

2016 Intel NWSE High School Awards

At the 33rd Annual Intel Northwest Science Expo presented by Portland State University students from across the state competed for awards. Two Best of Fair were selected. Six students were selected to join Team OR from the state fair joining 23 selected at their regional fair. 120 awards were earned.

Special Award	Award Sponsor	Title	Student List	Organization	Adult Sponsor
Best of Fair-Life	The Sawyer Family	A Novel Nanoparticle-microRNA Treatment to Overcome Drug Resistance and Tumor Metastasis in Lung Cancer	Anirudh Jain	Catlin Gabel School	Jeff Crosby
Best of Fair-Physical	The Sawyer Family	A Highly Selective and Efficient Electrocatalytic Conversion of Carbon Dioxide using Nanostructured Electrodes	Nikhil Murthy	Catlin Gabel School	Jeff Crosby
ISEF Finalist	Northwest Science Expo System	A Novel Approach to Cancer Treatment: Allosteric Inhibition of the Carbonic Anhydrase IX Isozyme for Anticancer Applications	Nandini Naidu	Valley Catholic High School	MohanKumar Naidu
ISEF Finalist	Northwest Science Expo System	The Novel Fabrication of a Superhydrophobic Glass Surface	Lauren Cooper	Lake Oswego High School	Keith Grosse
ISEF Finalist	Northwest Science Expo System	The effects of expressing DNA repair enzymes, UVDE and cv-pdg, in E. coli cells under UVB light	Stuti Garg	Westview High School	Debbie Cooper
ISEF Finalist	Northwest Science Expo System	Inducing Ferromagnetism in Organic Polymers for Versatile	Arnob Das	Jesuit High School	Sabita Roy

		Applications of Polymer-Based Magnetic Nanoparticles			
ISEF Finalist	Northwest Science Expo System	Quakify: A Low-Cost, Crowdsourced, Real-time Solution to Earthquake Early Warning	Harish Palani	Sunset High School	Rekha Rasiah
ISEF Finalist	Northwest Science Expo System	A Novel Nanoparticle-microRNA Treatment to Overcome Drug Resistance and Tumor Metastasis in Lung Cancer	Anirudh Jain	Catlin Gabel School	Jeff Crosby
Scholarships					
OSU College of Engineering Scholarship	Oregon State University	Catalyst Refinement in the Industrialized Production of Biodiesel through Reactive Distillation	Libby Williams	Wilsonville High School	Jim O'Connell
OSU College of Engineering Scholarship	Oregon State University	A Commercially Practical Application of Plastic Biodegradation	Mason Muir	West Salem High School	Michael Lampert
OSU General Scholarship	Oregon State University	Effects of Electro Magnetic Energy on Dungeoness Crab	Taylor Browning	Tillamook High School	Mark Roberts
OSU General Scholarship	Oregon State University	Designing a Merkle-Daamgard Cryptographically Secure Hash Function Using Elliptic Curves in Weierstrass Form	Brady Testa	School of Science and Technology	Chester Novitt
OSU General Scholarship	Oregon State University	Quakify: A Low-Cost, Crowdsourced, Real-time Solution to Earthquake Early Warning	Harish Palani	Sunset High School	Rekha Rasiah

PSU Maseeh College of Engineering and Computer Science Computer Sciences Scholarship	PSU College of Engineering and Computer Science	A Smart Burn/Spill-Proof Microwave that spares the Salad: Novel Application of Levenberg-Marquardt Algorithms in Bayesian Analysis for Real-Time Thermodynamic Modeling	Muhammad Rahman	Westview High School	Debbie Cooper
University of Oregon Scholarships	University of Oregon	Spectral Data Analysis of Titanium Oxide Presence in Stars	Sarah Maazouz	Liberty High School	Dr. Milt Scholl
University of Oregon Scholarships	University of Oregon	The effects of expressing DNA repair enzymes, UVDE and cv-pdg, in E. coli cells under UVB light	Stuti Garg	Westview High School	Debbie Cooper
University of Oregon Scholarships	University of Oregon	A Novel Nanoparticle-microRNA Treatment to Overcome Drug Resistance and Tumor Metastasis in Lung Cancer	Anirudh Jain	Catlin Gabel School	Jeff Crosby
University of Portland Scholarships	University of Portland	The Ability of Neonicotinoids to Metabolize Insecticides	Tanner Karp	Wilsonville High School	Jay Schauer
University of Portland Scholarships	University of Portland	Differentiation of Underwater Vibrational Stimuli in <i>Xenopus laevis</i>	Alexandria Montgomery	West Salem High School	Michael Lampert

