

2017 Intel NWSE High School Awards

Press Release

The Intel Northwest Science Expo, held Saturday, April 8, 2017 at Portland State University, announces top winners in Oregon's state-level high school science research competition affiliated with the Intel International Science and Engineering Fair (ISEF).

Two best of fair winners were chosen.

- Chaitanya Karamchedu, 17, in grade 12 from Jesuit High School won Best of Fair Physical Science with a project titled, "The Optimization of a Novel Hydrogel Desalination Technique, by investigating alternative dewatering processes for starch-g-polyacrylamide to improve overall system efficiency". He had qualified for the international fair at his regional fair.
- Anushka Nair, 16, in grade 10 from Lake Oswego High School won Best of Fair Life Science and was selected as an Intel ISEF finalist with a project titled, "Radiochemistry and AI: Development of an Analytical Capability Using Machine Learning Algorithms for Early Detection of Radionuclides in the Environment".

In addition, five projects were chosen as Intel ISEF finalists. These finalists win an expenses-paid trip to Los Angeles, California, in May 2017, to compete at the international level, during the Society for Science and the Public organized event, the Intel International Science and Engineering Fair.

- Nathan Tidball, 15, in grade 10 from Wilsonville High School was selected as an Intel ISEF finalist with a project titled, "Single Chamber MFC: Filtration of Arsenic with Exoelectrogenic Biofilm".
- Aditya Sivakumar, 17, in grade 11 from Beaverton High School was selected as an Intel ISEF finalist with a project titled, "A Geometrical Analysis of Harmony and Counterpoint in Music Using Quotient Orbifolds".
- Carson Weidman, 18, in grade 12 from West Salem High School was selected as an Intel ISEF finalist with a project titled, "Carbon Fiber Chain Mail".
- Arjun Somayazulu, 17, in grade 11 from Westview High School was selected as an Intel ISEF finalist with a project titled, "Influence of Sub-Cellular Protein Localization on Cellular Growth Rate".
- Stuti Garg, 17, in grade 11 from Westview High School was selected as an Intel ISEF finalist with a project titled, "Rescue of Nucleotide DNA Repair Deficiencies to UVB and Solar-simulated Irradiation by Pyrimidine Dimer Glycosylases and UV Endonucleases".

Joining the finalists from Intel NWSE will be the best projects from each of the seven regional fairs in the Northwest Science Expo System. The group of about 30 students, collectively referred to as Team OR, will represent the entire state at Intel ISEF against international competition in science, engineering and mathematics.

- Rohan Wagh, 14, in grade 9 from Sunset High School qualified for Intel ISEF at Beaverton-Hillsboro Science Expo with a project titled, "A More Durable and Portable Microbial Fuel Cell that Utilizes Native Plant Based Activated Carbon Electrode and Carbon-Platinum Catalyst".
- Divya Amirtharaj, 15, in grade 10 from Westview High School qualified for Intel ISEF at Beaverton-Hillsboro Science Expo with a project titled, "Mobile Real-Time OCR for Visually Impaired Individuals".
- Ashwin Datta, 18, in grade 12 from Glencoe High School qualified for Intel ISEF at Beaverton-Hillsboro Science Expo with a project titled, "Designing and Implementing an Algorithm to Accurately Control the Attitude of Free -Floating Satellites Using Extendable Manipulators".
- Aditya Jain, 16, in grade 12 from Westview High School qualified for Intel ISEF at Beaverton-Hillsboro Science Expo with a project titled, "A Novel Pan-Cancer Approach to Quantify Tumor Mutational Burden and Clinical Data Predictors for Immunotherapy Response towards Personalized Medicine".
- Ryan Westcott, 15, in grade 9 from Oregon Episcopal School qualified for Intel ISEF at Aardvark Science Exposition with a project titled, "UAV Obstacle Avoidance and Collision Prevention System".

