



Academy of Science and Technology

NEWS CLIPPINGS

Dr. Susan Caffery, Headmaster

Volume 12 Issue 23 February 8, 2019

Upcoming Events

- February 9
**Senior High EDC
Biotech Comp**
- February 12
**Distinguished Lecture
Series**
- February 16
**DI Regional
DICE Diamond Chal-
lenge**
- February 19
**AST Registers Class
of 2023**
- Feb 22-23
SEFH
- February 26
**Distinguished Lecture
Series**
- March 5
**Distinguished Lecture
Series**
- March 8
AST Donut Day
- March 21-23
FIRST Regional
- March 22-23
DI State
- March 26
**Distinguished Lecture
Series**
- March 29-31
Texas SEF

From the Headmaster

Competition Season is Upon Us!
Thank you for your support and serving as judges for the Technical Writing Competition and the Science Fair. Our students performed well at these events! Our next competition is the Senior High EDC on Saturday, February 9. Please read the information below and volunteer as you are able.

Susan M. Caffery, EdD LPC

Volunteer to Judge for SCI:TECH

Adult volunteers are needed to judge for the many events during SCI://TECH. I especially need judges for Senior High EDC on Saturday, February 9. Please see all opportunities below. Go to <http://www.efta-us.org/in-the-community/sci-tech> to register as a volunteer or judge.

February 9, 2019 Senior High EDC Lone Star College-Montgomery
Biotechnology Competition 8 am—1 pm
Repsol Senior High Engineering Design Competition 8 am—4 pm
Email Dr. Caffery if you can be a Journal Judge (AM only) or Track Judge (All Day).

SCI://TECH Winners

Technical Writing

Ninth Grade Division

1st	Michael	Menezes
2nd	Mahi	Patel
3rd	Andy	Shen

A Slick Model: Modeling the Dispersion of Oil Slicks in the Ocean

Effects of News Frames on Decision-Making and Emotional Responses as Reflected by Measures of Non-Metabolic Heart Rate and the Effects of Frequency and Variety of News Consumption on Emotional States as Reflected by Long-Term Heart Rate Fluctuations

The Development of an Early Wildfire Detection Device

April 5
AST Senior Day

April 9
STAAR English I

April 11
STAAR English II Juniors– SAT

April 17-20
FIRST World Champs

April 26
AST Trivia Night

May 5
AST Senior Gala

May 6
PAST General Meeting

May 6
Incoming Freshmen Parent Dessert Reception

May 10
AST Underclassmen Awards

May 12-18
Intel ISEF

May 16
Senior Awards

May 21
AST Donut Day

May 22
Freshman Research Symposium

May 22-25
DI Global Finals

Senior Division

1st	Brendan	Alam	Implementing Econophysics to Predict Mixed Migrations
2nd	Clara	Victorio	Removing Microplastics from Wastewater: Increasing the Efficiency of Electgrocoagulation
3rd	Hayley	Jue	Comparing the Toxicity of Chemical and Organic Pesticides on Human Gut Bacteria Equilibrium

Grand Awards

Ninth Grade Division Life Science

Effects of News Frames on Decision-Making and Emotional Responses as Reflected by Measures of Non-Metabolic Heart Rate and the Effects of Frequency and Variety of News Consumption on Emotional States as Reflected by Long-Term Heart Rate Fluctuations

Mahi Patel

Physical Science

The Game of Hex: Using Deep Neural Networks and Tree Search

William Kaiser

Senior Division Life Science

Examining Cultural Eutrophication: A Novel Smartphone Application for the Determination and Mapping of Phosphate Content in Aquatic Ecosystems via Crowdsourcing

Michael Gerhard

Physical Science

EyeSpy Diagnostics: Developing a Non-Invasive Smartphone-Based Intelligent Device and Application for the Accurate and Affordable Diagnosis of Eye Fundus Anomalies via Machine Learning

Kabir Jolly

May 23
TWCP Graduation

May 30
Last Day of School

May 31—June 2
FISH Camp

Science Fair

Place Awards

Place	Last	First	Division	Category	Title
1	Patel	Mahi	9th	Behavioral/Social Science	An News Perspective: Effects of News Frames
2	Zhang	Emily	9th	Behavioral/Social Science	A Connection Between Personality Traits and Demographics Factors
3	You	Sandra	9th	Behavioral/Social Science	Minor Changes
2	Prks	Jordan	9th	Biochemistry/Microbiology	Making Up Bacteria
1	Halm	Kwesi	9th	Chemistry	Soft Dring Erosion on Teeth/enamel
3	Gundlpally	Neel	9th	Chemistry	Reducing Damage to Homes from Fires by Fire-Resistant Chemicals

