwa Ahmed**

Harmony School of Innovation- Dallas

Mentor: [Joseph Su, M.P.H., Ph.D.](#)

Ecologic evaluation for the association between early-onset colorectal cancer and environmental arsenic



**Imad Ahmed**

Harmony School of Innovation- Dallas

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

Evaluating the Effects of Post-Mortem Intervals on In-Vitro Mouse Cortical Viability as Measured by GFP Expression and Cleaved Caspase-3 Presence

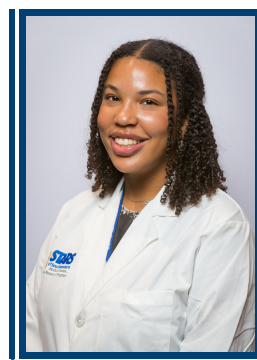


**Eno Ambe**

Lone Star High School

Mentor: [Sharmistha Mitra, Ph.D.](#)

Determining The Function of Linear Ubiquitin Chain Assembly Complex in Glycogen Metabolism



**Eva Anderson**

Irma Lerma Rangel YWLA

Mentor: [Jin Ye, Ph.D.](#)

Domain deletions in UBXD8 – its role in ferroptosis and alcoholic liver disease



**Lakshmi Aravindan**

John Paul II High School

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

Succinate Regulates the Enteric Nervous System via Epithelial Tuft Cells



**Prerith Arunkumar**

Coppell High School

Mentor: [Benjamin Weaver, Ph.D.](#)

Variant Calling and Identifying Suppressors of ubr-5 and Its Role in Pluripotent Stem Cells



**Eleanor Browne**

The Hockaday School

Mentor: [Nicholas Conrad, Ph.D.](#)

Assaying the direct effects of METTL16 on translation

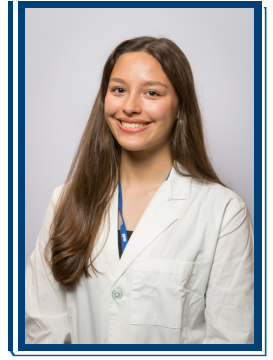


**Chloe Callaway**

Independence High School

Mentor: [Wenhao Zhang, Ph.D.](#)

Reading out the mind from in-silico hippocampus

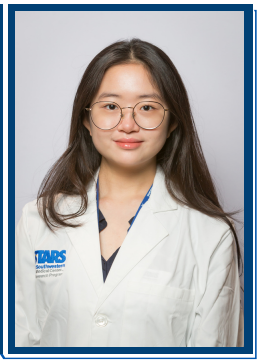


**Abigail Castro**

Mansfield Legacy High School

Mentor: [Glen Liszczak, Ph.D.](#)

Wrestling with the Implications of ETV6 SUMOylation Cancer Model



**Elise Cho**

The Hockaday School

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

Investigation into the regulation of AgrC, a receptor histidine kinase from *Staphylococcus aureus*



**Andrea Condormango Rafael**

School for the Talented and Gifted at Townview Magnet Center

Mentor: [Samuel Achilefu, Ph.D.](#)

Observing the fluorescence lifetime of LS288 on 4T1 cells



**Sisir Datla**

R.L. Turner High School

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

Identification and cloning of ZNF22, a novel transcription factor, involved in CD8+ T cell exhaustion



**Antonio Dimafelix**

Jesuit College Preparatory School of Dallas

Mentor: [Daniel Kober, Ph.D.](#)

How ER-localized E2 enzymes control Protein Homeostasis



**Jacqueline Dominguez**

Prestonwood Christian Academy

Mentor: [Daisuke Hattori, Ph.D.](#)

Examining neural circuits that regulate social attention in *Drosophila*



**Shashank Gangaram**

Plano East Senior High School

Mentor: [Helmut Krämer, Ph.D.](#)

Drug induced enhancement in neuronal autophagy delays neurodegeneration in *Drosophila* Alzheimer's Disease models



**Samuel Guerra Arthur**

North Garland High School

Mentor: [Nicolai Van Oers, Ph.D.](#)

Species-Specific Differences in the Transcription Factor Forkhead Box N1



**Tyler Hall**

The Oakridge School

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

Finding the Substrate Binding Region of CSAR1 in the Parasite *Toxoplasma*



**Alyssa Harbin**

MacArthur High School

Mentor: [E. Sherwood](#)

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

The Relationship Between  
Asthma and Carotid Thickness



**Jose Hernandez**

School for the Talented  
and Gifted at Townview

Mentor: [Genevieve](#)

[Konopka, Ph.D.](#)

Determining Circadian Rhythm  
Effects on Embryonic Brain  
Development



**Anish Jonnalagadda**

Imagine International  
Academy of North Texas

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

*Characterizing the Role of NR2F1  
in Metastatic Prostate Cancer*



**Lauren Kaneira**

Flower Mound High  
School

Mentor: [Mark](#)