- Raley Schweinfurth, 17, in grade 11 from Oregon Episcopal School qualified for Intel ISEF at Aardvark Science Exposition with a project titled, "Detection and Removal of Dinotefuran from the Environment: A Multi-Year HPLC-MS Analysis".
- Alison Thomas, 16, in grade 10 from Oregon Episcopal School qualified for Intel ISEF at Aardvark Science Exposition with a project titled, "The Effect of Paper, Electronic, and Audio-Electronic Reading Modalities on Reading Comprehension in an Adult Aged 60 and Above".
- Pushkar Shinde, 16, in grade 11 from Oregon Episcopal School qualified for Intel ISEF at Aardvark Science Exposition with a project titled, "Aptamer Based Disruption of the CD47:SIRPalpha for Anticancer Applications".
- Bryan Chun, 18, in grade 12 from Oregon Episcopal School qualified for Intel ISEF at Aardvark Science Exposition with a project titled, "Novel Fabrication of Thin Film Luminescent Solar Concentrators".
- Daniel Tang, 17, in grade 12 from West Linn High School qualified for Intel ISEF at CREST-Jane Goodall Science Symposium with a project titled, "A Path to Improving Gene Therapies for Liver-Related Diseases and Cancers through Selectable CRISPR-Cas9 Vectors".
- Jareth Anderson, 17, in grade 12 from Wilsonville High School qualified for Intel ISEF at CREST-Jane Goodall Science Symposium with a project titled, "The Moral Sentence; Is It Right to Penalize People of Generalized Social Classes By a Crowd-sourced Judging of Peers?".
- Jessica Yu, 15, in grade 10 from West Linn High School qualified for Intel ISEF at CREST-Jane Goodall Science Symposium with a project titled, "Safe with Me Now - A Novel System to Prevent Vehicular Hyperthermia in Children".
- Kristopher Wieland, 18, in grade 12 from Wilsonville High School and Jared Wieland, 14, in grade 9 from Wilsonville High School qualified for Intel ISEF at CREST-Jane Goodall Science Symposium with a project titled, "Revolution of Self-Fertilizing Crops".
- Alec Leng, 17, in grade 12 from Lincoln High School qualified for Intel ISEF at Portland Public Schools Science Expo with a project titled, "Independence of the Miller-Rabin and Lucas Probable Prime Tests".
- Adam Nayak, 17, in grade 11 from Cleveland High School qualified for Intel ISEF at Portland Public Schools Science Expo with a project titled, "Modeling the Effects of Land Use Change on Flooding in Pacific Northwest Streams".
- Arnob Das, 17, in grade 11 from Jesuit High School qualified for Intel ISEF at Gresham-Barlow Science Expo with a project titled, "Room Temperature Persistent Current in Conjugated Polymer Nanorings".
- Isaac Klementis, 18, in grade 11 from Gresham High School qualified for Intel ISEF at Gresham-Barlow Science Expo with a project titled, "Evaluating the effectiveness of lichen as a bioindicator".
- James Verheyden, 16, in grade 11 from Bend Science Station qualified for Intel ISEF at COCC Regional Science Expo with a project titled, "Optimizing bioavailable iron in water".
- Megha Joshi, 15, in grade 10 from South Salem High School qualified for Intel ISEF at Central Western Oregon Science Expo with a project titled, "Novel Method of Identifying and Confirming Candidate Genes Causing Resistance to Venetoclax Drug in Acute Myeloid Leukemia (AML) using CRISPR-Cas9".
- James Chen, 16, in grade 12 from West Salem High School qualified for Intel ISEF at Central Western Oregon Science Expo with a project titled, "Novel Application of Collatz-like Sequences for Cryptographic Hash Functions".

Nearly 100 volunteer judges spent the day interviewing high school student researchers. The event is sponsored by Intel Corporation, Portland State University and Genentech in addition to many individual contributions. Team OR is supported by NWSES sponsors OHSU and private individuals and foundations.

The Intel NWSE for middle school students is Monday, May 1, 2017 at Portland State University. Judges are needed. To volunteer or see full high school results visit nwse.org.

Top Prizes and Scholarships

Special Award	Award Sponsor	Exhibit Number	Title	Student List	School	Adult Sponsor
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Best of Fair-Life	Stardust Materials, LLC	HS-VE-0085	Radiochemistry and AI: Development of an Analytical Capability Using Machine Learning Algorithms for Early Detection of Radionuclides in the Environment	Anushka Nair	Lake Oswego High School	Charu Nair
Best of Fair-Physical	Stardust Materials, LLC	HS-EN-0052	The Optimization of a Novel Hydrogel Desalination Technique, by investigating alternative dewatering processes for starch-g-polyacrylamide to improve overall system efficiency	Chaitanya Karamchedu	Jesuit High School	Lara Shamieh
ISEF Finalist	Northwest Science Expo System	HS-MA-0015	A Geometrical Analysis of Harmony and Counterpoint in Music Using Quotient Orbifolds	Aditya Sivakumar	Beaverton High School	Mark Geren
ISEF Finalist	Northwest Science Expo System	HS-EN-0058	Single Chamber MFC: Filtration of Arsenic with Exoelectrogenic Biofilm	Nathan Tidball	Wilsonville High School	Thomas Schuster
ISEF Finalist	Northwest Science Expo System	HS-CM-0009	Influence of Sub-Cellular Protein Localization on Cellular Growth Rate	Arjun Somayazulu	Westview High School	Debbie Cooper
ISEF Finalist	Northwest Science Expo System	HS-MI-0039	Rescue of Nucleotide DNA Repair Deficiencies to UVB and Solar-simulated Irradiation by Pyrimidine Dimer Glycosylases and UV Endonucleases	Stuti Garg	Westview High School	Debbie Cooper
ISEF Finalist	Northwest Science Expo System	HS-EB-0011	Carbon Fiber Chain Mail	Carson Weidman	West Salem High School	Michael Lampert