1	Kaiser	William	9th	Computer Science	The Game of Hex: Using Deep Neural Networks and Tree Search
2	Pillutla	Aditya	9th	Computer Science	Accident Hotspot Prediction Method
3	Samudrala	Sidarth	9th	Computer Science	Using GIS to Model Future Water Contamination iSites n Texas
1	Grousseau	Maxime	9th	Engineering: Aerospace	The Effect of Shape on the Lift Generated by a Wing
2	Stackes	Robert	9th	Engineering: Chemical	Recyclng the Potassium Carbonate from Corroded Batteries
1	Senthilku-mar	Sabharina-than	9th Team	Engineering: Elec/Mech/Civil	Walk It Then You Talk It
1	Sharer	Jason	9th	Engineering:	Walk It Then You Talk It
2	Behne	Caitlin	9th	Engineering: Elec/Mech/Civil	Year Two of Automated Ventilation Control System
3	Shen	Andy	9th	Engineering: Elec/Mech/Civil	The Engineering of and Early Wildfire Detection Device

1	Svetlitski	Jessica	9th	Engineering: Materials/ Bioengineering	Mold Growth Prevention via Utilization of Silver Nanoparticles in Paint II
2	Stanosheck	isabelle	9th	Engineering: Materials/ Bioengineering	Which Housing Insulation Prevents Mold Growth
1	Jackson	Yasmin	9th	Environmental Science	Radiation in Coal Ash
3	Schnicer	Lorenzo	9th	Environmental Science	Mixin Compressed Plastic with Wood to Make a Sturdier Material
1	Menezes	Michael	9th	Mathematics	A Slick Model
1	Leong	Annika	9th	Medicine/Health	Reprogramming Cells: Turning Cells of the Body into STEM Cells
2	Abdelghani	Yomna	9th	Medicine/Health	Balanced pH for a Balanced Life
3	Van-Benthuyse	Jacob	9th	Medicine/Health	Does Exercise Affect Mental Function?
1	Flores	Alejandro	9th	Physics & Astronomy	Spectroscopy and Pollution
1	Rosenbaum	Addison	9th	Plant Science	Assessing the Amounts of Carbon Consumption in Plants
3	Medellin	Natalia	9th	Plant Science	Fire's Affect on Soil Quality
1	Thayill Thomas	Mijo	9th	Robotics and Intelligent Machines	Aateur 3D Mapping through Echolocation
2	Sathi	Harish	9th	Robotics and Intelligent Machines	Smart Walking Stick for Incurable Eye Diseases

Senior Division

1	Calizzi	Christopher	Senior	Animal Science	Modeling Prenatal Nicotine Exposure with <i>Hydra littoralis</i>
2	Pascarella	Grace	Senior	Animal Science	Comparison of Strepsiptera <i>Caenochloax fenyesei</i> and <i>Xenospeckii</i> Antenna and Mouthpart Sensory Structures

1	Simpson	Ruth	Senior	Behavioral/Social Science	Society's Perception of Public Health
1	Nimocks	Melannie	Senior	Biochemistry/Microbiology	Analyzing the Effects of CRISPR
2	Ang	Pearlyn	Senior	Biochemistry/Microbiology	Optimization for Oponization
3	Jue	Hayley	Senior	Biochemistry/Microbiology	Comparing the Toxicity of Chemical and Organic Pesticides on Human Gut Bacteri Equilibrium
1	Yu	Ethan	Senior	Chemistry	Optimizing Thermal Efficiency in Starch-Based Bioplastics
2	Crocker	Harry	Senior	Chemistry	Can Electrolysis Susstain Life?
1	He	Derek	Senior Team	Computer Science	An Innovative, Multi-Faceted Ap- platon for Improved Driver Safety
1	Pedroza	Ian	Senior Team	Computer Science	An Innovative, Multi-Faceted Ap- platon for Improved Driver Safety
2	Joshi	Praneel	Senior Team	Computer Science	Antibiotic Resistance Detection Through Machinej Learning
2	Manage	Sithija	Senior Team	Computer Science	Antibiotic Resistance Detection Through Machinej Learning
3	Mannem	Swathi	Senior	Computer Science	Alterntative Methods of Commu- nications II
1	Drabbant	Steven	Senior Team	Earth/Space Science	Predicting Sporadic E nd Tropo- spheric Ductin to Enhance Long Distance VHF Communication
1	Paylor	Jack	Senior Team	Earth/Space Science	Predicting Sporadic E nd Tropo- spheric Ductin to Enhance Long Distance VHF Communication
1	Devault	Nicholas	Senior	Energy and Transportation	Engineering a Wind-Powered USB Charger
2	Prevlor	Darryl	Senior	Engineering: Aerospase	The Mini Work Station for Astro- nauts Redefined
3	Murray	Logan	Senior Team	Engineering: Aerospase	Improving Aerodynamics Efficien- cy in Torodial Aerospke Rocket Engines
3	Oberg	Max	Senior Team	Engineering: Aerospase	Improving Aerodynamics Efficien- cy in Torodial Aerospke Rocket Engines