[Henkemeyer, Ph.D.](#)

Quantifying the Effects of  
Novel Drugs on the Inhibition  
of Neuropathic Pain and  
Neuron Activation Analysis in  
Mice



**Isabel Ketterson**

Lakehill Preparatory  
School

Mentor: [Yuh Min Chook,](#)

[Ph.D.](#)

Investigation of E3 ligase  
WDC1 binding to the exportin  
CRM1

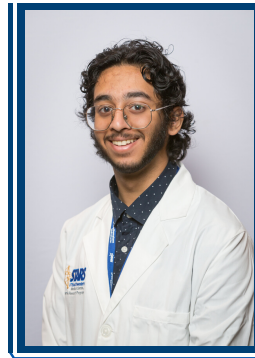


**Max Kettles**

Greenhill School

Mentor: [Jing Tian, Ph.D.](#)

Unraveling the Mechanism:  
Investigating SREBP-1  
phosphorylation and PUFA  
Mediated selective suppression  
of SREBP-1



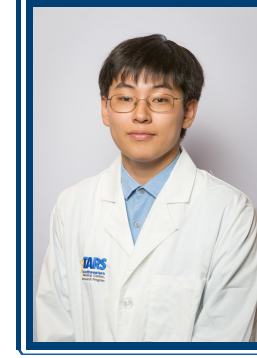
**Om Kulkarni**

Texas Academy of  
Mathematics and Science

Mentor: [Michael](#)

[Buszczak, Ph.D.](#)

Testing whether GCNA paralogs  
preserve genome integrity by  
regulating pericentromeric  
satellite DNA



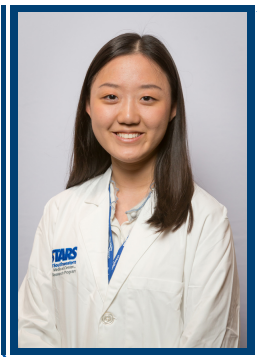
**James Li**

Frisco High School

Mentor: [Melanie H Cobb,](#)

[Ph.D.](#)

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



**Ruixuan Li**

The Hockaday School

Mentor: [Felix Nitschke,](#)

[Ph.D.](#)

*TATk-Mediated Delivery of Human  
 $\alpha$ -Amylase Protein for Cross-  
Correction-Enabled Viral Gene  
Therapy of Lafora Disease*



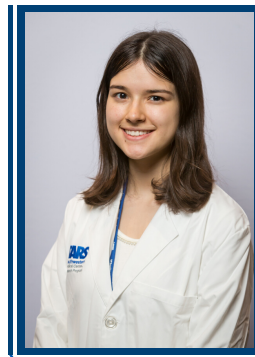
**Mihir Madabushi**

Uplift North Hills Preparatory

Mentor: [Lorena Saelices](#)

[Gómez, Ph.D.](#)

Identification of Transthyretin  
Aggregate Antibodies for  
Incorporation Into a Clinical  
Diagnostic Tool



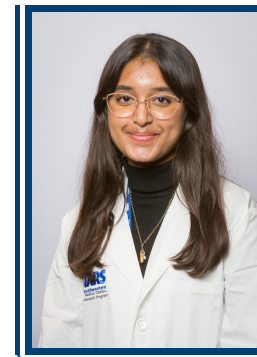
**Grace Marquez**

MacArthur High School

Mentor: [Todd Roberts,](#)

[Ph.D.](#)

*Identify Neural Organization of  
Zebra Finch Motor Pathways  
by Gene Expression*



**Ishrat Masud**

Jack E. Singley Academy

Mentor: [Shin Yamazaki,](#)

[Ph.D.](#)

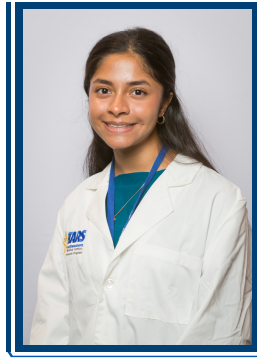
Nose poking behavior reveals  
that daytime anticipatory food  
seeking behavior persists in  
mice during and after timed  
restricted feeding



**Jayanth Mokkaipira**  
Plano West Senior High School

Mentor: [Ganesh Raj, M.D., Ph.D.](#)

Disrupting Protein-Protein Interactions as a Therapeutic Approach in Estrogen-Receptor Positive Breast Cancer



**Anika Mootha**  
Greenhill School

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

Cellular Localization of RNAi Machinery in Mammalian Cells



**Jane Moses**  
Allen High School

Mentor: [Jun Wu, Ph.D.](#)

Investigating the effect of physical constraints on the differentiation of human pluripotent stem cells



