

Finalist Directory

COUNTRIES, REGIONS AND TERRITORIES PARTICIPATING IN REGENERON ISEF 2024

LEGEND

- Each # next to the finalist's name indicates previous ISEF participation
- An * identifies non-competing projects
- T precedes the name of a Teacher-Sponsor of the project
- T after the project ID indicates a team project

AMERICAN SAMOA

Pago Pago, American Samoa, TEAS01, American Samoa Science Fair

ANIM034 Utilization of Cigarette Butt Waste as a Larvicidal Control Tool on Dengue Vector *Aedes polynesiensis* Mosquitoes

<https://projectboard.world/isef/project/166733>

John Marcial Toa Mirasol, 14, Freshman, Manumalo Academy, Pago Pago, American Samoa, T: Miriam Mirasol

BCHM027 Antipodal Algae: Engineering Energy Solutions for a South Pacific Island

<https://projectboard.world/isef/project/166793>

Amelie Ruoyi Chen, 17, Junior, Pacific Horizons School, Pago Pago, American Samoa, T: Karen Dizon

EAEV071 Effect of Sodium Chloride on the Growth of Taro (*Colocasia esculenta*)

<https://projectboard.world/isef/project/166959>

Princess Jazzelle Franco Viesca, 18, Senior, Fa'asao Marist High School, Pago Pago, American Samoa, T: Cassandra Ina Amor Garcia

PLNT052 Comparing Different Applications of Indigenous Microorganisms With Synthetic Fertilizer on the Growth of *Abelmoschus esculentus* (Okra)

<https://projectboard.world/isef/project/166737>

Kim Gerald Doca Garcia, 15, Sophomore, Fa'asao Marist High School, Pago Pago, American Samoa, T: Cassandra Inna Amor Garcia

AUSTRALIA

Oatlands, Australia, AUS004, Australian Science and Engineering Fair

CBIO046 Predicting P-Glycoprotein Inhibition Using a Message-Passing Graph Neural Network

<https://projectboard.world/isef/project/167998>

Yiming Zhang, 19, Senior, James Ruse Agricultural High School, Sydney, NSW, Australia, T: Carina Dennis

EAEV070 Forward Modelling of Climate Change-Induced Sedimentation and Effects on Coastal Ecosystems

<https://projectboard.world/isef/project/166957>

Kevin Hao, 17, Senior, Knox Grammar School, Sydney, NSW, Australia, T: Reece Roberts

EAEV083T Apparent Temperature Optimisation for Commercial Operations in Portable Buildings

<https://projectboard.world/isef/project/167687>

Pothik Vincent Mondol, 17, Junior, Mohammad Niyaz Hasan, 18, Junior, Monishi Rangchak Tripura, 17, Junior, Darwin High School, Darwin City, NT, Australia, T: Nick Ergos

EAEV088T FloodCast: Predicting Floods and Their Socioeconomic Impacts Through Deep Learning Neural Networks and Regression

<https://projectboard.world/isef/project/167842>

Alex Huijie Zhuang, 15, Sophomore, Adrian Huihao Zhuang, 18, Senior, The King's School, North Parramatta, New South Wales, Australia, T: Sam Zhuang

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- EAEV090** **Microplastics, Anything but a Small Problem: An Investigation Into How Different Sizes of Australia's Most Common Waterway Microplastic, Polyethylene, Affects *Daphnia magna*'s Physiological Functions**
<https://projectboard.world/isef/project/168000>
Jessica Caitlin Jones, 18, Senior, Menai High School, Illawong, New South Wales, Australia, T: Ann Hanna
- ENBM065** **UpLift Mobility: Robotic Lift To Elevate Frequently Falling Individuals**
<https://projectboard.world/isef/project/167368>
Jeslyn Gabrielle Tan, 18, Senior, Barker College, Sydney, New South Wales, Australia, T: Jeser Becker
- MATH033** **Resistors, Fractals and Infinity— Developing and Exploring Methods for Calculating the Equivalent Resistance of Infinite Networks of Resistors**
<https://projectboard.world/isef/project/167999>
Joshua Taj Abordi, 17, Junior, Mount Lawley Senior High School, Perth, Western Australia, Australia, T: Amanda Gardiner
- SOFT023** **EmSafe: Further Improving the Emergency Call Service and the Development of Digital Emergency Management Infrastructure for Industrial, Event and Public Use**
<https://projectboard.world/isef/project/163446>
- # Rahul Kumar, 17, Senior, Brisbane Grammar School, Spring Hill, Qld, Australia, T: Tanya Neilsen
- TMED070** **A Comparison of Machine Learning Models (CNN and SVM) in the Novel Supervised Image Classification Approach for the Accessible Diagnosis of Alzheimer's Disease via Clock Drawing Tests on Mobile Phone Applications**
<https://projectboard.world/isef/project/167674>
Aditya Ghai, 18, Senior, Anglican Church Grammar School, East Brisbane, Queensland, Australia, T: Emma Vlahos

AZERBAIJAN

Baku, Azerbaijan, AZR001, Azerbaijan Science and Engineering Fair

- BMED092T** **Synthesizing a Novel Antioxidant Compound To Mitigate Oxidative Stress in Alzheimer's Disease**
<https://projectboard.world/isef/project/168822>
Said Aslanov, 15, Sophomore, Ibrahim Allahverdiyev, 16, Sophomore, Dunya School, Baku, Azerbaijan, T: Efsun Sucayev
- EGSD052T** **Application of Hybrid Energy Systems Based on Triboelectric Nanogenerators (TENG) to Smart Settlements**
<https://projectboard.world/isef/project/168821>
Elchin Hasanov, 15, Sophomore, Ali Musayev, 15, Sophomore, Dunya School, Azerbaijan, T: Orxan Gulahmadov
- ENEV082T** **Identification of the Locations of Waste in Oceans and Seas Through Artificial Intelligence Integration (Robocean)**
<https://projectboard.world/isef/project/168799>
Alibali Alibayov, 15, Sophomore, Haji Hajiyev, 15, Sophomore, 4th Secondary School, Zagatala District, Azerbaijan, Lyceum Named after Academician Zarifa Aliyeva, Zagatala, Azerbaijan, T: Gurban Musayev
- ENEV083T** **EcoPrintTech**
<https://projectboard.world/isef/project/168796>
Ali Afandi, 16, Sophomore, Ismail Rizayev, 17, Junior, Lyceum Named after Academician Zarifa Aliyeva, Baku, Azerbaijan, T: Rafiga Baghirova
- ROBO084T** **Smart Power Grid Control: Artificial Intelligence-Based Fault Detection in Power Transmission Systems**
<https://projectboard.world/isef/project/168797>
Nijat Taghizade, 15, Sophomore, Khazar Huseynov, 15, Sophomore, Dunya School, Baku, Azerbaijan, Educational Complex 132-134, Baku, Absheron, Azerbaijan, T: Etibar Vazirov

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BELGIUM

Brussels, Belgium, EUB001, European Union Contest for Young Scientists (EUCYS)

SOFT016T **Rekari: Intuitive Collaboration Platform for Various Drone Missions**

<https://projectboard.world/isef/project/162134>

Tim Arnold, 17, Senior, Felix von Ludowig, 18, Senior, Hanns-Seidel-Gymnasium Hösbach, Hosbach, Germany, Staatliche Fachoberschule Aschaffenburg, Aschaffenburg, Bavaria, Germany, T: Thomas Gessner

SOFT053 **A Graph Isomorphism Kernel Based on k-Vertex Connectivity and Its Application in Graph Neural Networks**

<https://projectboard.world/isef/project/168124>

Deyan Hadzhi-Manich, 18, Senior, High School of Mathematics "Dr Petar Beron", Varna, Bulgaria, T: Eleonora Pavlova

BRAZIL

Novo Hamburgo, Brazil, BRA001, International Fair of South America — MOSTRATEC

ANIM004 **Analysis of the Larvicidal Biopotential of Jua Bravo (*Solanum viarum Dunal*) on Mosquito Larvae Causing Tropical Diseases**

<https://projectboard.world/isef/project/162428>

Pedro Paulo Milhomem Braga, 16, Senior, Escola Santa Teresinha, Imperatriz, Maranhao, Brazil, T: Zilmar Timoteo Soares

CELLO01 **Tumor Markers of Gastric Cancer**

<https://projectboard.world/isef/project/162377>

Luiza Zaiter Costa, 16, Junior, Colegio Degraus, Jundiai, Sao Paulo, Brazil, T: Clarissa Basso

CHEM001T **Designing Drugs by Artificial Intelligence: Novel Curcuminoids for the Treatment of Papillary Renal Cell Carcinoma Type II (PRCC2)**

<https://projectboard.world/isef/project/162309>

Filipe Holanda Dias, 17, Senior, Marcos Ivan da Silva Felix, 17, Senior, Escola de Ensino Medio Joaquim de Figueiredo Correia, Iracema, Ceara, Brazil, T: Helyson Lucas Braz

EAEV002T **Analysis of CO₂ Fixation Through Photosynthesis in Waters of the South Coast of Brazil**

<https://projectboard.world/isef/project/162310>

Giovana Bloedow Eggers, 19, Senior, Luiza da Luz Apollo, 19, Senior, Fundacao Escola Tecnica Liberato Salzano Vieira da Cunha, Novo Hamburgo, Rio Grande do Sul, Brazil, T: Ana Sofia Cardoso

EAEV008 **Augmented Reality and Virtual Reality Platform for the Study of Paleontology Using QR Code**

<https://projectboard.world/isef/project/162371>

Bernardo Damiao Camargo, 15, Junior, Eureka - Escola de Tecnologia e Pesquisa, Cascavel, Parana, Brazil, T: Maycon Lourenco

EAEV009T **Sea Sponge: Production of a Sponge Through the Use of Endocarp of Coconut (*Cocos nucifera*) and Shrimp Gel (*Farfantepenaeus paulensis* and *F. brasiliensis*) for the Retention of Pollutants in the Water**

<https://projectboard.world/isef/project/162307>

Mayara Louise de Oliveira Silva, 19, Freshman, Alice Keroly Diogenes Araujo, 18, Freshman, Escola Estadual Rui Barbosa, Tibau - RN, Brazil, T: Yandra Thais Rocha da Mota

ETSD001 **Ergonomic Wheelchair for Paraplegic Dogs With Resting Mechanism**

<https://projectboard.world/isef/project/162401>

Kauan Brasil Maia de Oliveira, 19, Senior, Fundacao Escola Tecnica Liberato Salzano Vieira da Cunha, Novo Hamburgo, Rio Grande do Sul, Brazil, T: Lucas Gomes

PHYS003 **An Analytical Method To Investigate High Dimensionality Signatures in Static and Spherically Symmetric Black Holes**

<https://projectboard.world/isef/project/162315>

Paola Volpi, 17, Junior, Colegio Dante Alighieri, Sao Paulo, Sao Paulo, Brazil, T: Wayner Klen

- TMED001 Sustainable Use of Medicinal Properties of Feijoa (*Acca sellowiana*) in the Production of a Herbal Tincture and Healing Ointment**
<https://projectboard.world/isef/project/162415>
 Eloise Antunes Lima, 18, Senior, Escola de Educacao Basica Ruth Lebarbechon, Agua Doce, Santa Catarina, Brazil, T: Janete Rodrigues
- Sao Paulo, Brazil, BRA002, FEBRACE– Feira Brasileira de Ciencias e Engenharia**
- BCHM021T Evaluation of the Potential of Using *Dunaliella salina* Microalgae Biomass Associated With the Flavonoid Hesperidin Extracted From *Citrus sinensis* Orange Peels Waste as a Sustainable Alternative for Supplementation of Beef Cattle**
<https://projectboard.world/isef/project/165905>
 Sabrina Dos Santos Rocha, 19, Senior, Clara Dias da Silva Marins Brandao, 18, Senior, Mariah Clara Oliveira Fernandes da Silva, 18, Senior, Escola Djalma Pessoa–Sesi Bahia, Salvador, Bahia, Brazil, T: Fernando Leal Barreiros Moutinho
- CELLO33 Rock the Metals! Investigating Manganese as a Trigger of Malignancy and Metal Transporters as Targets in Cancer Treatment**
<https://projectboard.world/isef/project/165904>
 Carolina de Araujo Pereira da Silva, 18, Senior, Instituto Federal de Educacao Ciencia e Tecnologia do Rio de Janeiro, Rio de Janeiro, RJ, Brazil, T: Mariana Stelling
- CHEM046T Dyes Adsorption Using Activated Carbon From Coffee Capsule Grounds**
<https://projectboard.world/isef/project/166523>
 Caio Nunes Santana#, 19, Senior, Alana Carolina da Costa Franca, 18, Senior, Emily Kanashiro da Hora, 19, Senior, Instituto Federal da Bahia (IFBA)–Campus Camacari, Camacari, Bahia, Brazil, T: Luciene Santos Carvalho
- EAEV064 Fostering Mangrove Sustainability: Blue Carbon Estimation by Integrating Allometric Equations With Machine Learning and Remote Sensing**
<https://projectboard.world/isef/project/165978>
 Gabriel Pacifico Rydygier de Ruediger, 18, Senior, Colegio Visconde de Porto Seguro, Sao Paulo, Brazil, T: Francisco Correa
- ENBM049 ConnectBreathe: Multiplatform Biomedical System for Respiratory Physiotherapy With Gametherapy**
<https://projectboard.world/isef/project/166526>
- # Ana Elisa Brechane da Silva, 16, Junior, EE Prof Maria das Dores Ferreira Rocha, Santa Rita d'Oeste, Sao Paulo, Brazil, T: Eder Carlos Antoniassi
- MATS039T From Marketing Hype to Scientific Clarity: Fighting Greenwashing With a New Rapid, Accurate, and Cost-Effective Method for Assessing the Biodegradability of Plastics**
<https://projectboard.world/isef/project/166567>
 Marina Martins, 19, Senior, Pedro Henrique Stecanella, 19, Senior, Fundacao Escola Tecnica Liberato Salzano Vieira da Cunha, Novo Hamburgo, Rio Grande do Sul, Brazil, T: Schana Andreia da Silva
- MCRO030T Biodegradable Nano-Bandage as a Potential Antimicrobial Agent**
<https://projectboard.world/isef/project/167369>
 Alan Matheus Carneiro Martins, 18, Senior, Giovanna Pereira Prado, 18, Senior, Lucas Martins Santana de Araujo, 18, Senior, Instituto Federal do Parana Campus Umuarama, Umuarama, Parana, Brazil, T: Otavio Sakai
- PLNT046 RCMC—Natural Edible Coating Based on Carnauba Wax and Mandacaru: A New Alternative to Fruit Conservation**
<https://projectboard.world/isef/project/165979>
 Gabrielle de Oliveira Rodrigues, 19, Senior, Escola de Ensino Medio Luiz Girao, Maranguape, Ceara, Brazil, T: Carlos Oyama
- PLNT048 CBeet: Developing a Biotechnological Seed Coating With Beet Byproducts**
<https://projectboard.world/isef/project/166527>
 Ana Rebeka Monteiro Lima de Souza, 18, Senior, EEMTI Marconi Coelho Reis, Cascavel, Ceara, Brazil, T: Heloína Lopes Capistrano

