

2024 USEF - Senior Division

Category and Rank	Name	School	Project Title
Behavioral & Social Sciences - First	Sierra Sun	The Waterford School	Differential Empathy and the Limitations of Social Science Research
Behavioral & Social Sciences - Second	Aadi Mishra	The Waterford School	Silent Echoes: Understanding and Predicting the Widespread Mental Health Impact of Mass Shootings
Behavioral & Social Sciences - Third	Liliana Swanson	Juan Diego Catholic High	The Role of Test-Taking Strategies on Sex Differences in AP Chemistry
Behavioral & Social Sciences - Fourth	Jenna Fang	Juan Diego Catholic High	Gender Differences in the Emotional Response to Mark Rothko's Paintings
Biology & Microbiology - First	Kaitlyn Cao	Skyline High	HIV-1 Tat Affects Lysosomal Nitric Oxide (NO) Levels in Neurons
Biology & Microbiology - Second	Nina Zhu	West High	Antler Regeneration-Associated Proteins Promote Regenerative Cell Behaviors in Mouse Bone Progenitor Cells
Biology & Microbiology - Third	Gabriella Miranda, Samuel Morse & Mikko Anderson	Rowland Hall	Competitive Algal Growth Dynamics of Chlorella and Scenedesmus in Varied Nitrogen-Phosphorus Growth Media
Biology & Microbiology - Fourth	Trang Nguyen	Cottonwood High	Unaltered ERK1/2 Phosphorylation Preceding Cardiac Hypertrophy: Insights into Metabolic Alterations from an MPC1 Knockout Model
Chemistry & Biochemistry - First	Aidan Yu	West High	Biomedically Functional Sugars: Streamlined Approaches Towards Glycan-Based Drug Design
Chemistry & Biochemistry - Second	Quinn Orgain, Marina Peng & Halle Baughman	Rowland Hall	Microalgae Bio-cement: A Strong and Sustainable Alternative to Traditional Cement Production
Chemistry & Biochemistry - Third	Parv Kale	The Waterford School	Digital Detection of Chlorophyll in Cooking Oils: A Novel Approach Beyond Spectrophotometry
Chemistry & Biochemistry - Fourth	Jennifer Dipoma	Juan Diego Catholic High	Understanding How The p53-Bad* Gene Therapy Triggers Cell Death in Liver Cancer
Civil & Environmental Engineering - First	Hobie Hodlmair	Juan Diego Catholic High	Insulation proficiency of varying materials in cavity walls
Civil & Environmental Engineering - Second	Aneesh Rao	Skyline High	A Sticky Solution to Styrofoam Waste for a Greener Future
Computer Science & Applied Computational Methods - First	Lavanya Mohnani	Hillcrest High	ImproveYES: A State-Of-The-Art Method To Foresee Diabetic Retinopathy by Creating a Machine-Learning-Based Computational Algorithm
Computer Science & Applied Computational Methods - Second	William Silver	Skyline High	Visualizing Convolutional Neural Networks
Computer Science & Applied Computational Methods - Third	Aadarsh Kuberan	West High	Evaluation of Image Learning Against ECFP6 Fingerprinting for DNA-Encoded Library Drug Screening
Computer Science & Applied Computational Methods - Fourth	Shurik Rajeev	West High	Detecting Mutations in the Human Genome Through Reducing Hash Table Collisions
Earth & Environmental Sciences - First	Arianna Vazquez	Juan Diego Catholic High	Exploring the Impact of Wildfires on Algae Growth in Utah Lake
Earth & Environmental Sciences - Second	Krishnam Goel	West High	Redefining the Paradigm of Toxic Algal Blooms under Nutrient-Limited Conditions- A Breakthrough in Cyanobacterial Genomics
Earth & Environmental Sciences - Third	Caroline Cook	Salt Lake Center for Science Education (SLCSE)	Interpreting Local Fossil Fuel Use with Stable Carbon Isotopes in Tree Rings
Earth & Environmental Sciences - Fourth	Hazel Wilde	Salt Lake Center for Science Education (SLCSE)	Snow Weigh; There's an Avalanche!
Electrical Engineering - First	Anda Xie	West High	A Novel Implementation of ChatGPT (GPT-3.5) Based Turn-Taking Intelligent Assistance Technology (IAT)
Electrical Engineering - Second	Ridhitha Nachaegari	The Waterford School	Heart Rate Monitor: A Student's Version
Electrical Engineering - Third	Mikhail Strykh, Shalin Mahate & Ivan Turan	West High	Aquarium Heater
Electrical Engineering - Fourth	James Vaughan & Timothy Galkin	Cottonwood High	Using Rectenna to Measure 5G Coverage in Utah Ski Resorts

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Energy: Chemical & Physical - First	Angelina Nguyen	Hunter High	Enhancing Energy from Fast-Food Waste in Microbial Fuel Cells: Electrode Configurations and Oil-Rich Substrates
Energy: Chemical & Physical - Second	Brian Schlisman & Annukka Payne-Rinne	Salt Lake Center for Science Education (SLCSE)	Particulate Matter and Biodiesel
Mechanical & Materials Engineering - First	Evan Weinstein, Aiden Gandhi & Eli Hatton	Rowland Hall	A Novel Multi-Modal Drone for Remote Water Testing
Mechanical & Materials Engineering - Second	Kritpol Poollapwisit & Dominick Garcia	Mount Vernon Academy	Dogs' bathroom
Medicine, Health Sciences, & Biomedical Engineering - First	Sahil Shah	The Waterford School	A Novel Therapeutic Approach for Peripheral Neural Sheath Tumors
Medicine, Health Sciences, & Biomedical Engineering - Second	Mingchuan Cheng	West High	Creating More Intuitive Prostheses: A Quantitative Method of Assessing Cognitive Load
Medicine, Health Sciences, & Biomedical Engineering - Third	Emily Conway	Juan Diego Catholic High	Detecting X-Linked Hypophosphatemia: A Novel Diagnostic Approach
Medicine, Health Sciences, & Biomedical Engineering - Fourth	Aditya Mole	Hillcrest High	What specific molecular pathways and crosstalk mechanisms underlie the observed increase in autophagy when KRAS is suppressed in pancreatic ductal adenocarcinoma, and how can this comprehensive understanding inform potential therapeutic strategies?
Physics, Astronomy & Math - First	Aadhi Umamageswaran	West High	Silhouettes of Sound (Fingerprinting Animal Vocalizations for Species Identification)
Physics, Astronomy & Math - Second	Natalie Germanov & Sanskriti Negi	West High	Rendering Higher Dimensions with Ray Tracing
Physics, Astronomy & Math - Third	Forest Young & Victor Young	Skyline High	Opto-electronic Correlation Recognition: Improved Logarithmic Joint Transform Correlator with eliminated zero-order term (NO ILJTC)
Physics, Astronomy & Math - Fourth	Sophie Zheng	Rowland Hall	Comparing the Origins of Hot Neptunes and Hot Jupiters

Regeneron ISEF Grand Champion Winners			
Winner	Sierra Sun	The Waterford School	Differential Empathy and the Limitations of Social Science Research
Winner	Aidan Yu	West High	Biomedically Functional Sugars: Streamlined Approaches Towards Glycan-Based Drug Design
Winner	Sahil Shah	The Waterford School	A Novel Therapeutic Approach for Peripheral Neural Sheath Tumors
Winner	Mingchuan Cheng	West High	Creating More Intuitive Prostheses: A Quantitative Method of Assessing Cognitive Load
Winner	Aadhi Umamageswaran	West High	Silhouettes of Sound (Fingerprinting Animal Vocalizations for Species Identification)