

**Greater San Diego Science & Engineering Fair 2020**  
**Category Place Awards - SENIOR DIVISION**  
**Judging Results By ALPHA**

Category	Booth	Place	Last Name	First Name	Project Title	Grade	School	Advisor
Microbiology	203	4th	Abdinasir	Daud	The Effect of Vaping on Lung Cells	10	Bright Horizon Academy	N. Naserelddin
Engineering: Electrical & Mechanical	147	2nd	Alwazir	Solaiman	Alzheimer's Aid	9	Bright Horizon Academy	N. Naserelddin
Computer Science	133	4th	Arias	Jose	Password Security	9	Gompers Preparatory Academy	J. Ulyott
Medicine & Health Sciences	180 Team	2nd	Bantval	Pranav	The Efficacy of Topical Curcumin 5% Gel for Knee Osteoarthritis: A Pilot Study	9	Canyon Crest Academy	A. Haas
Microbiology	204	1st	Belbese	Haya	The Road to the Cure of Alzheimer's	9	Bright Horizon Academy	N. Naserelddin
Computer Science	134 Team	2nd	Bowyer	Nolan	An Application to Calculate Individual Percent Risk of Specific Cancers	11	Scripps Ranch High School	P. Fowler
Engineering: Electrical & Mechanical	148	1st	Caligiuri	Christopher	Novel Stimulation of Stem-Cell Derived Brains to Model Neurodevelopmental and Neurodegenerative Diseases	11	Canyon Crest Academy	A. Haas
Environmental Sciences & Management	168	1st	Cao	Rina	Effect of Cities on Normalized Differences of Land	11	University City High School	S. Stevenson
Physics & Astronomy	219	1st	Catanzaro	Francisco	Determining Plastics with a Grating Spectrometer	11	Cathedral Catholic High School	M. Rafie
Medicine & Health Sciences	180 Team	2nd	Chiniga	Rishi	The Efficacy of Topical Curcumin 5% Gel for Knee Osteoarthritis: A Pilot Study	10	Francis Parker School	A. Haas
Microbiology	205	2nd	Clairmont	Ryan	Proteus Mirabilis Exhibits Increased Susceptibility to Erythromycin During Swarming	10	Canyon Crest Academy	A. Haas
Engineering: Materials & Bionengineering	159	1st	Czajkowski	Aurora	Engineering an Affordable and Sustainable Water Filtration Device	12	Bonita Vista High School	M. Mardahl-Dumesnil

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Microbiology	206	2nd	Dimmock	Samuel	Does Capsaicin Decrease Quorum Sensing in Important Human Pathogen Pseudomonas aeruginosa?	11	Canyon Crest Academy	A. Haas
Mathematical Sciences	176	1st	Faktor	Benjamin	Mathematical Analysis of a Fluid in a Polyhedral Domain	11	Canyon Crest Academy	A. Haas
Microbiology	207	1st	Fan	Kara	Antibacterial Polymer: Aloe Vera Synthesis of Nano-silver Polymer and Its Application	9	Westview High School	M. Christopher
Medicine & Health Sciences	181	3rd	Feldstein	Dylan	Do Induced Pluripotent Stem Cell-Derived Extracellular Vesicles Reduce Macrophage Activation and Induce Anti-Inflammatory Effects?	11	Canyon Crest Academy	A. Haas
Medicine & Health Sciences	182	2nd	Feldstein	Emily	Oxidized Metabolites of Dietary Fats Induce Liver Cell Death	11	Canyon Crest Academy	A. Haas
Medicine & Health Sciences	183	2nd	Feng	Morgan	A New Efficient Approach to Monitor Cell Response to Viral Infection	10	Westview High School	M. Christopher
Mathematical Sciences	177	2nd	Fowler	Lou	A User-Friendly Statistics Calculator Including Regression Analysis and 14 Statistical Tests	10	Academy of Our Lady of Peace	T. Paluso
Biochemistry	118	1st	Gan	Jessie	Application of a Novel Cell-Adhesion Force Quantification Technique to Predict Metastasis	11	San Diego Jewish Academy	C. Eisen
Medicine & Health Sciences	184	1st	Gao	Andrew	Scan, Sequence, Save: Early Lung Cancer Detection via Novel DNA Methylation Liquid Biopsy and Deep Learning Assisted Imaging Analysis	10	Canyon Crest Academy	A. Haas
Animal Sciences	101	3rd	Garcia	Asael	What Genre of Music Affects a Mammal's Productivity the Best?	11	Central Union High School	L. Rueda
Engineering: Electrical & Mechanical	149	3rd	Garcia	Eva	Renewable Energy Produced by Solar Tracking	10	Central Union High School	L. Rueda

