

2016 Central Sound Regional Science and Engineering Awards

Grand Champion:

Sriharshita Musunuri (Henry M. Jackson)- Molecularly Imprinted Polymeric Nanoparticles: A Novel Theranostic System to Detect and Neutralize Endotoxins

First Runner Up:

Mahalaxmi Elango (Interlake)- Drug Vulnerabilities of the Cancer Cell Line Encyclopedia Are Revealed by Machine Learning Approaches

Category Awards

Animal Sciences, Plant Sciences

1. Bonnie Winters (Mountlake Terrace)- Phytoremediation of Lead in Soil Using Herbaceous Angiosperms
2. Gurleen Gill, Kanae Lancaster, and Gabrielle McDaniel (Tesla STEM)- Bio-Photovoltaic Solar Panels from Micro Photosynthetic Power Cells Using Blue-Green Algae
3. Lexi Gavigan (Cedarcrest)- Mealworms vs Plastic Waste
HM Olivia Edgington and Megan Lawther (Tesla STEM)- Effects of Processed Foods vs. Whole Foods on Memory
SN Izabella Filippini and Rose Matta (Tesla STEM)- The Effect of Washington Water Pollutants on Daphnia

Behavioral and Social Sciences

1. Christine Pham, Elena Rettig, Varsha Veeramachaneni (Tesla STEM)- The Effects of Social Media Usage on Stress Levels
2. Tara Ghazanfari and Lola Par (Tesla STEM)- Project Recidivism Reduction
3. Zoe Richards (Newport)- Family Cold and Flu Prevention: Knowledge, Actions, and Outcomes
3. Catalina Fox (Tesla STEM)- The Effects of Meditation on Blood Pressure Levels
HM Megan DeSilva, Bradley Devin, and Ben Schwedler (Tesla STEM)- The Effects of Binaural Beats on Working Memory Capacity in High School Students
HM Helen Maslen, Maanasa Nandula, and Priyanka Taneja (Tesla STEM)- The Effect of Placebo on Menstrual Pain Reduction
SN Anna Miller (Tesla STEM)- The Effects of Classical Music vs. Pop Music on the Memory of an Illustration

Biochemistry, Cell & Molecular Biology, Computational Biology & Bioinformatics

1. Mahalaxmi Elango (Interlake)- Drug Vulnerabilities of the Cancer Cell Line Encyclopedia Are Revealed by Machine Learning Approaches
2. Dyuti Shreya Nandy (Newport)- A Novel Approach for the Treatment of Type 2 Diabetes with PTP1B Inhibitor: Design, Synthesis and Biological Activity
3. AsiaLee Donnelly (Mountlake Terrace)- Phylogenetic Tree of Chloroplast Markers in Plants
SN Jessica Phung (Mountlake Terrace)- Batch Effects on High-Throughput Data

Biomedical & Health Sciences, Bioengineering, Materials Science

1. Sriharshita Musunuri (Henry M. Jackson)- Molecularly Imprinted Polymeric Nanoparticles: A Novel Theranostic System to Detect and Neutralize Endotoxins
2. Gokul Gowri and Anand Sekar (Inglemoor)- Development of Low-Cost, Modular, and Adaptable Assistive Technology for ALS Care
3. Favour Orji (TAF Academy)-The Role of Thyroid Hormone in Adult Neural Development and Plasticity
HM Andrew Wang and Effie Jia (Tesla STEM)- The Implementation of Polystyrene and Graphene in the Active Layer of PCDTBT:PCBM Inverted Organic Solar Cells to Increase Energy Conversion Efficiency
HM Afeef Sheikh (Tesla STEM)- A Helping Hand: Utilizing Augmented Reality to Aid in Rehabilitation Processes
SN Jesse Wu (Newport)- Effect of Ca²⁺ and Ba²⁺ on the Mechanical Property of Bulk Alginate Hydrogels

Earth & Environmental Sciences, Environmental Engineering

1. Maheck Jerez, Margo Nanneman, Ben Zabback (Tesla STEM)-SODIS Support Device
2. Dhruvik Parikh (Henry M. Jackson)- Simultaneous Hydrogen Production and Wastewater Treatment by Photocatalytic Titanium Dioxide
3. Alissa Acheson, Caylyn Berosik, Agata Skarbek (Tesla STEM)- The Analysis of Water Variation in Various Populated Area Based on pH, Turbidity, Total Dissolved Solids, Dissolved Oxygen, and Nitrates
HM Chirag Das (Tesla STEM)- Osmotic Pressure and Electric Circuit With the Early Detection of Toxins in Water
SN Aimee Roseberry and Quinton Skinner (Tesla STEM)-Collecting Energy through Piezoelectric Sensors

Embedded Systems, Robotics & Intelligent Machines, Systems Software

1. Rishabh Jain (Skyview)-Bosh Glove
2. Faris Gulamali (Interlake)- Validating a Three-Dimensional Computational Model of the Effect of Ankle-Foot Orthosis Stiffness on Gait Biomechanics in a Post Stroke Individual
3. Andrew Borrud and Kristian Suzara (Mountlake Terrace)-Bluetooth Smoke Detectors
HM Neha Nagvekar (Tesla STEM)- Smart Health Monitoring

SN Eshika Saxena (Interlake)- A Portable Optoelectronic System to Identify Spectral Fingerprints for Non-invasive Blood Analysis, Impurity Detection, and Food Quality Assessment using Chemometrics Techniques Enhanced with Machine Learning

Energy-Chemical, Energy-Physical

1. David Li (Interlake)- The Iron-Chromium Flow Battery
 2. Anne Lee, Isaac Perrin, Brandon Yue (Tesla STEM)- Pressurized Distillation: An Energy Efficient Approach to Ethanol Extraction in Biofuel Production
 3. Troy Leighton (Aviation)-Solar Cell Economics and Latitude
- SN Logan Bronemann, Ben Davidson, Andrew Klippert (Mountlake Terrace)-Hydrogen Fuel Cell Efficiency

Engineering Mechanics

1. Clayton Kristiansen (Cedarcrest)-Electromagnetic Lock
 1. Eliza Gutke, Isaac Muhlstein, Bin Phan (Skyline)-Open Source Electronics for Telemetry in High Energy Physics
 2. Quinlan Emmons, Natan Gallagher (Mountlake Terrace)-Remote Control Lawn Mower
 3. Natalie Roberts, Madeline LaPorte (Cedarcrest)-Aquatic Drone Vehicle
- HM Russell Whealdon (O'Dea)-Making a Better Home
- SN Jeremy Vicencio (O'Dea)-Kinetic Energy and Impact Force Absorption and Diffusion Material

Physics & Astronomy, Mathematics

1. Adeline Hillier (Newport)-Communication by Ultrasound Using Radio Modulation Techniques
 2. Sunayana Rane (Interlake)- Developing a Better Model for the Morphological Classification of Galaxies
 3. Helen Carson (Home School)- A Survey of Mars Dust Devil Activity in CTX Images of Amazonia Planitia
- HM Benjamin Benson (Cedarcrest)- Designation and Coherence of Novel Conglomerate Propulsion Methods Optimized for Preeminent Interplanetary Space Applications
- SN Nicole Lim, Jennifer Paz Meza (Todd Beamer)- Neutron Flux Tunnel for Patient Abstraction during BNCT Oncological Therapies