

## **High School Special Award Winners at the Intel Northwest Science Expo**

### **Outstanding Chemistry Project sponsored by American Chemical Society, Portland Section**

Prize includes: \$250, certificate

Exhibit number: HS-CH-055 Student: Matt Lee of Beaverton High School

Project title: Inverse Grätzel Solar Cells and Metallation of Polymer Porphyrin Films

### **Outstanding Project in an Atmospheric Science Exhibit sponsored by American Meteorological Society**

Prize includes: certificate & trophy

Exhibit number: HS-EA-013 Student: Tyler Anderson of Glencoe High School

Project title: Tsunami Wavebreakers

### **Outstanding Project in an Atmospheric Science Exhibit sponsored by American Meteorological Society**

Prize includes: certificate & trophy

Exhibit number: HS-VM-037 Student: Jongwoo Park of Sheldon High School

Project title: The use of natural secondary metabolites to absorb the greenhouse gas carbon dioxide

### **Outstanding Project in an Atmospheric Science Exhibit sponsored by American Meteorological Society**

Prize includes: certificate & trophy

Exhibit number: HS-ET-035 Student: Alexa Carey of Curry Science Academy

Project title: Effectiveness of Cellulose-Degrading Enzyme Treatments in Alcohol Production for Bio-Energy from Noxious Weed Species

### **Outstanding Project in an Atmospheric Science Exhibit sponsored by American Meteorological Society**

Prize includes: certificate & trophy

Exhibit number: HS-VM-033 Student: Shane Prohaska of Glencoe High School

Project title: The Examination of the Barview Jetty

**Outstanding Research in Psychology sponsored by American Psychological Association and Teachers of Psychology in Secondary Schools**

Prize includes: Certificate and trophy

Exhibit number: HS-BE-044 Student: Elica Sharifnia of Southridge High School

Project title: The Psychological Effect from the Consumption of Sports Drinks on Sport Performance

**Excellence in Statistics sponsored by American Statistical Association**

Prize includes: \$75 and trophy

Exhibit number: HS-VA-035 Student: Brian Tang of Skyview High School

Project title: Regression modeling: a comparison of two adjacent air quality studies

**Excellence in Statistics sponsored by American Statistical Association**

Prize includes: \$75 and trophy

Exhibit number: HS-BE-129 Student: Chris Canary and Ross Hansen of Wilsonville High School

Project title: Making the Transition: Predicting High School Success

**Excellence in Statistics sponsored by American Statistical Association**

Prize includes: \$75 and trophy

Exhibit number: HS-VM-035 Student: Kacie Dean of Wilsonville High School

Project title: Degradation of Monofilament versus Fluorocarbon Fishing Tippet

**Outstanding Project in Nuclear Science/Engineering sponsored by AREVA**

Prize includes: Student membership in American Nuclear Society, certificate, trophy

Exhibit number: HS-PH-057 Student: Edward Nguyen of Southridge High School

Project title: Detection of Helium-3 and High Energy Neutrons in an Inertial Electrostatic Confinement Reactor

**Army Outstanding High School Project sponsored by Army Research Office, U.S. Army**

Prize includes: Certificate, medal, and Saving bond (\$100)

Exhibit number: HS-CO-022 Student: Tom Conerly of Catlin Gabel School

Project title: Using Graphics Cards for Non-Graphics Applications

**Army Exceptional Projects sponsored by Army Research Office, U.S. Army**

Prize includes: Certificate and Savings bond (\$50)

Exhibit number: HS-AN-023 Student: Chelsey Burian of Lakeview High School

Project title: How Does Soil Texture Influence Burrow Preference in Pygmy Rabbits

**Army Exceptional Projects sponsored by Army Research Office, U.S. Army**

Prize includes: Certificate and Savings bond (\$50)

Exhibit number: HS-BE-021 Student: Daniel Tonkovich of La Salle High School

Project title: The Effects of Light Therapy on Teenage Sleep Habits

**Army Exceptional Projects sponsored by Army Research Office, U.S. Army**

Prize includes: Certificate and Savings bond (\$50)

Exhibit number: HS-CM-006 Student: Dylan Page of Oregon Episcopal School

Project title: Studying the Spread of Genetically Modified Organisms in Plants: An Investigation of GMOs in Commercial Corn and Soy Products

