

2008 Intel NWSE Category Award Winner Report

HS Animal Sciences

1	<i>HS-AN-0071</i>		
<i>Name</i>		<i>OrgName</i>	<i>Title</i>
Matthew Nugent		Oregon Episcopal School	Salinity Tolerance of The New Zealand Mudsail (Potamopyrgus antipodarum) Collected From Young's Bay, Oregon
2	<i>HS-AN-0001</i>		
<i>Name</i>		<i>OrgName</i>	<i>Title</i>
Sebastian Scofield		St. Albert Science Club	Colony Emigration in Aphaenogaster occidentalis
3	<i>HS-AN-0097</i>		
<i>Name</i>		<i>OrgName</i>	<i>Title</i>
Sharon Shin		West Linn High School	Feeder Goldfish Predicting Feeding With Sound
HM	<i>HS-AN-0089</i>		
<i>Name</i>		<i>OrgName</i>	<i>Title</i>
Robert Tan		West Salem High School	The Effects of Extremely Low Frequency (ELF) Electric Fields on the Olfactory System of Madagascar Hissing Cockroaches (Gromphadorhina)

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HS Behavioral and Social Science

1	<i>HS-BE-0089</i>		
<i>Name</i>		<i>OrgName</i>	<i>Title</i>
Gwendolyn McGinnis		Oregon Health Science University	Spatial Ability Enhanced in Left-Handers on Memory Island
2	<i>HS-BE-0085</i>		
<i>Name</i>		<i>OrgName</i>	<i>Title</i>
Jessica Cummins		West Salem High School	A discussion about Equality: Gender Study in the Classroom
Mary Patzel		West Salem High School	
3	<i>HS-BE-0115</i>		
<i>Name</i>		<i>OrgName</i>	<i>Title</i>
Sarah Schroeder		Wilsonville High School	Manipulating Enjoyment Levels of High School Students During an Objectively Boring Task
HM	<i>HS-BE-0144</i>		
<i>Name</i>		<i>OrgName</i>	<i>Title</i>
Erin Beauchemin		Wilsonville High School	Testing the Significance of Artistic Differences in Pictographs
HM	<i>HS-BE-0146</i>		
<i>Name</i>		<i>OrgName</i>	<i>Title</i>
Chelsea Ford		Wilsonville High School	Testing For a Relationship Between Early Childhood Education and High School Success
Katy Britsch		Wilsonville High School	

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HS Biochemistry

1

HS-BC-0017

Name

Nicole Panichello

OrgName

West Linn High School

Title

Comparing Levels of Protein and Mercury in Wild and Farm-Raised Pacific Chinook Salmon

Kelsey Guerins

West Linn High School

2

HS-BC-0013

Name

Jordan Young

OrgName

Southridge High School

Title

3

HS-BC-0016

Name

Niloy Ghosh

OrgName

Westview High School

Title

Reproducibility of trypsin digestion in complex protein digests using ¹⁸O labeling

HM

HS-BC-0019

Name

Calley Lathrop

OrgName

Portland State University

Title

Potassium Analysis Using Fluorimeter: Year One

Avery Breyne-Cartwright

Portland State University

Kaylyn Schaber

Portland State University

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HS Cellular and Molecular Biology

1	<i>HS-CM-0015</i>		
<i>Name</i>		<i>OrgName</i>	<i>Title</i>
Diya Dwarakanath		Westview High School	Role of Calcium/Calmodulin-dependent Protein Kinases in BDNF-induced AMPA Receptor Surface
2	<i>HS-CM-0009</i>		
<i>Name</i>		<i>OrgName</i>	<i>Title</i>
Maithri Sarangam		Merlo Station High School	The Unfolding of a Propeptide Across the Cellular pH Gradient
3	<i>HS-CM-0021</i>		
<i>Name</i>		<i>OrgName</i>	<i>Title</i>
Thao Cao		Benson Polytechnic High School	Calorie Restriction Provides Protection Against Hydrogen Peroxide-Induced Cell Death in Retinal
HM	<i>HS-CM-0014</i>		
<i>Name</i>		<i>OrgName</i>	<i>Title</i>
Zhenhuan Lei		Westview High School	H3K4me3 JARID1C contributes to embryonic stem cell pluripotency
HM	<i>HS-CM-0018</i>		
<i>Name</i>		<i>OrgName</i>	<i>Title</i>
Joseph Lykins		Hillsboro High School	The Effect of Concentrations of the Cofactor Thiamine on The Rate of Cellular Respiration in the Common Earthworm (<i>Lumbricus terrestris</i>)