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Medicine & Health Sciences	185	3rd	Gonzales	Briana	The Effect of Age on the Ability to Hear High Frequencies	11	Central Union High School	L. Rueda
Computer Science	134 Team	2nd	Grigsby	Prescott	An Application to Calculate Individual Percent Risk of Specific Cancers Using QRDA Category I File Assessment	11	Scripps Ranch High School	P. Fowler
Environmental Sciences & Management	169 Team	1st	Gupta	Kavya	A Device To Detect GenX Contaminated Water Using Chemical Indication And Colorimetry	9	Westview High School	H. Eaton
Environmental Sciences & Management	170	1st	Gurram	Sanjana	Optimizing Plant Cellulose for Cost-effective and Environmentally Benign Oil Spill Mitigation	11	Westview High School	My-N. Ingram
Biochemistry	119	2nd	Han	Juyoung	Genome Editing For All Students	11	Canyon Crest Academy	A. Haas
Biochemistry	120	2nd	Hegde	Aditya	The Effects of Carbon Nanomaterials on the Effectiveness of Phage Therapy	10	Canyon Crest Academy	A. Haas
Environmental Sciences & Management	171	2nd	Holmes	Mason	Fluorescent Reporter Under MerR-like Receptors for Metallic Ion Contaminant Recognition	10	Canyon Crest Academy	A. Haas
Animal Sciences	102	1st	Huang	Aaron	Anxiety Hierarchy: Testing the Priority of Genes in C. Elegans	11	Canyon Crest Academy	A. Haas
Medicine & Health Sciences	186	2nd	Huang	Irene	Assessing Tennis Players' Physiological Responses Using Wearable Devices Under Different Score Scenarios	11	Canyon Crest Academy	A. Haas
Medicine & Health Sciences	187	1st	Huang	Ryan	Manipulation of Gut Microbiome by Prebiotic to Combat Alcoholic Liver Diseases	10	Canyon Crest Academy	A. Haas
Engineering: Electrical & Mechanical	150	3rd	Isabelle	Adrian	A Low Cost Motion Detector Using Modern Engineering Technologies	12	Olympian High School	M. Claudio

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Category	Booth	Place	Last Name	First Name	Project Title	Grade	School	Advisor
Behavioral & Social Sciences	104	2nd	Ismail	Abdullahi	The Gym or the Field?	10	Bright Horizon Academy	N. Naserelddin
Microbiology	208	1st	Jung	Eleanor	A Novel Approach to Killing Klebsiella Pneumoniae Using Endolysins and Polycationic Peptides	9	Mt. Carmel High School	A. Klingborg
Medicine & Health Sciences	188	2nd	Kamil	Kainath	Analyzing Protein Production and Gene Expression of Neurostimulant-addicted Drosophila Melanogaster	10	Mission Vista High School	N. German
Behavioral & Social Sciences	105	2nd	Kariye	Abdirahman	Repetition Makes Perfect	9	Bright Horizon Academy	N. Naserelddin
Engineering: Materials & Bionegineering	160	3rd	Khan	Mohammad	Finding an Effective, Self-Cleaning Water Treatment Solution	9	Bright Horizon Academy	N. Naserelddin
Behavioral & Social Sciences	106	2nd	Kim	Sean	Gender Roles and Portrait Values in Relation to the Progression of Gender Equality	11	The Bishop's School	L. Keller
Engineering: Materials & Bionegineering	161	3rd	Konganda	Shaun	Comparing SSVEP & P300 in BCI Brain-Computer Interface	11	Canyon Crest Academy	A. Haas
Behavioral & Social Sciences	107	1st	Krishnamurthy	Hari	AsylumIndicator.AI - Predictive Behavioral Modeling of United States Asylum Adjudication to Help Refugees	9	Canyon Crest Academy	A. Haas
Medicine & Health Sciences	189	3rd	Krishnan	Nanditha	Optimization of UV nm Spectroscopy for Protein Concentration for Therapeutic Applications	10	Torrey Pines High School	B. Belyea
Environmental Sciences & Management	172	3rd	Krutzik	Anika	Exploring the Biodiversity of the New River Using Molecular Six Techniques Techniques	9	Vincent Memorial Catholic High School	R. Lizarraga
Computer Science	136	1st	Kuang	Andrew	Simplified Asthma Diagnosis Through Neural Networks	10	Canyon Crest Academy	A. Haas
Engineering: Electrical & Mechanical	151	1st	Kuo	Marc	Read My Mind: Morse Code Communication By Measuring Electrical Activity From Eye Blinking	10	La Jolla High School	J. Coggan