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BULGARIA

Sofia, Bulgaria, BGR001, Bulgarian Science and Innovation Fair

MATH004 Slice Rank Polynomial Method and Avoidance of Triangles in Fields

<https://projectboard.world/isef/project/162567>

Demira Georgieva Nedeva, 18, Junior, Model High School of Mathematics "Akademik Kiril Popov", Plovdiv, Bulgaria, T: Veselina Karapeeva

MATH005 On the Construction and Applications of Infinite-Dimensional Lie Algebra Weight Systems in the Theory of Vassiliev Invariants

<https://projectboard.world/isef/project/162604>

Nikola Slavkov Gyulev, 17, Junior, Model High School of Mathematics "Akademik Kiril Popov", Plovdiv, Bulgaria, T: Veselina Karapeeva

PHYS009 Energies on Deformed Planar Lattices: Geometric Consideration

<https://projectboard.world/isef/project/162581>

Stefan Milkov Gaydarov, 18, Junior, Model High School of Mathematics "Akademik Kiril Popov", Plovdiv, Bulgaria, T: Veselina Karapeeva

ROBO009 Controlling Robotic Swarms Using LLMs

<https://projectboard.world/isef/project/162582>

Stoyan Hristov Ganchev, 18, Junior, Model High School of Mathematics "Akademik Kiril Popov", Plovdiv, Bulgaria, T: Veselina Karapeeva

CANADA

Hamilton, Canada, CAN001, Bay Area Science and Engineering Fair

BMED062 Genetic Analysis of CD16+ Monocyte, CD16- Monocyte and CD4+ T Lymphocyte Cells To Identify Novel Gene Expression Signatures and Develop a Diagnostic Tool for Systemic Lupus Erythematosus

<https://projectboard.world/isef/project/166956>

Maya LeBlanc, 16, Junior, Abbey Park High School, Oakville, Ontario, Canada, T: Dana Bee

EBED038 Accessible Microscopy! A Cellphone-Based Fourier Ptychography Microscope for High-Resolution, Large Field-of-View and High-Speed Imaging

<https://projectboard.world/isef/project/166922>

William Yixi Xu, 17, Junior, Dundas Valley Secondary School, Dundas, Ontario, Canada, T: Anita Mckerracher

EGSD035 Redefining the Landscape of Hydrogen Safety Using Innovative Gasochromic Technology

<https://projectboard.world/isef/project/166917>

Alia Wahban, 16, Junior, Hillfield Strathallan College, Hamilton, Ontario, Canada, T: Nathalie Goulet

ROBO062 Rapid Screening for Major Skin Cancers With M-SCAHN: Multimodal Hierarchical CNN-Transformer Hybrid Networks With Advanced Interpretability, Lesion Evolution Tracking, Trait Identification, and Color Constancy for Improved Generalization in Diverse Populations

<https://projectboard.world/isef/project/166919>

Anthony Efthimiadis, 14, Freshman, Oakville Trafalgar High School, Oakville, Ontario, Canada, T: Dana Bee

TECA008 Talk to the Hand: A Portable Translator Between Verbal Communication and Tactile Sign

<https://projectboard.world/isef/project/166921>

Lily Jiayang Song, 18, Senior, North Park Collegiate and Vocational School, Brantford, Ontario, Canada, T: Richard Humpartzoomian

Trenton, Canada, CAN002, Youth Science Canada - Team Canada

CBIO029 Predicting Patient Response to CAR-T Cell Therapy Using Computational Methods for Biomarker Identification

<https://projectboard.world/isef/project/165873>

Elizabeth Jia Yi Chen, 18, Senior, Old Scona School, Edmonton, Alberta, Canada, T: Brian Lee

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- EBED031T** **The Digital Air Rifle Ballistic Measuring Device**
<https://projectboard.world/isef/project/165876>
Chloe Rae Filion, 15, Sophomore, Sophie Rose Filion, 16, Junior, Saint-Jean-de-Brebeuf, Welland, Ecole Secondaire Catholique Saint-Jean-de-Brebeuf, Welland, Ontario, Canada, T: Stefane Filion
- ENBM048** **PRecision Exospinal Constructive Innovative Stereotactic Evolution (PRECISE)**
<https://projectboard.world/isef/project/166524>
Keanu Wei Feng Chan, 17, Senior, Mount Baker Secondary School, Cranbrook, British Columbia, Canada, T: Sean Whalen
- ETSD041** **Low-Cost Rapid Response Rocket Launched UAV for Wildfire Hotspot Detection**
<https://projectboard.world/isef/project/165931>
Jason Zhao, 17, Junior, Collingwood School, West Vancouver, British Columbia, Canada, T: Edel Vo
- MATS037** **3D Bioprinting Soft Microrobotic “Niches” for Stem Cell Delivery**
<https://projectboard.world/isef/project/165875>

Cindy Cheng, 17, Junior, Laurel Heights Secondary School, Waterloo, Ontario, Canada, T: Shirley Tang
- PHYS035** **PhAst: Accelerated Asteroid Characterization Through Novel Photometric Integration Using Ground and Space-Based Sky Surveys**
<https://projectboard.world/isef/project/165679>
Arushi Nath, 14, Freshman, Bloor Collegiate Institute, Toronto, Ontario, Canada, T: Benjamin Stevenson
- TMED044** **MalaScope — A Low-Cost Deep Learning Sensor for Label-Free Detection of Malaria**
<https://projectboard.world/isef/project/165680>
Gurnoor Kaur, 15, Freshman, Cameron Heights Collegiate Institute, Kitchener, Ontario, Canada, T: Maya ElKibbi
- Montreal, Canada, CAN004, Montreal Regional Science and Technology Fair**
- ENBM052** **ProtoFlow**
<https://projectboard.world/isef/project/166568>
David Alexander Salasidis, 15, Freshman, Herzliah High School, Montreal, Quebec, Canada, T: Patrick Elbaz
- ETSD046** **A Sailor’s Type of Turbine**
<https://projectboard.world/isef/project/166569>
Linnea Helbing-Mantovani, 18, Junior, Kells Academy, Montreal, Quebec, Canada, T: Raffaata Ghanem
- ETSD053T** **Environmental Learning and Research Technology**
<https://projectboard.world/isef/project/166923>
Nathan Aruna#, 17, Junior, Christos Velmachos#, 17, Junior, Laval Senior Academy, Laval, Quebec, Canada, T: Heather Mcpherson

CHILE

Santiago, Chile, CHL003, Fundación Club Ciencias Chile

- *ENEV030** **Bean Bags Made Out of Recycled Textiles With QR Codes as Didactic Tools in the Environmental Transformation of Fashion in Chile**
Antonia Llanos, 16, Junior, Kingston College Concepcion, Concepcion, Bio Bio, Chile, T: Jorge Zurita

CHINA

Beijing, China, CHN001, China Adolescents Science and Technology Innovation Contest

- BEHA020** **Public Perception of the Revitalizing Value of Linear Cultural Heritage—An Empirical Study Based on the South China Historical Trails**
<https://projectboard.world/isef/project/162905>
Xuanyu Jin, 17, Junior, Guandong Experimental High School, Guangzhou, Guangdong, China, T: Zhengyong Hu

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- BEHA044** **Investigation and Optimization of Bus Network in Mountain Cluster Cities: A Case Study of Routes 530 and 551 by Chongqing Northern Public Transport Co**
<https://projectboard.world/isef/project/167524>
Zixiang Yan, 16, Junior, Middle School Affiliated to Southwest University, Chongqing, Beibei District, China, T: Yin Tang
- BMED025** **The Repurposing of Prednisolone: Inhibition on the Formation of Pancreatic Cancer Associated Fibroblasts (CAFs) Through Ets1-HMGXB3 Axis**
<https://projectboard.world/isef/project/163667>
Boyuan Hu, 17, Junior, The High School Affiliated to Renmin University of China, Beijing, Beijing, China, T: Ning Tao
- CELLO24** **Differential Mechanisms of LPA1 and LPA4 Receptors in Regulating Cell Migration**
<https://projectboard.world/isef/project/163668>
Huyang Zhang, 18, Senior, Beijing National Day School, Beijing, China, T: Xiangmei Dou
- CELLO25** **Iron Transporter Protein Slc22a17 Regulates Myelin Formation and Oligodendrocyte Development**
<https://projectboard.world/isef/project/163704>
Hongxi Zhang, 17, Junior, Tsinghua University High School, Beijing, China, T: Zhifei Li
- CHEM027** **Light-Driven Adaptive Camouflage Structures Based on Photoprogrammable Printing Ink**
<https://projectboard.world/isef/project/162873>
Shengjie Xu, 17, Junior, Shanghai Foreign Language School Affiliated to SISU, Shanghai, China, T: Haobin Zhu
- CHEM030** **Next-Generation Coating: Tunable Self-Healing Material for Intelligent Protection of Metal Surfaces**
<https://projectboard.world/isef/project/163663>
Shuyi Deng, 17, Junior, YK Pao School, Shanghai, Shanghai, China, T: Yifan Shen
- CHEM056** **Research on the Emulsification and Dispersion Effects of Natural Surfactants on Bird Dropping Stains**
<https://projectboard.world/isef/project/167185>
Zitong Fu, 17, Junior, High School Affiliated to Shanghai Jiao Tong University, Shanghai, China, T: Yafei Sun
- EBED017** **An Innovative Electronic Memory Aid Optimizing Fragmented Time for Enhanced Word Memorization**
<https://projectboard.world/isef/project/163099>
Zhaoyu Deng, 15, Sophomore, Chengdu Shude Xiejin High School, Chengdu, Sichuan, China, T: Qingsong Xiao
- EBED020** **Keeping an Eye on Children: A Swimmer-Following Vehicle Enabled by Edge Intelligence**
<https://projectboard.world/isef/project/163665>
Hongyi Qi, 17, Junior, Shanghai Starriver Bilingual School, Shanghai, China, T: Tun Lu
- ENBM024** **A Novel Non-labeled Visualization Platform of Cardiomyocyte Beating for Drug and Functional Gene Discovery**
<https://projectboard.world/isef/project/163585>
Jianyun Chen, 18, Junior, Montverde Academy, Shanghai, Shanghai, China, T: Yaozu Xiang
- ENBM027** **The Integration of Edge Impulse Platform and Orthopedic Medicine: A Knee Joint Disease Monitoring System Based on Artificial Intelligence**
<https://projectboard.world/isef/project/163706>
Shixuan Ying, 16, Junior, No. 2 High School of East China Normal University, Shanghai, Shanghai, China, T: Xiaojin Yu
- ENEVO34** **Removal of Microplastics by Waste Plastics Based on Fenton-like Reaction: Waste Treat Waste**
<https://projectboard.world/isef/project/163707>
Zhihan Yang, 17, Junior, No. 2 High School Attached to East China Normal University, Shanghai, Shanghai, China, T: Jinhe Zhou

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- ENEV064T** **Research on Duckweed Treatment, Sewage Purification and Ecological Restoration in Campus**
<https://projectboard.world/isef/project/167370>
Xiangquan Zhou, 17, Senior, Yudi Zhao, 18, Senior, YuXian Middle School, Hengyang City, Hunan Province, China, T: Ping Li
- ETSD024** **Development of Efficient Underwater Robot Based on Quadruped Structure of Sea Turtles and Fish Fin Hydrodynamics**
<https://projectboard.world/isef/project/162859>
Hanlin Li, 16, Junior, Shanghai Starriver Bilingual School, Shanghai, China, T: Yun Xu
- ETSD027** **Snake-Inspired Modular Multi-Segment Pneumatic Climbing Robot for External Pole-like Infrastructure Exploration**
<https://projectboard.world/isef/project/162904>
Leyu Zhang, 18, Senior, Shanghai World Foreign Language Academy, Shanghai, China, T: Dexu Lin
- ETSD028** **Engineering of a Bio-Inspired Tiltable Oscillating Fin Submersible Thruster**
<https://projectboard.world/isef/project/163098>