ISEF Finalist	Northwest Science Expo System	HS-VE-0085	Radiochemistry and AI: Development of an Analytical Capability Using Machine Learning Algorithms for Early Detection of Radionuclides in the Environment	Anushka Nair	Lake Oswego High School	Charu Nair
OSU College of Engineering Scholarship	Oregon State University	HS-EE-0048	Use of Magnetic-Propulsion Based Artificial Satellites for De-Orbiting Space Debris via Electroactive Kinetic Impact-Absorption Composite Barrier	Gabriel Sutherland	Oregon Episcopal School	Ryan Holland
OSU College of Engineering Scholarship	Oregon State University	HS-EE-0043	Sunlight at Night	Samuel Anderton	Trinity Lutheran School	Thomas Stueve
OSU General Scholarship	Oregon State University	HS-EB-0032	An improved method for molecular sieve regeneration to be used in a cost effective and energy efficient manure lagoon cover	Kyla Wiegand	Wilsonville High School	Jim O'Connell
OSU General Scholarship	Oregon State University	HS-AN-0028	The Correlation Between Equine Stride Length and the Length of the Forearm	Hannah Rugg	Trinity Lutheran School	Thomas Stueve
OSU General Scholarship	Oregon State University	HS-VE-0085	Radiochemistry and AI: Development of an Analytical Capability Using Machine Learning Algorithms for Early Detection of Radionuclides in the Environment	Anushka Nair	Lake Oswego High School	Charu Nair

PSU Maseeh College of Engineering and Computer Science Computer Sciences Scholarship	PSU College of Engineering and Computer Science	HS-EB-0031	Utilizing Synechococcus elongatus to organically increase the amount of anthocyanin produced by Arabidopsis thaliana	Mackenna Koppler	West Linn High School	Gabe Nagler
University of Oregon Scholarships	University of Oregon	HS-CO-0015	Artificial Intelligence for Original and Creative Artwork	Yesh Godse	Westview High School	Debbie Cooper
University of Oregon Scholarships	University of Oregon	HS-MI-0019	Effects of UV Radiation on Tardigrade Health in and out of Dormancy	Alexandria Montgomery	West Salem High School	Michael Lampert
University of Oregon Scholarships	University of Oregon	HS-AN-0034	Potential Geoduck Habitat in Netarts Bay	Austin Weeks	Tillamook High School	Mark Roberts
University of Portland Scholarships	University of Portland	HS-ME-0001	Does Eating a Western-Style Diet during Pregnancy Affect Fetal Ovaries in Nonhuman Primates? Implications for Human Fertility.	Ashley Scates	Oregon Episcopal School	Peter Langley
University of Portland Scholarships	University of Portland	HS-EN-0017	Investigating the Enzyme Activity in Cellobiase of Mushrooms	Jennifer Lee	Oregon Episcopal School	Bettina Gregg
Special Awards						
Award for Excellence in Scientific Research in Environmental Health	Oregon Environmental Health Association	HS-VE-0053	Resilient Waters - The Affects of Acidification on Central Oregon Waters	Mikayla Reuter	Summit High School	Callie Pfister
Biophysics Award	Biophysical Society	HS-ME-0060	Embracing Thoracic Scoliosis	Makayla Bruce	Wilsonville High School	Jay Schauer
Dr. Lamb Award	Students of Dr. Bill Lamb	HS-CH-0035	The Possible Creation of Chloropropanols in Propylene Glycol Based E-cigarettes	Ari Bluffstone	Catlin Gabel School	Jeff Crosby