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Category	Booth	Place	Last Name	First Name	Project Title	Grade	School	Advisor
Plant Sciences	223	1st	Lai	Malvyn	Effects of Mycorrhizal Networks on Carbon Flow Between Plants	9	Mt. Everest Academy	R. Pachon
Behavioral & Social Sciences	108	3rd	Lee	Brian	How Age and Social Experience Dictate Beliefs on Ease of Social Mobility	11	Scripps Ranch High School	P. Fowler
Behavioral & Social Sciences	109	3rd	Li	Grace	What Affects the Probability of School Shootings?	9	Scripps Ranch High School	P. Fowler
Microbiology	209	2nd	Li	Raymond	Sensitivity of Bacteria to Metals During Lag Phase VS Growth Phase	10	Canyon Crest Academy	A. Haas
Plant Sciences	224	4th	Li	Shaun	Effects of the Combination of Endomycorrhizal and Cyanobacterial Symbioses on Nitrogen Uptake in Hornworts	10	Canyon Crest Academy	A. Haas
Biochemistry	121	3rd	Li	Vivian	The Impact of Diet Upon Metabolism in Fish	10	La Jolla Country Day School	D. Padgett
Behavioral & Social Sciences	109	3rd	Liu	Albert	What Affects the Probability of School Shootings?	9	Scripps Ranch High School	P. Fowler
Microbiology	210	1st	Liu	Edward	Pathogenic Bacteria Disrupts Skin Barrier in Atopic Dermatitis	11	Canyon Crest Academy	A. Haas
Computer Science	137	3rd	Liu	Livia	No Texting While Driving App	9	Olympian High School	M. Claudio
Chemistry	128	4th	Magana	Jasmine	How a Decrease in Temperature Affects an Oscillating Reaction	10	Central Union High School	L. Rueda
Medicine & Health Sciences	191	1st	Mandyam	Atulya	SCH 23390 Inhibits Cell-Death Produced by Methamphetamine in Human Neuronal Progenitor Cells	10	Westview High School	My-N. Ingram
Medicine & Health Sciences	192	3rd	Mendoza	Sebastian	Sleep Deprivation on Human Deep Tendon Reflexes	12	Bonita Vista High School	M. Mardahl-Dumesnil

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Category	Booth	Place	Last Name	First Name	Project Title	Grade	School	Advisor
Behavioral & Social Sciences	110	2nd	Mohamed	Mustafa	Will Brain Games Increase IQ	10	Bright Horizon Academy	N. Naserelddin
Engineering: Electrical & Mechanical	152	3rd	Monroy	Diego	Winds of Change	9	Vincent Memorial Catholic High School	R. Lizarraga
Engineering: Materials & Bionegineering	162	2nd	Montoya	Issael	The Effect of Salt and Sugar on a Microbial Fuel Cell	10	Central Union High School	L. Rueda
Medicine & Health Sciences	193	3rd	Morales	Andres	Fast Food VS Homemade Food	9	Gompers Preparatory Academy	J. Ullyott
Behavioral & Social Sciences	111	3rd	Munoz	Priscila	Correlation Between Recurring Dream Themes and Anxiety Disorders	10	Central Union High School	L. Rueda
Plant Sciences	225	3rd	Nafarrete	Noah	The Effect of Ferrous Iron Gluconate on Chloroplast Biosynthesis and Anthocyanin Regulation in <i>Rotala rotundifolia</i>	12	Bonita Vista High School	M. Mardahl-Dumesnil
Microbiology	211	3rd	Narayana Murthy	Adhithi	Identification, Cloning, and Expression of Desaturase Enzyme in <i>E.coli</i> Bacteria	10	Del Norte High School	A. Callicott
Medicine & Health Sciences	194	1st	Negrete	Alexis	ADHD in a Stratified Pediatric Sample: A Study of Prevalence, Comorbid Conditions, & Impairments	12	Central Union High School	L. Rueda
Microbiology	212	1st	Osman	Shukriya	Antioxidants: A Potential Key In Preventing Radiotherapy Cell Toxicity	9	Bright Horizon Academy	N. Naserelddin
Environmental Sciences & Management	173	2nd	Oualline	Grace	Determining the Efficacy of Mycelium Water Filtration Systems	11	La Jolla Country Day School	D. Padgett
Computer Science	138	1st	Pabari	Raj	DNA Storage - Novel, Cloud-Based Solution to Archive Digital Data Using Synthetic Nucleotides	10	Classical Academy High School	D. Bower
Behavioral & Social Sciences	112 Team	3rd	Padilla	Daniella	The Effect of Talking Versus Texting on Human Reaction Time	10	Central Union High School	L. Rueda

