



CREST-Jane Goodall Science Symposium

ISEF-affiliated High School Science Fair 2015



Special Awards

Outstanding Project in Atmospheric Science

sponsored by the American Meteorological Society

- Ellie Jones & Katies Jones
 - *Mercury Levels in a Salt Marsh in North Carolina*
- Angela Garrett & Olivia Klugman
 - *Effects of Pollution on Macroinvertebrate Colonization in Small Northwest Streams*

NOAA's Taking the Pulse of the Planet Award

sponsored by the National Oceanic and Atmospheric Administration

- Christa Huddleston & Jonathon Goddard
 - *Sea Star Wasting Syndrome*

Sustainable Development Award

sponsored by the Ricoh Americas Corporation

- Ellie Jones & Katie Jones
 - *Mercury Levels in a Salt Marsh in North Carolina*

Award for Excellence in Behavioral Science

sponsored by the Oregon Research Institute (University of Oregon)

- Adam Pierce & Alex Qiu
 - *The Impact of Dogs on Social Interactions*

U.S. Regional Stockholm Junior Water Prize

sponsored by the Water Environment Federation

- Gabe Armattoe
 - *Minimizing Soil Permeation with Soil Amendments*
- Chloe Tomlinson & Michaela Lawrence
 - *Effect of Fracking Effluent on the Development of Embryonic Zebrafish*
- Lydia VanWinkle
 - *Using Nanorust to Trace Contaminated Water due to Hydraulic Fracking*

Outstanding Project in Materials Science

sponsored by the ASM International Foundation

- Luukas Lemetyinen
 - *Testing Materials to Make a Better Skateboard Wheel*

Intel Excellence in Computer Science

sponsored by Intel Corporation

- Raymond Berry
 - *Identify With a Tap to the App*

Best Application of Modern Mathematics

sponsored by Mu Alpha Theta

- Erich Kramer
 - *Heuristically Proving Goldbach's Conjecture By Comparing The Growth of Partitions and Evens At Maximal Prime Gaps*

Outstanding Research in Psychology

sponsored by the American Psychological Association

- Daniel D. Tang
 - *The Biological Basis for Learning: Using Zebra Finch Songbirds to Investigate Vocal Learning*

Best Use of Measurements

sponsored by the US Metric Association

- Dominique Holman & Antoinette Gowen
 - *The Effect of Benthic Mud Microorganisms in an MFC on the Breakdown of Organic Compounds and the Generation of Electricity*

Naval Excellence in Science and Engineering Award

sponsored by the Office of Naval Research, US Navy and Marine Corps

- Elizabeth Hoots
 - *Bacterial Water Filter: The Use of Halobacterium for Desalination*
- Dominic Ragalie
 - *The Wheel Reinvented*

Honorable Mention(s):

- Ben Chan & Calvin McHenry
 - *Solar Cloth Part 1: Graphene*
- Jack Holland & Ryan Holland
 - *The Effect of Screen Use on Visual Acuity, Refractive Error, and Presbyopia*

Award for Excellence in Scientific Research in Environmental Health

sponsored by the Oregon Environmental Health Association

- Hayden Wilde, Kristopher Wieland, & Haley Prusse
 - *Algae, A Biofuel and Bio-Cleaner: Can algae be used to clean water systems and produce useful biofuels?*

Achievement in Contextual Behavioral Science Research

sponsored by the Oregon chapter of the Association for Contextual Behavioral Sciences (OACBS)

- Krista Wurscher
 - *Concussion symptoms in Relation to Brain Maturity*

ASU Walton Sustainability Solutions Award

sponsored by the Arizona State University Rob & Melani Walton Sustainability Solutions Initiative

- Taylor Lust & Francelia Juarez
 - *Assessing the use of invasive plant species to generate power in a microbial fuel cell*
- Mackenzie Weber & Andrea Swenson
 - *Combating Urban Malnutrition through Small-scale Indoor Greenhouse Gardening*

In Vitro Biology Award

sponsored by the Society for In Vitro Biology

- Dylan Martins
 - *Metanomic exploration of the syntrophic relationship between Honey Bee endosymbionts Gilliamella apicola and Snodgrassella alvi under preventative antibiotic resistance*

Surgeon General's Special Science Award

sponsored by United States Department of Health and Human Services

- Talia Lichtenberg
 - *Location...Location...Alzheimer's?*

Most Outstanding Eleventh Grade Exhibit

sponsored by Yale Science & Engineering Association, Inc.