IEEE Special Awards	IEEE Oregon	HS-EE-0048	Use of Magnetic-Propulsion Based Artificial Satellites for De-Orbiting Space Debris via Electroactive Kinetic Impact-Absorption Composite Barrier	Gabriel Sutherland	Oregon Episcopal School	Ryan Holland
IEEE Special Awards	IEEE Oregon	HS-PL-0017	Measuring Tree Health Through Electrical Stress Signals	Marcella Cross	West Salem High School	Michael Lampert
IEEE Special Awards	IEEE Oregon	HS-EN-0050	Smarter Power: Advancing Renewable Energy Generation and Management with High-Efficiency Solar Paints and Blockchain-Based Distributed Microgrids	Harish Palani	Sunset High School	Korin Riske
IEEE Special Awards	IEEE Oregon	HS-EE-0047		Seth Talyansky	Catlin Gabel School	Jeff Crosby
IEEE Special Awards	IEEE Oregon	HS-MA-0016	Independence of the Miller-Rabin and Lucas Probable Prime Tests	Alec Leng	Lincoln High School	Angie McVay
IEEE Special Awards	IEEE Oregon	HS-CO-0013	Dementia Diagnosis with Deep Convolutional Neural Networks	Ethan Liu, Raymond Liu	Crescent Valley High School	Huaping Liu
Intel Excellence in Computer Science	Intel Corporation	HS-CO-0015	Artificial Intelligence for Original and Creative Artwork	Yesh Godse	Westview High School	Debbie Cooper
Mu Alpha Theta Award	Mu Alpha Theta	HS-MA-0016	Independence of the Miller-Rabin and Lucas Probable Prime Tests	Alec Leng	Lincoln High School	Angie McVay
NASA Earth System Science Award	NASA	HS-VE-0026	Detection and Removal of Dinotefuran from the Environment: A Multi-Year HPLC-MS Analysis	Raley Schweinfurth	Oregon Episcopal School	Bettina Gregg

Naval Excellence in Science and Engineering Award	Office of Naval Research, US Navy and Marine Corps	HS-ME-0060	Embracing Thoracic Scoliosis	Makayla Bruce	Wilsonville High School	Jay Schauer
Naval Excellence in Science and Engineering Award	Office of Naval Research, US Navy and Marine Corps	HS-EB-0011	Carbon Fiber Chain Mail	Carson Weidman	West Salem High School	Michael Lampert
Naval Excellence in Science and Engineering Award	Office of Naval Research, US Navy and Marine Corps	HS-EB-0007	Robotic Prosthetic Hand	Josh Diehl	Liberty High School	Steffan Ledgerwood
Naval Excellence in Science and Engineering Award	Office of Naval Research, US Navy and Marine Corps	HS-MA-0016	Independence of the Miller-Rabin and Lucas Probable Prime Tests	Alec Leng	Lincoln High School	Angie McVay
Naval Excellence in Science and Engineering Award	Office of Naval Research, US Navy and Marine Corps	HS-EE-0015	The Effect of the Mass to Surface Area Ratio on the Velocity of a Hovercraft Over Different Terrain	Leah Painter	International School of Beaverton	Wendi Fisher
NOAA's Taking the Pulse of the Planet	National Oceanic and Atmospheric Administration	HS-VE-0054	The Effect of pH Levels on the Growth and Development of Crassostrea Gigas Seed	Max Parson-Scherban	Oregon Episcopal School	Bevin Daglen
Outstanding Air Quality Project	Southwest Clean Air Agency	HS-VE-0060	Statistical Analysis of Global Correlation Patterns between Active Fires and Air Pollutants Using ANOVA	Rupert Li	Jesuit High School	Lara Shamieh
Outstanding Applied or Practical Chemistry Project by a Junior or Senior	Portland Industrial Chemists' Association-American Chemical Society	HS-CH-0006	Absorption of Copper(II) Ion by using Magnetic Nanoparticles coated with Saccharic Acid	Nichakan Khuichad	Oregon Episcopal School	Bevin Daglen
Outstanding Aquatic Related Environmental Science Project	Lake Oswego Corporation	HS-VE-0046	The Effect of BPA on Planaria	Mikayla Ellsworth, Arianna Chappell	West Linn High School	Nancy Monson

Outstanding Chemistry Project	American Chemical Society, Portland Section	HS-BC-0008	The Novel Role of gC1qR in Lymphoproliferative Disorder Associated Angioedema	Sharanya Suresh	Westview High School	Debbie Cooper
Outstanding Chemistry Related Project	Iota Sigma Pi	HS-EB-0031	Utilizing Synechococcus elongatus to organically increase the amount of anthocyanin produced by Arabidopsis thaliana	Mackenna Koppler	West Linn High School	Gabe Nagler
Outstanding Geoscience Project	Association Of Women Geoscientists	HS-VE-0059	Utilizing Microscopic Biological Indicators in Stream Conservation: What Do Benthic Diatoms & Coliform Bacteria Reveal About Willamette River's Pollution Profile?	Sarah Haines, Kylie Swinmurn	Northwest Academy	Molly Sultany
Outstanding Natural Resources Science Project	Pacific NW Research Station, USDA Forest Service	HS-VE-0067	Evaluating the effectiveness of lichen as a bioindicator	Isaac Klementis	Gresham High School	Julie Trisel
Outstanding Project by an 11th Grade Student	Yale University Science and Engineering Association	HS-CO-0015	Artificial Intelligence for Original and Creative Artwork	Yesh Godse	Westview High School	Debbie Cooper
Outstanding Project in an Atmospheric Science Exhibit	American Meteorological Society	HS-PL-0030	A Data Mining Approach to Examine the Effects of Climate Change on the Growth of Pinot Noir Grapes in Western	Abhigya Sodani	Westview High School	Debbie Cooper
Outstanding Project in In Vitro Biology	Society for in Vitro Biology	HS-MI-0001	Measuring the Antifungal and Preservative Effects of Edible Essential Oils on Aspergillus niger and Penicillium notatum	Ronan Waterson	Oregon Episcopal School	Peter Langley