**Army Exceptional Projects sponsored by Army Research Office, U.S. Army**

Prize includes: Certificate and Savings bond (\$50)

Exhibit number: HS-PL-069 Student: Michael Bernert of West Linn High School

Project title: Medium Optimization for *A. palmatum* in vitro

**Army Certificates of Merit sponsored by Army Research Office, U.S. Army**

Prize includes: Certificate of Achievement

Exhibit number: HS-BC-011 Student: Francis Gieringer of Hillsboro High School

Project title: The effects of phosphorous in freshwater on algal growth of *Microcystis aeruginosa*

**Army Certificates of Merit sponsored by Army Research Office, U.S. Army**

Prize includes: Certificate of Achievement

Exhibit number: HS-CH-035 Student: Sean You of Sunset High School

Project title: How number of carbons in ketones and aldehydes affect the amount of styrofoam dissolution

**Army Certificates of Merit sponsored by Army Research Office, U.S. Army**

Prize includes: Certificate of Achievement

Exhibit number: HS-PH-052 Student: Nicole Bateham, Sydney Boyce and Sunithi Hindagolla of Crescent Valley High School

Project title: The Effects of Wave Period, Water Depth, and the Slope of the Beach on Coastal Erosion

**Army Certificates of Merit sponsored by Army Research Office, U.S. Army**

Prize includes: Certificate of Achievement

Exhibit number: HS-PH-058 Student: Sloan Anderson of Glencoe High School

Project title: Prismatic Effect in Sunglasses

**Army Certificates of Merit sponsored by Army Research Office, U.S. Army**

Prize includes: Certificate of Achievement

Exhibit number: HS-PH-072 Student: Min Sung Kang of Oregon Episcopal School

Project title: Construct a device to measure magnetic fields based upon a compass needle and use your device to measure the Earth's

**Army Certificates of Merit sponsored by Army Research Office, U.S. Army**

Prize includes: Certificate of Achievement

Exhibit number: HS-ME-031 Student: Tanmay Bhardwaj of Merlo Station High School

Project title: The Effect of Different Body Mass Index Levels on the Working Heart Rate of the Adolescent Male

**Army Certificates of Merit sponsored by Army Research Office, U.S. Army**

Prize includes: Certificate of Achievement

Exhibit number: HS-EE-069 Student: Dane Bennington of Wilsonville High School

Project title: Portable Airborne Landmine Detection Platform

**Army Certificates of Merit sponsored by Army Research Office, U.S. Army**

Prize includes: Certificate of Achievement

Exhibit number: HS-MI-014 Student: Matthew Barnes and Cody Borgogno of Marshfield High School

Project title: Mat Germs

**Outstanding Project in Materials Science sponsored by ASM International Foundation**

Prize includes: certificate and medal mailed after the fair

Exhibit number: HS-EM-005 Student: Michael Loy of Oregon Episcopal School

Project title: Analyzing the Effects of Air-Entraining Admixtures and Shrinkage-Reducing Admixtures on Concrete Properties in the Development of a New Shrinkage-Reducing Admixture

**Outstanding Geoscience Project sponsored by Association Of Women Geoscientists**

Prize includes: certificate & trophy

Exhibit number: HS-EA-019 Student: Holly VanderSchaaf, Elena Sipe and Roxanne Degens of Cleveland High School

Project title: Glacier Change on Mt. Adams

**Outstanding Geoscience Project sponsored by Association Of Women Geoscientists**

Prize includes: certificate & trophy

Exhibit number: HS-VA-005 Student: Jennifer Luong and Anne Seder of Oregon Episcopal School

Project title: A Study of the Effect of NO<sub>2</sub> on Ascorbic Acid Levels in Douglas Fir Needles Along the Columbia River Gorge

**Technical Communications sponsored by Dr. and Mrs. Walden C. Rhines**

Prize includes: \$5000

Exhibit number: HS-ME-007 Student: Patrick Chen of Oregon Episcopal School

Project title: Lysosomal Dysfunction in Retinal Pigment Epithelia Cells (RPE), the pathogenesis of Age Related Macular Degeneration?