Special Awards

Special Award	Award Sponsor	Title	Student List	Organization	Adult Sponsor
Award for Excellence in Scientific Research in	Oregon Environmental Health Association	A Diatom Bioassessment in a Willamette River Tributary at the Nanoscale Using a	Kylie Swinmurn, Sarah Haines	Northwest Academy	Molly Sultany

Environmental Health		Scanning Electron Microscope			
Biophysics Award	Biophysical Society	Lung Cancer Decision Support System: Novel Automated Noninvasive Tumor Malignancy and Patient Outcomes Predictive Modelling through Radiomics Feature Quantification	Aditya Jain	Westview High School	Debbie Cooper
Dr. Lamb Award	Students of Dr. Bill Lamb	The Effects of Commercial Beekeeping Antibiotics on the Endosymbionts of the Western Honey Bee	Dylan Martins	West Linn High School	Gabe Nagler
IEEE Special Awards	IEEE Oregon	E.M.P's Effects on Everyday Tech	Ian Gutierrez	Oregon Episcopal School	Robert Orr
IEEE Special Awards	IEEE Oregon	A Smart Burn/Spill-Proof Microwave that spares the Salad: Novel Application of Levenberg-Marquardt Algorithms in Bayesian Analysis for Real-Time Thermodynamic Modeling	Muhammad Rahman	Westview High School	Debbie Cooper
IEEE Special Awards	IEEE Oregon	Optimizing Dye Sensitized Solar Cells Utilizing Absorption Spectra	Benjamin Johnson	Westview High School	Debbie Cooper
IEEE Special Awards	IEEE Oregon	An Innovative Quantum Machine Learning Accelerator to Find the Minimum Kronecker Reed-Muller Form Based	Bryan Lee	Westview High School	Debbie Cooper

		on Grovers Search Algorithm			
IEEE Special Awards	IEEE Oregon	Lung Cancer Decision Support System: Novel Automated Noninvasive Tumor Malignancy and Patient Outcomes Predictive Modelling through Radiomics Feature Quantification	Aditya Jain	Westview High School	Debbie Cooper
IEEE Special Awards	IEEE Oregon	Graphene 3D Printer	Connor Suderman	West Salem High School	Michael Lampert
IEEE Special Awards	IEEE Oregon	Quakify: A Low-Cost, Crowdsourced, Real-time Solution to Earthquake Early Warning	Harish Palani	Sunset High School	Rekha Rasiah
Intel Excellence in Computer Science	Intel Corporation	A Novel Algorithm Combining Random Forest and Wavelet Distance Measurement for Biometric Identification Using Electrocardiograms	Robin Tan	Jesuit High School	Marek Perkowski
Mu Alpha Theta Award	Mu Alpha Theta	Alzheimer's Disease Risk Model Suggests Social Isolation and Lack of Education Have Great Significance in Risk	Talia Lichtenberg	West Linn High School	Jonathan Davies
NASA Earth System Science Award	NASA	Quakify: A Low-Cost, Crowdsourced, Real-time Solution to Earthquake Early Warning	Harish Palani	Sunset High School	Rekha Rasiah
Naval Excellence in Science and Engineering Award	Office of Naval Research, US Navy and Marine Corps	Water Desalination via Energy Efficient Capacitive Deionization	Austin Hohenshelt	Wilsonville High School	Jay Schauer