- Tanner Asher
 - *Power in the Pipes*

OSLC Excellence in Research in Child Development and Family Research

sponsored by the Oregon Social Learning Center

- Eva Crystal & Ashlyn McManus
 - *Variables that Contribute to Poor Attendance Among Students at Wilsonville High School*

International Sustainable World (Energy, Engineering, & the Environment) Project Expo Outstanding Project [I-SWEEEP]

sponsored by I-SWEEEP

- Mackenna Koppler
 - *Using Organic Pigments to Create Electricity in Dye Synthesized Solar Cells*

Promising Young Scientist

sponsored by CREST

- Justin Gould & Lauren Griffith
 - *Shh, I Can't See*
- Maddie Redifer, Magoo Alfrey & Nataliah Colbert
 - *Does receiving feedback from different ages of people affect how one performs?*
- Megan Talbert & Marlee Odell
 - *Hydroelectricity*
- Ben Chan & Calvin McHenry
 - *Solar Cloth Part 1: Graphene*
- Emily Thu-Thao Nguyen
 - *Stop Childhood Obesity: Feed Kids Knowledge*
- Ji An
 - *Do Genetically Modified Organisms Cause Celiac Disease?*
- Evan Watson
 - *Predicting the Future of Baseball with Advanced Sabermetrics*
- Saralun Ondee
 - *Dissolved Oxygen in Hydroponic Plant Growth*

Best Demonstration of Field Knowledge

sponsored by CREST

- Nicholas Miller
 - *The Transmembrane Permease Lpg0730 is Integral to the Ability of Legionella pneumophila to Infect Protozoan Host Cells*

Best Experimental Design

sponsored by CREST

- Nicholas Miller
 - *The Transmembrane Permease Lpg0730 is Integral to the Ability of Legionella pneumophila to Infect Protozoan Host Cells*

Noteworthy Logbook

sponsored by CREST

- Kayla Gadd
 - *Feasibility of New 3-Dimensional Imaging in Mitral Valve Stenosis a Comparison with 2-Dimensional Imaging*

Best Project Display: Analog

sponsored by CREST

- Hayden Wilde, Kristopher Wieland & Haley Prusse
 - *Algae, A Biofuel and Bio-Cleaner: Can algae be used to clean water systems and produce useful biofuels?*

Best Project Display: Digital

sponsored by CREST

- Nicholas Miller
 - *The Transmembrane Permease Lpg0730 is Integral to the Ability of Legionella pneumophila to Infect Protozoan Host Cells*

Best Use of Statistical Analysis

sponsored by CREST, with support from Texas Instruments

- Henry Li
 - *The Economics of Decision-Making: Investigating the Effects of Social Pressure on Incentive Selection*
- Talia Lichtenberg
 - *Location...Location...Alzheimer's?*

Most Creative Project Idea

sponsored by CREST

- Ben Walker & Chris Winjum
 - *Building a Better World: Colonizing the Deep Ocean*

Paul Sherman Award

sponsored by CREST, with support from an anonymous donor

- Kylee Allen
 - *The Effect of BPA on the Growth of E. coli Bacteria*
- Frank Craft
 - *Clackamas River Water Quality Assessment*
- Jaden Goldschmidt
 - *Usefulness of Arachnids*
- Mikayla Ellsworth
 - *Are Flame Retardants in Our Local Rivers?*

Women In Engineering

sponsored by CREST, with support from an anonymous donor

- Mackenna Koppler
 - *Using Organic Pigments to Create Electricity in Dye Synthesized Solar Cells*

