

**2023 USEF - Senior Division**

Category and Rank	Name	School	Project Title
Behavioral & Social Sciences - First	Sierra Sun	The Waterford School	Competing Biases: Parochial Empathy vs. Moral Blameworthiness
Behavioral & Social Sciences - Second	Sarah Wilkins	Juan Diego Catholic High	Exploring Expressive Journaling on Veterinary Professionals' Mental Health
Behavioral & Social Sciences - Third	Caroline Cook	Salt Lake Center for Science Education (SLCSE)	High School Students, Birth Control, and Abortion
Biology & Microbiology - First	Megan Tandar	West High	A Fluorogenic-Based Assay to Measure Chaperone-Mediated Autophagy Activity in Cells and Tissues
Biology & Microbiology - Second	Taylor Apgar	Juan Diego Catholic High	Biocompatibility of Micellar Propofol in Human and Murine Macrophages
Biology & Microbiology - Third	Saathvik Pai	West High	The Effect of GRIN2B Deficiency on Neurite Morphology
Biology & Microbiology - Fourth	Jayashabari Shankar & Narayani Shankar	Hillcrest High	Analyzing Virus Genomes with Intervene and Python programs
Chemistry & Biochemistry - First	Madilyne Beaudry	St. Joseph High School	Testing the Use of Crude Enzymes from White-rot Fungus for Sustainable Cellulose Delignification
Chemistry & Biochemistry - Second	Jacob Galang	Juan Diego Catholic High	Macro Molecular Therapeutics for Cancer Treatment: Multivalent HPMA Polymer-Peptide Conjugate for DR5 Crosslinking and Apoptosis
Chemistry & Biochemistry - Third	Andrew Lefort	Juan Diego Catholic High	Biochemical Analysis of Minimal Crinoid Polyketide Synthase Versus Wild Type Crinoid PKS
Chemistry & Biochemistry - Fourth	Megan Selmer	Juan Diego Catholic High	Antibiotic Discovery from Great Salt Lake-Derived Actinomycetes
Civil & Environmental Engineering - First	Krishnam Goel	West High	Harmful Algal Blooms Threaten Global Surface Water Sustainability- an ecosystem based study
Computer Science & Applied Computational Methods - First	Cole Chu & Alex Hernandez	West High	Action Detection for ASL(American Sign Language)
Computer Science & Applied Computational Methods - Second	Shurik Rajeev	West High	Detecting Mutations in the Human Genome Through K-mer Counting
Computer Science & Applied Computational Methods - Third	Vishwa Murugappan	Hillcrest High	Analyzing Twitter Discussion of Electronic Nicotine Delivery Systems among Teenagers
Computer Science & Applied Computational Methods - Fourth	Hanxiao Shi	West High	Enhancing Social/Financial Fairness via Adversarial Machine Learning
Earth & Environmental Sciences - First	Hazel Wilde	Salt Lake Center for Science Education (SLCSE)	The Effect of the Changing Climate on Temperature Stressors for Pika (Ochotona princeps)
Earth & Environmental Sciences - Second	Aleaokalani Pindat-Kahele	Juan Diego Catholic High	The Effect of Varying Concentrations of Rock Climbing Chalk on Thymus Vulgaris
Earth & Environmental Sciences - Third	Nina Zhu	West High	The Effect of Climate Change on Bacteria in Natural Water Environments
Earth & Environmental Sciences - Fourth	Andrew Yrungaray	Salt Lake Center for Science Education (SLCSE)	Mitigating the Effects of Great Salt Lake Dust: An Investigation into Soil Binders
Electrical Engineering - First	Ridhitha Nachaegari	The Waterford School	Smart Blind Opener
Electrical Engineering - Second	Anda Xie	West High	RecyclEDU
Electrical Engineering - Third	Daniel Christenson	American Preparatory Academy APA West Valley 2	Shocking Self Defense
Energy: Chemical & Physical - First	Angelina Nguyen	Hunter High	Sustainable Environment: Investigating Efficiency of Alternative Fuels With Biofuels
Energy: Chemical & Physical - Second	Weijun Liang	Juan Diego Catholic High	A new method for computing Transition Charges and Vibrational Couplings
Mechanical & Materials Engineering - First	Evan Weinstein, Aiden Gandhi & Eli Hatton	Rowland Hall	A Novel Approach to Heating Mechanisms in Electric Aircraft Engines Using Thorium Dioxide Coated Tungsten Carbide
Mechanical & Materials Engineering - Second	Joseph Griffith	Stansbury High School	Study of Carbon Fiber Curing in Space
Mechanical & Materials Engineering - Third	Cade Hunter	American Heritage	Revers Ride on the Backwards Bike
Mechanical & Materials Engineering - Fourth	James White II	Stansbury High School	InfiniCase
Medicine, Health Sciences, & Biomedical Engineering - First	Audrey Su	Skyline High	Identification and Analysis of Metabolic Inhibitors in ctnnb1-driven Hepatocellular Carcinoma (HCC) in Transgenic Zebrafish (Danio rerio)
Medicine, Health Sciences, & Biomedical Engineering - Second	Mercedes Randhahn	St. Joseph High School	Investigating the Emerging Potential of Centella asiatica, Centella erecta, and Hydrocotyle verticillata as Accessible Treatments for Triple-negative Breast Cancer

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Medicine, Health Sciences, & Biomedical Engineering - Third	Sahil Shah & Shayan Pandit	The Waterford School	Predicting Symptomatic Alzheimers' Precursor (MCI) through Cerebellar Lobular Volume with Regards to Cognitive/Motor Aging; a Voxel-Based Analysis
Medicine, Health Sciences, & Biomedical Engineering - Fourth	Aarav Parikh	Hillcrest High	Development of Propofol-based Nanoparticle Manufacturing Model for Targeted Drug Delivery
Physics, Astronomy & Math - First	Sophie Zheng	Rowland Hall	Investigating the Origins of Hot Neptunes with Radial Velocity Data
Physics, Astronomy & Math - Second	Sasha Acevedo & Castle Kishbaugh	Salt Lake Center for Science Education (SLCSE)	Time Crystals
Physics, Astronomy & Math - Third	Shelton Burton	Grantsville High	Wings Shape and Flight Distance
Plant Sciences - First	Isabella DeLagerheim	Salt Lake Center for Science Education (SLCSE)	Creating Soil Stability on The Great Salt Lake Utilizing Biosolids
Plant Sciences - Second	Om Das & Idai Cotache	Mount Vernon Academy	Indoor Farming

<b>Regeneron ISEF Grand Champion Winners</b>			
Observer	Cade Hunter	American Heritage	Revers Ride on the Backwards Bike
Observer	Tanvi Bandiatmakur	West High	Sublocalization of Magi-1 and Kirrel-3 in CHO Cells
Observer	Angelina Nguyen	Hunter High	Sustainable Environment: Investigating Efficiency of Alternative Fuels With Biofuels
Winner	Cole Chu & Alex Hernandez	West High	Action Detection for ASL(American Sign Language)
Winner	Audrey Su	Skyline High	Identification and Analysis of Metabolic Inhibitors in ctnnb1-driven Hepatocellular Carcinoma (HCC) in Transgenic Zebrafish (Danio rerio)
Winner	Sophie Zheng	Rowland Hall	Investigating the Origins of Hot Neptunes with Radial Velocity Data
Winner	Evan Weinstein, Aiden Gandhi & Eli Hatton	Rowland Hall	A Novel Approach to Heating Mechanisms in Electric Aircraft Engines Using Thorium Dioxide Coated Tungsten Carbide