

2014 CSRSEF Category Awards

Grand Champion: Meera Srinivasan (Interlake)-*Investigating the Sublethal Effects of Polycyclic Aromatic Hydrocarbons on Salmon Using Zebrafish as a Model Organism*

First Runner-Up: Alisha Saxena (Interlake)-*Analyzing and Preventing Quick Response Code Based Malware and Phishing Attacks for Smartphones*

Animal Science

1. Mikala Zilinsky (Cedarcrest)-*The Comparison of Mesozoic to Modern-Day Feathers*

Behavioral and Social Sciences

1. Celia Evans (Henry M. Jackson)-*Ascertaining Common Misconceptions about Concussions and their Consequences*
 2. Jason Yim (Meadowdale)-*Using Electroencephalography to Record Cortical Brain Activity During Visuomotor Rotation*
 3. Benton Shutz and Cam Nagel (STEM School)-*Leadership Roles*
- HM-Lynsey Liu and Jennifer Yeh (STEM School)-*The Effect of Exercise on Autism*
HM-Brian "Sam" Johnson (O'Dea)-*Allergies and Feelings of Isolation, Depression, and Anxiety*

Biochemistry, Cell & Molecular Biology

1. Isaac Harper (Cedarcrest)-*Enhancing the Maturation of Human Induced Pluripotent Stem Cell-derived Cardiomyocytes by IGF-1 Treatment*
 2. Suzanna Andrews and Sophia Romanelli (Cedarcrest)-*The Correlation between Fermentation Time and the Rheological Properties of Bread Dough*
 3. Claire Hillier (Newport)-*Coordination of Mitochondrial Gene Expression in C. Elegans*
- HM-Barbara Biney (Mountlake Terrace)-*Effect of Nicotine on the Heart and Circulatory System*

Chemistry

1. Cameron Akker (Redmond)-*Graphene Oxide and Reduced Graphene Oxide Coated Nafion Membranes for Enhanced Performance in Polymer Electrolyte Membrane Fuel Cells*
2. Alyssa Coen (Cedarcrest)-*The Effects of Common Household Items on Glow Sticks*
3. Brendan McGonigle (O'Dea)-*Orange Juice vs. Sports Drinks: Electrolyte Testing*

Computer Science

1. Alisha Saxena (Interlake)-*Analyzing and Preventing Quick Response Code Based Malware and Phishing Attacks for Smartphones*
 2. Cameron MacKenzie, Devansh Kukreja, Tiago Ferreira (STEM School)-*Redesigning AFIS*
 3. Sean Dempsey (Cedarcrest)-*Near-English Programming for Window*
- HM-Mahalaxmi Elango (Interlake)-*Machine Learning Using Genomic Features to Improve Prognosis of Bladder Urothelial Carcinoma Cancer*

Electrical and Mechanical Engineering

1. Haily Ho (Cedarcrest)-*Maximizing Theoretical Photovolcanic Power Generation through Adaptive Positioning*
 2. Kaeden Wile, Matt Vredevoogd, Eli Mackley (Aviation)-*Underwater Turbine Blade Density Performance*
 3. Clark Schaefer, Usman Jamil, and Tristan Heywood (STEM School)-*Designing an Economic Remotely Operated Submersible*
- HM-Daniel Henry (O'Dea)-*Aerodynamics and Bridge Design*
HM-Henry Newstrom (O'Dea)-*Removable Wall Panels*
HM-Kurt Blancaflor (Meadowdale)-*A Novel Approach to Holographic Display*

2014 CSRSEF Category Awards, cont.

Energy and Transportation

1. Dyuti Nandy (ACES)-*Biodiesel Production by Transesterification Using Environmental Benign Reusable Heterogeneous Catalyst*
 2. Jen Frye and Briana Ashing (Thomas Jefferson)-*Quick Trak Neutron Shielding for Accelerators*
 3. Christopher Yu and Pavan Kumat (STEM School)-*Efficiency of Photovoltaic Cells with Mirror Arrays*
- HM-Mrigank Bhardwaj, Abhishek Sangameswaran, Srikar Murali (STEM School)-*Increasing the Range of Electric Vehicle by Using a Dual Motor Drive System to Optimize Battery Usage*
- HM- Rachel Demaree and Jillian Mellinger (Aviation)-*Underwater Current Turbines*