Multi-Disciplinary Research

sponsored by CREST, with support from an anonymous donor

- Daniel D. Tang
 - *The Biological Basis for Learning: Using Zebra Finch Songbirds to Investigate Vocal Learning*

Special Awards

Scholarships

Oregon State University College of Engineering - \$1000/yr, 4 years

Parker Wright

Parachute Assisted Drone Landing System

Oregon State University - \$2000/yr, 1 year

- Elizabeth Hoots
 - *Bacterial Water Filter: The Use of Halobacterium for Desalination*
- Tanner Asher
 - *Power in the Pipes*

Category Awards

Behavioral Science-Cognitive Psychology

Participants

Kellen Olsen	Maya Zachary	Elizabeth Gardner	Madeleine Itschner	Alexandra Bourque
David Hersch	Megan Joerger	Julia Hughes	Anna Speer	Kendall Tate
Griffin Banta	Jillian Clemo	Lauren Griffith	Chandler Wright	
Jake Thompson	Xavier Juhala	Justin Gould	Mariah McDonald	
Julia Lamb	Jillian Emken	Grace Eaton	Carter Moody	
Dani Porche	Brittany Park	Bethan Cleminson	Mitchell Conroy	

Honorable Mention

Jareth Anderson

The Effect on Cognitive Abilities with Binaural Beats

Honorable Mention

Charise Call & Yarana Avalos

Inattentional Blindness as a Function of Age

3rd Place

Elise Hlady

MBTI and Sexuality

2nd Place

Krista Wurscher

Concussion symptoms in Relation to Brain Maturity

1st Place

Daniel D. Tang

The Biological Basis for Learning: Using Zebra Finch Songbirds to Investigate Vocal Learning

Behavioral Science: Social Psychology and Sociology

Participants

Emma Hansen

Maddie Redifer

Isabelle Harries

Izzie McDonald

Magoo Alfrey

Grace Miller

Olivia Olmsted

Nataliah Colbert

Alexander Qiu

Megan Larsen

Avery Esau

Adam Pierce

Anna Butts

Lauren Kyles

Audrey Chames

Weston Miller

Tegan Thwaites

Annie Lang

Brooke Daugherty

Justin Harrel

Mayra Farfan

Laura Notario

Zoe Lee

Olivia George

Honorable Mention

Madeline Finklea

Is Risk Propensity Related to Texting and Driving and are the Current Interventions Effective?

Honorable Mention

Riley Tellegen

The Social Media Problem

3rd Place

Luke Somerscales & Alexandria Tessler

Variance of Motivation to Deceive Based on Age

2nd Place

Eva Crystal & Ashlyn McManus - *Variables that Contribute to Poor Attendance Among Students at Wilsonville High School*

1st Place

Samuel Cassidy

The Effects of Cell Phone Cameras on Ethical and Cooperative Behavior

Computer Science, Engineering and Energy

Participants

Raymond Berry

Colton Veenker

Allie Forsterer

Ethan Pierce

Lucas Wharton

Kipp Hamersly

Nicklaus Zimkas

Brandon Busch

Matthew Lewis

Cristian Villanueva

Ian Luper

Megan Talbert

Diana Bob

Kylie Watton

Marlee Odell

Honorable Mention

Anna-Maria Hartner & Kaylene Lim

DNA-Based Storage: An Innovative Approach Using Graphene Nanopores

Honorable Mention

Luke Puppo & Kjel Pettenger-Wiley

The Effectiveness of a Small Scale Mechanical Energy Storage Device: Engineering an Emergency Flywheel Generator

3rd Place

Parker Wright

Parachute Assisted Landing System

2nd Place

Tanner Asher

Power in the Pipes

1st Place

Mackenna Koppler

Using Organic Pigments to Create Electricity in Dye Synthesized Solar Cells

Engineering: Bioengineering, Materials and Energy

Participants

Zach Steinberg

Dominic Ragalie

Calvin McHenry

Kayla Tence

David Baker

Andrew Kassab

Ben Walker

Francelia Juarez

Brandon Humberston

Chaz Hilweh

Chris Winjum

Taylor Lust

Aaron Markstaller

Nicholas Olson

Ian Walsh

Evan Baier

Ethan Haymore

Ben Chan

Chan Lee

Zachary Small

Honorable Mention

Dominique Holman & Antoinette Gowen

The Effect of Benthic Mud Microorganisms in an MFC on the Breakdown of Organic Compounds and the Generation of Electricity

