

2022 CREST-Jane Goodall Science Symposium Regional and CREST Special Awards

Outstanding Project in Atmospheric Science

The Outstanding Project in Atmospheric Science, sponsored by the American Meteorological Society, awards a Certificate of Outstanding Achievement for creative scientific endeavor in the areas of atmospheric and related oceanic and hydrologic sciences. Each year the AMS publishes the names of science fair winners in the December issue of the *Bulletin of the American Meteorological Society*.

Rubi Martin, Claire Keith

How do pollutants affect lichen?

Outstanding Research in Psychology

The Outstanding Research in Psychology award, sponsored by the American Psychological Association, awards a certificate recognizing outstanding research in the category of behavioral and social sciences or any category related to psychology

Annamika Konkola

Semantic change as an indicator of comprehensive and social understanding in the digital age

Sienna Reiner, Dylan Englund, Emily Newton

What is social media's effect on teenagers brains?

Most Outstanding Exhibit in Materials Science

The projects that receive Most Outstanding Exhibit in Materials Science award demonstrate exceptional use of materials-related concepts and some aspect of the materials paradigm: structure - processing - properties - and performance relationships. The winners of this award receive a certificate and ribbon.

Melania Kitsis

Put a cap on single use plastic

Shea Lang, Dakota Blevins

Bullet race

Mu Alpha Theta Award

The Mu Alpha Theta Award certificate is for the individual or group project that demonstrates the most challenging, original, thorough, and creative investigation of a problem involving mathematics.

Evelyne Knight, Camryn Lau

Using carbon sequestration density in a mixed-conifer forest to model potential implications of wildfire and best practices for resource allocation

NASA Earth System Science Award

The NASA Earth System Science Award Certificate is given to the projects that best demonstrate insight into Earth's interconnected systems. The projects incorporate studies of the different components of Earth systems, their interactions and their evolution over time.

Evelyne Knight, Camryn Lau

Using carbon sequestration density in a mixed-conifer forest to model potential implications of wildfire and best practices for resource allocation

Hector Baltazar

Hydrogen revitalization

NOAA Taking the Pulse of the Planet Award

The Taking the Pulse of the Planet award honors projects selected from among all the general award categories whose research emphasizes NOAA's mission of Science, Service, and Stewardship: "To understand and predict changes in climate, weather, oceans, and coasts, to share that knowledge and information with others, and to conserve and manage coastal and marine ecosystems and resources."

Katie Glynn, Ella Ganey

How do different colors hold and reflect heat?

Sydney Taylor

The detrimental effects of salinity changes on zooxanthellae health

Naval Excellence in Science and Engineering Award

The Naval Science and Engineering Award recognizes 4 exceptional projects. The Office of Naval Research is pleased to support the education of future scientists and engineers of America and presents each project with a \$50 gift certificate.

Lauren Gault

Quantum computing and the traveling salesman problem

Charlie An

How is the survival rate in ladybugs affected by natural deterrents?

Michael Bartholomew

Which plant extracts kill the most bacteria?

Katerina Kitsis

Climate change and teen's mental health

Ricoh Sustainable Development Award

Ricoh USA Certificate recognizes projects that demonstrate a technical innovation that offers the greatest potential for increasing our ability to grow environmentally friendly and socially responsible businesses.

Evyenia Kitsis

Bioengineering sustainably made menstrual pads

Sophia Gordon, Ava Katz

Maximization of plant microbial fuel cells for LED use on green roof

In Vitro Biology

This award recognizes the best 11th grade students exhibiting in the areas of plant or animal in vitro biology or tissue culture. A formal letter of congratulations will be sent and publicity of the winner's achievement will be included in the society's online newsletter

Zhehan Jia, Faye House

Antibiotic resistant bacteria in local waterways

Gannon Strand, Imo Udoh

Coliphage T4r+ bacteriophage efficiency at killing bacteria colonies found on bathroom door handles

USAID

The US Agency for International Development is pleased to offer the Science Champion Award Certificate to recognize exceptional projects that have the potential to make an impact on addressing international development challenges.

Liam Ottum

Space debris capture and defense system

Eden Pepos

How thinopyrum intermedium could alter the future of wheat

Metric System: Best Use of the SI

The Best Use of the Metric System award, sponsored by the US Metric Association, is a certificate to recognize the project that has used metric measures and expresses those measures consistently and correctly.