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Engineering: Materials & Bionegineering	163	2nd	Palayur	Ann	Saving Habitats and Water Via Controlled Plant Environments	12	St. Joseph Academy	R. Sjogren
Plant Sciences	226	3rd	Palayur	Sarah	Why Do Seeds Germinate at Different Paces?	9	St. Joseph Academy	R. Sjogren
Behavioral & Social Sciences	113	3rd	Perez	Anaid	The Environmental Factors That Triggers the Development of Persistent Asthma	11	Central Union High School	L. Rueda
Behavioral & Social Sciences	114	3rd	Quijada	Miriam	Effect of Organization on Short-Term	10	Central Union High School	L. Rueda
Medicine & Health Sciences	195	3rd	Ramirez	Jadyn	NSAIDs: The Fastest Pain Relief	10	Central Union High School	L. Rueda
Mathematical Sciences	178	2nd	Ranka	Siddhant	Measurement of Correlation and Randomness in Irrational Numbers	11	Del Norte High School	A. Callicott
Computer Science	139	2nd	Rizo	Petunia	Using Musical Notation to Encrypt Messages in Python	9	Mt. Everest Academy	N. Negus
Computer Science	140	2nd	Rosenbaum	Maya	Game-Based Gratitude Journal App for Android	10	Canyon Crest Academy	A. Haas
Environmental Sciences & Management	174	2nd	Sanchez	Sabrina	One Man's Trash Is Another Worm's Treasure	12	Bonita Vista High School	M. Mardahl-Dumesnil
Engineering: Energy & Transport	156	1st	Schremmer	Bella Rose	Powered Piers and Beaches by the Rise and Fall of Waves -- A Novel Wave Energy Conversion Application	9	University City High School	M. Quessenberry
Behavioral & Social Sciences	115	1st	Shriram	Anjana	Prepotent Response Inhibition in ASL vs. non-ASL Multilinguals- A Correlative Study	10	Canyon Crest Academy	A. Haas
Engineering: Electrical & Mechanical	153	3rd	Soliman	Ziyad	Stop That Car!	10	Classical Academy High School	N. Naserelddin

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Behavioral & Social Sciences	112 Team	3rd	Stallworth	Kayla	The Effect of Talking Versus Texting on Human Reaction Time	11	Central Union High School	L. Rueda
Computer Science	141 Team	3rd	Stevenson	Kayla	SocialCue: Breaking Down Communication Barriers	10	Olympian High School	M. Claudio
Medicine & Health Sciences	196	1st	Tang	Jason	Understanding the Function of Novel Tumor Suppression Gene UBE1L in Melanoma	11	Canyon Crest Academy	A. Haas
Physics & Astronomy	220	3rd	Tanori	Efrain	Effect of Down Force of the Best Beyblades using a MainStays Fan	11	Central Union High School	L. Rueda
Computer Science	141 Team	3rd	Telang	Aditi	SocialCue : Breaking Down Communication Barriers	10	Olympian High School	M. Claudio
Engineering: Materials & Bionegineering	164	1st	Tianshi	Emily	Atmospheric Moisture Harvesting Device: Biomimicking Torrey Pine Needles	11	The Cambridge School High School	M. Mayne
Microbiology	213	2nd	Udata	Sidharth	Phage Phases: How Stress Affects Bacteriophage Transition from Lysogenic to Lytic Pathways	10	Canyon Crest Academy	A. Haas
Computer Science	142	1st	Um	Christopher	Improving Complexity of Grover's Algorithm Using Qutrits Manipulation and a Novel Two-Dimensional System of the Oracle	11	Torrey Pines High School	B. Belyea
Microbiology	214	3rd	Unpingco	Nicholas	How Does Stress Affect Bacterial Susceptibility to Bacteriophage Infection in E. Coli?	11	Canyon Crest Academy	A. Haas
Engineering: Energy & Transport	157	3rd	Vallejo	Jose	Aerodynamics & Bridge Design	9	Gompers Preparatory Academy	J. Ulloytt
Microbiology	215	2nd	Vangala	Yashasvi	Investigation Into the Rate of Development of Phage Resistance in E.coli	11	Canyon Crest Academy	A. Haas
Chemistry	129	2nd	Vargas	Audrey	Photocatalytic Treatment of Wastewater and Hydrogen Production	11	Sweetwater High School	J. Chase