Zihao Liu, 17, Junior, The High School Affiliated to Beijing Normal University, Beijing, Beijing, China, T: Ya Zhang
- ETSD032** **Cross-Section Transformer: An Innovative Foldable Wheeled Robot With Flexible Configuration**
<https://projectboard.world/isef/project/163717>
Li Wei Chen, 17, Junior, Guangzhou Zhixin High School, Guangzhou, Guangdong, China, T: Zhicheng Liang
- ETSD040** **Development and Characterization of a Bionic Vine: A Novel, Flexible and Stable Wire-Driven Soft Robot**
<https://projectboard.world/isef/project/165666>
Junzheng Jia, 17, Junior, Beijing 101 Middle School, Beijing, Beijing, China, T: Zhibin Sun
- MATH019** **Bounds for Ramsey Numbers in an Extended Scenario**
<https://projectboard.world/isef/project/163666>
Siyu Chen, 17, Junior, Shanghai Pinghe Bilingual School, Shanghai, China, T: Longtu Yuan
- MATH025** **Linear Group of Seventh Chord Transformations**
<https://projectboard.world/isef/project/167177>
Songtianze Huang, 16, Junior, Hangzhou Foreign Languages School, Hangzhou, Zhejiang, China, T: Dongbo Lu
- MCRO016** **Synthesis of L-Lactic Acid Based on Conversion of CO₂ by Efficient Artificial Photosynthetic Communities**
<https://projectboard.world/isef/project/162858>
Yucheng Qiao, 17, Junior, No. 2 High School Attached to East China Normal University, Shanghai, Shanghai, China, T: Dengyun Wu
- PHYS030** **To Precess or To Retrogress: Dynamics and Anomalous Sway Precession of Euler's Magnetic Pendulum**
<https://projectboard.world/isef/project/163586>
Houxi Zhou, 17, Junior, The High School Affiliated to Renmin University of China, Beijing, Beijing, China, T: Yongping Zhang
- PHYS032** **Hearing Light: Light-Heat-Sound Transformation of a Jar and Its Thermodynamic Characteristics**
<https://projectboard.world/isef/project/163705>
Yincheng Zhou, 17, Junior, Nanjing Foreign Language School, Nanjing, Jiangsu, China, T: Weiwei Lin
- ROBO029** **Another Way To Swim: A Lightweight Bionic Frog Robot Based on Pneumatic System**
<https://projectboard.world/isef/project/163669>
Hongyi Lyu, 17, Junior, Shanghai Pinghe Bilingual School, Shanghai, China, T: Lucheng Wang
- ROBO030** **A Novel and Convenient Go-Games Win-Rate Estimation and Misplay Detection Model Based on Convolutional Neural Networks**
<https://projectboard.world/isef/project/163715>
Qingyuan Yao, 17, Junior, The High School Affiliated to Renmin University of China, Beijing, China, T: Yiping Wang

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- ROBO032 Tremor-Adaptive Assistive Dining Solution: A Robotic Arm Integrating Computer Vision and Active Stabilization for Enhanced Autonomy**
<https://projectboard.world/isef/project/163735>
Tianhao Shao, 17, Junior, Shanghai Starriver Bilingual School, Shanghai, China, T: Yi Gao
- SOFT025 A Lightweight Linguistic-Enhanced Word Embedding Framework for Medical Q&A Chatbot**
<https://projectboard.world/isef/project/163487>
Jiayi Zhou, 17, Junior, Shanghai High School International Division, Shanghai, China, T: Yong Yu
- TECA005 Revival and Restoration of Chinese Traditional Puppetry Videos Using Motion Video and Action Recognition Technology**
<https://projectboard.world/isef/project/163719>
Minghan Lu, 17, Junior, Shanghai Foreign Language School Affiliated to SISU, Shanghai, China, T: Haobin Zhu
- TECA006 Seals of Ancient Chinese Paintings: Recognition and Association Analysis Based on Deep Neural Networks**
<https://projectboard.world/isef/project/163725>
Tianlan Xu, 17, Junior, Hangzhou Foreign Languages School, Hangzhou, Zhejiang, China, T: Wei Chen
- Chengdu, China, CHN008, Sichuan Science Fair**
- BMED001 Evolutionary Insights Into the Stemness Paradox of Human Germ Cells and Cancer Cells**
<https://projectboard.world/isef/project/164299>
Kevin Xuan Lei, 17, Junior, Shanghai High School International Division, Shanghai, China, T: Hui Liao
- ENBM001 Tableware Jitter Elimination Technology for Parkinson's Patients**
<https://projectboard.world/isef/project/162412>
Susie Meng Di Yuan, 17, Junior, Dulwich College Beijing, Shunyi District, Beijing, China, T: Dominic Williams
- MATS001 A Self-Healing Flexible "Jelly-like" Zinc-Ion Battery: Empowering Wearable Devices and Safe Energy Storage**
<https://projectboard.world/isef/project/162413>
Jonathan Xufeng Hu, 16, Junior, Shanghai High School International Division, Shanghai, China, T: Min Yang
- PHYS001 Magnetic Field-Assisted Nanopatterning of Two-Dimensional Materials for Future Electronics**
<https://projectboard.world/isef/project/162409>
Aimee Yixuan Mu, 15, Sophomore, Shanghai High School International Division, Shanghai, China, T: Hui Liao
- ROBO002 Sign Language Recognition-Enabled Robotic Companion for Enhanced Communication With the Deaf-Mute**
<https://projectboard.world/isef/project/162438>
Zhekai Shen, 16, Sophomore, Shanghai Foreign Language School Affiliated to SISU, Shanghai, China, T: Shoubo Lu

CHINA, HONG KONG SPECIAL ADMINISTRATIVE REGION

Hong Kong, China, Hong Kong Special Administrative Region, HKG001, Hong Kong S&T Invention Contest

- CHEM005T Heavy Metal Ions Adsorption and Biofilm Production by Nanocellulose Synthesized From Sugarcane Bagasse**
<https://projectboard.world/isef/project/162487>
Ho Suet Hilary Law, 17, Senior, Yuen Ching So, 17, Senior, Si Ching Chan, 18, Senior, St. Paul's Convent School, Hong Kong, China, Hong Kong Special Administrative Region, T: Tara Lam

Finalist Directory

- MATS003T Antimicrobial Edible Bio-Disposables of Kombucha of Fruit Skins With Chitosan Coating**
<https://projectboard.world/isef/project/162366>
Yau Nam Choi, 18, Senior, Ka Hei So, 18, Senior, Kin Kwan Ng, 17, Senior, Carmel Pak U Secondary School, Hong Kong, China, Hong Kong Special Administrative Region, T: Yuen Yu Ip
- ROBO004 A RFID-Based Traffic Control System (MPCRS) Suited for Ambulance**
<https://projectboard.world/isef/project/162405>
Chi Tang Tsui, 18, Junior, CNEC Christian College, Hong Kong, NT, China, Hong Kong Special Administrative Region, T: Siu Fung Lau
- TMED005 MMRTD: Multi-Sensory Mixed Reality Therapy for Dementia**
<https://projectboard.world/isef/project/162488>
Ingrid Wai Hin Chan, 17, Senior, German Swiss International School (Hong Kong), Hong Kong, China, Hong Kong Special Administrative Region, T: Patrick McGuiggan

CHINA, MACAO SPECIAL ADMINISTRATIVE REGION

- Macao, China, Macao Special Administrative Region, MAC001, Macao Region Science Fair**
- CBIO001T Deep Learning-Based Microscope Image Analysis for Cell Viability Estimation in MTT Assays**
<https://projectboard.world/isef/project/162406>
Ka Chon Sun, 18, Junior, Wa Kit Un, 17, Junior, Kin Fai Kelvin Liang, 16, Junior, Kao Yip Middle School, Macao, China, Macao Special Administrative Region, T: Wai Lam Chao
- EGSD002 One-Step Synthesis of Amorphous ZnP2 Composite Anode Promoting the Fast-Charging Performance in Li-Ion Batteries**
<https://projectboard.world/isef/project/162369>
Pok Hei Leong, 16, Junior, Pui Ching Middle School, Macao, China, Macao Special Administrative Region, T: Ka Kong Chan
- ENEV002T Autonomous Ecosystem Surveillance Vehicle: An Autonomous Aquatic Environmental Patrol Boat Aimed at Reducing Current Capability Gaps in Aquatic Bio-Security Sector by Realtime Data Transmission**
<https://projectboard.world/isef/project/162402>
Wang Hei Lei, 16, Sophomore, Pok Man Han, 15, Sophomore, Chit Bryan Lao, 16, Junior, Pui Ching Middle School, Macao, China, Macao Special Administrative Region, T: Kun Wa Lao
- ROBO003 Trojan Microrobots for Digestive Tract Treatment**
<https://projectboard.world/isef/project/162375>
Ziheng Xu, 16, Junior, Pui Ching Middle School, Macao, China, Macao Special Administrative Region, T: Leng Ieng Leong
- ROBO006T NeRF Technology: An Economic Approach to 3D Scanning**
<https://projectboard.world/isef/project/162408>
Chan I Sun, 18, Senior, Seng Chon Chang, 16, Junior, Man Kin Ho, 17, Senior, Instituto Salesiano, Macao, Macao, China, Macao Special Administrative Region, T: Yu Hua Xiao
- ROBO007T Advancing Pet Face Recognition: A Deep Learning Approach With a Large-Scale Dataset**
<https://projectboard.world/isef/project/162407>
Nok Him Isaac Lau, 14, Freshman, Hiu Yan Lin, 16, Freshman, Kao Yip Middle School, Macao, China, Macao Special Administrative Region, T: Chi Chon Ng

CHINESE TAIPEI

- Taipei, Taiwan, TWN001, Taiwan International Science Fair**
- ANIM014T Endocannabinoids: From *Drosophila* Physiology and Autophagy Regulation to Therapeutic Insights**
<https://projectboard.world/isef/project/162439>
Yi-Tzu Chang, 17, Junior, Min-Hong Chang, 16, Junior, Taipei First Girls High School, Taipei City, Chinese Taipei, T: Guang-Chao Chen

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- ANIM018T** **Bridging the Evolutionary Divide: Gastrovascular Flows in Polyclad Flatworms**
<https://projectboard.world/isef/project/162061>
Yu-Ning Chiu, 18, Senior, Po-Chun Hsu, 18, Senior, Yu-Hsun Chang, 18, Senior, National Experimental High School At Hsinchu Science Park, Hsinchu, Taiwan, T: Wei-Ban Jie
- BEHA012T** **Searching for “Magic Pill”: A Novel Adenosine Modulator in the Treatment of Schizophrenia and Stress-Related Disorders**
<https://projectboard.world/isef/project/162441>
Yu-Pin Tsao, 18, Senior, Shao-Chieh Fu, 17, Senior, Taipei Municipal Chien Kuo High School, Taipei City, Taiwan, T: Wen-Sung Lai
- CHEM019** **Development of a Photocaged Cathepsin B Inhibitor With Increased Lysosome Uptake and Light-activated Biological Functions**
<https://projectboard.world/isef/project/162622>
Jasmine Lin, 16, Junior, Taipei First Girls High School, Taipei City, Chinese Taipei, T: Tsung-Shing Wang
- EAEVO27** **Surface Changes in Southern Ocean and the Link to Deep Carbon Reservoir Expansion During 2.7 Ma**
<https://projectboard.world/isef/project/162512>
Pei-Tzu Wu, 18, Senior, Taipei First Girls High School, Taipei City, Chinese Taipei, T: Li Lo
- ENEVO13T** **Coupling High-Efficient Redox Flow Desalination and Rejected Brine Toward Mineralization of CO₂**
<https://projectboard.world/isef/project/162442>
Hsi-Chih Chu, 17, Junior, Yun-Chieh Chao, 17, Junior, Chung-Ling Ku, 17, Junior, Taipei Fuhsing Private School, The Affiliated Senior High School of National Taiwan Normal University, Taipei City, Chinese Taipei, T: Chin-Hua Wang
- MATH015T** **Counting Visible Points on Square Lattice by Arithmetic Functions With Asymptotic Behavior**
<https://projectboard.world/isef/project/162124>
Jih-An Hsu, 17, Junior, Pin-Hua Lin, 17, Junior, National Pingtung Senior High School, Pingtung, Pingtung, Taiwan, T: Kung-Ming Chang
- MATS020T** **Functional Ceramic Materials of Waste Incense Ash for Acid Rain Neutralization and CO₂ Fixation**
<https://projectboard.world/isef/project/162122>
Hsin-Yu Chang, 18, Senior, Yung-Tai Lin, 18, Senior, Taichung Municipal Dajia Senior High School, Taichung City, Taichung City, Taiwan, T: Chia Nan Huang
- PHYS024** **The Key Factors Boosting Star Formation Rates of Galaxies**
<https://projectboard.world/isef/project/162125>
Hsin-Yi Yeh, 17, Junior, Taipei First Girls High School, Taipei City, Chinese Taipei, T: Ting-Wen Lan
- PLNT017** **Rising Temperature, Falling Immunity: Plant Stomatal Defense Relies on Heat Sensitive Protease**
<https://projectboard.world/isef/project/162445>
Ching-Min Lin, 17, Senior, Taipei Municipal Chien Kuo High School, Taipei City, Taiwan, T: Yet-Ran Chen
- PLNT018** **Imaging, Expression Profiling, and Modeling: Systematic Approaches Integrated To Investigate BPC Regulation of the Circadian Clock**
<https://projectboard.world/isef/project/162444>
Shao-Chi Tsai, 18, Senior, Taipei Municipal Chien Kuo High School, Taipei City, Taiwan, T: Huang-Lung Tsai
- SOFT019** **Back Propagation Neural Network-Based Framework for Unknown Malware Detection**
<https://projectboard.world/isef/project/162557>
Yi-Jhe Chen, 18, Senior, The Affiliated Senior High School of National Taiwan Normal University, Taipei City, Chinese Taipei, T: Shun-Wen Hsiao

Finalist Directory

CZECH REPUBLIC

Srch, Czech Republic, CZE001, Students' Professional Activities (SPA)

