

# 2016 South Sound Regional Science Fair

## High School Awards

### Honorable Mention

| Project Category               | Project Title  | Name               | School       | School District | GR |
|--------------------------------|--|--------------------|--------------|-----------------|----|
| Animal Sciences                | Effect of Cigarettes on Daphnia Heart Rate   | Yasmene Hammoud    | Wilson High  | Tacoma          | 9  |
|                                | Monosodium Glutamate affecting the heart beat of Daphnia   | Carmen Parra       | Wilson High  | Tacoma          | 9  |
| Biomedical and Health Sciences | What is the Effect of Zingiber officinale on the Zone of Inhibition of Staphylococcus epidermis? | Kaija Wilks        | Wilson High  | Tacoma          | 9  |
| Earth & Environmental Science  | Filtering Out Micro Beads  | Chloe Barton       | Wilson High  | Tacoma          | 9  |
|                                | How does temperature effect the feeding rate of barnacles  | Violette Lafferty  | Wilson High  | Tacoma          | 9  |
|                                | The oil in your kitchen, now used in your car  | Annika Cederstrand | Annie Wright |                 | 11 |
|                                |  | Abbey Turner       | Annie Wright |                 | 11 |
| Engineering Mechanics          | Using Paper to Test the Strength of Different Shaped Building Elements                           | Poplar Yang        | Annie Wright |                 | 10 |
|                                |  | Zoe Zheng          | Annie Wright |                 | 10 |
| Environmental Engineering      | Effect of an Earten Filter on biomass of plants  | Thomas Jacobs      | Wilson High  | Tacoma          | 9  |
| Materials Science              | Evaporation - Is It Fast or Slow   | Elissa Essman      | Home School  |                 | 10 |
|                                | Is recycled paper weaker than virgin paper?  | Pin-Yu Lien        | Annie Wright |                 | 10 |
| Microbiology                   | horse fecal matter vs ryeberries on mycelium growth over time on blue oyster mushrooms           | Tristan Sampson    | Wilson High  | Tacoma          | 10 |
|                                | The Effect of Initial Glo Germ Placement on Resulting Glo Germ Spread                            | Malachi White      | Wilson High  | Tacoma          | 9  |
| Plant Sciences                 | One Greek Disaster   | Hanna Bennett      | Wilson High  | Tacoma          | 9  |
|                                | The effect of sweet potato allelochemicals on biomass of opposing plant                          | LaRae Ellison      | Wilson High  | Tacoma          | 9  |

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**Honorable Mention (Continued)**

|                               |   |                |             |        |   |
|-------------------------------|---|----------------|-------------|--------|---|
| Plant Sciences<br>(Continued) | The effect of different sources of greywater on the biomass of crop | Nathan Sachs   | Wilson High | Tacoma | 9 |
|                               | The Effect of Rhizobia Bacteria on Seed Germination Rates           | Bryan Vo       | Wilson High | Tacoma | 9 |
|                               | The Not So Dynamic Duo: The effect of zinc on moss growth           | Hannah Griffin | Wilson High | Tacoma | 9 |

**Third Place**

| <b>Project Category</b>       | <b>Project Title</b>  | <b>Name</b>   | <b>School</b>        | <b>School District</b> | <b>GR</b> |
|-------------------------------|---|---------------|----------------------|------------------------|-----------|
| Animal Sciences               | An Evaluation of Factors That May Influence Olympia Oyster ( <i>Ostrea Lurida</i> ) Reproduction and Growth | Emily Thomsen | Wilson High          | Tacoma                 | 11        |
| Behavioral & Social Sciences  | colorization  | Katie Looper  | Harrison Preparatoty | Clover Park            | 9         |
| Earth & Environmental Science | How much Matters?   | Hina Ramzan   | Wilson High          | Tacoma                 | 9         |
| Microbiology                  | Affect of Breast Milk on Bacteria Growth  | Arianna Jones | Wilson High          | Tacoma                 | 9         |
|                               | The Effect of Introducing Peanut Oil to <i>Staphylococcus epidermidis</i>                                   | Alisa Glabe   | Wilson High          | Tacoma                 | 9         |