Outstanding Project in Materials Science	ASM International Foundation	HS-EB-0030	A Concrete Solution - Examining A Potential Use For Recycled Expanded Polystyrene Dissolved With D-Limonene	Justin LeBlanc	Wilsonville High School	Jay Schauer
Outstanding Research in Psychology	American Psychological Association	HS-BE-0002	Anxiety and Depression in High School Students: Prevalence and Main Contributors	Amelia Comer	Oregon Episcopal School	Peter Langley
Outstanding Use of the International System of Units	U.S. Metric Association	HS-EE-0055	Developing a Parabolic Reflector to Increase the Signal Strength of a Router in a in-home Wireless Network	Anya Anand, Aabhishek Anand	Lincoln High School	Kalla Anand
Outstanding Use of the International System of Units	U.S. Metric Association	HS-ME-0067	Testing Cystic Fibrosis Lung Disease Severity	Jack Burns	Wilsonville High School	Harold Collier
Sustainable Development Award	Ricoh Corporation	HS-EN-0028	Biodegradable Plastic	Haley Koba	West Salem High School	Michael Lampert
TiE Oregon Entrepreneurship Honorable Mention	TiE Oregon	HS-EB-0011	Carbon Fiber Chain Mail	Carson Weidman	West Salem High School	Michael Lampert
TiE Oregon Outstanding Entrepreneurship Projects	TiE Oregon	HS-EE-0029	Do Stock Pickups Fall Flat?	Matthew Lane	Glencoe High School	Chris Steiner
Tom Owen Award for Excellence in Statistics	Oregon Chapter of the American Statistical Association	HS-ME-0048	Follow Your Heart: Relative Efficiencies of Machine Learning for Early Prediction of Coronary Artery Disease	Anwasha Mukherjee	Westview High School	Debbie Cooper
Tom Owen Award for Excellence in Statistics	Oregon Chapter of the American Statistical Association	HS-VE-0085	Radiochemistry and AI: Development of an Analytical Capability Using Machine Learning Algorithms for Early Detection of	Anushka Nair	Lake Oswego High School	Charu Nair

			Radionuclides in the Environment			
Tom Owen Award for Excellence in Statistics	Oregon Chapter of the American Statistical Association	HS-ME-0058	EPICS (Ensemble-learning for Prediction of Cancer Survival):A new high-accuracy predictor of cancer survival using microarray gene expression and clinical data	Arjun Jain	Catlin Gabel School	Jeff Crosby
Tom Owen Honorable Mention in Statistics	Oregon Chapter of the American Statistical Association	HS-BE-0002	Anxiety and Depression in High School Students: Prevalence and Main Contributors	Amelia Comer	Oregon Episcopal School	Peter Langley
Tom Owen Honorable Mention in Statistics	Oregon Chapter of the American Statistical Association	HS-ME-0043	A Novel Pan-Cancer Approach to Quantify Tumor Mutational Burden and Clinical Data Predictors for Immunotherapy Response towards Personalized Medicine	Aditya Jain	Westview High School	Debbie Cooper
Tom Owen Honorable Mention in Statistics	Oregon Chapter of the American Statistical Association	HS-CM-0009	Influence of Sub-Cellular Protein Localization on Cellular Growth Rate	Arjun Somayazulu	Westview High School	Debbie Cooper
Tom Owen Honorable Mention in Statistics	Oregon Chapter of the American Statistical Association	HS-EN-0004	Improved Trap for Pest Snails Including Giant African Land Snails	Hannah Weinberg	Oregon Episcopal School	Bevin Daglen
Tom Owen Honorable Mention in Statistics	Oregon Chapter of the American Statistical Association	HS-ME-0055	Effects of Two Cool-Down Methods on Delayed Onset Muscle Soreness and Flexibility	Amy Kraemer	Amity High School	Cara Benfield