BCHM002 Reprogramming the Luciferin-Substrate Activity in NanoLuc Luciferase

<https://projectboard.world/isef/project/162399>

Tereza Sustrava, 19, Junior, Gymnazium Brno, Trida Kapitana Jarose, Prispevkova Organizace, Brno, South Moravian Region, Czech Republic, T: Martin Marek

BMED002 Strengthening Cardiomyocytes: Proliferation Independent Effects of Mechano-Transducer YAP1

<https://projectboard.world/isef/project/162361>

Katerina Jirakova, 18, Junior, Gymnazium Brno, Trida Kapitana Jarose, Prispevkova Organizace, Brno, South Moravian Region, Czech Republic, T: Vladimir Vinarsky

CHEM004 Labelling of Antibodies by Nanoparticles and Their Utilization in the Analysis of the Biological Samples

<https://projectboard.world/isef/project/162501>

Eliska Konecna, 18, Junior, Gymnazium Brno-Reckovice, Brno, Jihomoravsky Kraj, Czech Republic, T: Michal Kunak

Praha 4, Czech Republic, CZE002, AMAVET Czech Republic Science Fair

CBIO058 Intraoperative Brain Tumor Detection Using Raman Spectroscopy Data and Machine Learning

<https://projectboard.world/isef/project/168297>

Nikolas Pippal, 17, Sophomore, Gymnazium Olomouc-Hejcin, Olomouc, Olomoucky Kraj, Czech Republic, T: Sarka Richterikova

ETSD068 Utilisation of Quantum Computers in Simulations of Heat Transfer in Flowing Fluids

<https://projectboard.world/isef/project/168004>

Matej Sicer, 18, Senior, The St. Cyril and Methodius Comprehensive School and Pedagogical High School Brno, Brno, Brno-Mesto, Czech Republic, T: Michal Krelina

DENMARK

københavn, Denmark, DNK001, Unge Forskere

ENEV001 Aquadynamic Coating

<https://projectboard.world/isef/project/162381>

Alexandra Maria Cotiga, 18, Junior, Bagsvaerd Kostskole og Gymnasium, Bagsvaerd, Region Hovedstaden, Denmark, T: Julie Wittrup

EGYPT

North Coast & West of Egypt, Egypt, EGY002, Bibliotheca Alexandrina Science and Engineering Fair -Alexandria

CBIO027T Quantum Helix: DNA Maze Solved!!

<https://projectboard.world/isef/project/165411>

Mariem Mohamed Hassan Soliman El-Kady, 16, Sophomore, Malak Maged Abowady, 16, Sophomore, STEM School of Alexandria, Alexandria, Egypt, T: Eman Ali

EBED030T Development of an Advanced Life-Jacket to Enhanced the Sea Survival

<https://projectboard.world/isef/project/165683>

Mohamed Hany Ali, 17, Senior, Gasser Amr Ali, 17, Senior, Dakahlia STEM School, Gamasa, Dakahlia, Egypt, T: Mohamed Bastawissi

ENBM042T A Deep Learning-Base Approach for Ovarian Cancer Subtype Classification

<https://projectboard.world/isef/project/165693>

Ahmed Kadry Naser, 17, Junior, Ahmed Hanafy Abdou, 17, Junior, Kafr EL-Sheikh STEM School, Kafr EL-Sheikh, Egypt, T: Ali Zaki El Daliy

MATS034 Synthesis of a Novel Nanostructures From Zn-ZnO/MoS2 for Effective Removal of High-Concentration Dyes and Bacteria From Water Within a Record Time Alongside Green Hydrogen Production

<https://projectboard.world/isef/project/165675>

Amr Mahmoud Ghazi, 17, Senior, EL-Shaheed-Oudah High School, Shirben, Dakahylia Governorate, Egypt, T: Ahmed Abd-Elgani

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- TECA007T** **Dual Sensory**
<https://projectboard.world/isef/project/165410>
Jana Mohamed Hassan, 17, Junior, Basmala Mohamed Shredh, 16, Junior, Kafr EL-Sheikh STEM School, Kafr EL-Sheikh, Egypt, T: Elsayed Rashwan
- TMED045T** **Lifestyle Synchronization of Medullary Sponge Kidney Patients**
<https://projectboard.world/isef/project/165694>
Adham Mohammed AlDakrany, 17, Senior, Mohamed Ahmed Seddik, 17, Senior, Kafr EL-Sheikh STEM School, Kafr EL-Sheikh, Egypt, T: Elsayed Rashwan
- Cairo, Egypt, EGY001, Egypt Science and Engineering Fair–Cairo & Upper Egypt**
- BCHM024T** **Phosphine, Not a Toxin: A Newly Designed Capsule Encapsulating Aluminum Phosphide With Its Antidote; Preserving the Function of Celphos While Ensuring Instant Supportive Treatment**
<https://projectboard.world/isef/project/166784>
Anas Elmekawi, 18, Senior, Mohamed Walid Mohamed, 18, Senior, Sharkya STEM School, Zagazig, Sharkia, Egypt, T: Rabab Diab
- BEHA037** **ArabLexify: Elevating Early Dyslexia Diagnosis in Arabic-Speaking Children Ages 6–12 by Utilizing Accessible Digital Screening Tool**
<https://projectboard.world/isef/project/166782>
- # Mohamed Ahmed Sakr, 18, Senior, Obour STEM School, Obour, Kalubya, Egypt, T: Eman Seif
- BEHA045** **Harmony: A Remote AI-Based Monitoring and Prediction System for Manic and Depression Episodes in Bipolar Disorders**
<https://projectboard.world/isef/project/167768>
Sahar Ashraf Ahmed, 15, Sophomore, City Schools, Sohag, Egypt, T: Moshira Ragi
- CHEM054** **Utilizing Polyurethane Foam and Nano-Activated Carbon-Based Composite for Sustainable Eco-Friendly Oil Spill Remediation**
<https://projectboard.world/isef/project/166781>
Jumana Ahmed Ragab, 18, Junior, Cairo Manara Language School for Girls Secondary, Nasr City, Cairo, Egypt, T: Noura Abdel Hamid
- EAEV073T** **Sustainable Agricultural Irrigation Using Hydrogel**
<https://projectboard.world/isef/project/167036>
Youssef Abdelaal Abdelaal, 17, Junior, Yassin Yasser Rizk, 17, Junior, Obour STEM School, Obour, Kalubya, Egypt, T: Nahed Hassan
- ENBM055T** **Myocardial Infarction Detection System ECG-Based That Integrates Signal Processing and Machine Learning for Early Diagnosis**
<https://projectboard.world/isef/project/166778>
Mariam Mohsen Hamouda, 16, Junior, Habiba Samir Abdalla, 16, Junior, The Red Sea STEM High School, Hurghada, Red Sea, Egypt, T: Malaak Fahmy
- SOFT045T** **Mouseless Mouse: Enhancing Digital Interaction for Individuals With Limited Hand Mobility via Amplify and Smooth Extracted Data From Head Movement Using Real-Time Facial Tracking and Deep Learning**
<https://projectboard.world/isef/project/167037>
Mohamed Maher Abdalla, 16, Junior, Mohamed Hemdan Hemdan, 16, Junior, Obour STEM School, Obour, Kalubya, Egypt, T: Amin Helmy Saad
- TMED057** **Metabolomics Unveils Novel Biomarkers for Early Diagnosis of Kidney Failure: Exploring the Therapeutic Effect of Naringenin and *Cymbopogon proximus* Essential Oil Combination**
<https://projectboard.world/isef/project/166779>
Jana Hosam Abd El Wahab, 19, Senior, Maadi STEM School for Girls, Cairo, Egypt, T: Aliaa El Mosallamy
- TMED058** **AEYE: A Novel Approach for the Detection of Diabetic Retinopathy Using a Non-Mydriatic Handheld Fundus Camera and a New Transformer**
<https://projectboard.world/isef/project/166780>
Mohamed Ashraf Saady, 17, Junior, Sharkya STEM School, Zagazig, Sharkia, Egypt, T: Ahmed Zaidan

Finalist Directory

ESTONIA

Tartu, Estonia, EST001, Estonian Young Scientist Contest

CHEM044T Mechanochemical Conversion of the Persistent Organic Pollutant Trichloropropane to a Platform Chemical Utilizing the Grignard Reaction

Fred Jarv, 19, Senior, Jaagup Kuuskla, 18, Senior, Noo Reaalgümnaasium, Noo, Tartumaa, Estonia, T: Aivar Vinne

ENEVO47T Turbine Filter

<https://projectboard.world/isef/project/165062>

Mihkel Kuusik, 19, Senior, Peeter Kuusik, 16, Sophomore, Poltsamaa Co-Educational Gymnasium, Poltsamaa, Jogevasmaa, Estonia, T: Urmas Kuusik

GEORGIA

Tbilisi, Georgia, GEO001, Georgian Science Project Olympiad

CHEM002T AFM1 in Milk and Dairy Products

<https://projectboard.world/isef/project/162336>

Iakob Saparashvili, 16, Sophomore, Mariam Bukhaidze, 15, Sophomore, Nikoloz Abashidze, 16, Junior, Georgian-American High School, Tbilisi, Georgia, T: Darejani Iremashvili

MATH001T Solving High-Degree Equations Using Modern Technology

<https://projectboard.world/isef/project/162480>

Giorgi Chomakhidze, 17, Senior, Nikoloz Kuloshvili, 15, Sophomore, Aleksandre Nazgaidze, 16, Sophomore, Georgian-American School, Tbilisi, Georgia, T: Tamar Tsereteli

TECA010T Quantum Glitch

<https://projectboard.world/isef/project/162306>

Ani Gogia, 17, Senior, Archil Beraia, 16, Junior, Vakhtang Gogia, 16, Junior, Georgian-American School, Tbilisi, Georgia, T: Goga Suknidze

GERMANY

Hamburg, Germany, DEU001, Jugend Forscht

BMED051 Characterization of Pd-L1 in a Barrett's Esophageal Adenocarcinoma Cell Culture Model

<https://projectboard.world/isef/project/165883>

Elisabeth Lena-Maria Brauer, 19, Senior, Gymnasium Saint Augustin, Grimma, Saxony, Germany, T: Rene Thieme

CBIO032 Alzheimer's Recognition Using Artificial Intelligence

<https://projectboard.world/isef/project/166520>

Niklas Bennewitz, 18, Senior, Romain-Rolland-Oberschule, Berlin, Germany, T: Angela Koehler-Kruetzfeldt

CHEM016T BioPower: A Biochemical Redox-Flow Battery

<https://projectboard.world/isef/project/162426>

Julia Marie Trapp, 16, Sophomore, Alexander Christian Trapp, 19, Senior, Landheim Ammersee, Schondorf am Ammersee, Bavaria, Germany, T: Thorwald Feuerabendt

EGSD016 Improving Aerodynamic Characteristics of Helical Wind Turbines With Modified Blades

<https://projectboard.world/isef/project/162076>

Anne Marie Bobes, 17, Senior, Markgraf-Albrecht-Gymnasium Osterburg, Osterburg, Germany, T: Michael Mueller

EGSD026T Photovoltaic on Fleek! Power Optimization for Photovoltaic Systems Using Power Equalization

<https://projectboard.world/isef/project/165665>

Stefanie Eski, 18, Senior, Babett Ludwig, 18, Senior, Florian Bruetsch, 18, Senior, Gymnasium Spaichingen, Spaichingen, Otto-Hahn Gymnasium Tuttlingen, Tuttlingen, Baden-Württemberg, Germany, T: Helmut Ruf

Finalist Directory

- *ETSD030** **A Parameter Study on Metal Fused Filament Fabrication Using 17-4PH**
Franka Bauer, 19, Senior, Landesschule Pforta, Naumburg, Saxony-Anhalt, Germany,
T: Thomas Brill
- MATH012** **Integration of Sequences**
<https://projectboard.world/isef/project/162456>
Emma Rueter, 18, Senior, Leibniz-Gymnasium Berlin, Berlin, Germany, T: Lisa Rüter
- PHYS005** **Determination of the Hubble Constant by 1a Supernovae**
<https://projectboard.world/isef/project/162507>
Maximilian Alt, 18, Senior, Privates Johannes-Gymnasium, Lahnstein, Rhineland-Palatinate, Germany, T: Norbert Fisseni
- PHYS026T** **Thermally Triggered Motion of Pyrolytic Graphite on a Magnet Array**
<https://projectboard.world/isef/project/162329>
Katharina Austermann, 19, Senior, Charlotte Sophie Klar, 19, Senior, Humboldt-Gymnasium Berlin, Berlin, Germany, T: Markus Roser

GHANA

- Accra, Ghana, GHA001, MISE Research Program**
- ROBO067T** **Deep Learning-Based Brain-Computer Interface for Motor Actions**
<https://projectboard.world/isef/project/167319>
Aryan Ajit Patil, 16, Junior, Samaira De, 16, Sophomore, Lincoln Community School, Accra, Greater Accra, Ghana, T: Pravish Sainath

GUAM

- Piti, Guam, TEGU01, Guam Island-Wide Science Fair**
- BEHA049** **Auditory Effect of Fibonacci and Lucas Sequences on Short-Term Memory**
<https://projectboard.world/isef/project/167860>
Kevin Choi, 18, Junior, St. John's School, Upper Tumon, Guam, T: Arlene Chua
- CHEM063** **A Study of the Power Generation Efficiency of Natural Dyes in Daily Life on Dye-Sensitized Solar Cell (DSSC) According to Chemical Structures**
<https://projectboard.world/isef/project/167818>
Hoyoung Grace Kang, 16, Sophomore, St. John's School, Upper Tumon, Guam, T: Christine McCormic