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HS Chemistry

1	<i>HS-CH-0055</i>		
<i>Name</i>		<i>OrgName</i>	<i>Title</i>
Brian McCarthy		Liberty High School	Photoactive Polymer Films from Interfacially Polymerized Porphyrin and Phthalocyanine
2	<i>HS-CH-0030</i>		
<i>Name</i>		<i>OrgName</i>	<i>Title</i>
Siheng You		Sunset High School	Chemical Analysis of a Holly Bark Extract with Herbicidal Properties
3	<i>HS-CH-0015</i>		
<i>Name</i>		<i>OrgName</i>	<i>Title</i>
Joshua Dreyzen		Oregon Episcopal School	The Ideal Catalytic Promoter for Direct Conversion from Methane to Acetic Acid
HM	<i>HS-CH-0042</i>		
<i>Name</i>		<i>OrgName</i>	<i>Title</i>
Andrew Read		Skyview High School	Optimizing Chemical Efficiency for Propulsion
Dan Woodman		Skyview High School	

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HS Computer Science

1	<i>HS-CO-0018</i>		
<i>Name</i>		<i>OrgName</i>	<i>Title</i>
Franklin Zhao		Westview High School	Quantum Encoding Algorithm for Error Correction
2	<i>HS-CO-0015</i>		
<i>Name</i>		<i>OrgName</i>	<i>Title</i>
Timothy Bauman		Central Catholic High School	Retrieving Regions-Of-Interest from Videos On The Fly Without Transcoding
3	<i>HS-CO-0013</i>		
<i>Name</i>		<i>OrgName</i>	<i>Title</i>
Jonathan Romrell		Glencoe High School	Sudoku Logic - Human vs. Computer

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HS Earth Science

1

HS-EA-0012

Name

Benjamin Lampert

OrgName

West Salem High School

Title

DETERMINING THE EFFECTIVENESS OF AERIAL
INFRASOUND ARRAYS VERSUS LAND BASED
SYSTEMS

Matthew Feltz

West Salem High School

2

HS-EA-0005

Name

Kerry Streiff

OrgName

Oregon Episcopal School

Title

An Examination of Chloride Deposition in Connate
Water Isolated from Subterranean Rock Deposits in
Oregon's Willamette Basin Comparatively Related to

Dennis Shi

Oregon Episcopal School

3

HS-EA-0004

Name

Lito Nicolai

OrgName

Oregon Episcopal School

Title

Ammonia Concentrations in Undersea Vents

HM

HS-EA-0013

Name

Jacinda Thomas

OrgName

Tillamook High School

Title

The Biogeochemical Effect of Catastrophic Fire and
Salvage Logging on Soil Nutrient Levels in the
Fremont National Forest

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2008 Intel NWSE Category Award Winner Report

HS Energy and Transportation

1

HS-ET-0001

Name

Julia Cohen

OrgName

Oregon Episcopal School

Title

Optimization of Algal Culture Growth Parameters to Obtain Lipids for Biodiesel Mass-Production- A Second Year Study

Lia Dawley

Oregon Episcopal School

Rahael Gupta

Oregon Episcopal School

2

HS-ET-0027

Name

Jonathan Gomes

OrgName

Skyview High School

Title

Aerodynamic Stability

3

HS-ET-0016

Name

Curtis Peterson

OrgName

Crescent Valley High School

Title

The Regeneration of Activated Charcoal for Removal of Hydrogen Sulfide in Landfill Gas Streams

Raymond Ehlers

Crescent Valley High School

Sean Skyllingstad

Crescent Valley High School

HM

HS-ET-0043

Name

Hayden Bush

OrgName

Tillamook High School

Title

The feasibility of creating biocrude from Scotch Broom (*Cytisus scoparius*)

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HS Engineering: Electrical and Mechanical

1

HS-EE-0006

Name

Preston Atree

OrgName

Beaverton High School

Title

Accomplishing Tasks with the Submerged Electronic Anthropomorphic Machine for Understanding New Keys in Engineering and Aquatic Science (SEA-