Tom Owen Honorable Mention in Statistics	Oregon Chapter of the American Statistical Association	HS-CO-0021	A Novel Approach to Machine Learning Combining Classical Occam's Razor Learning with Vapnik's Modern Statistical Theory	Leo Deng	Jesuit High School	Yuchen Huang
Tom Owen Honorable Mention in Statistics	Oregon Chapter of the American Statistical Association	HS-VE-0060	Statistical Analysis of Global Correlation Patterns between Active Fires and Air Pollutants Using ANOVA	Rupert Li	Jesuit High School	Lara Shamieh
Tom Owen Honorable Mention in Statistics	Oregon Chapter of the American Statistical Association	HS-BE-0052	An Attitudinal Survey of Park Visitors's™ Views of Coyotes: Utilizing Citizen Science as a Conservation Tool in an Urban Landscape	Sarah Duran	Northwest Academy	Molly Sultany
U.S. Air Force Outstanding Project	U.S. Air Force	HS-EE-0003	A Comparison of the Effectiveness of Three Porous Wrappings to Reduce Noise from Airplane Landing Gear	Annie Cheng	Oregon Episcopal School	Peter Langley
U.S. Air Force Outstanding Project	U.S. Air Force	HS-PH-0002	Simulating Aircraft Icing Using Computational Fluid Dynamics	Simon Hatcher	Oregon Episcopal School	Bevin Daglen
U.S. Air Force Outstanding Project	U.S. Air Force	HS-EE-0048	Use of Magnetic-Propulsion Based Artificial Satellites for De-Orbiting Space Debris via Electroactive Kinetic Impact-Absorption Composite Barrier	Gabriel Sutherland	Oregon Episcopal School	Ryan Holland
U.S. Air Force Outstanding Project	U.S. Air Force	HS-CO-0005	UAV Obstacle Avoidance and Collision Prevention System	Ryan Westcott	Oregon Episcopal School	Owen Gross
U.S. Regional Stockholm Junior Water Prize	Water Environment Federation	HS-VE-0053	Resilient Waters - The Affects of Acidification on	Mikayla Reuter	Summit High School	Callie Pfister

			Central Oregon Waters			
U.S. Regional Stockholm Junior Water Prize	Water Environment Federation	HS-VE-0059	Utilizing Microscopic Biological Indicators in Stream Conservation: What Do Benthic Diatoms & Coliform Bacteria Reveal About Willamette River's Pollution Profile?	Sarah Haines, Kylie Swinmurn	Northwest Academy	Molly Sultany
Vardhana Innovative Presentation	The Vardhana Family	HS-EE-0013	The Effects of Temperature on The Magnetic Interaction of a Linear Induction Motor	Ethan Dinh	Oregon Episcopal School	Owen Gross

Category Awards

Category	Place	Exhibit No	Title	Student List	Organization	Adult Sponsor
Animal Sciences	First Place	HS-AN-0008	An Analysis of the Effects of Ammonium Nitrate on the Heart Rates and Mortality Rates of Daphnia magna	Sara Barkouli, Haley Rice	Oregon Episcopal School	Bettina Gregg
Animal Sciences	Second Place	HS-AN-0036	The Effect of Changing Temperature and pH on the Early Embryonic Development of Purple Sea Urchins (Strongylocentrotus Purpuratus)	Hannah Budroe, Michelle Stevens	Wilsonville High School	Jay Schauer
Animal Sciences	Third Place	HS-AN-0034	Potential Geoduck Habitat in Netarts Bay	Austin Weeks	Tillamook High School	Mark Roberts
Behavioral and Social Science	First Place	HS-BE-0052	An Attitudinal Survey of Park Visitors's Views of Coyotes: Utilizing Citizen Science as a Conservation Tool in an Urban Landscape	Sarah Duran	Northwest Academy	Molly Sultany

Behavioral and Social Science	Second Place	HS-BE-0072	Walk Away From Stress With Smart Shoes	Soumik Chakraborty	Jesuit High School	Kanad Chakraborty
Behavioral and Social Science	Third Place	HS-BE-0003	The Effect of Paper, Electronic, and Audio-Electronic Reading Modalities on Reading Comprehension in an Adult Aged 60 and Above	Alison Thomas	Oregon Episcopal School	Bevin Daglen
Biochemistry	First Place	HS-BC-0008	The Novel Role of gC1qR in Lymphoproliferative Disorder Associated Angioedema	Sharanya Suresh	Westview High School	Debbie Cooper
Biochemistry	Second Place	HS-BC-0003	Measuring Oyster Growth in Response to the Addition of Salt Evaporites using Fluorescing Stains	Claire Bradley, Anna Mattson	Tillamook High School	Mark Roberts
Biochemistry	Third Place	HS-BC-0012	Sleep Deprivation and the Aggregation of Protein Modeled in Drosophila Melanogaster	Isabella Fenner, Eleanor Johnson	West Linn High School	Nancy Monson
Cellular and Molecular Biology	First Place	HS-CM-0009	Influence of Sub-Cellular Protein Localization on Cellular Growth Rate	Arjun Somayazulu	Westview High School	Debbie Cooper
Cellular and Molecular Biology	Second Place	HS-CM-0010	A Novel Method of Constructing Short Synthetic Gene Regulatory Elements	Adit Gupta	Westview High School	Debbie Cooper
Cellular and Molecular Biology	Third Place	HS-CM-0013	A Path to Improving Gene Therapies for Liver-Related Diseases and Cancers through Selectable CRISPR-Cas9 Vectors	Daniel Tang	West Linn High School	Nancy Monson