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Microbiology	216	2nd	Vaughn	Justin	Effect of Different Media on Synthesis of Silver Nanoparticles by Aspergillus niger	10	Canyon Crest Academy	A. Haas
Physics & Astronomy	221	1st	Vijayakumar	Vivek	Characterizing the Pulsations of Delta Scuti Stars Using the Mg I b Triplet	11	San Marcos High School	R. Terrill
Biochemistry	123	1st	Wang	Daniel	Lock Them Up: Capture Proteins in Action Using Covalent Bonds	10	Torrey Pines High School	B. Belyea
Medicine & Health Sciences	197	1st	Wang	Jeffrey	Multiple Factor Analysis Methods Elucidate Genome Expression Changes Across Cell Types	11	The Bishop's School	A. Pelletier
Biochemistry	124	1st	Wang	Kate	Machine Learning and Pharmacophore- Based Drug Discovery for Treating Duchenne Muscular Dystrophy	11	Canyon Crest Academy	A. Haas
Environmental Sciences & Management	169 Team	1st	Whall	Dagny	A Device to Detect GenX Contaminated Water Using Chemical Indication and Colorimetry	10	La Jolla High School	H. Eaton
Plant Sciences	227	1st	Williams	Skyler	The Role of Increased Flavonoid Accumulation in Protection of Pollen from Ultraviolet Radiation B	11	Canyon Crest Academy	A. Haas
Computer Science	143	1st	Wu	Dustin	Deep Learning Jazz Ensemble	12	Pacific Ridge High School	R. Mudaliar
Biochemistry	125	1st	Wu	Kyra	Identification of Natural and Synthetic Inhibitors of E. Coli fabI through Virtual Screening	11	Canyon Crest Academy	A. Haas
Computer Science	144	1st	Xu	Ellen	Artificial Intelligence Based Kawasaki Disease Early Diagnosis	9	Del Norte High School	A. Callicott
Chemistry	130	2nd	Xu	Ian	The Detection and Discrimination of Volatile Organic Vapors in a Thermally Cycled Porous Silicon Photonic Crystal Nanosensor	11	Del Norte High School	F. Liao
Chemistry	131	2nd	Xu	Kane	Copper Catalyzed Hydroboration Of Benzylidenecyclobutanes	11	Del Norte High School	F. Liao

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Medicine & Health Sciences	198	1st	Xu	Lynne	Develop a Human Brain Organoid Model to Investigate Neuroinflammation in Neurological Diseases	11	Torrey Pines High School	B. Belyea
Medicine & Health Sciences	199	2nd	Yao	Maxwell	Effect of a Combinatory RNAi Transfection on Kras-mutant Colorectal Cancer	11	Canyon Crest Academy	A. Haas
Microbiology	217	3rd	Yardley	Grace	Phage Stability		Canyon Crest Academy	A. Haas
Engineering: Materials & Bionengineering	165	3rd	Ymaz	Cecilia	Desalinate-It-Yourself: Desalinating Salt Water Using A DIY Filter	9	Chula Vista High School	G. Saclauso-Caro
Engineering: Electrical & Mechanical	154	1st	Zeng	Michael	For the Deaf to "Hear" - An Experimentation of Augmented Reality	10	The Bishop's School	B. Heldt
Medicine & Health Sciences	200	1st	Zhu	Wanyi	Molecular Mechanisms of an HTLV Infection	11	Canyon Crest Academy	A. Haas