

The 2024 Hawaii State Science & Engineering Fair Senior (SR) Division Best in Category

SR - ANIMAL SCIENCES (ANIM)		
1ST Place	Maddux S. 'Iolani School	ANIM-105 Determining the Levels and Abundance of Arginine in <i>Gracilaria salicornia</i> and <i>Codium edule</i> in Kāne'ōhe Bay and its Effect on Fibropapillomatosis Rates in <i>Chelonia mydas</i>
2ND Place	Logan L. 'Iolani School	ANIM-100 Utilizing Microbiome Transplants to Improve Landscape-Scale Mosquito Suppression
3RD Place	Noor S. Hilo High School	ANIM-108 The Effects of Temperature Zones to Decelerate and Halt the Maturation Rate of <i>Bactrocera Cucurbitae</i>

SR - BEHAVIORAL & SOCIAL SCIENCES (BEHA)		
1ST Place	Chisato T. 'Iolani School	BEHA-124 Urban Form and the Honolulu Housing Market
2ND Place	Hokuala E. / Jael K. Kamehameha Schools, Maui	BEHA-114 Cultural Influences on the Reproductive Health Awareness of Native Hawaiian Adolescents
3RD Place	Danica I. Mililani High School	BEHA-117 The Effects of Perceived Success on Self-Efficacy

SR - BIOCHEMISTRY (BCHM)		
1ST Place	Michael K. Kalāheo High School	BCHM-110 Using Aquaculture to Reduce Marine Pollution and HABs
2ND Place	John G. / Kana P. Kailua High School	BCHM-109 Do Sea Cucumbers (Holothuroidea) Supports the Ethnic Environment in a Traditional Hawaiian Fishpond?

SR - BIOMEDICAL & HEALTH SCIENCES (BMED)

1ST Place	Faith B. Kamehameha Schools, Kapālama	BMED-132 Caffeine: Effects on SKOV-3 Human Ovarian Cancer Cells
2ND Place	Linda C. / Amara L. Kailua High School	BMED-131 Antimicrobial Properties of Arthropod Exoskeletons
3RD Place	Genevieve Y. / Kalei Y. Kamehameha Schools, Kapālama	BMED-133 Comparing Dose-Dependent Effects of Ivermectin on SKOV-3 Ovarian Cancer and MCF-7 Breast Cancer Cells

SR - CELLULAR & MOLECULAR BIOLOGY (CELL)

1ST Place	Kamryn H. Kamehameha Schools, Kapālama	CELL-140 Effects of Fluoxetine on HEK293 Cells
2ND Place	Brent U. Kalāheo High School	CELL-139 Determining Which Essential Oils Inhibit E. Coli K12 Growth

SR - CHEMISTRY (CHEM)

1ST Place	Beatrice K. Waiākea High School	CHEM-144 Physical, Chemical, and Sensory Properties of a Noni-Fortified Pineapple Juice Beverage
2ND Place	Katarina G. Waialua High & Intermediate	CHEM-141 Lactose, Sucrose, and Glucose
3RD Place	Mei K. Kealakehe High School	CHEM-143 Analyzing The Reproducibility and Sustainability Of Bromoform Concentrations Extracted From Edible Oil-Immersed <i>Asparagopsis Taxiformis</i>

SR - COMPUTATIONAL BIOLOGY & BIOINFORMATICS (CBIO)

1ST Place	Claire M. Kealakehe High School	CBIO-138 Comparative Metagenomic Analysis of Bacterial Diversity Between Anchialine Ponds and Fishpond Ecosystems at Kaloko-Honokōhau National Historical Park
2ND Place	Calina-Miguela R. Mililani High School	CBIO-136 Neural Networks Can Be Used to Predict the Future of Diseases Like COVID-19
3RD Place	Lauren S. / Caleb C. Waipahu High School	CBIO-135 Using Artificial intelligence to Detect Breast Cancer Stages

SR - EARTH & ENVIRONMENTAL SCIENCES (EAEV)

1ST Place	Austyn B. Hilo High School	EAEV-163 Heavy Metal Contamination of Soil from Sugar Cane Farming: How Safe is the County Park?
2ND Place	Jeanine L. Kauai High School	EAEV-160 Identifying Photosynthetic Microeukaryotes and Cyanobacteria in the Diet of Tilapia in the 'Alekoko Fishpond using eDNA
3RD Place	Leilani P. Kalani High School	EAEV-145 Strengthening Natural Dyeing: A Comparative Study of Mordants for Sustainable Textile Coloration

SR - ENERGY SUSTAINABLE MATERIALS & DESIGN (EGSD)

1ST Place	Julianne U. Waipahu High School	EGSD-168 Thermoelectric Cooler
2ND Place	Tiffany C. Mililani High School	EGSD-167 Photovoltaic Cell Efficiency Based on Different Angles of the Sun
3RD Place	Kate K. Kalani High School	EGSD-165 Reshaping Plastic Waste: Developing a Mechanism That Will Transform Single-Use Plastics Into 3D Filament

SR - BIOMEDICAL ENGINEERING (ENBM)