Honorable Mention

Luukas Lemetyinen

Testing Materials to Make a Better Skateboard Wheel

3rd Place

Mackenzie Weber & Andrea Swenson

Combating Urban Malnutrition through Small-scale Indoor Greenhouse Gardening

2nd Place

Samuel Laurin & Sung-Jun Byun

Ferrofluid Solutions

1st Place

Hayden Wilde, Kristopher Wieland & Haley Prusse

Algae, A Biofuel and Bio-Cleaner: Can algae be used to clean water systems and produce useful biofuels?

Medicine and Health Sciences

Participants

Megan Shinn

Krista Slaney

Austin Barnes

Chase Eisenbrandt

Christina Small

Alex Dewart

Emily Thu-Thao Nguyen

Jack Holland

Ryan Holland

Adam Stevens

Vince Seth

Christina Li

Alexandria Chimienti

Mariah Colbert

Samantha Monello

Mary Kimball

Sophie Shelbourne

Morgan Mankin

Dylan Tiffany

Zack Huffstutter

Aubree Schrandt

Hailey Holmes

Isaac Shih

Jaxon Severson

Laila Elmashni

Honorable Mention

Talia Lichtenberg

Location...Location...Alzheimer's?

2nd Place

Kayla Gadd

Feasibility of New 3-Dimensional Imaging in Mitral Valve Stenosis a Comparison with 2-Dimensional Imaging

Riley Johnson & Nicole Laschober

The Effect of Headgear on Soccer Ball Impact and Concussion Risk

1st Place

Ben Sebastian & Daniel Tang

The Effects of Citalopram Hydrobromide on Sleep, Activity, and Cognitive Ability of Adult Drosophila melanogaster, Consumed During Larvae Developmental Stages

Microbiology

Participants

Rachel Gross
Grace Nickas
Julia Webster
Maddy Glass
Lilly Burnett

Miki Nakai
Abigail Rash
Will Glausi
Tanner Snapp
Kylee Allen

Ji An
Theresa Li
Kendall Gordon

Honorable Mention

Tessa Kehoe & Makaela Press

The Effect of E. coli K12 Interactions with Deoxyribose Sugar on the Creation of a Bacterial Biofilm

Honorable Mention

Elizabeth Hoots

Bacterial Water Filter: The Use of Halobacterium for Desalination

2nd Place

Amiette Baskerville

The Effectiveness of Astaxanthin as a Non-carcinogenic Sunscreen

1st Place (tie)

Dylan Martins

Metanomic exploration of the syntrophic relationship between Honey Bee endosymbionts Gilliamella apicola and Snodgrassella alvi under preventative antibiotic resistance

Nicholas Miller

The Transmembrane Permease Lpg0730 is Integral to the Ability of Legionella pneumophila to Infect Protozoan Host Cells

Physics, Chemistry & Mathematics

Participants

Reed Schatz
James O'Reilly
Mark Figueroa
Jack Himmer

Trevor Viohl
Mikayla Vincent
Anika Wolfe

Honorable Mention

Evan Watson

Predicting the Future of Baseball with Advanced Sabermetrics

Honorable Mention

Catherine Willard

Gender and Age on Video Game Addiction

Honorable Mention

Katie Williams & Tya Seth

Golf Putting

3rd Place

Erich Kramer

Heuristically Proving Goldbach's Conjecture By Comparing The Growth of Partitions and Evens At Maximal Prime Gaps

2nd Place

Riley Knowles

Calcium Retained in Drosophila melanogaster

1st Place

Henry Li

The Economics of Decision-Making: Investigating the Effects of Social Pressure on Incentive Selection