Aubrey Carter, Naomi Oltmans

Effect of volatilized hydrocarbons on drosophila movement

Sara Henry

Reproductive tumors of C. elegans at different temperatures

Stockholm Junior Water Prize

The Stockholm Junior Water Prize, sponsored by the Water Environment Federation, is awarded to the best water-related projects at the fair. It is aimed at enhancing the quality of life through improvement in water quality, water resource management or water and wastewater treatment. The recipients of this prize get a certificate, a free year-long membership to the WEF, and the opportunity to apply to the state level WEF competition.

Alexander Tye

Beaver dam analogs

Cara-Lee Biggs, Claire Johnson

Recycled plastic ice platforms

Isabella Buzzelli

Could eelgrass save the ocean?

Corina Ounaphom, Aydan Pritchard
Spirulina and how it can help our earth

US Air Force

The Air Force Research Laboratory is proud to support science, technology, engineering, and mathematics. This certificate recognizes projects with Air Force applicability in science and technology.

Thomas Pierce, Drayton Nimz
Cost-effective secondary mobility aid using tactile feedback to improve the spatial comprehension of the visually impaired in real-world situations

Thabela Fashu-Kanu, Abbie Jalili
*Synthetic food dye effect on *Drosophila melanogaster**

Yale Science and Engineering Association

The Yale Science and Engineering Association sponsors a certificate and a medallion awarded to the best 11th grade computer science, engineering, physics, or chemistry project.

Cadence Tillman
What diamond powder grit size is the most effective for use in thermal paste?

Oregon Environmental Health Association

The Excellence in Scientific Research in Environmental Health award, sponsored by the Oregon Environmental Health Association, recognizes a student who helps promote environmental health and safety with a certificate and \$60.

Caroline Nielsen
CO₂ concentration in the classroom

Best Project Display

The best digital project display board is organized, lacks errors, draws readers in, and is comprehensive. This award comes with \$25.

Lauren Gault
Quantum computing and the traveling salesman problem

Jesse Hayworth, William Baarsch
MOD-VFSystem

Noteworthy Logbook

The Noteworthy Log book contains documentation of project's process from beginning to end (evidence the logbook has been used throughout the project). The logbook documents thought process of student through all phases of project. This award comes with \$25.

Uma Grover, Melinda Lin
What are the effects of cyanobacteria blooms on the taxa diatomea?

Green Chemistry Award

The Green Chemistry award recognizes a project that has addressed the area of sustainable chemistry with emphasis on reducing chemical waste or remediating hazardous substances. This award comes with \$25.

Grace Sato

DRINC - Design to Remove Impurities and Noxious Chemicals

Promising Young Scientist

To the 9th grade students who present thoughtful, well-conducted experiments that show promise of greater things to come. Each project that receives this award wins a \$25 check made possible thanks to generous support from community members.

Kalysta Caitlyn Castillo, Jillian Rutherford

Tea for thought

Haruka Sakiyama

Computer air-gap hacking prevention

Reed Jordan

A plan for a successful habitation on the moon

Suhaani Garg

A novel device that detects and regulates dog barking, a sign of dog anxiety

Cara-Lee Biggs, Claire Johnson

Recycled plastic ice platforms

Eric Golgotiu, Julia Golgotiu

Impact of soil burn (wildfires) on early seedling performance

Alexander Denney

Impacts of the pandemic lockdown on the myopia of teens

Aasha Patel

Optogenetics & bacteria: utilizing natural genetic light recombinases to impact biofilm formation of E. coli

Matthew Tence

How test structure contributes to stress

Miles Miller

Carbon footprint - What is your carbon footprint?

Field Knowledge

To the students who indicate the best understanding of their topic and who can have related their work to other research in the field. This award comes with a \$25 cash prize provided by an anonymous community partner!

Jack Cunningham

Arduino-based electrochemical impedance spectroscopy to model molten salt solution corrosion

Experimental Design

The best experimental design award is given to the project which demonstrates the best practices of experimental design. This award comes with a \$25 cash prize provided by an anonymous community partner!

Isabella Scalise

Inhibiting Streptococcus mutans with antibacterial and antioxidant hibiscus polyphenolic compounds

Most Creative Project Idea

The Most Creative Project award goes to a project that takes a unique approach to solving a scientific or technical problem and makes use of readily available materials to collect data or address a need. This award comes with a \$25 cash prize provided by an anonymous community partner!

Alana Ryan

Trapping microplastics with synthetic jellyfish mucus

Intelligent Machines

The Intelligent Machines award recognizes a student who visually and verbally convey how their project, involving intelligent machines or artificial intelligence, will improve the human experience. This award comes with a \$25 cash prize provided by an anonymous community partner!