Chemistry	First Place	HS-CH-0003	The Effects of Different Levels of Carbohydrates, Salts, and Sugars on Various Electrolyte-Rich Drinks	Isabelle Saba	Oregon Episcopal School	Bevin Daglen
Chemistry	Second Place	HS-CH-0014	UV Exposure on Ethyl Acetate and Resveratrol for Chromatography Analysis	Ellie Chang, Christina Boxberger	Oregon Episcopal School	Ryan Holland
Chemistry	Third Place	HS-CH-0048	Presence of Evernic Acid in Evernia prunastri Lichen in Relation to Proximity to Major Roadways	Sanjana Basak	West Linn High School	Brian Delfatti
Computer Science and Robotics	First Place	HS-CO-0015	Artificial Intelligence for Original and Creative Artwork	Yesh Godse	Westview High School	Debbie Cooper
Computer Science and Robotics	Second Place	HS-CO-0021	A Novel Approach to Machine Learning Combining Classical Occam's Razor Learning with Vapnik's Modern Statistical Theory	Leo Deng	Jesuit High School	Yuchen Huang
Computer Science and Robotics	Third Place	HS-CO-0005	UAV Obstacle Avoidance and Collision Prevention System	Ryan Westcott	Oregon Episcopal School	Owen Gross
Computer Science and Robotics	Honorable Mention	HS-CO-0010	Hacked! Unauthorized WiFi Access Through Weak Password and Social Media Exploitation	Pooja Jain	West Linn High School	Wind Lothamer
Energy and Environmental Engineering	First Place	HS-EN-0052	The Optimization of a Novel Hydrogel Desalination Technique, by investigating alternative dewatering processes for starch-g-polyacrylamide to improve overall system efficiency	Chaitanya Karamchedu	Jesuit High School	Lara Shamieh

Energy and Environmental Engineering	Second Place	HS-EN-0049	A More Durable and Portable Microbial Fuel Cell that Utilizes Native Plant Based Activated Carbon Electrode and Carbon-Platinum Catalyst	Rohan Wagh	Sunset High School	Korin Riske
Energy and Environmental Engineering	Third Place	HS-EN-0058	Single Chamber MFC: Filtration of Arsenic with Exoelectrogenic Biofilm	Nathan Tidball	Wilsonville High School	Thomas Schuster
Energy and Environmental Engineering	Honorable Mention	HS-EN-0039	Novel Fabrication of Thin Film Luminescent Solar Concentrators	Bryan Chun	Oregon Episcopal School	Bevin Daglen
Engineering: Bioengineering and Materials	First Place	HS-EB-0031	Utilizing Synechococcus elongatus to organically increase the amount of anthocyanin produced by Arabidopsis thaliana	Mackenna Koppler	West Linn High School	Gabe Nagler
Engineering: Bioengineering and Materials	Second Place	HS-EB-0011	Carbon Fiber Chain Mail	Carson Weidman	West Salem High School	Michael Lampert
Engineering: Bioengineering and Materials	Third Place	HS-EB-0032	An improved method for molecular sieve regeneration to be used in a cost effective and energy efficient manure lagoon cover	Kyla Wiegand, Sarah Frechette	Wilsonville High School	Jim O'Connell
Engineering: Bioengineering and Materials	Honorable Mention	HS-EB-0030	A Concrete Solution - Examining A Potential Use For Recycled Expanded Polystyrene Dissolved With D-Limonene	Justin LeBlanc	Wilsonville High School	Jay Schauer
Engineering: Electrical and Mechanical	First Place	HS-EE-0022	Safe with Me Now - A Novel System to Prevent Vehicular Hyperthermia in Children	Jessica Yu	West Linn High School	Shawn McDevitt