1ST Place	Ashton B. Kalani High School	ENBM-172 Pneumatically Actuated Soft Robotic Glove for Individuals with Hand Impairments
2ND Place	Chloe H. Kalani High School	ENBM-171 The Correlation between Blood Pressure Monitoring and Pulse Time
3RD Place	Noah L. / Emi N. Kalāheo High School	ENBM-173 Integrating Inflatable Spinal Support Cushioning Systems Within Clothing for Vertebrate Dorsum Postural Issues

SR - ENGINEERING TECHNOLOGY: STATISTICS AND DYNAMICS (ETSD)

1ST Place	Williene C. Kealakehe High School	ETSD-190 Optimizing Architectural Applications to Existing School Buildings to Dampen the Severity of Sound Pollution in the Classroom
2ND Place	Man Fung Z. Kalani High School	ETSD-183 Connected Tandem Wing Affecting Fuel and Lift Efficiency of Different Distributions
3RD Place	Travis O. / Jenna L. Pearl City High School	ETSD-188 Tower Cross Bracing Amount to Maximize Efficiency

SR - ENVIRONMENTAL ENGINEERING (ENEV)

1ST Place	Kian S. University Laboratory School	ENEV-175 Sponge Studies: Assessing the Effects of Ecological Impacts on <i>Mycale grandis</i> Detritus Production, and Use as a Natural Deep Sea eDNA Sampler
2ND Place	Bennett T. / Kadence M. Kamehameha Schools, Maui	ENEV-178 Evaluating Native Hawaiian Plant Species' Contributions to Post-Fire Silt Sock Bioremediation in Lahaina
3RD Place	Angel Ko 'Aiea High School	ENEV-182 Growing Toward Sustainability: Cultivating Hawaii's Future with Agricultural Innovation

SR - MATHEMATICS (MATH)

1ST Place	Elle S. 'Iolani School	MATH-193 Exploring the Impact of Zoning Laws and Land-Use Policies on Food Deserts and Gut Microbiome Diversity in Native Hawaiian Communities
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SR - MATERIAL SCIENCES (MATS)

1ST Place	Ashley C. Island School	MATS-197 Using Organic Material Mats to Clean Oil Spills
2ND Place	Kaleikaumaka R. / Kia'i S. Kamehameha Schools, Maui	MATS-196 Optimal Table Tennis Paddle Stickiness
3RD Place	Clarice H. Kamehameha Schools, Kapālama	MATS-198 Creating a <i>Rhizophora</i> mangle and <i>Gracilaria salicornia</i> Based Bioplastic

SR - MICROBIOLOGY (MCRO)

1ST Place	Sage A. / Sailor C. Kailua High School	MCRO-207 The Effect of Bleaching Event on Rice Coral Microbiome
2ND Place	Isabella R. Hawai'i Preparatory Academy	MCRO-209 Golf Course Management: Investigating Soil Biodiversity
3RD Place	Kaelyn P. 'Iolani School	MCRO-200 Investigating the Relationship Between the Presence of Salivary Microbiota Associated with Periodontal Disease and having Alzheimer's Disease

SR - PHYSICS & ASTRONOMY (PHYS)

1ST Place	Nana H. 'Iolani School	PHYS-212 Formation for Krebs Cycle Acids in the Interstellar Environment
2ND Place	Makala H. Christian Liberty Academy	PHYS-223 Testing the Bottom-Up Formation of Galaxy Clusters
3RD Place	Zoe C. 'Iolani School	PHYS-213 Investigating the Role of Primordial Black Holes on Early Galaxy Formation

SR - PLANT SCIENCES (PLNT)

1ST Place	Sarina L. Hilo High School	PLNT-233 Investigating the Effectiveness of Fungicides on Disinfecting <i>Ceratocystis lukuohia</i> Fungi Spores from Ambrosia Beetle Frass
2ND Place	Kruze L. Moloka'i High School	PLNT-229 GROWING SMART A Comparative Study of Water Efficiency and Germination Rates in Wicking Bed versus Nursery Pot
3RD Place	Lauren J. Mililani High School	PLNT-232 The Growth of Spinach in Vertical and Horizontal Hydroponic Gardens

SR - ROBOTICS & INTELLIGENT MACHINES (ROBO)

1ST Place	Jisue H. Punahou School	ROBO-236 Can CNNs Accurately Classify Human Emotions? A Deep-Learning Facial Expression Recognition Study
2ND Place	Aaron-James S. Waipahu High School	ROBO-235 Using Computer Vision to Analyze Traffic
3RD Place	Andy C. Kalani High School	ROBO-234 Harnessing Brainwaves for Robot Control with an Arduino Brainwave Reader

SR - SYSTEMS SOFTWARE (SOFT)

1ST Place	Alex A. 'Iolani School	SOFT-237 How Does the Creation of a Simulation Based Website Affect Precautionary Actions and Danger Perceptions of Residents in Vulnerable Communities on Hawai'i Island?
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SR - TRANSLATIONAL MEDICINE (TMED)

1ST Place	Jaymie F. 'Iolani School	TMED-238 The Role of DNA Methylation in the Inflammatory Response Following the Consumption of Glutamate in a Patient with Psoriatic Arthritis: A Case Study in Personalize Medicine
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