Naval Excellence in Science and Engineering Award	Office of Naval Research, US Navy and Marine Corps	Catalyst Refinement in the Industrialized Production of Biodiesel through Reactive Distillation	Libby Williams	Wilsonville High School	Jim O'Connell
Naval Excellence in Science and Engineering Award	Office of Naval Research, US Navy and Marine Corps	Why waste nuclear waste?- The separation of Lanthanide and Actinide fission products	Harshita Narayanan	Westview High School	Debbie Cooper
Naval Excellence in Science and Engineering Award	Office of Naval Research, US Navy and Marine Corps	Designing a Merkle-Daamgard Cryptographically Secure Hash Function Using Elliptic Curves in Weierstrass Form	Brady Testa	School of Science and Technology	Chester Novitt
NOAAs Taking the Pulse of the Planet	National Oceanic and Atmospheric Administration	Addressing global water scarcity with a novel hydrogel based desalination technique using saponified starch-g-polyacrylamides hydrophilic properties to harvest fresh water.	Chaitanya Karamchedu	Jesuit High School	Lara Shamieh
Outstanding Air Quality Project	Southwest Clean Air Agency	Riparian Loss & Remote Sensing Technology: A Novel Method to Identify Vulnerabilities Within Urban Areas of the Willamette River Basin	Adam Nayak	Cleveland High School	Ronda Royal, Ph.D.
Outstanding Applied or Practical Chemistry Project by a Junior or Senior	Portland Industrial Chemists' Association/American Chemical Society	Catalyst Refinement in the Industrialized Production of Biodiesel through	Libby Williams	Wilsonville High School	Jim O'Connell

		Reactive Distillation			
Outstanding Aquatic Related Environmental Science Project	Lake Oswego Corporation	Epilithic Diatoms as Bioindicators of Pacific Northwest Stream Health: A Bioassessment Using Scanning Electron Microscopy	Jared Kerman, Sarah Hatcher	Northwest Academy	Molly Sultany
Outstanding Chemistry Project	American Chemical Society, Portland Section	Inducing Ferromagnetism in Organic Polymers for Versatile Applications of Polymer-Based Magnetic Nanoparticles	Arnob Das	Jesuit High School	Sabita Roy
Outstanding Chemistry Related Project	Iota Sigma Pi	Catalyst Refinement in the Industrialized Production of Biodiesel through Reactive Distillation	Libby Williams	Wilsonville High School	Jim O'Connell
Outstanding Geoscience Project	Association Of Women Geoscientists	A Diatom Bioassessment in a Willamette River Tributary at the Nanoscale Using a Scanning Electron Microscope	Kylie Swinmurn, Sarah Haines	Northwest Academy	Molly Sultany
Outstanding Natural Resources Science Project	Pacific NW Research Station, USDA Forest Service	Nitrogen Fixation from Red Alders on North West Conifers	Janejira Yeoman	Tillamook High School	Mark Roberts
Outstanding Project by an 11th Grade Student	Yale University Science and Engineering Association	An Innovative Bioinformatic, Piezoelectric Platform to Track Health and Behavior and Enable a Symbiotic Environment using a novel Learning Algorithms	Ashwin Datta	Glencoe High School	Susan Weidkamp

Outstanding Project in an Atmospheric Science Exhibit	American Meteorological Society	Automated precipitation alerts using environmental sensors, microcomputing, and a predictive data model developed from historical weather data	Lucas Schwartz	Oregon Episcopal School	Bevin Daglen
Outstanding Project in In Vitro Biology	Society for in Vitro Biology	Fertilizer, Fungicides, and Phytophthora; A Study of the Symbiotic Relationships of Rhizobium and Mycorrhizae with the Soybean Plant	Kristopher Wieland	Wilsonville High School	Jay Schauer
Outstanding Project in Materials Science	ASM International Foundation	The Novel Fabrication of a Superhydrophobic Glass Surface	Lauren Cooper	Lake Oswego High School	Keith Grosse
Outstanding Research in Psychology	American Psychological Association	A Study of Biases in Perception	Sophia Hawley	West Salem High School	Michael Lampert
Outstanding Use of the International System of Units	U.S. Metric Association	A Diatom Bioassessment in a Willamette River Tributary at the Nanoscale Using a Scanning Electron Microscope	Kylie Swinmurn, Sarah Haines	Northwest Academy	Molly Sultany
Sustainable Development Award	Ricoh Corporation	A Stratous Design for an Improved Manure Lagoon Lining	Kyla Wiegand, Sarah Frechette	Wilsonville High School	Jim O'Connell
TiE Oregon Entrepreneurship Honorable Mention	TiE Oregon	Quakify: A Low-Cost, Crowdsourced, Real-time Solution to Earthquake Early Warning	Harish Palani	Sunset High School	Rekha Rasiah