Environmental Management and Sciences

1. Meera Srinivasan (Interlake)-*Investigating the Sublethal Effects of Polycyclic Aromatic Hydrocarbons on Salmon Using Zebrafish as a Model Organism*
 2. Hannah Cho (Henry M. Jackson)-*Spirulina Cadmium Binding Ability in Aquatic Conditions*
 3. Madison Minsk and Maya Ganesan (STEM School)-*Assessing the Validity of Satellite Data in Determining the Impact of Wildfires on Air Pollution*
- HM-Julie Rettig and Claudia Nguyen (STEM School)-*Ecosystem Services: The Value of Protected vs Unprotected Land*

Medical and Health Sciences

1. Meena Meyyappan, Saakshi Dulani, and Daaniya Iyaz (STEM School)-*The Effect of Manipulated Sleep Intervals on Memory*
 2. Bryan McClintic (Cedarcrest)-*A Study of the Antimicrobial Effects of a Natural Tincture on Acne-Inducing Bacteria*
 3. Audrey Hyem, Marisa Messina, Warisha Soomro (STEM School)-*Analyzing the Characteristics of Mongoloid Hair Based on Geographical Location to Determine Whether or Not there is a Correlation Between the Two*
- HM-Kaimyn O'Neill, Dipti Dhond, Kelsey Drake (STEM School)-*Correlating Hoposapien Ethnicity with the Occurrence of Cardiovascular Complications Linked to Reduced Sleep*
- HM-Gokul Gowri (Inglemoor)-*In Search of a Universal Influenza Vaccine: Predicting the Efficacy and Cross Productivity of Influenza Vaccines Based on Conserved Viral Proteins*

Physics and Astronomy

1. Connor Hughes (Woodinville)-*Examining Hydrodynamic Drag Under Conditions of Laminar vs Non-Laminar Flow*
 2. Stone Fennell, Madison Rogers, Hyrun Bock (Ingraham)-*Deuterium Fuel Cell Loading Technology*
 3. Matthew Malloy (O'Dea)-*Does Corking a Baseball Bat Affect Power?*
- HM-Angela Martin and Lillian Thiel (Forest Ridge)-*Changing the Apperent Density of Ferrofluid*
- HM-Isaac Ipsen and Chris Francisco (O'Dea)-*Egg Protection*

Plant Science

1. Indira Rayala (Henry M. Jackson)-*Cranberry Extracts: A Quorum Sensing Inhibitor and the Novel Application of Cranberry Extracts as an Environmental Measure to Inhibit Pectobacterium Carotovorum in Crops*
2. Jacob Cepollina (O'Dea)-*Energy Levels in Algae*
3. Alice Ish (Cedarcrest)-*Rooting Plant Cuttings with Honey*

People's Choice

1. Connor Barret (Cedarcrest)-*The Effectiveness of Multi-Rotor Arial Drones for Search Applications*
2. Spencer Pickering (O'Dea)-*The Working Memory*
3. Kaeden Wile, Matt Vredevoogd, and Eli Mackley (Aviation)-*Underwater Turbine Blade Density Performance*

2014 CSRSEF Special Awards

American Institute for Aeronautics and Astronautics

For excellence in Aeronautics or Astronautics

- Mark Hastings (O'Dea)-*Wind Tunnel*
- Daniel Henry (O'Dea)-*Aerodynamics and Bridge Design*

American Chemical Society

Puget Sound Chapter

1. Cameron Akker (Redmond)-*Graphene Oxide and Reduced Graphene Oxide Coated Nafion Membranes for Enhanced Performance in Polymer Electrolyte Membrane Fuel Cells*
 2. Hannah Cho (Henry M. Jackson)-*Spirulina Cadmium Binding Ability in Aquatic Conditions*
 3. Anna Pischer (Henry M. Jackson)-*Efficiency of Electron Donors for Denitrification via Facultative Anaerobic Heterotrophs*
- HM-Alyssa Coen (Cedarcrest)-*The Effects of Common Household Items on Glow Sticks*

