

USEF 2020 - Senior Division			
Category and Rank	Name	School	Project Title
Behavioral & Social Sciences - First	Yvonne Kim	West High	Significant Brain Network Abnormalities in Autistic Children: The Analysis of Semantic, Speech, Motor, and Socio-Emotional Networks
Behavioral & Social Sciences - Second	Henry Brunisholz	Juan Diego Catholic High	The Relationship between Personality and Political Opinion
Behavioral & Social Sciences - Third	Nathan Flores & Susan Arcos Flores	Salt Lake Center for Science Education (SLCSE)	Psychological Benefits from Lithium Ions in Water
Behavioral & Social Sciences - Fourth	Skylar Kramer	AMES High School	CTE vs. Football
Biology & Biochemistry - First	Christopher Li	West High	Applying RNAi Screening to Identify Novel Genes that Control Intestinal Stem Cell Proliferation and Gut Regeneration
Biology & Biochemistry - Second	Thomas Barbera	Juan Diego Catholic High	Melanoma Gene Therapy: Using p53-Bad, a Tumor Suppressor-Apoptotic Protein Fusion
Biology & Biochemistry - Third	Aiden Pasinsky	Beehive Academy	Manipulating Prochlorococcus Algae for Improved CO2 Fixation and Temperature Resilience: Validated by Genetic Comparison
Biology & Biochemistry - Fourth	Anoushka Kharkar	West High	Determining the Effect of Intrauterine Growth Restriction and Postnatal Development on Alternative Splicing of Elastin in the Rat Lung
Chemistry - First	Sage Fuller	Salt Lake Center for Science Education (SLCSE)	CO2 Reduction Potential of Chromium and Iron
Chemistry - Second	Diana Alzen	Hillcrest High	The Effect of Cold Temperatures on Batteries
Earth & Environmental Sciences - First	Olivia Slaughter & Molly Chien	Salt Lake Center for Science Education (SLCSE)	Analyzing the Cortisol Levels of Ochotona princeps and Temperature Trends in the Great Basin Alpine Microclimate Habitats
Earth & Environmental Sciences - Second	Wentao Zhang	Hillcrest High	Building Air Quality Predictions With Machine Learning Techniques
Earth & Environmental Sciences - Third	Sevara Frederico & Dora Meiwes	West High	The Influence of Fungal Microorganisms in Soil Biomes on the Drought Resistance of Radish Plants
Earth & Environmental Sciences - Fourth	Darin Sandberg	Grantsville High	Implications of mushrooms in oil clean up.
Energy: Chemical & Physical - First	Marianne Liu	West High	A Novel Experimental-Computational Approach for Advanced Solid Polymer Electrolyte Design
Energy: Chemical & Physical - Second	Daniel Elliott & Zach Greenberg	Skyline High	Beyond the Decomposition Potential: The relationship between current and the rate of electrolysis of water as measured by the production of oxyhydrogen gas
Energy: Chemical & Physical - Third	Collin Stanley	Salt Lake Center for Science Education (SLCSE)	Generating Electricity From Wasted Energy
Energy: Chemical & Physical - Fourth	Luke Ussing	Grantsville High	Thermometric generators to harness excess heat from an automobile.
Engineering: Civil & Environmental - First	Warren Ellsworth	Hillcrest High	Our Water Breaking-Point: Resolving Detrimental Reservoir Mismanagement by Implementation of Advanced Multiparametric Modeling
Engineering: Civil & Environmental - Second	Makayla Lear	Grantsville High	Bioplastic Packaging Material
Engineering: Civil & Environmental - Third	Lennon Splain & Xander Allred	Salt Lake Center for Science Education (SLCSE)	Increasing Thermal Efficiency by Using Glass Bottles as Insulation
Engineering: Civil & Environmental - Fourth	Ellis Chalker & Kaden Hurley	Salt Lake Center for Science Education (SLCSE)	Can algae bio-mediate eutrophic nutrients out of water in a controlled environment
Engineering: Electrical & Computer Science - First	Isabella Bertagnolli	Juan Diego Catholic High	VanGAN: Computational Aesthetics using Generative Adversarial Networks
Engineering: Electrical & Computer Science - Second	Emma Grealley	The Waterford School	Human-Powered Generator: An Engineering Solution (Phase V)
Engineering: Electrical & Computer Science - Third	Aidan Jameson	AMES High School	AI to Detect Eosinophils
Engineering: Electrical & Computer Science - Fourth	Wensen Zhang	Hillcrest High	Improving Security and Fraud Prevention in Blockchains
Engineering: Materials & Biomedical - First	Malavika Singh	West High	Enabling Precision Medicine: An Innovative Approach for Classifying Genetic Mutations Using Natural Language Processing Algorithms
Engineering: Materials & Biomedical - Second	Anastasia Dunca	West High	Machine Learning Applications to Single Cell RNA Sequencing Data Analysis: An Unsupervised Learning Approach Towards Sub Clonal Cell Population Identification for Target Therapy Applications Against Tumor Heterogeneity