HUNGARY

- Budapest, Hungary, HUN001, National Scientific and Innovation Olympiad**
- EBED001** **Design of Traction Inverter With SiC Semiconductors**
<https://projectboard.world/isef/project/162313>
Szilveszter Milan Laskai, 19, Senior, Fazekas Mihaly High School, Debreceni, Hungary, T: Akos Csepregi
- ROBO001** **Human Body Key Point Estimation Based on FMCW Radar Images**
<https://projectboard.world/isef/project/162324>
Adam Vajda, 18, Senior, ELTE's Radnoti Miklos Affiliated Secondary School, Budapest, Hungary, T: Robert Vajda

INDIA

- NEW DELHI, India, INDO01, IRIS (Initiative for Research and Innovation in STEM)**
- ANIM009** **Traditional Eubiotics in Broiler Chicken Production: A Step Toward One Health**
<https://projectboard.world/isef/project/162411>
Niranjani R, 17, Senior, Kendriya Vidyalaya, Dindigul, Tamil Nadu, India, T: Abdul Jaleel P.P
- BMED020** **Early Detection of Ankylosing Spondylitis Using Analysis of Breathing Patterns With Neural Networks**
<https://projectboard.world/isef/project/162591>
Jayveer Sachin Kochhar, 15, Sophomore, Jamnabai Narsee International School, Mumbai, Maharashtra, India, T: Rekha MP

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- BMED024** **Volumetric Segmentation and Multimodal Classification of Brain Tumors Using Point Sampling and 3D CNNs**
<https://projectboard.world/isef/project/163447>
Dhairya Veer Singh, 18, Senior, Vasant Valley School, New Delhi, Delhi, India,
T: Swaty Nag
- CBIO008** **A Novel Multi-omics Based Data Integration Framework for Biological Age Prediction and Correlation With Chemotherapy Dosage for Personalized Therapeutics**
<https://projectboard.world/isef/project/162364>
- # Vanshika Digania, 17, Junior, Bharatiya Vidya Bhavan's R.K. Sarda Vidya Mandir, Raipur, Chhattisgarh, India, T: Sushil Pandey
- CBIO031** **GraphChem: A Soft Graph Mixture of Experts Based Adversarial Variational Spectral Graph Autoencoder for de novo Drug Design and Other Pharmacological Objectives**
- # Agnij Moitra, 16, Junior, Amity International School - Saket, New Delhi, Delhi, India,
T: Dr. Alka Saxena
- EAEVO38T** **A Comparative Study of Indigenous Fishes in Paddy Fields for Pest Control and Mosquito Control in Avitanallur Village**
<https://projectboard.world/isef/project/163103>
Neeraj N, 16, Junior, Adithyan U S, 17, Junior, GHSS Avitanallur, Kozhikode, Kerala, India,
T: Sheena T C
- EBED010T** **Real-Time Refractive Visual Aberration Correction Display Using Dynamic Point Spread Function-Based Deconvolution**
<https://projectboard.world/isef/project/162312>
Dhruv Ramu, 17, Junior, Akhilesh Balaji, 16, Junior, Neev Academy, Bengaluru, Karnataka, India, T: Parull Khanna
- ENBM006** **Gyno-Genix: A Quadrupled Biosensor for the Early Screening of Multiple Gynecological Problems**
<https://projectboard.world/isef/project/162355>
- # Soumya Agrawal, 17, Junior, Bharatiya Vidya Bhavan's R.K. Sarda Vidya Mandir, Raipur, Chhattisgarh, India, T: Sushil Pandey
- ENBM040** **SAKSHI –Smartphone Augmented Cervical Selfie: An Innovative Tool for Low-Resource Settings for the Prevention of Cervical Cancer**
<https://projectboard.world/isef/project/165405>
Avni Gadodia, 14, Freshman, Sardar Patel Vidyalaya, New Delhi, Delhi, India,
T: Vidhu Narayanan
- ENEVO15T** **Prototypic Volumetric Gradient Sensor for Optimizing Polyethylene Terephthalate Recycling by Pultrusion**
<https://projectboard.world/isef/project/162479>
Sagar Kumar, 18, Senior, Monish J, 17, Junior, Loyola School, DBMS English School, Jamshedpur, Jharkhand, India, T: Tahmina Akhtar T: Hirk Biswas
- ENEVO36** **A New Cost-effective Adsorbent Device for Civic Remediation To Reduce Lead, Copper and Cadmium in Surface Water Runoff**
<https://projectboard.world/isef/project/164245>
Kshemaahna Nagi, 18, Senior, Vidyashilp Academy, Bengaluru, Karnataka, India,
T: Kalai Selvi
- ETSD044** **Design and Analysis of Non-Pneumatic Tires With Hybrid Metamaterial Spoke: A Novel Approach**
<https://projectboard.world/isef/project/166521>
Siddhant D. Shah, 18, Junior, Bhagawan Mahavir International School, Surat, Gujarat, India, T: Gnanu Bhatt
- ETSD054** **Humanly Operable Programmed Exerciser**
<https://projectboard.world/isef/project/166958>
Shorya Bhasin, 18, Senior, Shri Ram School - DLF Campus, Gurugram, Haryana, India,
T: Nitin Rastogi
- MATH010** **Detecting Causality in 2+1 Dimension Spacetimes Using Symplectic Qandles**
<https://projectboard.world/isef/project/162353>
Ayush Jain, 17, Senior, Shri Ram School - Aravali Campus, Gugaon, Haryana, India,
T: Vladimir Chernov

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- MATS004** **Enhancing Strength of 3D Printed Objects Through Composite Mesh Reinforcement**
<https://projectboard.world/isef/project/162527>
Mayank Narayan, 17, Senior, Delhi Public School, Bhilai, Bhilai, Chhattisgarh, India,
T: Rajdeep Sen
- PHYS041** **Variable Star Classification Using Light Curve Analysis and Hybrid Quantum Algorithms**
<https://projectboard.world/isef/project/166525>
Aarush Suryanarayanan, 16, Sophomore, Devi Academy Senior Secondary School,
Chennai, NULL, India, T: Soundararajaperumal S
- PLNT027** **Biological Studies of Bioactive Compounds From Fox Tail Palm *Wodyetia bifurcata* L. and *Nerium oleander* L. Against the Feeding Behaviour and Vectoral Transmission of Hemipteran Insects Whiteflies**
<https://projectboard.world/isef/project/163584>
Aditya Srivastava, 17, Junior, DLF Public School, Ghaziabad, Uttar Pradesh, India,
T: Kalpana Joshi
- SOFT013** **Remote Detection and Severity Classification of Parkinson's Disease Using Markerless Videos in Uncontrolled Settings**
<https://projectboard.world/isef/project/162077>
Arav Dhoot, 18, Senior, Neerja Modi School, Jaipur, Rajasthan, India, T: Manasvi Mathur
- TMED013** **A Blood-Based Transcriptomic Algorithm and Scoring System for Alzheimer's Disease Detection**
<https://projectboard.world/isef/project/162481>
Prisha Goyal, 15, Sophomore, SCOPE Public School, Bhopal, Madhya Pradesh, India,
T: Neha Arya
- TMED014** **Wound Simulator: An *in vitro* Study of a Novel Biological Growth Factor Concentrate on Oral Mucositis**
<https://projectboard.world/isef/project/162354>
Keerthana Rajesh, 16, Junior, Greenwood High International School Bangalore,
Bangalore, Karnataka, India, T: Jyothsna Rao

INDONESIA

Jakarta Selatan, Indonesia, IDN002, Olimpiade Penelitian Siswa Indonesia

- BMED005T** **Aquatic Biocompound-Based Functional Instant Porridge for Ischemic Stroke Survivors**
<https://projectboard.world/isef/project/162618>
Komang Kirana Ardhia Pramesti, 17, Senior, I Putu Thio Mahapradana, 17, Senior, State High School SMAN 3 Denpasar, Denpasar, Bali, Indonesia, T: Made Rai Rahayu
- ENEV009** **Reduction of Gas Emission Through CO Converter and Gas Absorber System on Motorcycle Exhaust**
<https://projectboard.world/isef/project/162620>
Jannatan Hisankusuma, 17, Junior, SMA Negeri 3 Yogyakarta, Yogyakarta, D.I. Yogyakarta, Indonesia, T: Supriyana Supriyana
- PLNT011** ***In vitro* Mutagenesis of Sweet Potato (*Ipomea batatas*) Using Colchicine for Crop Improvement**
<https://projectboard.world/isef/project/162584>
Charis Tandiono, 16, Junior, British School Jakarta, Jakarta, Jakarta, Indonesia,
T: Sri Hartati
- TMED008T** **Antimalarial Activity of *Bambusa vulgaris* Leaf Extract and Artemisinin Combination**
<https://projectboard.world/isef/project/162619>
Muhammad Nafis Yusa', 18, Senior, Agnia Khotimatuzzahro Fuadah, 18, Senior, MAN 2 Tasikmalaya, Tasikmalaya, West Java, Indonesia, T: Eneng Mahmudah

Finalist Directory

IRAQ

Erbil, Iraq, IRQ001, INPO (Iraq National Project Olympiad)

BEHA036T How Does a Social Miracle Function?

<https://projectboard.world/isef/project/166596>

Nehir Duruk, 17, Junior, Irmak Duruk, 17, Junior, Rise International School Erbil, Erbil, Iraq,
T: Iclal Sezer

EAEV100T Water Purification Using Plants

<https://projectboard.world/isef/project/168323>

Abdullah Saud Sukkar, 17, Junior, Jaafar Hameed, 17, Junior, Basra Ishik Boys' College,
Basra, Iraq, T: Karzan Mustafa

ETSD051 Empowering Blind Navigation Through Innovative Sensor Technology

<https://projectboard.world/isef/project/166791>

Soz Jotyar, 14, Freshman, Slemani International Girls' Secondary School, Sulaymanayah,
Kurdistan, Iraq, T: Rebin Fattah

MATS055 Microwave Absorption Using Nanoparticles

<https://projectboard.world/isef/project/168322>

Yumna Faez Faez Ibrahim, 14, Freshman, Ishik Ronaki International School, Erbil, Iraq,
T: Vian Mustafa Khalil

SOFT034 LinkDev: A Programming Language That Combines All Programming Languages Into One Designed To Boost Coding Experience

<https://projectboard.world/isef/project/166528>

Ahmed Mudhafar Hashim, 16, Junior, Baghdad Ishik Boys College, Baghdad, Iraq,
T: Mohammedalfatih Mohammed

IRELAND

Dublin 16, Ireland, IRL002, SciFest

ENEVO16 Global Carbon Sinks: Remote Sensing for Peatland Restoration

<https://projectboard.world/isef/project/162585>

Jack Shannon, 18, Senior, Clongowes Wood College SJ, Clane, Kildare, Ireland,
T: Yvonne Nolan

Dublin, Ireland, IRL001, BT Young Scientist & Technology Exhibition

SOFT054T Implementing a Conversational Memory Architecture and Semantic Search Into Large Language Models To Enhance the Capabilities of Personal Voice Assistants

<https://projectboard.world/isef/project/168188>

Franciszek Jozef Mudrak, 16, Sophomore, Liam Joseph Fuller, 16, Sophomore, Stratford
College, Rathgar, Dublin, Ireland, T: Helen O'Kelly

ISRAEL

Jerusalem, Israel, ISRO01, The Israeli Young Scientists Contest

CBIO055 Developing Filter&Fire and Integrate&Fire Neural Networks To Assess the Role of Dendritic Cable Filtering

<https://projectboard.world/isef/project/168284>

Nadav Mihov, 17, Junior, The Hebrew University Secondary School, Jerusalem, Israel,
T: Orli Metzger-Cahana

CBIO056 RE:IN Modeling of the Endomesoderm GRN of Purple Sea Urchins and Developing Tools for Efficient GRN Modeling

<https://projectboard.world/isef/project/168285>

Daniel Grimland, 16, Junior, Begin High School, Rosh HaAyin, Israel, T: Dorit Gamliel

CBIO057 Gut Microbiome-Cardiometabolic Disease Spectrum Association Analysis Using Machine Learning

<https://projectboard.world/isef/project/168286>

Gil Ramot, 17, Junior, Ilan Ramon, Hod Hasharon, Central District, Israel, T: Dalia Gal

MATS054 The Future of Colors— The Unique Mechanism Underlying the Creation of Colors and Their Change in the Body of the Blue-Tailed Damselfly

<https://projectboard.world/isef/project/168314>

Lahav Hyitner, 18, Senior, Branco Weiss High School, Mazkeret Batya, Israel,
T: Dvir Fridman

Finalist Directory

ITALY

Milano, Italy, ITA001, I Giovani e le Scienze

ENEVO49T Revolutionizing Coconut Waste: Transforming Waste Into Resource

<https://projectboard.world/isef/project/165678>

Emma Lenti, 18, Senior, Alessio Pieretti, 18, Senior, Amanda Garofoli, 18, Senior, Istituto Istruzione Superiore Galileo Galilei, Jesi, Italy, T: Massimiliano Loroni

ETSD043T Light Now

<https://projectboard.world/isef/project/166127>

Ruggero Cadamuro, 16, Junior, Riccardo Sgoifo, 16, Junior, Viola Rizzatti, 16, Junior, ISIS Arturo Malignani Udine, Udine, Italy, T: Isabella Chiesa

PHYS051T Principles of Jet Propulsion: A Non-Standard Analysis of the Basic Formulas for Rocket Propulsion Leads to Surprising Results

<https://projectboard.world/isef/project/167094>

Matilde Mancini, 19, Senior, Gianluca Santini, 18, Senior, Liceo Scientifico Federigo Enriques, Livorno, Livorno, Italy, T: Fabrizio Santini

JAPAN

Tokyo, Japan, JPN002, Japan Science & Engineering Challenge

CBIO018 Analysis of the Relationship Between Missense Variants and Diseases

<https://projectboard.world/isef/project/162081>

Hinami Kadono, 17, Junior, MITA International School, Yoga, Setagaya-ku, Tokyo, Japan, T: Toshiyuki Tsuji