Anish Goswami

Autonomous disaster damage assessment using machine learning

Paul Sherman Award

This award commemorates Paul Sherman, whom we lost to cancer in 2005. During his 24-year career at West Linn High School, he started both the Advanced Biology class and the boys' varsity soccer program. Although Paul felt he was not a natural teacher, his effort and creativity and driving, sustaining enthusiasm for science fooled them all. Paul was an honored teacher but that meant much less to him than sharing his love of learning with his students. He was known for doing special extra things like dressing up as various famous scientists who came and delivered "guest" lectures (and staying in character all day!), telling a joke of the day, leaping around the classroom demonstrating molecular action, and also always urging his students to have family time. The students who receive the Paul Sherman award exhibit passion and enthusiasm for their project and scientific and/or engineering research. The winners receive a \$25 gift card to Powell's Books.

Chase McQueeney

Humor, what the heck?!

Emma Huberty, Evelyn Morlan

The effect of music therapy on bipolar disorder

Alan Kolesnikov

Procedural failures in agricultural field research

Angel Cruz

Different qualities between burned soil and commercial soil

Best Use of Statistical Analysis

The Best Use of Statistical Analysis Award recognizes a student who conveys an exceptional understanding and interpretation of the results of their statistical analyses. The project who receives this certificate also receives a brand new Texas Instruments-84 Graphing rechargeable calculator.

Aasha Patel

Optogenetics & bacteria: utilizing natural genetic light recombinases to impact biofilm formation of E. coli

Isabella Scalise

Inhibiting Streptococcus mutans with antibacterial and antioxidant hibiscus polyphenolic compounds

Best Multi-Disciplinary Research Award

The Best Multi-Disciplinary Research Award is given to a project that demonstrates outstanding achievement combining 2 or more distinct scientific/engineering disciplines, synthesizing these different perspectives to provide a more whole-system approach to a problem. The project that receives this award gets a certificate and \$125 thanks to an anonymous community member.

Suhaani Garg

A novel device that detects and regulates dog barking, a sign of dog anxiety

Women in Engineering Award

The Women in Engineering Award is given to a project that demonstrates excellence in applied engineering in any field by a female student. This award comes with a \$125 gift certificate – we'd like to extend special thanks to the anonymous community partners who made this possible!

Aditi Bhaskar

Invisible blues novel device for detection and measurement of nitrogen traces in a soil sample

That's Geography! Cultivating Empathy for the Earth Award

This award recognizes a project that focuses on issues of oceans, land, wildlife, human history & cultures, and human ingenuity; this project brings geographic concepts and skills to life in new, non-traditional ways and brings innovation to the space and place. This award comes with a certificate and \$100.

Evelyn Knight, Camryn Lau

Using carbon sequestration density in a mixed-conifer forest to model potential implications of wildfire and best practices for resource allocation

Biomedical Science Award

This project, from within the biomedical and health sciences meets: "The Regeneron Way." The Regeneron way says Lead with science, take on big ideas, make it happen, be great together, and do what's right. This award comes with a certificate and \$500.

Victoria Garcia

The effects of b-12 and omega-3 fatty acids on the recovery of concussed drosophila melanogaster

Oregon State University (\$2000, one time)

This Oregon State University scholarship is a one-time \$2,000 general scholarship to an exceptional project in any category.

Category Awards

Behavioral and Social Sciences

First Place

Summer Tan, Julia Hernandez
Gender and environmental stewardship

Second Place

Grace Boyer, Lily Walsh
Implicit bias throughout age groups

Third Place

Ayushi Mallick
Early diagnosis of epilepsy by assessing causes of cerebral hemispheric dominance

Honorable Mention

Kaylie Blodgett
The relationship between personality and conscious thought

Honorable Mention

Madeline Santoso
Participant-based simulations in predicting behavior in an economic crisis

Bioengineering and Materials Science

First Place

Eden Pepos
How thinopyrum intermedium could alter the future of wheat

Second Place

Clover Marshall
Finding the most affordable and sustainable moisturizer

Third Place

Shea Lang, Dakota Blevins
Bullet race

Honorable Mention

Reed Jordan
A plan for a successful habitation on the moon

Computer Sciences and Robotics

First Place

Anish Goswami

Autonomous disaster damage assessment using machine learning

Second Place

Sabrina Zhang

Facial recognition system to help people with visual impairment or prosopagnosia

Third Place

Lauren Gault

Quantum computing and the traveling salesman problem

Honorable Mention

Haruka Sakiyama

Computer air-gap hacking prevention

Electrical and Mechanical Engineering

First Place

Aditi Bhaskar

Invisible blues novel device for detection and measurement of nitrogen traces in a soil sample