**Herbert Hoover Young Engineer Award sponsored by Herbert Hoover Presidential Library Association**

Prize includes: Medallion, certificate

Exhibit number: HS-EE-027 Student: Fei Chen and William Neiswanger of Merlo Station High School

Project title: Increased Precision, Versatility, and Control in Laser-based Surgeries through the Intersection of Superimposed Varied Frequency Lasers

**IEEE Special Awards sponsored by IEEE Oregon**

Prize includes: Certificate and plaque

Exhibit number: HS-EE-013 Student: Jessica Lund and James Tanoto of Oregon Episcopal School

Project title: Comparing 535 Ru bis-TBA and Blackberry Extract to Dye-Sensitize Thin and Thick Titanium Dioxide Photoelectrochemical Cells

**IEEE Special Awards sponsored by IEEE Oregon**

Prize includes: Certificate and plaque

Exhibit number: HS-EE-069 Student: Dane Bennington of Wilsonville High School

Project title: Portable Airborne Landmine Detection Platform

**IEEE Special Awards sponsored by IEEE Oregon**

Prize includes: Certificate and plaque

Exhibit number: HS-EE-015 Student: Larissa Pham of Oregon Episcopal School

Project title: Creating A Smart Bag using RFID and E-textile Technology

**IEEE Special Awards sponsored by IEEE Oregon**

Prize includes: Certificate and plaque

Exhibit number: HS-AN-030 Student: Aletheia Bouknight of Bend Science Station

Project title: EMF: Energy Mutated Flies?

**IEEE Special Awards sponsored by IEEE Oregon**

Prize includes: Certificate and plaque

Exhibit number: HS-EE-027 Student: Fei Chen and William Neiswanger of Merlo Station High School

Project title: Increased Precision, Versatility, and Control in Laser-based Surgeries through the Intersection of Superimposed Varied Frequency Lasers

**IEEE Special Awards sponsored by IEEE Oregon**

Prize includes: Certificate and plaque

Exhibit number: HS-CO-015 Student: Nicholas Ewing of Skyview High School

Project title: Online Japanese Study and Reference Center

**IEEE Special Awards sponsored by IEEE Oregon**

Prize includes: Certificate and plaque

Exhibit number: HS-CO-003 Student: Oliver Daniels of Merlo Station High School

Project title: Computer Model of a Simple Nervous System Through the Simulation of Neural Pathways

**IEEE Special Awards sponsored by IEEE Oregon**

Prize includes: Certificate and plaque

Exhibit number: HS-CO-021 Student: Yale Fan of Catlin Gabel School

Project title: Applications of Multi-Valued Quantum Algorithms

**Intel Excellence in Computer Science sponsored by Intel Corporation**

Prize includes: \$200, certificate

Exhibit number: HS-CO-021 Student: Yale Fan of Catlin Gabel School

Project title: Applications of Multi-Valued Quantum Algorithms

**Outstanding Chemistry Related Project sponsored by Iota Sigma Pi**

Prize includes: \$25, book, certificate

Exhibit number: HS-MI-022 Student: Jing Chen of Benson Polytechnic High School

Project title: Inhibiting the Growth of Staphylococcus aureus with Elderberry Extract

**Outstanding Aquatic Related Environmental Science Project sponsored by Lake Oswego Corporation**

Prize includes: \$50 and trophy

Exhibit number: HS-AN-033 Student: Kelsey Moore of Glencoe High School

Project title: Salmon Incubation

**Best of Fair sponsored by Madden Industrial Craftsmen**

Prize includes: Plaque and \$100

Exhibit number: HS-ME-007 Student: Patrick Chen of Oregon Episcopal School

Project title: Lysosomal Dysfunction in Retinal Pigment Epithelia Cells (RPE), the pathogenesis of Age Related Macular Degeneration?

**Best of Fair sponsored by Madden Industrial Craftsmen**

Prize includes: Plaque and \$100

Exhibit number: HS-CO-021 Student: Yale Fan of Catlin Gabel School

Project title: Applications of Multi-Valued Quantum Algorithms

**Mu Alpha Theta Award sponsored by Mu Alpha Theta**

Prize includes: Certificate and trophy

Exhibit number: HS-MA-013 Student: Avi Levy of West Linn High School

Project title: Results in geometric inequalities

**NOAA's Taking the Pulse of the Planet sponsored by National Oceanic and Atmospheric Administration**

Prize includes: certificate and medal

Exhibit number: HS-EA-020 Student: Simon Spencer of Cleveland High School

Project title: Detecting Tsunami Inundation using Marine Geochemical Markers

**Innovative Engineering Award sponsored by National Society of Professional Engineers**

Prize includes: Award packet w/ pin, certificate and subscription to Engineering Times

