

The 67th Annual GSDSEF

GRAND AWARDS

2021

Junior Division

**Grand Awards
Runners-Up**

Junior Division

Grand Award Runner Up - Life Sciences

William Gao

Pacific Trails Middle School, Grade 7

Advisor: S. Thacker

*Finding Noninvasive Pancreatic Cancer
MicroRNA Biomarkers*

Junior Division

Grand Award Runner Up - Life Sciences

Sarah Gao

Pacific Trails Middle School, Grade 8

Advisor: S. Thacker

Finding Inhibitors of Bacterial Efflux Pump Proteins

Junior Division

Grand Award Runner Up - Physical Sciences

Neha Bhat

Carmel Valley Middle School, Grade 8

Advisor: N. Clum

*Using Google Earth Engine to Identify California
Gnatcatcher Habitats*

Junior Division

Grand Award Runner Up - Physical Sciences

Isa Timm

The Children's School, Grade 8

Advisor: D. Quincannon

Designing a Bicycle Powered Charging System

Senior Division

Grand Awards

Runners-Up

Senior Division

Grand Award Runner Up - Life Sciences

Eleanor Jung

Mt. Carmel High School, Grade 10

Advisor: A. Klingborg

Molecular Dynamics Simulation of Novel Klebsiella pneumoniae Treatment Disrupting the Outer Membrane

Senior Division

Grand Award Runner Up - Life Sciences

Kara Fan

Westview High School, Grade 10

Advisor: S. Halander

Dragonflies Beat Infection! Fabrication of Antibacterial Nanostructures for Orthopedic Implants

Senior Division

Grand Award Runner Up - Physical Sciences

Andrew Li

Canyon Crest Academy, Grade 10

Advisor: W. Slijk

*The Age of the Coma Ber Cluster Constrained Using
Amateur Data*

Senior Division

Grand Award Runner Up - Physical Sciences

James Hou

The Bishop's School, Grade 10

Advisor: M. Jaiclin

*Probabilistic Approach to Analyzing Racial Bias in BERT
on an Attribute Basis*

The Taiwan Award

**A Grand Award presented by the
Taiwanese American Foundation of San Diego**

The Taiwan Award

Kara Fan

Westview High School, Grade 10

Advisor: S. Halander

*Dragonflies Beat Infection! Fabrication of Antibacterial
Nanostructures for Orthopedic Implants*

Junior Division

Grand Awards

Junior Division

Grand Award – Life Sciences

Leanne Fan

Mesa Verde Middle School, Grade 7

Advisor: J. Woo

*Controlling Middle Ear Infection Using
Photodynamic Therapy*

Junior Division
Grand Award - Life Sciences

Kate Xu

Oak Valley Middle School, Grade 8

Advisor: K. Smith

*Identifying Patterns in Kawasaki Disease Patients
through Data Analysis and Visualization*

Junior Division

Grand Award - Physical Sciences

Sidarth Erat

Erat School, Grade 8

Advisor: S. Erat

*Colonel Blotto Game: An Analysis and Extensions
to Networks*

Junior Division

Grand Award - Physical Sciences

Arnav Dagar

Pacific Trails Middle School, Grade 7

Advisor: K. Chen

A Study of AI Agents for Two Player Games

Senior Division

Grand Awards

Senior Division
Grand Award - Life Sciences

Ellen Xu

Del Norte High School, Grade 10

Advisor: A. Callicott

*Developing a Robust Deep Ensemble Network for
Kawasaki Disease Early Diagnosis*

Senior Division

Grand Award - Life Sciences

Ayush Agrawal

Canyon Crest Academy, Grade 11

Advisor: W. Slijk

*Early Warning Detection of Arsenic Contamination from Hyperspectral
Remote Sensing and Deep Learning: An Application to Asia*

Senior Division

Grand Award - Physical Sciences

Ryan Clairmont

Canyon Crest Academy, Grade 11

Advisor: W. Slijk

*Morpho-Kinematic and Hydrodynamic Modeling
of the Cat's Eye Nebula*

Senior Division

Grand Award - Physical Sciences

Kyle Tianshi

The Cambridge School, Grade 9

Advisor: M. Mayne

*NEREID: Nanoparticle Examining Raspberry Pi Empowered
Image Processing Detector*

The 67th Annual GSDSEF

ISEF Finalists

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Ellen Xu

Ayush Agrawal

Ryan Clairmont

Kyle Tianshi

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Ellen Xu

Ayush Agrawal

Ryan Clairmont

Kyle Tianshi

Eleanor Jung

Andrew Li

**Congratulations to our
Award Winners**