Second Place

Thomas Pierce, Drayton Nimz

Cost-effective secondary mobility aid using tactile feedback to improve the spatial comprehension of the visually impaired in real-world situations

Third Place

Jesse Hayworth, William Baarsch

MOD-VFSystem

Honorable Mention

Suhaani Garg

A novel device that detects and regulates dog barking, a sign of dog anxiety

Energy and Environmental Engineering

First Place

Grace Sato

DRINC water- Design to Remove Impurities and Noxious Chemicals from water

Second Place

Sophia Gordon, Ava Katz

Maximization of plant microbial fuel cells for LED use on green roof

Third Place

Cara-Lee Biggs, Claire Johnson
Recycled plastic ice platforms

Honorable Mention

Jackson VanGordon, Benjamin Garcia
A solution to increase clean power production

Environmental and Earth Sciences

First Place

Uma Grover, Melinda Lin
What are the effects of cyanobacteria blooms on the taxa diatomea?

Second Place

Evelyne Knight, Camryn Lau
Using carbon sequestration density in a mixed-conifer forest to model potential implications of wildfire and best practices for resource allocation

Third Place

Sydney Taylor
The detrimental effects of salinity changes on zooxanthellae health

Honorable Mention

Isabella Buzzelli
Could eelgrass save the ocean?

Microbiology

First Place

Isabella Scalise
Inhibiting Streptococcus mutans with antibacterial and antioxidant hibiscus polyphenolic compounds

Second Place

Payton Heth
Drosophila's relationship between their gut microbiome in comparison to their functional motor skills.

Third Place

Aasha Patel
Optogenetics & bacteria: utilizing natural genetic light recombinases to impact biofilm formation of E. coli

Honorable Mention

Zhehan Jia, Faye House
Antibiotic resistant bacteria in local waterways

Life Sciences

First Place

Aubrey Carter, Naomi Oltmans

Effect of volatilized hydrocarbons on Drosophila movement

Second Place

Zoe Black, Avery McCormick

Plant effect on carbon dioxide levels in classrooms

Third Place

Simone Del-Carlo

Growing rice with and without azolla fern to determine if it affects rice yields in a typical indoor environment

Honorable Mention

Charlie An

How is the survival rate in ladybugs affected by natural deterrents?

Medicine and Health Sciences

First Place

Victoria Garcia

The effects of B-12 and omega-3 fatty acids on the recovery of concussed drosophila melanogaster

Second Place

Caroline Nielsen

CO2 concentration in the classroom

Third Place

Sanjana Mahesh

Using alu insertion polymorphism to study heredity in human populations of oregon

Honorable Mention

Claire Sousley

Kidney health at home

Chemistry

First Place

Oaklyn Hill

Extracting quinones from diesel exhaust

Second Place

Kalysta Caitlyn Castillo, Jillian Rutherford

Tea for thought

Third Place

Aaryan Ilanchelian, Siddharth Sundaram

Efficacy of MOF-74 CO₂ uptake under various concentrations

Advancing to the Northwest Science Expo

Summer Tan, Julia Hernandez
Grace Boyer, Lily Walsh
Ayushi Mallick
Kaylie Blodgett
Madeline Santoso
Eden Pepos
Clover Marshall
Shea Lang, Dakota Blevins
Anish Goswami
Sabrina Zhang
Lauren Gault
Aditi Bhaskar
Thomas Pierce, Drayton Nimz
Jesse Hayworth, William Baarsch
Grace Sato
Sophia Gordon, Ava Katz
Cara-Lee Biggs, Claire Johnson
Uma Grover, Melinda Lin
Evelyne Knight, Camryn Lau
Sydney Taylor

Isabella Scalise
Payton Heth
Aasha Patel
Aubrey Carter, Naomi Oltmans
Zoe Black, Avery McCormick
Simone Del-Carlo
Victoria Garcia
Caroline Nielsen
Sanjana Mahesh
Suhaani Garg
Zhehan Jia, Faye House
Claire Sousley
Charlie An
Isabella Buzzelli
Jack Cunningham
Angel Cruz
Liam Ottum
Jackson VanGordon, Benjamin Garcia
Alana Ryan
Oaklyn Hill

2022 Best of Fair

Advancing to the Regeneron International Science and Engineering Fair

Isabella Scalise

Inhibiting Streptococcus mutans with antibacterial and antioxidant hibiscus polyphenolic compounds

Aditi Bhaskar

Invisible blues novel device for detection and measurement of nitrogen traces in a soil sample

Uma Grover, Melinda Lin

What are the effects of cyanobacteria blooms on the taxa diatomea?

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Autonomous disaster damage assessment using machine learning