2

HS-EE-0042

Name

Morgan Walti

OrgName

Liberty High School

Title

Bionic Arm: an Application of Electromagnetics

3

HS-EE-0028

Name

Daniel Nash

Farshad Farabakhshian

OrgName

Southridge High School

Southridge High School

Title

HM

HS-EE-0024

Name

Sean Jones

OrgName

Merlo Station High School

Title

Using electrical puses to make non-inertial movement

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HS Engineering: Materials and Bioengineering

1	<i>HS-EM-0046</i>		
<i>Name</i>		<i>OrgName</i>	<i>Title</i>
Nathan VanWinkle		Liberty High School	Maximizing structure efficiency through material
Riley Hickman		Liberty High School	
2	<i>HS-EM-0009</i>		
<i>Name</i>		<i>OrgName</i>	<i>Title</i>
Michael Loy		Oregon Episcopal School	Developing a Novel pH Buffer Methodology to Prevent Concrete Corrosion
3	<i>HS-EM-0033</i>		
<i>Name</i>		<i>OrgName</i>	<i>Title</i>
Willie Neiswanger		Merlo Station High School	Universal Screwdriver Head
HM	<i>HS-EM-0007</i>		
<i>Name</i>		<i>OrgName</i>	<i>Title</i>
Teresa Chan		Crescent Valley High School	OPTIMIZING PORE SIZE OF CELLULOSE/POLYSULFONE NANOCOMPOSITE MICROFILMS FOR HEMODIALYSIS
Riti Gupta		Crescent Valley High School	
HM	<i>HS-EM-0038</i>		
<i>Name</i>		<i>OrgName</i>	<i>Title</i>
Manali Yavatkar		Jesuit High School	Micro-Monitor: The Use of Electrokinetics to Form MicroBead Bridges in a Portable Lab-on-a-Chip Device that Detects Cardiac Disease Protein Biomarkers
HM	<i>HS-EM-0040</i>		
<i>Name</i>		<i>OrgName</i>	<i>Title</i>
Sam Baker		Oregon Episcopal School	Anodizing Titanium on a Market Applicable Scale

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HS Environmental Analysis and Effects

1	<i>HS-VA-0052</i>		
<i>Name</i>		<i>OrgName</i>	<i>Title</i>
Spencer Vines		Skyview High School	Effects of Varied Nitrogen Phosporus ratios on Anabaena Flos-Aquae.
2	<i>HS-VA-0023</i>		
<i>Name</i>		<i>OrgName</i>	<i>Title</i>
Julia Semprini		Crescent Valley High School	COMPARING WATER QUALITY OF AN URBAN CREEK, (DIXON) AND A RURAL CREEK, (JACKSON) IN CORVALLIS, OREGON.
Jimmy Weber		Crescent Valley High School	
3	<i>HS-VA-0064</i>		
<i>Name</i>		<i>OrgName</i>	<i>Title</i>
Jamie Canepa		Jesuit High School	The Effect of Increased Temperature on the Growth of the corals Montipora digitata and Zoanthus sp.
HM	<i>HS-VA-0081</i>		
<i>Name</i>		<i>OrgName</i>	<i>Title</i>
Jane Crotteau		Wilsonville High School	The Effect of Kariva birth control on the regeneration of planaria

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HS Environmental Management

1

HS-VM-0037

Name

Ashutosh Patra

OrgName

Sunset High School

Title

Low Cost Identification of Anaerobic Microbes for Harvesting Energy and Cleansing Wastewater in a Single Chambered Microbial Fuel Cell

2

HS-VM-0024

Name

Nima Ahmadi

OrgName

Westview High School

Title

Mathematical Modeling of Conflagration Potential and its Application in Versatile Detection Devices

3

HS-VM-0003

Name

Caitlyn Au

OrgName

Oregon Episcopal School

Title

The effect of Eichhornia crassipes vs. Vallisneria americana on Nitrate and Phosphate levels in a constructed wetland

HM

HS-VM-0033

Name

Ari Hopkinson

Mallory Griffith

OrgName

West Linn High School

West Linn High School

Title

The Greenest Tree

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HS Mathematical Sciences

1	<i>HS-MA-0021</i>		
<i>Name</i>		<i>OrgName</i>	<i>Title</i>
Kirben Smoody		KiWi HS	Enumerating Burr Puzzles
2	<i>HS-MA-0019</i>		
<i>Name</i>		<i>OrgName</i>	<i>Title</i>
Prachi Pai		Merlo Station High School	Chaotic Maps from a Cryptanalysisp Viewpoint (Where Chaos Meets Computers)
3	<i>HS-MA-0001</i>		
<i>Name</i>		<i>OrgName</i>	<i>Title</i>
Anthony Lin		Catlin Gabel School	Extrapolating Real Estate Prices and Related Factors to Predict Future Housing Trends
HM	<i>HS-MA-0017</i>		
<i>Name</i>		<i>OrgName</i>	<i>Title</i>
Michael Chen		Merlo Station High School	Transient Phenomena in Astrophysics: Modeling 9 metis to determine radius of orbit