CHEM022T New Discovery of Conditions for Hydrogen Explosive Combustion in Platinum Foil

<https://projectboard.world/isef/project/162098>

Seiya Oba, 16, Sophomore, Kyotaro Shida, 17, Sophomore, Miyagi Sendai Daisan High School, Sendai, Miyagi-Pref., Japan, Miyagiken Sendai Daisan High School, Sendai-shi Miyagiken, Japan, T: Yusuke Sugawara

CHEM023 A Novel Pattern of Reactive Crystallization of Calcium Carbonate Formed in Agarose Gel

<https://projectboard.world/isef/project/162099>

Rei Sato, 18, Senior, Miyagi Prefectural Furukawa Reimei High School, Osaki City, Miyagi Prefecture, Japan, T: Michio Chiba

EGSD019T Novel Passive Radiative Cooler Which Combined Magnesium Oxide and Aluminum Foil

<https://projectboard.world/isef/project/162133>

Ami Endo, 16, Sophomore, Yuki Yagi, 16, Sophomore, Meika Umehara, 17, Sophomore, Shizuoka Kita High School, Shizuoka-City, Shizuoka-Pref., Japan, T: Yuji Takagi

ETSD020 Origami Chair: Always Accessible to Everyone, Everywhere

<https://projectboard.world/isef/project/162135>

Chiyo Nakatsuji, 17, Junior, Oin High School, Bunkyo-ku, Tokyo, Japan, T: Kimie Kuboyama

MATS022 Development of Water-Retaining Pavement Concrete Using Bamboo Fiber To Mitigate Urban Heat Island Effects

<https://projectboard.world/isef/project/162757>

Sara Nozue, 17, Junior, Ibaraki Prefectural Namiki Secondary School, Tsukuba-city, Ibaraki-Pref., Japan, T: Yuichiro Kogawa

MCRO013 Innovative Sustainable Bioplastic Production: Unleashing the Potential of Crustacean Waste Through a Novel Microbial Synthesis

<https://projectboard.world/isef/project/162080>

Towako Ikegami, 18, Junior, Kindai University Toyooka High School, Toyooka, Hyogo, Japan, T: Hirofumi Hara

PHYS023T Development of an Inexpensive, High-Performance, Easily-Assembled, Low-Dispersion Astronomical Spectrograph

<https://projectboard.world/isef/project/162100>

Hiroaki Yoshida, 18, Senior, Shotaro Kanetsuki, 16, Sophomore, Kohtarō Maeta, 17, Junior, National Institute of Technology, Yonago College, Yonago-City, Tottori-Pref., Japan, T: Akitsugu Takeuchi

Finalist Directory

- PHYS025** **A Proposal of Multidimensional Theory for Determining Electron Capacity Numbers in Atomic Entities of Other Dimensions**
<https://projectboard.world/isef/project/162137>
Sora Tazaki, 18, Senior, Shiga Prefectural Zeze High School, Otsu, Shiga, Japan,
T: Yoshihiro Kozai
- PLNT021** **Impact of Treading on Rice Growth: A Comparative Analysis Across Representative Varieties**
<https://projectboard.world/isef/project/162078>
Ryoko Ueno, 17, Junior, Notre Dame Seishin Gakuen Seishin Girl's High School, Kurashiki City, Okayama-Pref., Japan, T: Fukuto Tanaka
- Tokyo, Japan, JPN001, Japan Students Science Awards**
- ANIMO40T** **Learning and Long-Term Memory Are Found in Sea Urchin**
<https://projectboard.world/isef/project/167371>
Kazuya Ito, 17, Sophomore, Hibiki Imamura, 17, Junior, Haruto Kurose, 17, Sophomore, Kumamoto Prefectural Seiseiko Senior High School, Chuo-ku, Kumamoto-city, Japan,
T: Sugakiri Tabata
- CHEM037** **Drawing a Picture in a Liquid! Novel Photochromic System Using Methylene Blue Reduction With Ascorbic Acid**
<https://projectboard.world/isef/project/165399>
Fuka Nakamura, 17, Junior, Otsumaranzan High School, Hiki-gun, Saitama, Japan,
T: Takahiro Suzuki
- CHEM045** **Evaluation of Antimalarial Activity of Artemisinin Derivatives by the Reaction with Fe(II) Ion in Micelles**
<https://projectboard.world/isef/project/166472>
Yumi Tsukai, 17, Junior, Tokushima Municipal High School, Tokushima city, Tokushima, Japan, T: Yukitaka Hayafuji
- CHEM047** **Evaluation of Antioxidant Activity of Flavonoids—Remarkable Effect of Hydroxy Groups in the B Ring and the Substituent in the C Ring -**
<https://projectboard.world/isef/project/166537>
Kokomi Makino, 15, Sophomore, Tokushima Prefectural Johnouchi Secondary School, Tokushima city, Tokushima, Japan, T: Yukitaka Hayafuji
- ROBO063** **Bias in Large Language Models (LLMs); Paving the Way for an Equitable Artificial General Intelligence (AGI)**
<https://projectboard.world/isef/project/167093>
Rihito Kotani, 17, Junior, Tokyo Gakugei University International Secondary School, Nerima-ku, Tokyo, Japan, T: Shinya Kouno
- JORDAN**
- Amman, Jordan, JOR001, Science Fair of The Jordanian Ministry of Education**
- BCHM009T** **Utilizing Chitin Extracted From Fungi and the Exoskeleton of *Blattella germanica* for the Purpose of Being Resistant to Gamma Radiation**
<https://projectboard.world/isef/project/162643>
Ghayda Mohammad Alobaydiyen, 16, Sophomore, Juman Rafat Alabed, 15, Sophomore, International Proficiency Academy and Schools (IPAS), Amman, Jordan,
T: Anesa Mohammed Baniodeh
- BEHA011T** **A Sensor-Integrated Wearable Device for Support During Autism Spectrum Disorder Meltdowns by Applying the Deep Pressure Stimulation**
<https://projectboard.world/isef/project/162352>
Dana Mazen Al-Momani, 15, Sophomore, Layan Atef Al-Shobaki, 16, Sophomore, Jubilee School, Amman, Jordan, T: Khaled Aldahdouh
- ENBM008T** **Bionic Eye: Processing Camera Images and Converting Them To Electrical Signals to Replicate the Visual Pathway**
<https://projectboard.world/isef/project/162351>
Abdulrahman Mohammad Hammad, 15, Sophomore, Mohammad Khalid Al Zubi, 16, Sophomore, Islamic Educational College-Jubeiha, Amman, Jordan, T: Khaled Khader

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- ENEV017** **Forest Control System**
<https://projectboard.world/isef/project/162515>
Ahmad Khalil Fatafta, 15, Sophomore, Islamic Educational College - Jubeiha, Amman, Jordan, T: Khaled Khader
- MATH007** **New Method To Estimate the Square Roots of a Non-Perfect Square**
<https://projectboard.world/isef/project/162606>
Mohammad Issam Almahasneh, 14, Freshman, King Abdullah II School for Excellence, At-Tafilah, At-Tafilah, Jordan, T: Rasha AL-Hejaj
- MATS009** **Enhancing Hot Mix Asphalt (HMA) Matrices With Basalt-Limestone Combinations and Evaluating the Impact of Waste Engine Oil Rejuvenation in High-Reclaimed Asphalt Pavement Mixtures**
<https://projectboard.world/isef/project/162521>
Maram Fakher Al-Tamimi, 16, Junior, Jubilee School, Amman, Jordan, T: Khaled Aldahdouh
- MATS010** **Synthesis of a Bioplastic Based Drug Delivery System by Selective Etching of Halloysite Nanotubes**
<https://projectboard.world/isef/project/162531>
Mohammad Amjad Khalil, 14, Freshman, Mayar International Schools, Amman, Jordan, T: Fatima Alkhalayleh
- SOFT008** **Revolutionizing CVD Prevention and Management: A Comprehensive AI-Powered Solution**
<https://projectboard.world/isef/project/162452>
Adi Abedalqader AlHourani, 16, Junior, Islamic Educational College-Jubeiha, Amman, Jordan, T: Khaled Khader
- TMED016** **A Safer and Greener Prospective Alternative to Chemotherapy: *Dittrichia viscosa* Silver Nanoparticles' Selective Cytotoxicity Against MCF-7 Breast Cancer Cell Line With Minimal Impact on Healthy Cells**
<https://projectboard.world/isef/project/162530>
Sud Samer Owais, 16, Junior, Jubilee School, Amman, Jordan, T: Khaled Aldahdouh

KAZAKHSTAN

- Astana city, Kazakhstan, KAZ001, DARYN National Junior Science Projects Competition**
- CHEM061** **Obtaining a Polyadsorbent From the Natural Diatomite To Purify Wastewater From the Ions of Heavy Metals**
<https://projectboard.world/isef/project/167811>
Sayazhan Zhaksygaliev, 17, Junior, Miras International School, Astana, Kazakhstan, T: Assylkhan Zhumat
- MATH023** **Along the Path of the Great Kaprekar: A-Function, Repunits and Their Properties**
<https://projectboard.world/isef/project/167038>
Alikhan Zharbolov, 17, Junior, National Physics and Mathematics School, Almaty, Kazakhstan, T: Askar Dzhumadildayev
- SOFT037** **Automating Quantum Efficiency: An Algorithm for Gate-Based Optimization of Quantum Circuits**
<https://projectboard.world/isef/project/166570>
Abilmansur Rakhmettulyev, 16, Junior, Haileybury Astana School, Astana, Akmol, Kazakhstan, T: Martin Lukac

KENYA

- Nairobi, Kenya, KEN001, Kenya Science and Engineering Fair**
- EGSD036T** **An Advanced Supercapacitor From 3D-Silicon Carbide Nanospheres Synthesized Using Locally Sourced Corn Cob-Based Activated Carbon**
<https://projectboard.world/isef/project/167039>
Bhanu Rakesh Jangra, 15, Sophomore, Girish Suresh Jesani, 15, Sophomore, Diya Nayan Chouhan, 15, Freshman, Shree Cutchi Leva Patel Samaj School, Nairobi, Kenya, T: Laban Chweya

Finalist Directory

- ENEV059T** **An Efficient Simple Point-of-Use Water Purification Filter System From *Oryza sativa* Impregnated With Nanoparticles for Poor Household and Semi-Arid Areas in Kenya**
<https://projectboard.world/isef/project/166924>
Kairav Kantilal Raghvani, 16, Sophomore, Gurleen Kaur Ubbi, 17, Sophomore, Aashni Jenti Shiyani, 16, Sophomore, Shree Cutchi Leva Patel Samaj School, Nairobi, Kenya, T: Laban Chweya
- ENEV060T** **A Innovative Single Use-Plastic Collector System for Use in Open Channels and Drains in Sub-Urban and Urban Areas in Kenya: A Case Study of Nairobi**
<https://projectboard.world/isef/project/167095>
Manel Joseph Afonso, 15, Freshman, Adeeti GirishKumar Patel, 14, Freshman, Priti Dineshkumar Limbani, 16, Sophomore, Shree Cutchi Leva Patel Samaj School, Nairobi, Kenya, T: Laban Chweya

KUWAIT

- Kuwait, Kuwait, KWT001, Kuwait Science and Engineering Fair**
- ANIMO29** **The Effect of Different Levels of Edible Mushroom (*Pleurotus florida*) in Poultry Feed (Starter, Grower and Finisher Rations) as an Alternative Ingredient of Soya Bean on the Production Performance of Broilers**
<https://projectboard.world/isef/project/164378>
Lujen H A A Alshatti, 17, Senior, Om Maqail Al Assdiah School (Girls), Jaber Al Ahmad, Kuwait, T: Eatef Gamil
- CHEM034** **A Hidden Treasure in Combating Water Pollution and Boosting Agriculture**
<https://projectboard.world/isef/project/164381>
Aljouri S M S Alnutaifai, 17, Senior, Al Sharqiya High School (Girls), Mubarak Al Kabeer, Kuwait, T: Eatef Gamil

LUXEMBOURG

- Luxembourg, Luxembourg, LUX001, National contest "Jonk Fuerscher"**
- ROBO040** **Autonomous Driving Agents Trained by an Algorithm Based on NeuroEvolution of Augmenting Topologies (Neat) Using a New Logarithmic Fixed-Point Number System Optimized for Microcontrollers**
<https://projectboard.world/isef/project/164382>
Krzysztof Hyzyk, 18, Senior, European School Luxembourg 1, Luxembourg, Luxembourg, T: Przemyslaw Kaminski

MALAYSIA

- Putrajaya, Malaysia, MYS001, National Schools Science Innovation and Engineering Competition**
- BEHA028T** **The RIGHT Model: A Novel Personal Development Tool for Adolescents**
<https://projectboard.world/isef/project/165018>
Sher Meng Neoh, 16, Sophomore, Wan Yunn Ng, 14, Freshman, Jia Hui Keng, 15, Freshman, Heng Ee High School, George Town, Penang, Malaysia, T: Sze Hui Chung
- CHEM010** **M.L.C.E Larvicide: *Garcinia mangostana* Pericarp and *Citrus aurantifolia* Leaves Combined Extracts as a Novel Natural Larvicide for *Aedes aegypti* Larvae**
<https://projectboard.world/isef/project/162459>
Yee Jia Chuah, 16, Junior, Sekolah Menengah Kebangsaan Sultan Ismail, Johor Bahru, Johor, Malaysia, T: Norazuraini Ishak
- CHEM025T** **B.O.P.I : Black Pepper, Oregano and Pineapple Peel Insecticide as an Novel, Cost-Effective and Eco-friendly Fumigant To Eradicate *Sitophilus oryzae***
<https://projectboard.world/isef/project/162132>
Shun Zhan Na, 17, Junior, Khai Chin Ong, 16, Junior, Chung Ling High School Penang, Georgetown, Penang, Malaysia, T: Whey Cheng Heah