Engineering: Electrical and Mechanical	Second Place	HS- EE- 0015	The Effect of the Mass to Surface Area Ratio on the Velocity of a Hovercraft Over Different Terrain	Leah Painter	International School of Beaverton	Wendi Fisher
Engineering: Electrical and Mechanical	Third Place	HS- EE- 0003	A Comparison of the Effectiveness of Three Porous Wrappings to Reduce Noise from Airplane Landing Gear	Annie Cheng	Oregon Episcopal School	Peter Langley
Engineering: Electrical and Mechanical	Honorable Mention	HS- EE- 0048	Use of Magnetic- Propulsion Based Artificial Satellites for De-Orbiting Space Debris via Electroactive Kinetic Impact- Absorption Composite Barrier	Gabriel Sutherland	Oregon Episcopal School	Ryan Holland
Environmental and Earth Sciences	First Place	HS- VE- 0085	Radiochemistry and AI: Development of an Analytical Capability Using Machine Learning Algorithms for Early Detection of Radionuclides in the Environment	Anushka Nair	Lake Oswego High School	Charu Nair
Environmental and Earth Sciences	Second Place	HS- VE- 0061	Modeling the Effects of Land Use Change on Flooding in Pacific Northwest Streams	Adam Nayak	Cleveland High School	Ronda Royal, Ph.D.
Environmental and Earth Sciences	Third Place	HS- VE- 0026	Detection and Removal of Dinotefuran from the Environment: A Multi- Year HPLC-MS Analysis	Raley Schweinfurth	Oregon Episcopal School	Bettina Gregg
Mathematical Sciences	First Place	HS- MA- 0016	Independence of the Miller-Rabin and Lucas Probable Prime Tests	Alec Leng	Lincoln High School	Angie McVay

Mathematical Sciences	Second Place	HS-MA-0006	Novel Application of Collatz-like Sequences for Cryptographic Hash Functions	James Chen	West Salem High School	Michael Lampert
Mathematical Sciences	Third Place	HS-MA-0015	A Geometrical Analysis of Harmony and Counterpoint in Music Using Quotient Orbifolds	Aditya Sivakumar	Beaverton High School	Mark Geren
Medicine and Health Sciences	First Place	HS-ME-0043	A Novel Pan-Cancer Approach to Quantify Tumor Mutational Burden and Clinical Data Predictors for Immunotherapy Response towards Personalized Medicine	Aditya Jain	Westview High School	Debbie Cooper
Medicine and Health Sciences	Second Place	HS-ME-0048	Follow Your Heart: Relative Efficiencies of Machine Learning for Early Prediction of Coronary Artery Disease	Anwesha Mukherjee	Westview High School	Debbie Cooper
Medicine and Health Sciences	Third Place	HS-ME-0055	Effects of Two Cool-Down Methods on Delayed Onset Muscle Soreness and Flexibility	Amy Kraemer	Amity High School	Cara Benfield
Microbiology	First Place	HS-MI-0039	Rescue of Nucleotide DNA Repair Deficiencies to UVB and Solar-simulated Irradiation by Pyrimidine Dimer Glycosylases and UV Endonucleases	Stuti Garg	Westview High School	Debbie Cooper
Microbiology	Second Place	HS-MI-0046	Heart Disease and Homeostasis in the Gut: How L.acidophilus and E.coli react with L-Carnitine	JiHyun An	West Linn High School	Julie McDevitt
Microbiology	Third Place	HS-MI-0019	Effects of UV Radiation on Tardigrade Health in and out of Dormancy	Alexandria Montgomery	West Salem High School	Michael Lampert

Microbiology	Honorable Mention	HS-MI-0018	Advancing the science of the treatment and pathogenesis of Alzheimer's disease; the effects of antibiotics in conjunction with a biofilm	Dana Zaidan, Athena Lackides	Wilsonville High School	Jay Schauer
Physics and Astronomy	First Place	HS-PH-0003	Characterization and Alignment of Copper Nanowires for Future Display and Integrated Circuit Applications	Musa Tahir	Oregon Episcopal School	Bevin Daglen
Physics and Astronomy	Second Place	HS-PH-0001	Analyzing Confirmed Exoplanets Using Transit Detection Method Light Curves	Rachel Waddell, Selin Berk, Nahida Moradi	Oregon Episcopal School	Peter Langley
Physics and Astronomy	Third Place	HS-PH-0002	Simulating Aircraft Icing Using Computational Fluid Dynamics	Simon Hatcher	Oregon Episcopal School	Bevin Daglen
Physics and Astronomy	Honorable Mention	HS-PH-0069	Room Temperature Persistent Current in Conjugated Polymer Nanorings	Arnob Das	Jesuit High School	Sabita Roy
Plant Sciences	First Place	HS-PL-0033	Revolution of Self-Fertilizing Crops	Kristopher Wieland, Jared Wieland	Wilsonville High School	Thomas Schuster
Plant Sciences	Second Place	HS-PL-0026	Reactions of Salvinia sp. to Copper Contamination; Death or Absorption?	Bryan To	Oregon Episcopal School	Peter Langley
Plant Sciences	Third Place	HS-PL-0003	THE EFFECT OF BLUE-VIOLET LIGHT INTENSITY ON THE AMOUNT OF ANTIOXIDANTS IN SORRENTO BROCCOLI	Andrew Ngo	Oregon Episcopal School	Bevin Daglen