**Isabelle Munsterman**  
Woodrow Wilson High School

Mentor: [Marek Napierala, Ph.D.](#)

Genetic variants causing Friedreich's ataxia



**Chikasi Nwachukwu**

Harmony Science  
School of Innovation -  
Garland

Mentor: [Gerta Hoxhaj, Ph.D.](#)

The role of collagen components in supporting cell growth upon  $\Delta$ NADK2 loss



**Molewaoluwa Omotoso**

School of Health  
Professions at Townview

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

Transcriptional regulation of Melanocortin 4 Receptor (Mc4r) by Otp



**Satvik Paduri**

Science and Engineering  
Magnet at Townview

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

In vitro - Testing AAV9-JeT and CBA DDX3X Construct Expression

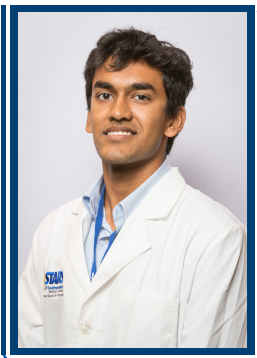


**Alanna Polyak**

Plano West Senior High School

Mentor: [Ariella Hanker, Ph.D.](#)

Investigating the addition of trastuzumab to neratinib and fulvestrant in ER+/HER2-mutant breast cancer cells with double HER2 mutations



**Aditya Pulipaka**

Greenhill School

Mentor: [Joseph Takahashi, Ph.D.](#)

Purification and Validation of BMAL1 Antibody for Studying BMAL1 Expression



**Sofia Reyes**

Booker T. Washington HSPA

Mentor: [Katherine J. Wert, Ph.D.](#)

Sex Difference and Hormonal Interactions in the Unfolded Protein Response



**Francisco Salazar**

School of Science and Engineering at Townview

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

Preliminary Investigation Into A Shear Wave Transducer For Possible Clinical Usage



**Pooja Sanghvi**

Greenhill School

Mentor: [Michalis Agathocleous, Ph.D.](#)

The Role of Lactate Dehydrogenase in Hematopoietic Stem Cells

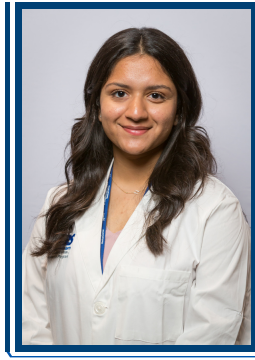


**Mary Schnautz**

Grapevine High School

Mentor: [Jennifer Kohler, Ph.D.](#)

*Determining the Function of GALNT14 in Osteosarcoma*

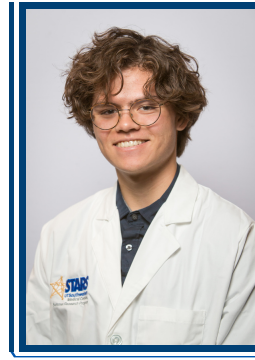


**Nishi Soni**

Centennial High School

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

*Exploring the Role of Chemokine Receptor CXCR4 Pathways Components in SCLC*



**Jake Tessnow**

Carroll Senior High School

Mentor: [Jeffrey Zigman, M.D., Ph.D.](#)

*The Role of Depp1 in Blood Glucose Homeostasis*

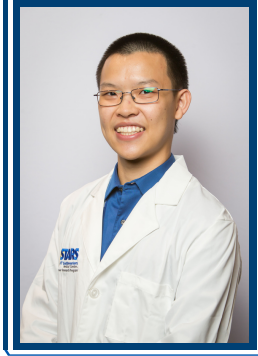


**Jeanette Thomas**

Keller High School

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

*Identifying Complex Interface Matching Errors within COVID-19 Vaccinations*



**Eric Tong**

Grapevine High School

Mentor: [Kendra Frederick, Ph.D.](#)

*Developing Methods to Predict NMR Peak Shapes for Regions of Intrinsic Disorder*



**Khoa Trinh**

Garland High School

Mentor: [Dayoung Oh, Ph.D.](#)

*The Role of GPR92 During Pancreatic Islet Development*



**Glenda Vega**

Irma Lerma Rangel YWLA

Mentor: [Sukh Makhnoon, Ph.D.](#)

*A Cellular Anatomy of the Female Urethra*



**Nelson Vo**

School of Science and Engineering at Townview

Mentor: [Hesham Sadek, M.D., Ph.D.](#)

*Induction of Cytokinesis in Cardiomyocytes Promotes Cardiac Regeneration*



**Dawson Zavala**

Jesuit College Preparatory School of Dallas

Mentor: [Gaurav Sharmav, Ph.D.](#)

*Enhancing Lung Preservation Strategies by Exploring Glucose Metabolism in Ex Vivo Lung Perfusion*