1	Deng	Alex	Senior	Engineering: Chemical	The Engineering and Production of a Biodegradable Battery
1	Dasari	Shobha	Senior Team	Engineering: Elec/Mech/Civil	Developing a Cost-Efficient System to Remotely Monitor Physical Therapy Exercise
1	Sa-lankimatt	Yashas	Senior Team	Engineering: Elec/Mech/Civil	Developing a Cost-Efficient System to Remotely Monitor Physical Therapy Exercise
1	Yu	Andrew	Senior Team	Engineering: Elec/Mech/Civil	Developing a Cost-Efficient System to Remotely Monitor Physical Therapy Exercise
2	Nguyen	Nathan	Senior	Engineering: Elec/Mech/Civil	The Nose Knows: Utilizing a Machine Learning Driven Electronic Nose to Detect Fungi
3	Tampi	Aparna	Senior	Engineering: Elec/Mech/Civil	Heatsave: An App for Combating Pediatric Vehicular Stroke
1	Sharma	Arman	Senior	Engineering: Material & Bioeng	A Novel, Cost-Effective, Industry-Reproducible Fabrication of Transparent, Conductive and Mechanically Stable Silver Nanowire-Based Films
2	Coye-Huyn	Saira	Senior Team	Engineering: Material & Bioeng	Reducing Petroleum Use in Packaging Using CNCs
2	Daniels	Julia	Senior Team	Engineering: Material & Bioeng	Reducing Petroleum Use in Packaging Using CNCs
1	Gerhard	Michael	Senior	Environmental Science	Examining Cultural Eutrophication: A Novel Smartphone Application for the Determination and Mapping of Phosphate Content in Aquatic Ecosystems via Crowdsourcing
3	Nash	Hudson	Senior	Environmental Science	BESSY: New System for Scalable Continuous Water Quality Monitoring Using Biocatalytic Electroanalysis

2	Alam	Brendan	Senior	Mathematics	Implicating Econophysics to Predict Mixed Migration
3	He	Andrew	Senior	Mathematics	Applications of Fractal Theory in Financial Markets
1	Choudhary	Prerit	Senior	Medicine/Health	The Creation of a Biosensing Mechanism Utilizing Wireless Echocardiograms in Combination with Seismocardiography in Body Sensing Mechanism for CHD Prevention
2	Marupudi	Akhil	Senior	Medicine/Health	Melanomore: Developing a Low-Cost Paper Sensor to Perform Immunohistochemistry for the Detection of Melanoma
3	Mittra	Ansh	Senior	Medicine/Health	Statistical Analysis of the Correlation Between Vitamin A Levels and Vaccine Induced Immunity Against Tetanus
1	Saenz	Sebastian	Senior	Physics & Astronomy	Faraday's Return
1	Kassem	Adham	Senior	Plant Science (Botany)	Genetic Mutation of Organic Structure to Increase Crop Yield
2	Chakraborti	Esha	Senior Team	Plant Science (Botany)	What Plant it Do? Bioremediation of Contaminated Water
2	Wang	Zoe	Senior Team	Plant Science (Botany)	What Plant it Do? Bioremediation of Contaminated Water
3	Ong	Shu Wen	Senior Team	Plant Science (Botany)	Phyt-ing Pharmaceutical Ecotoxicity with Phytoremediation
3	Zhao	Katherine	Senior Team	Plant Science (Botany)	Phyt-ing Pharmaceutical Ecotoxicity with Phytoremediation
1	Jolly	Kabir	Senior	Robotics and Intelligent Machines	EyeSpy Diagnosis: Developing a Non-Invasive Smartphone-Based Intelligent Device and Application for the Accurate and Affordable Diagnosis of Eye Fundus Anomalies via Machine Learning

Distinguished Lecture Series

The Spring 2019 Distinguished Lecture Series begins next week. The speakers for February are listed below. Lecture begin at 6 pm in the CP 1300 LGI.