TiE Oregon Outstanding Entrepreneurship Projects	TiE Oregon	Marco Polo Car Finder	Hannah Weinberg	Oregon Episcopal School	Catherine Molloseau
Tom Owen Award for Excellence in Statistics	Oregon Chapter of the American Statistical Association	Alzheimer's Disease Risk Model Suggests Social Isolation and Lack of Education Have Great Significance in Risk	Talia Lichtenberg	West Linn High School	Jonathan Davies
Tom Owen Award for Excellence in Statistics	Oregon Chapter of the American Statistical Association	A Highly Effective and Novel Treatment Method to Reduce Alcohol Seeking Behavior	Ajitha Mallidi	Westview High School	Debbie Cooper
Tom Owen Award for Excellence in Statistics	Oregon Chapter of the American Statistical Association	Lung Cancer Decision Support System: Novel Automated Noninvasive Tumor Malignancy and Patient Outcomes Predictive Modelling through Radiomics Feature Quantification	Aditya Jain	Westview High School	Debbie Cooper
U.S. Air Force Outstanding Project	U.S. Air Force	Multi-Modal All Terrain Vehicle	Christian Torralba, Eli Dodd	West Linn High School	Jonathan Davies
U.S. Air Force Outstanding Project	U.S. Air Force	The Novel Fabrication of a Superhydrophobic Glass Surface	Lauren Cooper	Lake Oswego High School	Keith Grosse
U.S. Air Force Outstanding Project	U.S. Air Force	Application of an Oscillating Electrical Field to Flames in a Microgravity Environment	James Chen	West Salem High School	Michael Lampert
U.S. Regional Stockholm Junior Water Prize	Water Environment Federation	Algae: A Bio-cleaner and Biofuel? The Effect of E.coli and Pseudomonas sp. on the Growth of	Hayden Wilde, Haley Prusse	Wilsonville High School	Thomas Schuster

		Lipid Production in Algae			
Vardhana Innovative Presentation	The Vardhana Family	Types and Levels of Synesthesia Throughout a Range of Age and Gender	Raimy Hamdan	Oregon Episcopal School	Robert Orr

Category Awards

Category	Place	Exhibit No	Title	Student List	Organization	Adult Sponsor
Animal Sciences	First Place	HS-AN-0012	Acetone's Effect on the Web-Building Process of Spiders	Rory O'Hollaren	Oregon Episcopal School	Bevin Daglen
Animal Sciences	Second Place	HS-AN-0020	Differentiation of Underwater Vibrational Stimuli in <i>Xenopus laevis</i>	Alexandria Montgomery	West Salem High School	Michael Lampert
Behavioral and Social Science	First Place	HS-BE-0039	A Highly Effective and Novel Treatment Method to Reduce Alcohol Seeking Behavior	Ajitha Mallidi	Westview High School	Debbie Cooper
Behavioral and Social Science	Second Place	HS-BE-0070	Evaluating the Relationship Between College Information Literacy and College Going Self-Efficacy	Austin Gardner	Gresham High School	Kathy Childress
Behavioral and Social Science	Third Place	HS-BE-0089	Switching it up: Developing an Activity-Based Measure of Network Switching	Krista Wurscher	West Linn High School	Monica Emerick
Behavioral and Social Science	Honorable Mention	HS-BE-0022	The Effect of Paper and Electronic Reading Modalities on Reading Comprehension and Speed in an Adolescent.	Alison Thomas	Oregon Episcopal School	Catherine Molloseau
Biochemistry	First Place	HS-BC-0011	A Novel Approach to Cancer Treatment: Allosteric Inhibition of the Carbonic Anhydrase IX Isozyme for Anticancer Applications	Nandini Naidu	Valley Catholic High School	MohanKumar Naidu