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### Second Place

| Project Category              | Project Title  | Name          | School                 | School District | GR |
|-------------------------------|--|---------------|------------------------|-----------------|----|
| Animal Sciences               | How does diet affect equine hyperactivity?   | Cecilia Black | Annie Wright           |                 | 12 |
| Behavioral & Social Sciences  | Music and Short Term Memory  | Jessie Ju     | Annie Wright           |                 | 11 |
| Earth & Environmental Science | Living on Silver: The Effect of adding Nano silver on the lifespan of Daphnia  | Jodi Van      | Wilson High            | Tacoma          | 9  |
|                               | The Effect of Antifouling Paint on the Heart Rate of Daphnia   | Melina Nguyen | Wilson High            | Tacoma          | 9  |
| Energy: Chemical              | Optimization of Fuel Cell Structure for the Commercial Reduction of Carbon Dioxide in Water to Produce Ethanol   | Aditi Kumar   | Timberline High School | North Thurston  | 10 |
| Environmental Engineering     | Water Filtration   | Veronika Pon  | Wilson High            | Tacoma          | 9  |
| Materials Science             | A Filtration Compilation: The Effect of the Filter on the Amount of Pollutants Remaining in the Water Will be Seen in the Decreased Particulate Mass and Turbidity | Noah Jensen   | Wilson High            | Tacoma          | 9  |
| Microbiology                  | Effect of Smoke on Bacteria  | Tucker Buxton | Wilson High            | Tacoma          | 9  |
| Plant Sciences                | The Effect of Foliar-Applied and Soil-Applied Calcium Nitrate on Leaching  | Victoria Le   | Wilson High            | Tacoma          | 9  |

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|--------------------------------|---|---------------------------|-----------------------------------|-----------------|----|
| Animal Sciences                | Bug Off: Analyzing Attractive and Repellent Behaviors of Culex Mosquitos  | Hyunjoo Ji                | Annie Wright                      |                 | 10 |
|                                |   | Sasha Chang               | Annie Wright                      |                 | 10 |
| Behavioral & Social Sciences   | Does the Knowledge of a Time Limit Affect Performance of a Simple Task?   | Daphne Land               | Homeschool                        |                 | 9  |
| Biomedical and Health Sciences | Low Cost Alternatives to Diagnose Disease Specifically Designed for Developing Countries Using Fast Lithography Activation of Sheets  | Vineethsubbu Somasundaram | Olympia High                      | Olympia         | 10 |
|                                |   | Rakshith Mullukatte       | Olympia High                      | Olympia         | 10 |
| Biomedical Engineering         | MyHealth: Early Detection, Monitoring, and Control of Parkinsonian Tremor   | Surabhi Mundada           | Olympia High                      | Olympia         | 11 |
| Cellular & Molecular Biology   | Drugs and Neural Spike Rates  | Zoe Nelson                | Harrison Preparatoty              | Clover Park     | 12 |
| Earth & Environmental Science  | Surveying biodiversity on Creosote pilings in the Puget Sound through a comprehensive mathematical analysis using DEROS: A diving and exploration remote operated submersible | David Guertin             | Tacoma Science and Math Institute | Tacoma          | 12 |
|                                |   | Keshreeyaji Oswal         | Tacoma Science and Math Institute | Tacoma          | 12 |
|                                |   | Karun Paul                | Tacoma Science and Math Institute | Tacoma          | 12 |
| Embedded Systems               | Alzheimer's Aid: A computer based assistance application for Alzheimer's patients   | Sowmya Duddu              | Olympia High                      | Olympia         | 9  |
| Energy: Chemical               | Running on Algae: The Optimum Growth Conditions of Chlorella ellipsoidea for the Production of Biofuel  | Kelsey Homan              | Wilson High                       | Tacoma          | 9  |

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#### First Place (Continued)

|                                 |   |                       |                  |          |    |
|---------------------------------|---|-----------------------|------------------|----------|----|
| Engineering Mechanics           | The analysis of airfoil technology: The impact of camber on the lift to drag relationship of airfoils at different angles of attack | Raghavendra Bharadwaj | Capital High     | Olympia  | 9  |
| Environmental Engineering       | Modeling the Effects of Rain garden Implementation on the Efficiency of Nitrate Filtration in an Urban Landscape                    | Sarah Dawson          | Wilson High      | Tacoma   | 9  |
| Materials Science               | The Science of Soundproofing  | Aurora Hake           | Annie Wright     |          | 11 |
|                                 |   | Cindy Liang           | Annie Wright     |          | 11 |
| Microbiology                    | A Novel Approach to the Reduction of Antibiotic Resistant Escherichia coli Present in Livestock Waste Through Use of Plant Extracts | Sarah Strickler       | Bonney Lake High | Sumner   | 12 |
| Physics & Astronomy             | Cerumen on Earbuds  | Brittain Rhodes       | Wilson High      | Tacoma   | 9  |
| Plant Sciences                  | Are Your Vegetables Poisonous? Testing the Effect of Arsenic Levels in Soil on Plants   | Carlie Zinder         | Wilson High      | Tacoma   | 9  |
| Robotics & Intelligent Machines | Efficiently Diagnosing Heart Arrhythmia using Machine Learning Algorithms   | Abhinav Gundrala      | Olympia High     | Olympia  | 9  |
| Translational Medical Science   | TOWARDS NEXT GENERATION CANCER TREATMENT MODALITY: In-vivo dosimetry studies of Boron Neutron Capture Therapy using protist models  | Nitya Krishna Kumar   | Olympia High     | Olympia  | 11 |
|                                 |   | Veenadhari Kollipara  | Interlake High   | Bellevue | 10 |