

Central Sound Regional Science and Engineering Fair

May 7, 2015 at Bellevue College

Category Awards

Animal and Plant Sciences

1. Marko Lysyk (STEM School)-The Benefits of Companion Planting: Sage and Arugula
2. Brendan Sailer (O'Dea)-Maximizing the Useful Life of a Ripe Banana
3. Shravya Kakulammarri and Stephanie Mai (STEM School)-Investigating the Fluctuations in Carbon Composition of the Ocean and its Effect on Oyster Life

HM. Jacob Lane (O'Dea)-Fruit Fly Diet and Extermination

Behavioral and Social Sciences

1. Meena Reddy (STEM School)-Investigating the Effect of Video Exposure Of Urban and Natural Environments on Recorded Stress Levels
2. Lessane Ketema and Heejoon An (Henry M. Jackson)-Emotional Responses to Movie Clips Paired with Differing Music
3. Pauline Pfaffe and Jacob Lee (STEM School)-Study of Public Domestic Hostility between Couples

Biochemistry, Molecular Biology, and Microbiology

1. Jack Bull, Julia Kim, and Maddie Rogers (NW Nuclear Consortium)-Quantifying the Effects of Boron Neutron Capture Therapy
2. Dyuti Shreya Nandy (Newport)-Developing Small Molecule Inhibitors for Protein Tyrosine Phosphatase 1 B (PTP1B) to Regulate Insulin Signaling: The Treatment of Diabetes and Obesity
3. Aditya Murali (Redmond)-Characterization of Virulence Proteins of Plant Pathogenic Bacterium *Rhodococcus fascians*

HM. Macy Matheson (Henry M. Jackson)-Evolutionary Trends in Lake Washington Stickleback Fish

Computer Science

1. Mahalaxmi Elango (Interlake)-Implementation of Machine Learning for Better Resistance Prediction in Acute Myeloid Leukemia
2. Bryan Shin (Kamiak)-Combining 8-bit Images to Exceed Color Depth of Films
3. Mayukha Vadari (Redmond)-Application of Big Data Analytics to Map out Galaxy Transitions since the Beginning of Time

HM. Favour Orji (TAF Academy)-From Zero to Hero

Electrical, Mechanical, and Material Engineering

1. Sonia Murthy, Ethan Perrin, and Sophia Tevosyan (STEM School)-Implementation of a Carbon Dioxide Refrigeration System as a Cogeneration Appliance and Alternative to Halocarbon-based Refrigeration Systems

1. Christina Dias (STEM School)-Investigating Ideal Material Composition for Tissue Engineering of Muscle, Tissue, and Fat
2. Sriharshita Musunuri (Henry M. Jackson)-Application of Tetrahedrite and Magnesium Silicide in a Novel Thermoelectric Unicouple to Generate Electricity in Industrial Waste Heat Situations
3. Udit Ranasaria (STEM School)- An Educational Game Console

HM. Alana Wang (STEM School)-Incorporating SMA Wire into Textile Fashion

HM. Benjamin Benson (Cedarcrest)-The Destruction of Earth's Orbiting Space Debris

HM. Yuepon Fan-Hernandez (Henry M. Jackson)-Investigating Nafion Tubes for the Purpose of Cheap, Low Energy Desalination of Water.

Energy and Transportation

1. Kyle Airis and Kevin Airis (Home School)-Maximizing the Power Output of a Wind Turbine Generator
2. Vibha Vadlamani (STEM School)-Increasing the Efficiency of Photovoltaics by Concentrating Visible Light Through Reflection
3. Dhruvik Parikh (Henry M. Jackson)-Microbial lipid accumulation using grape pomace hydrolysates as a novel feedstock for biodiesel synthesis

HM. Paul Adler (Newport)-An Experimental Investigation on the Use of Fully Concentrated Salt Water Solution in Pressure Retarded Osmosis for Renewable Energy Production

HM. Francesca Bennett and Nikita Sharma (Henry M. Jackson)-Development of an Orbital Debris Collection Device Aimed at the Reduction and Recycling of Fragments in Space

HM. Lexi Gavigan (Cedarcrest)- Household Circuits

Environmental Science and Management

1. Meera Srinivason (Interlake)-A Novel LC-MS/MS Method of Determining Bioindicators of P.A.H. (Polycyclic Aromatic Hydrocarbon) Toxicity
2. Madison Ransom (Henry M. Jackson)-Applying the Process of Bipolar Electrodialysis for the Safe Disposal of Acid Whey, the Byproduct of Greek Yogurt Production
3. Hilina Defersha and Thu Phan (Mountlake Terrace)-Increasing the Efficiency of the Basin Still

Medicine and Health Sciences

1. Gogul Gouri (Inglemoor)-Designing a Novel Influenza Vaccine using in silico analysis
2. Armen Aghajanyan and Matthew Hur (Interlake)-The Integrated Voxel Analysis Method to Diagnose Onset of Alzheimer's Disease and Pinpoint Severely Affected Brain Regions through Structural MRI Images
3. Indira Rayala (Henry M. Jackson)-Presence of Quorum Sensing Inhibitors in Ayurvedic Medicine

HM. Prerana Annapantula, Elysia Midorikawa and Sindhooja Mullapudi (STEM School)-The effects of *Withania Somnifera* (Ashwagandha) and *Terminalia Arjuna* (Arjuna) on adolescent athletes' performances