- Tuesday, February 12 Sarah H. Elsea, PhD, FACMG **Genetics, Genetic Counseling, Discovery, and Healthcare-It's in Your DNA**
- Tuesday, February 26 Lois M. Ramondetta, MD **Human Papilloma Virus**

Juniors—Take the SAT in April

You have the opportunity to take the SAT here at TWCP Hs on **Tuesday, April 9, 2019**. The cost is \$50. You must register and pay through School Cash before Wednesday, February 13, 2019. There is NO late arrival for juniors on this day!

Seniors— Scholarship Opportunity

The **Society of Petroleum Engineers Gulf Coast Section** is offering scholarships to students who plan to study science or engineering as a freshman in college next year.

Eligibility includes:

- Be a graduating senior
- Planning to study science or engineering next year
- Have a permanent residence in one of the 29 counties in Gulf Coast Section
- Be a US Citizen or Permanent Resident

Applications must be received by February 21, 2019.

Visit <https://www.spegcs.org/committees/scholarship-internship>.



AST SENIOR GALA IS SUNDAY, MAY 5, 2019

SUBMIT your child's photos! Senior Gala Committee is collecting all photos for the formal slide show.

For Formal Slideshow, we will need:

1. Baby Photo (up to 2 years of age).
2. 1 formal photo of Senior: doesn't have to be official Senior formal, but a nice recent photo of your Senior
3. 1 to 2 casual photos of your Senior. You will upload these photos to: <https://form.jotform.com/83305164139151>

Mr. Sky Beck has requested that photos for the casual slide show he is creating be sent directly to him at becksky70@gmail.com.

For Casual Slideshow, Mr. Beck needs:

1. One individual 2. One photo with family 3. One photo with friends 4. Two to three additional photos in any setting

DUE DATE FOR ALL PHOTOS IS FEB. 28! Email us at astseniorbanquet2019@yahoo.com with any questions.

National Youth Science Camp (NYSCamp)

Graduating seniors (class of 2019) are eligible to apply to attend the National Youth Science Camp (<http://apply.nyscamp.org>). **The deadline to apply for the 2019 NY-SCamp is February 28, 2019.** The camp is a residential science education program for young STEM enthusiasts the summer after they graduate from high school. Students from around the country (two from each state) are selected to represent each state and Washington, DC. The goal is to provide engaged learning opportunities in science, technology, engineering, mathematics, and related professions that extend and enhance the traditional K-12 school curriculum.

2019 Physics and Engineering Festival

The **Department of Physics and Astronomy of Texas A&M University** invites students and families to participate in the **2019 Physics and Engineering Festival on April 6** in the Mitchell Physics and Mitchell Institute on the Texas A&M Campus. This is a free event from 10 am until 3:30 pm. There will be approximately 200 interactive science exhibits for kids and adults run by faculty and students. The guest speaker is by astronomer Michael E. Brown of the California Institute of Technology, who will speak on *Plant Nine from Outer Space*. For more information go to <http://physicsfestival.tamu.edu/>. Students may earn exploration credit for this event.

Join PAST

The **Parents of the Academy of Science and Technology (P.A.S.T.)** is a 501(c)3 organization that supports the Academy. Throughout its long history with the Academy, PAST has provided much needed equipment such as analytical balances, laptop computers, lab equipment, professional development, Jones State Forest trailer, etc. PAST pays for each senior to attend the Gala. Parents who are members of PAST receive a discount on the Gala ticket.

Please consider joining PAST today and supporting our students. You may go to the PAST website at <http://pastforthefuture.org/index.php> to join. Join today so that you receive the AST Directory on Saturday at the picnic!

Did you know that you can shop and support PAST? PAST has the following loyalty deals:

Kroger- Enroll your Kroger Plus Card online at www.krogercommunityrewards.com. The PAST number is 81773.

Randall's - Go to the Courtesy Booth and link to charity # 2243.

Amazon - Go to <http://smile.amazon.com> and choose Parents of the Academy of Science and Technology (ID #76-0317025) as your charity.