Engineering: Materials & Biomedical - Third	Brendon Young	West High	A Ring-Based Non-Invasive Technique for Human Cardiac and Cardiovascular Health Monitoring
Engineering: Materials & Biomedical - Fourth	Matthew Simmons	Hillcrest High	In Depth Detection of Pneumonia Among Young Children Using Image Recognition Techniques
Engineering: Mechanical - First	Nathaniel Loveless	West High	An Optimization of the Marriage Between FDM Manufactured Components and Conventional Material Stock
Engineering: Mechanical - Second	Ellie Tille, Elenor Stevens & Crista Suggars	AMES High School	Asthma Friendly Fireworks
Engineering: Mechanical - Third	Benjamin Scott	Stansbury High School	Electrostatic Discharge Apparatus
Medicine & Health Sciences - First	Keegan Gilbert	Juan Diego Catholic High	Characterization of learning and memory dysfunction in mouse models of genetic and acquired epilepsy
Medicine & Health Sciences - Second	Clara Tandar	West High	Aurora Kinase Inhibitor Synergy Screen to Enhance Chemotherapeutic Sensitivity
Medicine & Health Sciences - Third	Evalien Duyvesteyn	Juan Diego Catholic High	The Effect of Lactic Acid in Mice Models of Epilepsy and SUDEP
Medicine & Health Sciences - Fourth	Aarav Singh	Beehive Academy	The Use of An Augmented Reality Microscope with AI-Based Image Classification in the Rapid Detection of Bacteria
Physics, Astronomy & Math - First	Tarun Martheswaran	The Waterford School	An Enhanced Early Detection Model of Dengue Fever Outbreaks Using SEIR Infectious Disease Epidemiological Compartments, Generalized Linear Regression Relationships, and Statistical Computing
Physics, Astronomy & Math - Second	Seung Jean Yoo	West High	Using Machine Learning to Classify Dwarf Galaxy Candidates
Physics, Astronomy & Math - Third	Lukas Mesicek	Salt Lake Center for Science Education (SLCSE)	Simulating Spacetime: General Relativity in Action
Physics, Astronomy & Math - Fourth	Brian Wu, Dereje Lambert & Dikchit Acharya	The Waterford School	Global Chemical Enrichment of Galaxies Using Dust Absorbers in the Early Universe
Plant Sciences - First	Lucy Engar & Evan Birkinshaw	Salt Lake Center for Science Education (SLCSE)	Investigating the Effects of CH <sub>4</sub> on Micorbial Colonies in Primula vulgaris and General Health of Dianthus caryophyllus
Plant Sciences - Second	Armando Martinez	Salt Lake Center for Science Education (SLCSE)	Using Algae to Advert the Process of Ocean Acidification

<b>Intel ISEF Grand Champion Winners</b>			
Observer	Wentao Zhang	Hillcrest High	Building Air Quality Predictions With Machine Learning Techniques
Winner	Olivia Slaughter & Molly Chien	Salt Lake Center for Science Education (SLCSE)	Analyzing the Cortisol Levels of Ochotona princeps and Temperature Trends in the Great Basin Alpine Microclimate Habitats
Winner	Tarun Martheswaran	The Waterford School	An Enhanced Early Detection Model of Dengue Fever Outbreaks Using SEIR Infectious Disease Epidemiological Compartments, Generalized Linear Regression Relationships, and Statistical Computing
Winner	Seung Jean Yoo	West High	Using Machine Learning to Classify Dwarf Galaxy Candidates
Winner	Christopher Li	West High	Applying RNAi Screening to Identify Novel Genes that Control Intestinal Stem Cell Proliferation and Gut Regeneration
Winner	Keegan Gilbert	Juan Diego Catholic High	Characterization of learning and memory dysfunction in mouse models of genetic and acquired epilepsy
Winner	Clara Tandar	West High	Aurora Kinase Inhibitor Synergy Screen to Enhance Chemotherapeutic Sensitivity