Finalist Directory

- ENEVO07T HazeGuard: Advanced Safety Glasses for Enhanced Safety in Haze Weather Conditions**
<https://projectboard.world/isef/project/162403>
Muhammad Amal Hassan, 15, Junior, Adam Fardeen Mohd Farris, 15, Sophomore, Asyraff Mohamad Alyasa', 16, Sophomore, Sekolah Sultan Alam Shah, Putrajaya, Wilayah Persekutuan, Malaysia, T: Samsiah Radiman
- ENEVO78T Waste to Green Eco-Construction**
<https://projectboard.world/isef/project/168146>
Rahini Saieshree Surendran, 15, Sophomore, Anis Raihanah, 15, Sophomore, SMK King George V, Seremban, Negeri Sembilan, Malaysia, T: Normawarni Hasan
- ROBO012T Scan-Drop: Aerial Integrated Flood Search and Rescue (SAR) With Specialized Flood Victim Detection System To Assist Rescuers**
<https://projectboard.world/isef/project/162404>
Jia Zhe Chiah, 15, Sophomore, Jia Heng Teoh, 17, Junior, Chung Ling High School Penang, Georgetown, Penang, Malaysia, T: Whey Cheng Heah

NORTHERN IRELAND

Lisburn, Northern Ireland, NFK001, Sentinus Young Innovators

- ETSD016 Foot-Assisted Torque Amplifier**
<https://projectboard.world/isef/project/162410>
Joel David McIntyre, 18, Senior, Ballymena Academy, Ballymena, Ulster, Northern Ireland, T: Kathryn Wylie

NORTHERN MARIANA ISLANDS

Saipan, Northern Mariana Islands, NMIO01, Northern Mariana Islands Science & Engineering Fair

- EAEVO39 Leaf-Mining Weevil's Destruction Rate Against Invasive *Coccinia grandis* in Saipan**
<https://projectboard.world/isef/project/163693>
Simon Daniel Tang, 16, Junior, Saipan Southern High School, Saipan, Northern Mariana Islands, T: Dora Miura
- EAEVO47T Unearth Saipan: Enhancing Soil Assessment With Regression Analysis and Machine Learning for Vehicle Decay Investigation**
<https://projectboard.world/isef/project/164383>
Jedric Jizaiah Guiao Aniciete, 17, Junior, Gwanpil Son, 16, Junior, Gwanhun Son, 15, Freshman, Marianas High School, Saipan, Northern Mariana Islands, T: Marifi Doculan
- SOFT059 Advancing El Niño-Southern Oscillation ("ENSO") Ensemble Forecasting With Distillation-Based Learning**
<https://projectboard.world/isef/project/163938>

Yelin Park, 18, Senior, Saipan International School, Saipan, Northern Mariana Islands, T: April Liske-Clark

NORWAY

Oslo, Norway, NOR001, Norwegian Contest for Young Scientists

- PHYSO61 Modelling Paths of the Moon's Shadow on the Surface of the Earth During Total Solar Eclipses**
<https://projectboard.world/isef/project/168005>
Ricardo Sonda Guiraudeli, 18, Senior, Blindern VGS, Oslo, Norway, T: Håkon Briseid

OMAN

Muscat, Oman, OMN001, The Omani National Science Faire

- CHEM003T Reducing the Viscosity of Crude Oil Using Environmental Materials**
<https://projectboard.world/isef/project/162395>
Habiba Mohamed Abdelwahab, 16, Junior, Basmalah Ahmed Al Saidi, 17, Junior, Omama bint Hamza bin Abdul Muttalib School, Al Batinah North, Oman, T: Hajar Al Shihhi
- ETSD002T Sustainable Fabrication of 3D Printing Filament From Recycled Plastic Bottles**
<https://projectboard.world/isef/project/162397>
Abdullah Zahir Al Sheriyani, 16, Junior, Mulham Hilal Al Hinah, 16, Junior, Bil'arab bin Sultan, Bahla, Ad Dakhiliyah, Oman, T: Badar Al Humaimi

Finalist Directory

PLNTO01T **The Effect of Expired-Milk-Derived Biochar Amendments on Enhancing Cowpea (*Vigna unguiculata*) Growth**
<https://projectboard.world/isef/project/162396>
Ruaa Rashid Al Hinai, 17, Junior, Fajr Abdulla Al Hinai, 16, Junior, Aysha bint Talha, Bahla, Al Dakhiliyah Reagan, Oman, T: Aamal Al Mahruqi

PAKISTAN

ISLAMABAD, Pakistan, PAK001, National Science and Engineering Fair Pakistan

EAEVO17T **Investigating the Use of Machine Learning in Potato Crop Disease Prediction and Preventive Measures in the Context of Smart Farming and Climate Change**
<https://projectboard.world/isef/project/162421>
Rafey Ataullah, 17, Junior, Mohammad Allawal Jamal, 17, Junior, Aitchison College, Lahore, Punjab, Pakistan, T: Salima Manji

ENEVO04T **Leveraging Electrochemistry and Light Scattering To Improve Air Quality Detection**
<https://projectboard.world/isef/project/162330>
Haaris Masood, 14, Freshman, Haon Kim, 16, Freshman, Scarsdale International School, Lahore, Punjab, Pakistan, T: Salma Afroz

MATS007T **Harnessing Zinc Oxide (ZnO) Nanoparticles for Enhanced Photocatalytic Applications**
<https://projectboard.world/isef/project/162350>
Muhammad Rizwan Javed, 16, Sophomore, Nabeel Ikram, 15, Freshman, Government M.C. High School, Okara, Punjab, Pakistan, T: Sarfaraz Ali

MCRO003 **Determination of Antimicrobial Activity of *Nigella sativa* Against Bacterial Isolates**
<https://projectboard.world/isef/project/162365>
Rehaab Fatima, 15, Sophomore, Govt. Girls High School Wassanpura, Lahore, Punjab, Pakistan, T: Ujala Nasir

PALESTINE

Ramallah, Palestine, PSE001, Palestine Science and Technology Fair

BEHA038 **An Advanced Alzheimer's Medication Reminder System for Enhanced Patient Care and Improved Medication Adherence, Supporting Memory Maintenance and Cognitive Functionality**
<https://projectboard.world/isef/project/166926>
Hala Rahhal, 15, Sophomore, Alawda Secondary School for Girls, Bethlehem, Palestine, T: Rana Khair

BEHA039 **Integrating Artificial Intelligence To Analyze Mental Health's Impact on Cancer Patients and Revolutionize Treatment Strategies for Technological and Medical Advancement**
<https://projectboard.world/isef/project/166927>
Sadeel Jamal Odi, 16, Junior, Bethlehem Secondary School for Girls, Bethlehem, Palestine, T: Maysoon Bannoura

BEHA040 **An Integrated Platform Leveraging Virtual Reality Fused With Artificial Intelligence, Grounded in Cognitive-Behavioral Therapy Methodology and Reinforced With Supportive Measures, To Ensure the Success of the Rehabilitation Journey**
<https://projectboard.world/isef/project/166928>
Rayyan Mohammad Khleif, 17, Junior, Bethlehem Secondary School for Boys, Bethlehem, Palestine, T: Khalid Barakat

EBED039 **Advanced Soil Sensor Technology for Sustainable Agriculture Management**
<https://projectboard.world/isef/project/166925>
Yamen Samir Bsharat, 16, Muscat Boys Secondary School, Tubas, West Bank, Palestine, T: Raef Bsharat

SOFT041 **A Novel Approach for Analyzing the Cipher Algorithms of the Advanced Encryption Standard (AES) and Developing a New Quantum Algorithm in the Era of Quantum Computing and Quantum Cybersecurity**
<https://projectboard.world/isef/project/166794>
Mesk Abdalsalam, 16, Junior, Talae' Al-Amal Secondary Schools, Nablus, West Bank, Palestine, T: Walaa Shahroori

Finalist Directory

PANAMA

Panama City, Panama, PAN001, Feria Científica del Ingenio Juvenil

***MCRO010T Antibiotic Resistance in *Escherichia coli* Bacteria Isolated From Dogs in Panama City, in the Context of One Health**

Iveth Barrios, 18, Senior, Kely Dominguez, 18, Senior, Manuel Maria Tejada Roca, Panama, Los Santos, Panama, T: Calixto Barrera

PHILIPPINES

Pasig City, Philippines, PHLO01, Philippines Science Fair

BMED067 Anticancer Potential of Molave (*Vitex parviflora* Juss.) Crude Leaf Ethanolic Extract Against Lung Cancer Cells (A549 and GL01)

<https://projectboard.world/isef/project/167112>

Josiah Christopher Quilao Cruz, 16, Junior, Quezon City Science High School, Quezon City, Philippines, T: Earl Merilles

CELLO45T *In vitro* and *in silico* Evaluation of Embryogenesis Inhibition Activity of Ethanolic Extracts of Chico (*Manilkara zapota*) Bark Against Gastrointestinal Strongyle Eggs

<https://projectboard.world/isef/project/168006>

Wesly Nadela Secuya, 16, Junior, Mikaella Rose Emereene Delfinado Macabata, 16, Junior, Michaela Ria Calonia Rentuza, 17, Junior, Cebu City National Science High School, Cebu City, Cebu, Philippines, T: Reuth Thessalonica De La Victoria

EAEV079 Flood Mitigation of Tarlac City Through 3D Simulation of Groundwater Discharge to Flood Inundation Using Rainfall Prediction and Integration of Spatio-Temporal GIS in Hydrodynamic Models

<https://projectboard.world/isef/project/167525>

Arnon Yzabel Guzman Guinto, 18, Senior, Tarlac National High School, Tarlac City, Tarlac, Philippines, T: Nica Joyce Aquino

EGSD037 Optimizing the Catalyst Type, Catalyst Concentration and Methanol-to-Oil Molar Ratio of Darak (Rice Bran) Oil Extracts Transesterification for Maximum Biodiesel Yield

<https://projectboard.world/isef/project/167099>

Christian Paul Balaan Palacio, 18, Senior, Mandaue City Science High School, Mandaue City, Cebu, Philippines, T: Noelyn Marie Navarro

ENEV067T AGRIGENT: Enhancing Greenhouse Agriculture With IoT (Internet of Things)-Enabled Automated Irrigation and Rainwater Harvesting System for Improved Crop Growth and Water Efficiency

<https://projectboard.world/isef/project/167630>

Rose Feth Fernan Catadman, 17, Senior, Andrei Miguel Flores Reformina, 18, Senior, Analie Ruiz Pedrano, 17, Senior, City of Bogo Senior High School, Bogo, Cebu, Philippines, T: Kent Jasper Ytang

MATS044T *In vitro* Study of Bioceramics From Bamboo (*Bambusa blumeana*) Leaf Ash and Green Mussel (*Perna viridis*) Shells With Silver (Ag) Coating and 3D-Printing Applications for Bone Regeneration

<https://projectboard.world/isef/project/167386>

Hart Gabrielle Tumali Ong, 18, Senior, Frances Gabrielle Stapp Bingcang, 18, Senior, Jessica Loreen Lee Yabut, 18, Senior, Angeles City Science High School, Angeles City, Pampanga, Philippines, T: Lolita Bautista

ROBO064 Enhanced Crop Disease Symptom Detection in Corn (*Zea mays*) Using Drone Aerial Imagery and AI for Symptom Mapping

<https://projectboard.world/isef/project/167101>

Karl Gian Salvame Abellana, 17, Senior, Mandaue City Science High School, Mandaue City, Cebu, Philippines, T: Pamela Perez

Finalist Directory

POLAND

Warsaw, Poland, PLDO01, E(x)plory Science Fair

EBED004 **Extending PCPU: A New, Practical and Production-Ready Processor Core Written From Scratch**

<https://projectboard.world/isef/project/162546>

Piotr Wegrzyn, 18, Senior, Liceum Ogólnokształcące nr XIV im. Polonii Belgijskiej we Wrocławiu, Wrocław, Dolnośląskie, Poland, T: Karolina Pietraszek

PLNT014T **RHIZOBIOTIC: An Innovative Fertiliser That Does Not Contribute to Water Eutrophication and Allows for the Control of Ethylene in Plants**

<https://projectboard.world/isef/project/162511>

Kornelia Weronika Wieczorek, 15, Sophomore, Diana Serjant, 16, Sophomore, III Liceum Ogólnokształcące z Oddziałami Dwujęzycznymi im. Marynarki Wojennej w Gdyni, III Liceum Ogólnokształcące im. Marynarki Wojennej RP w Gdyni, Gdynia, Poland, T: Anna Rzepa

SOFT001 **wheretopark.app: Multi-Dimensional Parking Lot Availability Resolution Using AI, CCTV Cameras and Sensor Data**

<https://projectboard.world/isef/project/162416>

Grzegorz Baranski, 19, Senior, I Liceum w Chmurze, Warszawa, Mazowieckie, Poland, T: Stanislaw Baranski

PORTUGAL

Porto, Portugal, PRTO01, Portuguese Contest for Young Scientists

CHEM017T **HidroQapa: Waterproof Bioplastic Made From Chitosan Extracted From Shrimp Shell Waste**

<https://projectboard.world/isef/project/162592>

Frederico Reis Mauritty, 19, Senior, Madalena de Castro Filipe, 19, Senior, Colegio Valsassina, Lisboa, Portugal, T: Joao Gomes

PUERTO RICO

Mayaguez, Puerto Rico, TEPRO1, Puerto Rico Math Fair

MATH027 **Enhancing Federated Learning Using Mathematical Theorems and Coding Technologies**