Biochemistry	Second Place	HS-BC-0016	The alpha-v integrin inhibitor cilengitide potentiates cisplatin chemotherapy in breast cancer cells	Sharanya Suresh	Westview High School	Debbie Cooper
Biochemistry	Third Place	HS-BC-0013	Effects of Different Freezing Types on the Quality of Broccoli	Ellen Li, Sharon Lin	Oregon Episcopal School	Bettina Gregg
Cellular and Molecular Biology	First Place	HS-CM-0013	Going viral: Analysis of Mutants of Archaeal Hyperthermophilic Sulfolobus solfataricus Spindle-shaped Viruses	Kayla Gadd	West Linn High School	Nancy Monson
Cellular and Molecular Biology	Second Place	HS-CM-0012	Effects of Chronic Alcohol Drinking on Circadian Gene Expression in the Brain	Snigdha Kanadibhotla	Westview High School	Debbie Cooper
Cellular and Molecular Biology	Third Place	HS-CM-0009	Fabrication of a Magnesium Sulfate Hydrogel for the Repair of Traumatically Severed PRC Neurons in vitro and CNS Injury Applications	Sahil Veeramoney	Oregon Episcopal School	Bettina Gregg
Cellular and Molecular Biology	Honorable Mention	HS-CM-0008	The Effect of Tauroursodeoxycholic Acid on Drosophila melanogaster	Grant Thomas	Oregon Episcopal School	Bettina Gregg
Chemistry	First Place	HS-CH-0023	A Highly Selective and Efficient Electrocatalytic Conversion of Carbon Dioxide using Nanostructured Electrodes	Nikhil Murthy	Catlin Gabel School	Jeff Crosby
Chemistry	Second Place	HS-CH-0017	Inducing Ferromagnetism in Organic Polymers for Versatile Applications of Polymer-Based Magnetic Nanoparticles	Arnob Das	Jesuit High School	Sabita Roy
Chemistry	Third Place	HS-CH-0004	Quantification of Dinotefuran in Oregon Honey: A Two-Year Comparison Following Insecticide Application	Raley Schweinfurth	Oregon Episcopal School	Bevin Daglen

Chemistry	Honorable Mention	HS-CH-0014	Why waste nuclear waste?- The separation of Lanthanide and Actinide fission products	Harshita Narayanan	Westview High School	Debbie Cooper
Computer Science and Robotics	First Place	HS-CO-0028	A Novel Algorithm Combining Random Forest and Wavelet Distance Measurement for Biometric Identification Using Electrocardiograms	Robin Tan	Jesuit High School	Marek Perkowski
Computer Science and Robotics	Second Place	HS-CO-0007	Using Optical Flow Calculated via the Lucas Kanade Method to Stitch Images with Low Spatial Frequency	Jacob Waite	Oregon Episcopal School	Bettina Gregg
Computer Science and Robotics	Third Place	HS-CO-0013	An Innovative Quantum Machine Learning Accelerator to Find the Minimum Kronecker Reed-Muller Form Based on Grovers Search Algorithm	Bryan Lee	Westview High School	Debbie Cooper
Computer Science and Robotics	Honorable Mention	HS-CO-0030	Robotic Finger: Search for an Agile Design	Sushruta Chandramouli	Northwest Academy	Molly Sultany
Energy and Environmental Engineering	First Place	HS-EN-0064	Addressing global water scarcity with a novel hydrogel based desalination technique using saponified starch-g-polyacrylamides hydrophilic properties to harvest fresh water.	Chaitanya Karamchedu	Jesuit High School	Lara Shamieh
Energy and Environmental Engineering	Second Place	HS-EN-0067	Utility of Labeled Nanomaterials for Investigating Environmental Behavior	Lydia VanWinkle	West Linn High School	Brian Delfatti
Energy and Environmental Engineering	Third Place	HS-EN-0037	Catalyst Refinement in the Industrialized Production of Biodiesel through Reactive Distillation	Libby Williams	Wilsonville High School	Jim O'Connell