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HS Medicine and Health Sciences

1	<i>HS-ME-0089</i>		
<i>Name</i>		<i>OrgName</i>	<i>Title</i>
Elliot Prince		West Linn High School	Evaluating Sleep Hygiene: Empowering Teens to Take Charge
2	<i>HS-ME-0023</i>		
<i>Name</i>		<i>OrgName</i>	<i>Title</i>
Neela Ramanujam		Sunset High School	The Effect of Tiotropium on Lung Cancer Cells
3	<i>HS-ME-0048</i>		
<i>Name</i>		<i>OrgName</i>	<i>Title</i>
Neelay Pandit		Westview High School	Serotonin 2A receptors and Shivering
HM	<i>HS-ME-0045</i>		
<i>Name</i>		<i>OrgName</i>	<i>Title</i>
Erica Ellingson		Skyview High School	Neuroanatomical and Behavioral Correlates of Progesterone Withdrawal
HM	<i>HS-ME-0054</i>		
<i>Name</i>		<i>OrgName</i>	<i>Title</i>
Philip Narkiewicz-Jodko		NIS Labs	The Effects of Inflammation on Stem Cells

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HS Microbiology

1

HS-MI-0043

Name

Annika Sullivan

OrgName

Grant High School

Title

Some Like It Hot: Fuselloviruses of the Hyperthermophilic Archeon *Sulfolobus solfataricus*

2

HS-MI-0002

Name

Laurie Rumker

OrgName

Oregon Episcopal School

Title

Effects of Different Electron Donors on Toxin Degradation for Bioremediation

3

HS-MI-0053

Name

Jennifer Luong

OrgName

Oregon Episcopal School

Title

A Study of the Effect of *Narcissus obvallaris* Salisbury Alkaloid Extract on *Escherichia coli* Biofilm

HM

HS-MI-0005

Name

Rivfka Shenoy

OrgName

Catlin Gabel School

Title

Effects of DMSO on Prion Infectivity in *Saccharomyces Cerevisiae*

HM

HS-MI-0006

Name

Tara Kumar

OrgName

Catlin Gabel School

Title

THE EFFECTS OF METAL COMPOUNDS ON THE GROWTH RATE OF *E. COLI*

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HS Physics and Astronomy

1

HS-PH-0019

Name

Scott Harpool

OrgName

Oregon Episcopal School

Title

Performance Comparison Of Dye Sensitized Solar Cell Modules With Constant Titanium Dioxide Area Distributed In Series And Parallel Configurations

2

HS-PH-0056

Name

Katherine Lownsbery

OrgName

West Salem High School

Title

Effect of Electric Field on Potassium Sulfate Crystal Growth

3

HS-PH-0076

Name

Marisa Peralta

OrgName

West Linn High School

Title

Increasing magnetic field strength and applications to small generators

HM

HS-PH-0023

Name

Therese Chen

OrgName

Oregon Episcopal School

Title

The Effects of Electromagnetic Fields on Rust

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HS Plant Sciences

1

HS-PL-0061

Name

Elliott Finn

OrgName

Crescent Valley High School

Title

Experimental Study in Fragaria Salt Tolerance and the Development of a Rapid Leaf Assay

Rob Livesay

Crescent Valley High School

Hanna Lorenz

Crescent Valley High School

2

HS-PL-0047

Name

Nick Atanasov

OrgName

Southridge High School

Title

The Mutagenic Effects of Ultraviolet Radiation on Leaf Morphology in Radish Plants

3

HS-PL-0004

Name

Maggie Dreyer

OrgName

Bend Science Station

Title

Quantifying the Thigmonastic Response of Mimosa Pudica to Various Stimuli

HM

HS-PL-0076

Name

Lipi Gupta

OrgName

Crescent Valley High School

Title

Experimental Study of Effect of Forest Fires on Tree Growth and Wood Quality

Marissa Minato

Crescent Valley High School

Molly Ward

Crescent Valley High School

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