American Meteorological Society

For creative scientific endeavors in the areas of atmospheric and related oceanic and hydrologic sciences

- Madison Minsk and Maya Ganesan (STEM School)-*Assessing the Validity of Satellite Data in Determining the Impact of Wildfires on Air Pollution*

American Physiological Association

For outstanding research in behavioral and social sciences or any category related to physiology

- Celia Evans (Henry M. Jackson)-*Ascertaining Common Misconceptions About Concussions and their Consequences while Analyzing the Effectiveness of Concussion Health Laws*

Association for Women Geoscientists

For a female student whose project exemplifies high standards of innovativeness and scientific excellence in the geosciences.

- Shruti Parikh (Henry M. Jackson)-*Analyzing and Mapping Coal Dust Loss and Developing a Technique to Capture Lost Dust*

Inspiring Excellence--For outstanding research

- Siever Walker and Korry Broderick (O'Dea)-*Snow-Mo-Bike*

National Oceanic and Atmospheric Administration Taking the Pulse of the Planet Award

The project that best emphasizes NOAA's mission to understand and predict changes in climate, weather, oceans and coasts, to share knowledge, and to conserve marine and coastal marine ecosystems and resources.

- Meera Srinivasan (Interlake)-*Investigating the Sublethal Effects of Polycyclic Aromatic Hydrocarbons on Salmon using Zebrafish as Model Organism*

Office of Naval Research

For research applicable to the naval sciences

- Piper Cramer (Cedarcrest)-*Breathe Easy: Developing an Emergency Personal Ventilator*
- Gabriel Richter-Hardacker (O'Dea)-*Purification Device for Radioactive Sea Water*
- Connor Hughes (Woodinville)-*Examining Hydrodynamic Drag Under Conditions of Laminar vs Non-Laminar Flow*

Stockholm Junior Water Prize

- Natalie Weed (Henry M. Jackson)-*The Effect of Photocatalyst TiO₂ Concentration on E. Coli Inactivation in Water*
- Hannah Cho (Henry M. Jackson)-*Spirulina Cadmium Binding Ability in Aquatic Conditions*
- Max Lorenze (O'Dea)-*Is it Possible to Build a Water Filter that is Cheaper and Works as Well as a Commercial Water Filter*

US Metric Association

For best use of international standard units

- Cameron Akker (Redmond)-*Graphene Oxide and Reduced Graphene Oxide Coated Nafion Membranes for Enhanced Performance in Polymer Electrolyte Membrane Fuel Cells*

US Public Health Service

For innovative and creative projects that illustrate scientific approaches to address disease, injury prevention and wellness.

- Zachary Oster (O'Dea)-*Effect of Kinesiology Tape on Shoulder Strength in Crossfit Athletes*

Yale Science and Engineering Association

For the most outstanding 11th grade project in the areas of Computer Science, Engineering,

- Brian Le (O'Dea)-*Body Heat to Energy*
- Tony Le (O'Dea)-*Pinhole vs Digital Cameras*
- Jeremy Harrison Vineeta Parapudi and Reksha Rathnam (STEM School)-*Trends in the Occurrence of Aggravated Assault in the City of Bellevue*
- Airik Myers (O'Dea)-*Simple Magnetic Motor*
- Alexandra Mititen and Kyra Nichols (STEM School)-*A Cheaper and Easier-To-Use-and-Install Home Surveillance System*
- Jonathan Kuc (TAF Academy)-*Effectiveness of the Features of the Diabetes Assistant App*
- Sean Dempsey (Cedarcrest)-*Near-English Programming for Windows*

Intel Excellence in Computer Science

For the top first place winner in the Computer Science Category

- Alisha Saxena (Interlake)-*Analyzing and Preventing Quick Response Code Based Malware and Phishing Attacks for Smartphones*

Physics, or Chemistry.

- Connor Hughes (Woodinville)-*Examining Hydrodynamic Drag Under Conditions of Laminar vs Non-Laminar Flow*