Energy and Environmental Engineering	Honorable Mention	HS-EN-0038	Optimizing Dye Sensitized Solar Cells Utilizing Absorption Spectra	Benjamin Johnson	Westview High School	Debbie Cooper
Engineering: Bioengineering and Materials	First Place	HS-EB-0021	The Novel Fabrication of a Superhydrophobic Glass Surface	Lauren Cooper	Lake Oswego High School	Keith Grosse
Engineering: Bioengineering and Materials	Second Place	HS-EB-0022	Development of a device to assess the impact of real-time auditory biofeedback on gait in patients with multiple sclerosis	Daniel Weidman	Grant High School	Kelly Allen
Engineering: Bioengineering and Materials	Third Place	HS-EB-0013	Brainwave Sewing Machine	Shadrach Mont, Donovan Mendoza	Glencoe High School	Chris Steiner
Engineering: Bioengineering and Materials	Honorable Mention	HS-EB-0003	Using Temperature Differential to Objectively Quantify Inflammation Through Thermal Imaging	Joan Hady	Oregon Episcopal School	Peter Langley
Engineering: Electrical and Mechanical	First Place	HS-EE-0066	A Smart Burn/Spill-Proof Microwave that spares the Salad: Novel Application of Levenberg-Marquardt Algorithms in Bayesian Analysis for Real-Time Thermodynamic Modeling	Muhammad Rahman	Westview High School	Debbie Cooper
Engineering: Electrical and Mechanical	Second Place	HS-EE-0008	Application of an Oscillating Electrical Field to Flames in a Microgravity Environment	James Chen	West Salem High School	Michael Lampert
Engineering: Electrical and Mechanical	Third Place	HS-EE-0063	An Innovative Bioinformatic, Piezoelectric Platform to Track Health and Behavior and Enable a Symbiotic Environment using a novel Learning Algorithms	Ashwin Datta	Glencoe High School	Susan Weidkamp

Engineering: Electrical and Mechanical	Honorable Mention	HS-EE-0007	Graphene 3D Printer	Connor Suderman	West Salem High School	Michael Lampert
Environmental and Earth Sciences	First Place	HS-VE-0052	Quakify: A Low-Cost, Crowdsourced, Real- time Solution to Earthquake Early Warning	Harish Palani	Sunset High School	Rekha Rasiah
Environmental and Earth Sciences	Second Place	HS-VE-0068	Riparian Loss & Remote Sensing Technology: A Novel Method to Identify Vulnerabilities Within Urban Areas of the Willamette River Basin	Adam Nayak	Cleveland High School	Ronda Royal, Ph.D.
Environmental and Earth Sciences	Third Place	HS-VE-0053	Phosphorus and Lake Ecology: Role in algal bloom dynamics and lake management with environmental education applications	Aneesh Mysore	Westview High School	Debbie Cooper
Environmental and Earth Sciences	Honorable Mention	HS-VE-0076	I'm Melting	James Verheyden	Bend Science Station	David Bermudez
Environmental and Earth Sciences	Honorable Mention	HS-VE-0071	Epilithic Diatoms as Bioindicators of Pacific Northwest Stream Health: A Bioassessment Using Scanning Electron Microscopy	Jared Kerman, Sarah Hatcher	Northwest Academy	Molly Sultany
Environmental and Earth Sciences	Honorable Mention	HS-VE-0073	A Diatom Bioassessment in a Willamette River Tributary at the Nanoscale Using a Scanning Electron Microscope	Kylie Swinmurn, Sarah Haines	Northwest Academy	Molly Sultany
Mathematical Sciences	First Place	HS-MA-0002	Designing a Merkle- Daamgard Cryptographically Secure Hash Function Using Elliptic Curves in Weierstrass Form	Brady Testa	School of Science and Technology	Chester Novitt
Mathematical Sciences	Second Place	HS-MA-0008	Novel Techniques for Error Correction with	Ashwin Sah	Jesuit High School	Lara Shamieh