Physics, Astronomy and Mathematics

1. August Chen (Redmond)-Quiz-Cast: Prediction of Pop Quiz Timing Using Bayesian Reasoning
2. Deshae Dawson, Rob Hoff and Dillard Honey (Bothell)-Particle Accelerator
3. Brianna Ashing, Stone Fennell and Kevin Lee (Thomas Jefferson)-Multiple Gas Reactor

HM. Melanie Chen (Interlake)-Conditional Probabilities in Weighted Networks

HM. Johnathan Emerson and Nathan Flack (O'Dea)-Rubens Tube Experimentation

HM. Helen Carson (Home School)-Relative Subsurface Water Ice Depths Near a Mars Barchan Dune Using THEMIS Infrared Temperature Data

HM. Daniel Christensen, Steven Muhlestein and Darryl Worcester (Skyline)-Parallel Ring Poiser

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Special Awards

American Chemical Society

1. Dyuti Shreya Nandy (Newport)-Developing Small Molecule Inhibitors for Protein Tyrosine Phosphatase 1 B (PTP1B) to Regulate Insulin Signaling: The Treatment of Diabetes and Obesity
2. Meera Srinivasan (Interlake)- A Novel LC-MS/MS Method of Determining Bioindicators of P.A.H. (Polycyclic Aromatic Hydrocarbon) Toxicity

American Institute for Aeronautics and Astronautics Society

Helen Carson (Home School)-Relative Subsurface Water Ice Depths near a Mars Barchan Dune Using THEMIS Infrared Temperature Data

Benjamin Benson (Cedarcrest)-The Destruction of Earth's Orbiting Space Debris

Jim Lacher (STEM School)-Improvements of Wing Performance at Various Speeds through Adjustment of Wing Minutiae and Coating Materials

Emilee Paradis (Montlake Terrace)-Relationship between Chaos Theory and Fluid Flow around Objects

American Meteorological Society

Kira Johnson (Getchell)-The Impact Coal Trains are having on Ground-Level Ozone

American Psychological Association

Meena Reddy (STEM School)-Investigating the Effect of Video Exposure of Urban and Natural Environments on Recorded Stress Levels

Association for Women Geoscientists

Emilee Paradis (Montlake Terrace)-Relationship between Chaos Theory and Fluid Flow Around Objects

ASU Walton Sustainability Solutions Award

Madison Ransom (Henry M. Jackson)-Applying the Process of Bipolar Electrodialysis for the Safe Disposal of Acid Whey, the Byproduct of Greek Yogurt Production

Inspiring Excellence Award

Dane Smith (Henry M. Jackson)- Design of an improved insulin pump system by applying insulin, glucagon, GLP-1 agonist exenatide, a sprinkler needle, and a glucose sensor for the prevention of hypoglycemia

Yuepon Fan-Hernandez (Henry M. Jackson)-Investigating Nafion Tubes for the Purpose of Cheap, Low Energy Desalination of Water

Lexi Gavigan (Cedarcrest)-Household Circuits

Hunter Saunders (Henry M. Jackson)-Designing an Interchangeable Pylon and foot on a Transtibial Prosthesis with a Quick-Connect Fitting below the Socket Region

Benze Jan Matthew Deraco (O'Dea)-Tendencies in Behavior

Anthony Hoffman (STEM School)-Studying the ability of written code switching in bilingual readers

Claire Hillier (Newport)-Computational identification of RNA editing sites in *C. elegans*

Mu Alpha Theta

Faris Gulamali (STEM School)-Lyapunov's Exponent: Applications of the Rate of Divergence

National Oceanic and Atmospheric Administration

Shravya Kakulammarri and Stephanie Mai (STEM School)-Investigating the Fluctuations in Carbon Composition of the Ocean and its Effect on Oyster Life

Office of Naval Research

Melanie Chen (Interlake)-Conditional Probabilities in Weighted Networks

Yuepon Fan-Hernandez (Henry M. Jackson)-Investigating Nafion Tubes for the Purpose of Cheap, Low Energy Desalination of Water

Ricoh Sustainable Development

Sonia Murthy, Ethan Perrin, and Sophia Tevosyan (STEM School)-Implementation of a Carbon Dioxide Refrigeration System as a Cogeneration Appliance and Alternative to Halocarbon-based Refrigeration Systems

Sigma Xi

Christina Dias (STEM School)-Investigating Ideal Material Composition for Tissue Engineering of Muscle, Tissue, and Fat

Society for in vitro Biology

Aditya Murali (Redmond)-Characterization of Virulence Proteins of Plant Pathogenic Bacterium *Rhodococcus fascians*

Stockholm Junior Water Prize

Meera Srinivasan (Interlake)- A Novel LC-MS/MS Method of Determining Bioindicators of P.A.H. (Polycyclic Aromatic Hydrocarbon) Toxicity

US Air Force Science and Technology

Adeline Hillier (Newport)-Wireless power transfer using radio waves

US Metric Association

Kyle Airis and Kevin Airis (Home School)-Maximizing the Power Output of a Wind Turbine Generator

US Public Health Service

Pauline Pfaffe and Jacob Lee (STEM School)-Study of Public Domestic Hostility between Couples