Life & Environmental Sciences

Participants

Frank Craft

Alyssa Betts

Lauren Eber

Maria Tinio

Ellie Jones

Gabe Armattoo

Christa Huddleston

Saralun Ondee

Katie Jones

Morgan Freitas

Jonathon Goddard

Keaton Straub

Mikayla Ellsworth

Zander Froelich

Jaden Goldschmidt

Sarah Heiden

Elenamaria Lima

Cameron Walter

Burke Robinett

Ronan Maples

Skylar Kool

Angela Cateora

Cailee Ito

Honorable Mention

Evan McKinley

Sapience in the Larval Form of Tenebrio molitor

Honorable Mention

Grace Converse & Aileen Converse

The Nature of the Olfactory Sense of Wild Passerine Birds Native to the Willamette Valley Coniferous Forests

3rd Place

Angela Garrett & Olivia Klugman

Effects of Pollution on Macroinvertebrate Colonization in Small Northwest Streams

2nd Place

Chloe Tomlinson & Michaela Lawrence

Effect of Fracking Effluent on the Development of Embryonic Zebrafish

1st Place

Lydia VanWinkle

Using Nanorust to Trace Contaminated Water due to Hydraulic Fracking

Advancing to the Intel Northwest Science Expo (State Fair)

Northwest Science Expo, Portland, Oregon,
3 April 2015

Evan McKinley	Talia Lichtenberg	Ryan Holland	Tessa Kehoe
Grace Converse	Nick Miller	Dominic Ragalie	Makaela Press
Aileen Converse	Elizabeth Hoots Dylan	Ben Chan	Erich Kramer
Lydia VanWinkle	Martins	Calvin McHenry	Eva Crystal
Krista Wurscher	Amiette Baskerville	Nicholas Olson	Ashlyn McManus
Daniel D. Tang	Riley Knowles	Elise Hlady	Christa Huddleston
Mackenna Koppler	Henry Li	Chloe Tomlinson	Jonathon Goddard
Tanner Asher	Evan Watson	Michaela Lawrence	Francelia Avalos
Parker Wright	Katie Williams	Angela Garrett	Taylor Lust
Anna-Maria Hartner	Tya Seth	Olivia Klugman	Luke Somerscales
Kaylene Lim	Ellie Jones	Luke Puppo	Alexandria Tessler
Luukas Lemetyinen	Katie Jones	Kjel Pettenger-Wiley	Samuel Laurin
Mackenzie Weber	Gabe Armattoe	Hayden Wilde	Sung-Jun Byun
Andrea Swenson	Raymond Berry	Kristopher Wieland	Antoinette Gowen
Kayla Gadd	Ethan Pierce	Haley Prusse	Dominique Holman
Ben Sebastian	Nick Zimkas	Riley Johnson	Madeline Finklea
Daniel Tang	Jack Holland	Nicole Laschober	Samuel Cassidy

Best Of Fair

Observers: attending Intel ISEF in Pittsburgh, Pennsylvania May 10-15, 2015

Will not compete, but will attend to learn and get the ISEF experience

- Ben Sebastian & Daniel Tang
 - *The Effects of Citalopram Hydrobromide on Sleep, Activity, and Cognitive Ability of Adult Drosophila melanogaster, Consumed During Larvae Developmental Stages*
- Hayden Wilde, Kristopher Wieland & Haley Prusse
 - *Algae, A Biofuel and Bio-Cleaner: Can algae be used to clean water systems and produce useful biofuels?*

Advancing to Intel ISEF in Pittsburgh, Pennsylvania May 10-15, 2015

Henry Li

The Economics of Decision-Making: Investigating the Effects of Social Pressure on Incentive Selection

Daniel D. Tang

The Biological Basis for Learning: Using Zebra Finch Songbirds to Investigate Vocal Learning

Nicholas Miller

The Transmembrane Permease Lpg0730 is Integral to the Ability of Legionella pneumophila to Infect Protozoan Host Cells