Exhibit number: HS-EM-006 Student: Colin MacLean of Oregon Episcopal School

Project title: Synthesis and Characterization of a MWNT-PANI Composite

**Naval Excellence in Science and Engineering Award sponsored by Office of Naval Research, US Navy and Marine Corps**

Prize includes: Certificate, \$75 gift certificate and medal

Exhibit number: HS-BE-044 Student: Elica Sharifnia of Southridge High School

Project title: The Psychological Effect from the Consumption of Sports Drinks on Sport Performance

**Naval Excellence in Science and Engineering Award sponsored by Office of Naval Research, US Navy and Marine Corps**

Prize includes: Certificate, \$75 gift certificate and medal

Exhibit number: HS-CH-055 Student: Matt Lee of Beaverton High School

Project title: Inverse Grätzel Solar Cells and Metallation of Polymer Porphyrin Films

**Naval Excellence in Science and Engineering Award sponsored by Office of Naval Research, US Navy and Marine Corps**

Prize includes: Certificate and \$75 gift certificate and medal

Exhibit number: HS-AN-021 Student: Bryndis Ingimarsdottir of Skyview High School

Project title: The Effect of Hearing Loss on the Mating Songs of Male C57BL/6 Mice

**Naval Excellence in Science and Engineering Award sponsored by Office of Naval Research, US Navy and Marine Corps**

Prize includes: Certificate, \$75 gift certificate and medal

Exhibit number: HS-ET-035 Student: Alexa Carey of Curry Science Academy

Project title: Effectiveness of Cellulose-Degrading Enzyme Treatments in Alcohol Production for Bio-Energy from Noxious Weed Species

**Naval Excellence in Science and Engineering Award sponsored by Office of Naval Research, US Navy and Marine Corps**

Prize includes: Certificate, \$75 gift certificate and medal

Exhibit number: HS-PL-035 Student: Dana Hong of Columbia River High School

Project title: The Effect of the Length and Drying Period of Reed Canarygrass Rhizomes on the Re-germination of Reed Canarygrass

**Award for Excellence in Scientific Research in Environmental Health sponsored by Oregon Environmental Health Association**

Prize includes: \$150, certificate

Exhibit number: HS-VM-027 Student: Cassandra Rider of Hillsboro High School

Project title: Effect of Average Daily Temperature in July in the Jackson Bottom Wetlands Gene Pool and Barley Straw on Spirogyra Growth

**Outstanding Project in Plant Biology sponsored by OSU Department of Botany and Plant Pathology**

Prize includes: \$50 and trophy

Exhibit number: HS-PL-037 Student: Amanda Henderson of Clackamas High School

Project title: Leaf Morphological Plasticity Response to Water Availability in the *Piriqueta caroliniana* Complex

**Outstanding Science Project About Forests sponsored by Pacific NW Research Station, USDA Forest Service**

Prize includes: Plaque

Exhibit number: HS-PL-003 Student: Laurie Fletcher of Curry Science Academy

Project title: A Comparison of the Flammability of Southwestern Oregon Woody Plants and the Effectiveness of Zeolite as a Fire Retardant

**Outstanding Applied or Practical Chemistry Project by a Junior or Senior sponsored by Portland Industrial Chemists' Association/American Chemical Society**

Prize includes: \$200, certificate

Exhibit number: HS-MI-022 Student: Jing Chen of Benson Polytechnic High School

Project title: Inhibiting the Growth of Staphylococcus aureus with Elderberry Extract

**Sustainable Development Award sponsored by Ricoh Corporation**

Prize includes: certificate, trophy, entry in raffle for a digital camera

Exhibit number: HS-VM-037 Student: Jongwoo Park of Sheldon High School

Project title: The use of natural secondary metabolites to absorb the greenhouse gas carbon dioxide

**Outstanding Air Quality Project sponsored by Southwest Clean Air Agency**

Prize includes: Plaque

Exhibit number: HS-VA-035 Student: Brian Tang of Skyview High School

Project title: Regression modeling: a comparison of two adjacent air quality studies