			Null Symmetric Sums over General Fields			
Mathematical Sciences	Third Place	HS-MA-0003	Forces Acting on Simulated Thick Knots under Uniform Contraction in Relation to Topology	Henry Talbott	Oregon Episcopal School	Bettina Gregg
Mathematical Sciences	Honorable Mention	HS-MA-0007	A New Mathematical Formalism for the Infinite and the Infinitesimal Regimes	Aditya Sivakumar	Beaverton High School	Mark Geren
Mathematical Sciences	Honorable Mention	HS-MA-0016	Alzheimer's Disease Risk Model Suggests Social Isolation and Lack of Education Have Great Significance in Risk	Talia Lichtenberg	West Linn High School	Jonathan Davies
Medicine and Health Sciences	First Place	HS-ME-0083	A Novel Nanoparticle-microRNA Treatment to Overcome Drug Resistance and Tumor Metastasis in Lung Cancer	Anirudh Jain	Catlin Gabel School	Jeff Crosby
Medicine and Health Sciences	Second Place	HS-ME-0066	Lung Cancer Decision Support System: Novel Automated Noninvasive Tumor Malignancy and Patient Outcomes Predictive Modelling through Radiomics Feature Quantification	Aditya Jain	Westview High School	Debbie Cooper
Medicine and Health Sciences	Third Place	HS-ME-0037	Heart Disease and Gut Bacteria: Targeting Lactobacillus Rhamnosus and Escherichia coli	JiHyun An	West Linn High School	Brian Delfatti
Medicine and Health Sciences	Honorable Mention	HS-ME-0038	New Evidence for a Potential Citalopram Hydrobromide Mediated Mechanism Influencing the Suppression of Serotonergic Neurons during Brain Development	Benjamin Sebastian, Daniel Tang	West Linn High School	Nancy Monson

Microbiology	First Place	HS-MI-0045	The effects of expressing DNA repair enzymes, UVDE and cv-pdg, in E. coli cells under UVB light	Stuti Garg	Westview High School	Debbie Cooper
Microbiology	Second Place	HS-MI-0024	The Effects of Commercial Beekeeping Antibiotics on the Endosymbionts of the Western Honey Bee	Dylan Martins	West Linn High School	Gabe Nagler
Microbiology	Third Place	HS-MI-0006	Investigation of AMF in Native and Invasive Plants of Oregon	Marcella Cross	West Salem High School	Michael Lampert
Microbiology	Honorable Mention	HS-MI-0058	The Ability of Neonicotinoids to Metabolize Insecticides	Tanner Karp	Wilsonville High School	Jay Schauer
Physics and Astronomy	First Place	HS-PH-0036	Spectral Data Analysis of Titanium Oxide Presence in Stars	Sarah Maazoouz	Liberty High School	Dr. Milt Scholl
Physics and Astronomy	Second Place	HS-PH-0035	Probability of the Giant Impactor Theory	Andy Johnson	Westview High School	Debbie Cooper
Plant Sciences	First Place	HS-PL-0046	Fertilizer, Fungicides, and Phytophthora; A Study of the Symbiotic Relationships of Rhizobium and Mycorrhizae with the Soybean Plant	Kristopher Wieland	Wilsonville High School	Jay Schauer
Plant Sciences	Second Place	HS-PL-0043	Investigating Genetic Variation and Phenotypic Plasticity in <i>Brachypodium Sylvaticum</i>	Sanjana Potnis	Northwest Academy	Molly Sultany
Plant Sciences	Third Place	HS-PL-0045	Inducing Polyploidy in Wisconsin Fast Plants Using Colchicine and Dichlorophenoxyacetic Acid	Eve Hallock, Jacob Dyer	Wilsonville High School	Jay Schauer
Plant Sciences	Honorable Mention	HS-PL-0032	Nitrogen Fixation from Red Alders on North West Conifers	Janejira Yeoman	Tillamook High School	Mark Roberts