**Outstanding Project in Optical Science and Engineering sponsored by SPIE-The International Society for Optical Engineering**

Prize includes: Certificate and trophy

Exhibit number: HS-EE-027 Student: Fei Chen and William Neiswanger of Merlo Station High School

Project title: Increased Precision, Versatility, and Control in Laser-based Surgeries through the Intersection of Superimposed Varied Frequency Lasers

**Creative Use of Technology for Data Collection sponsored by Texas Instruments**

Prize includes: TI-84 Plus calculator

Exhibit number: HS-EE-017 Student: Preston Altree of Beaverton High School

Project title: Making Waves Like The Blue Man Group

**U.S. Air Force Outstanding Project sponsored by U.S. Air Force**

Prize includes: Certificate, Sharp MemoMaster Organizer, medallion

Exhibit number: HS-ET-034 Student: Brian McCarthy of Liberty High School

Project title: The Development of Translucent Organic Solar Cells on FTO Glass by Interfacial Polymerization

**U.S. Air Force Outstanding Project sponsored by U.S. Air Force**

Prize includes: Certificate, Sharp MemoMaster Organizer, medallion

Exhibit number: HS-ET-039 Student: Giovany Rosales of Westview High School

Project title: Alternative Fuels Call for Alternative Sugars

**U.S. Air Force Outstanding Project sponsored by U.S. Air Force**

Prize includes: Certificate, Sharp MemoMaster Organizer, medallion

Exhibit number: HS-VM-022 Student: Jacinda Thomas of Tillamook High School

Project title: Determining the best method of road decommissioning based on vegetative succession

**U.S. Air Force Outstanding Project sponsored by U.S. Air Force**

Prize includes: Certificate, Sharp MemoMaster Organizer, medallion

Exhibit number: HS-MA-009 Student: Ahmed Aissi of Merlo Station High School

Project title: Do Random Numbers Generated Using Noise, Frequency, and Workload Have Higher Entropy than Software Generated random Numbers

**U.S. Air Force Outstanding Project sponsored by U.S. Air Force**

Prize includes: Certificate, Sharp MemoMaster Organizer, medallion

Exhibit number: HS-MI-011 Student: Jeremy Carp of Oregon Episcopal School

Project title: The Effects of Ag Nano-Particles on The Growth of Escherichia coli in High and Low Protein Liquids

**Outstanding Use of the International System of Units sponsored by U.S. Metric Association**

Prize includes: certificate and trophy

Exhibit number: HS-ET-034 Student: Brian McCarthy of Liberty High School

Project title: The Development of Translucent Organic Solar Cells on FTO Glass by Interfacial Polymerization

**Outstanding Use of the International System of Units sponsored by U.S. Metric Association**

Prize includes: certificate and trophy

Exhibit number: HS-BC-006 Student: Laila Wahedi of Merlo Station High School

Project title: Insulin-like Growth Factor I Mediated Cell Proliferation Via the Insulin Receptor

**Project Best Illustrating Surgeon General's Health Recommendations sponsored by U.S. Public Health Service**

Prize includes: Certificate and trophy

Exhibit number: HS-ME-034 Student: Max McKinnon of Lakeview High School

Project title: A Novel Method for Determining VO<sub>2</sub> Max

**U.S. Regional Stockholm Junior Water Prize sponsored by Water Environment Federation**

Prize includes: Certificate, invitation to compete for State Stockholm Junior Water Prize

Exhibit number: HS-VM-033 Student: Shane Prohaska of Glencoe High School

Project title: The Examination of the Barview Jetty

**Outstanding Project by an 11th Grade Student sponsored by Yale University Science and Engineering Association**

Prize includes: Certificate and medallion received by mail

Exhibit number: HS-ME-007 Student: Patrick Chen of Oregon Episcopal School

Project title: Lysosomal Dysfunction in Retinal Pigment Epithelia Cells (RPE), the pathogenesis of Age Related Macular Degeneration?

**Julie Becker Award sponsored by Youth Exploring Science**

Prize includes: \$1000, certificate, book, and biography of Julie Becker

Exhibit number: HS-BE-057 Student: Kimberly Blair of Lakeview High School

Project title: How Does Teaching Style Impact The Learning of Scientific Methods In Second Grade Students