<https://projectboard.world/isef/project/167259>

Sarah Lu, 16, Junior, Centro Residencial de Oportunidades Educativas de Mayaguez, Mayaguez, Puerto Rico, T: Edwin Benvenuti

MATH028 **Cryptography Using Dates and Prime Numbers**

<https://projectboard.world/isef/project/167260>

Luis Francisco Duran, 16, Junior, Centro Residencial de Oportunidades Educativas de Mayaguez, Mayaguez, Puerto Rico, T: Edwin Benvenuti

MATH029 **P-Adic Analysis of Elliptic Curves: Exploring the Relationship Between P-Adic Curve Theory and Ellipse Geometry**

<https://projectboard.world/isef/project/167321>

Ian Yariel Rivera Colon, 18, Senior, Dr. Pedro Albizu Campus, Ponce, Puerto Rico, T: Esperanza Soto Rivera

Ponce, Puerto Rico, TEPRO2, Arecibo Regional Science Fair

CHEM062T **Modeling of Amino Acids' Chemical Reactivity Against Cancer**

<https://projectboard.world/isef/project/167816>

Catherine Vasnetsov, 17, Junior, Victor Vasnetsov, 17, Junior, The TESIS School in Dorado, Dorado, Puerto Rico, T: Laura Burgos

EGSD040 **Maximizing Solar Energy: Improving the Efficiency of Solar Panels Using Solar Trackers**

<https://projectboard.world/isef/project/167377>

Anthony Matthew Matinez, 14, Freshman, Brigida Alvarez Rodriguez Mathematics and Science High School, Vega Baja, Puerto Rico, T: Ristian Hernandez

Finalist Directory

- MATS043** **Integration of Cooling Compartments Into a Vest To Reduce Body Heat Caused by Global Warming**
<https://projectboard.world/isef/project/167376>
Christian Pagan-Millan, 17, Senior, Brigida Alvarez Rodriguez Mathematics and Science High School, Vega Baja, Puerto Rico, T: Abigail Rivera
- Ponce, Puerto Rico, TEPRO3, Bayamon Regional Science Fair**
- EGSD041** **Exploring the Use of Leaf Biomimicry and Electromagnetic Induction for Electricity Production**
<https://projectboard.world/isef/project/167685>
Grace Echevarria Rivera, 18, Senior, Escuela Bilingue Especializada en Ciencias y Matematicas Papa Juan XXIII Secundaria, Bayamon, Puerto Rico, T: Natcha Leon
- ENBM068** **Adjustable Socket for Transfemoral Prosthesis**
<https://projectboard.world/isef/project/167683>
Gerally Rodríguez Rosado, 16, Junior, Escuela Bilingue Especializada en Ciencias y Matematicas Papa Juan XXIII Secundaria, Bayamon, Puerto Rico, T: Monica Pagan
- MCRO036** **Impact of Breast Milk in Escherichia coli Inhibition: Variation of the Antibacterial Efficacy According to the Stage of Breastfeeding**
<https://projectboard.world/isef/project/168042>
Amanda Isabel Cabrera Santos, 16, Junior, Escuela Bilingue Especializada en Ciencias y Matematicas Papa Juan XXIII Secundaria, Bayamon, Puerto Rico, T: Monica Pagan Ortega
- Ponce, Puerto Rico, TEPRO4, Caguas Regional Science Fair**
- BCHM032** **Homemade Solution To Reduce Active Bacteria in School Desks**
<https://projectboard.world/isef/project/167746>
Angelique Enid Suárez de Jesús, 15, Sophomore, Specialized School of Science and Mathematics Genaro Cautino Vazquez, Guayama, Puerto Rico, T: Cruz Vazquez Enchautegui
- BMED070** ***Grouitiella apiculata*: Hidden Treasure Against HCT116 Cells**
<https://projectboard.world/isef/project/167749>
Hardy G. Rodríguez Meléndez, 17, Junior, Pablo Colón Berdecia, Barranquitas, Puerto Rico, T: Jennyfer Rivera Berrios
- ENEVO69T** **Eco-Friendly Fabric: Use of Algae and Seagrass in Paper Production**
<https://projectboard.world/isef/project/167689>
Martin A. I. Stella Nieves, 17, Senior, Patrick Noah Peña, 17, Senior, Colegio Bautista de Caguas, Caguas, Puerto Rico, T: Evelyn Rivera
- Sabana Grande, Puerto Rico, TEPRO5, Humacao Regional Science Fair**
- ETSD064** **Design and Testing of a Floating Archimedes' Screw Turbine**
<https://projectboard.world/isef/project/167680>
Paul Lucas Bird Rivera, 16, Junior, Centro Residencial de Oportunidades Educativas de Ceiba, Ceiba, Puerto Rico, T: Wilmayris Alvira Concepcion
- MCRO041** **A Comparative Study of the Antibacterial Activity of Bioactive Compounds From the *Bougainvillea glabra* and *Plectranthus amboinicus* Plants**
<https://projectboard.world/isef/project/168193>
Juan P. Pablo Marrero Baez, 17, Senior, Superior Rafaelina E. Lebron Flores, Patillas, Puerto Rico, T: Mayra Rivera Rivera
- PHYS056** **Discovery of New Extragalactic Planet Candidates: A Novel End-to-End Machine Learning Pipeline for Efficient Transit Detection in the X-ray Spectrum**
<https://projectboard.world/isef/project/167681>
- # Emily Nicole Alemán, 17, Senior, Centro Residencial de Oportunidades Educativas de Ceiba, Ceiba, Puerto Rico, T: Wilmayris Alvira Concepcion
- Ponce, Puerto Rico, TEPRO6, Ponce Regional Science Fair**
- MATS045** **Photodynamic Therapy Based on Eosin Y Transport Using Boron Nitride Nanotubes and Carbon Nanotubes To Induce Apoptosis in Pancreatic Cancer Cells**
<https://projectboard.world/isef/project/167696>
Gianna Iriel Ríos Garcia, 16, Junior, Dr. Pedro Albizu Campus, Ponce, Puerto Rico, T: Jonatan Plaza Plaza

Finalist Directory

- MCRO033** **Antifungal Effect of Essential Oils as a Potential Approach in Mucor Fungal Prevention and Control**
<https://projectboard.world/isef/project/167745>
Marianna Alexandra Garcia Gonzalez, 18, Senior, Dr. Pedro Albizu Campus, Ponce, Puerto Rico, T: Jonatan Plaza Plaza
- PLNT057** **Analysis of the Effect of an Electromagnetic Field and Electrolytes as a Significant Biostimulation Factor on Plant Growth**
<https://projectboard.world/isef/project/167678>
Eddy Jinghao Li Cai, 17, Senior, Dr. Pedro Albizu Campus, Ponce, Puerto Rico, T: Kathia Rodriguez
- Sabana Grande, Puerto Rico, TEPR08, Mayaguez Regional Science Fair**
- BEHA047** **Comparison of Brain Waves, Blinking and Reading Comprehension When Reading on an Electronic Device and a Printed Text**
<https://projectboard.world/isef/project/167809>
Alejandra Harris, 17, Senior, Centro Residencial de Oportunidades Educativas de Mayaguez, Mayaguez, Mayaguez, Puerto Rico, T: Diana Rodriguez
- EAEV082** ***Eichhornia crassipes* (Water Hyacinth) as a Phytoremediator of Heavy Metals Copper (Cu), Lead (Pb) and Zinc (Zn) in Freshwater Bodies**
<https://projectboard.world/isef/project/167675>
Camila Isabel Negron, 16, Senior, Centro Residencial de Oportunidades Educativas de Mayaguez, Mayaguez, Mayaguez, Puerto Rico, T: Brenda Cabrera
- EGSD042** **Optimizing Piezoelectric Energy Into Morse Code**
<https://projectboard.world/isef/project/167695>
Ethan Jose Cubero, 18, Senior, Centro Residencial de Oportunidades Educativas de Mayaguez, Mayaguez, Mayaguez, Puerto Rico, T: Brenda Cabrera
- Ponce, Puerto Rico, TEPR09, San Juan Regional Science Fair**
- ETSD065** **Re-Shaping an Airplane's Wings To Improve Aerodynamic Efficiency**
<https://projectboard.world/isef/project/167748>
Fernando Andrés Andino -Serrano, 16, Junior, The San Juan Math, Science and Technology Center, San Juan, Puerto Rico, T: Luis Lopez
- TMED071** **Machine Learning-Based Algorithm To Predict Alzheimer's Disease Risk Using Inflammatory and Genetic Biomarkers in Caribbean Hispanic Cardiovascular Patients**
<https://projectboard.world/isef/project/167684>
Ana Sofía Duconge, 17, Junior, University Gardens High School, San Juan, Puerto Rico, T: Guillermina Saldana
- Carolina, Puerto Rico, TEPR12, Puerto Rico Metropolitan Science Fair**
- CHEM059** **The Use of Reduced Graphene Oxide in Fluorinated Phthalocyanines and Their Applications in Gas Sensing**
<https://projectboard.world/isef/project/167676>
Ricardo Andre Rosario - Hernandez, 18, Senior, Escuela Secundaria Especializada en Ciencias, Matematicas y Tecnología, Caguas, Puerto Rico, T: Jose Molina Vazquez
- CHEM064** **Unveiling New Horizons in 2D Materials: Computational Discovery of a Metallic Boron Nitride Monolayer**
<https://projectboard.world/isef/project/167827>
- #**
- ENBM071T** **Can Nanomaterials Be Engineered To Promote Tissue Regeneration Like Bone and Cartilage?**
<https://projectboard.world/isef/project/167766>
Paulina Isabelle Lockwood-Belmont, 18, Senior, Gabriela Carolina Noa - O'Neill, 18, Senior, Colegio Puertorriqueno de Ninas, Guaynabo, Puerto Rico, T: Angeles Fernandez
- ENBM073T** **Designing and Testing a Complementary 3D Exoskeleton Monitoring System for Patients With Mobility Challenges**
<https://projectboard.world/isef/project/167829>
Layla Sofia Ballet-Torres#, 17, Junior, Kayla Zoara Teronn - Villodas#, 16, Junior, Colegio Rosa-Bell, Guaynabo, Puerto Rico, T: Yajaira Torres De Jesús T: Yajaira Torres De Jesus

Finalist Directory

- ENBM077** **The Effect of Light Filtering Technology on Enhancing Color Perception for Individuals With Color Blindness**
<https://projectboard.world/isef/project/168160>
Nicolas Andres Colon - Lopez, 14, Freshman, Colegio San Ignacio de Loyola, San Juan, Puerto Rico, T: Laura Rosado
- ETSD063** **AWAKE: A Cost-Effective IoT System for Drowsy Driving and Alerts To Save Lives**
<https://projectboard.world/isef/project/167677>
Alvaro Daniel Villafuerte - Gonzalez, 15, Freshman, Colegio San Ignacio de Loyola, San Juan, Puerto Rico, T: Carol Gonzalez
- ROBO075** **Innovative Robot Prototype for the Application of Robotic Intelligence To Rescue Earthquake Victims**
<https://projectboard.world/isef/project/167828>
Suriana Belen Santiago-Sepulveda, 14, Freshman, Academia Interamericana de Arecibo, Arecibo, Puerto Rico, T: Christine Fuentes
- SOFT049T** **FSci-PMI: An Innovative Interface for Postmortem Interval Identification Using the Calliphoridae (Blowfly) Cycle**
<https://projectboard.world/isef/project/167744>
Karla Sophia Mestre-Noble, 14, Freshman, Adriana Victoria Cintron-Burgos, 15, Freshman, Colegio Rosa-Bell, Guaynabo, Puerto Rico, T: Yajaira Torres De Jesus
- TMED076T** **Development of a Biodegradable Polymer Infused With *Delonix regia* (Flamboyant) for Wound Care Applications**
<https://projectboard.world/isef/project/167862>
Miranda Sanz-Alvarez, 15, Sophomore, Kamila Zoe Rotger - Costas, 16, Sophomore, Colegio Rosa-Bell, Guaynabo, Puerto Rico, T: Yajaira Torres De Jesus
- Cayey, Puerto Rico, TEPR11, Radians Science & Engineering Fair**
- ANIM038** **Investigating the Potential Impact of Tea Consumption on the Longevity of *Drosophila melanogaster***
<https://projectboard.world/isef/project/167040>
Delimar Colon-Burgos, 15, Sophomore, Radians School, Cayey, Puerto Rico, T: Carla Caceres
- QATAR**
- Doha, Qatar, QAT001, The National Student Research Fair**
- ANIM027T** **Identifying New Sponge Species From Qatar Marine Environment Using Molecular Techniques**
<https://projectboard.world/isef/project/163726>
Alanood Ali Aljalalma, 17, Senior, Fajer Saif Albloshi, 17, Senior, Qatar Technical School For Girls, Doha, Al Luqta, Qatar, T: Dema Assad
- BMED050T** **Phytochemical Examination and Antiproliferation Effect of *Acacia senegal* and *Boswellia sacra* Extract on Colon Cancer Cell (Caco-2)**
<https://projectboard.world/isef/project/165879>
Noof Mohammed Al Rashdi, 16, Junior, Salma Rashad Kashlan, 18, Senior, Zubaida Secondary School for Girls, Al-Doha, Qatar, T: Yousra Abdelmawgood
- CELLO23T** **Exploring the Impact of TAS2R38 Gene Polymorphism on BMI and Body Fat Percentage Among Qatari Adolescents**
<https://projectboard.world/isef/project/163450>
Abdulaziz Khalid M A Al-Hardan, 17, Senior, Turki Hamad Al-Thabhani, 16, Senior, Qatar Science and Technology Secondary School for Boys, Doha, Ain Khalid, Qatar, T: Ahmed Faris
- EBED021T** **A Comprehensive Assistive System for Enhancing Independence in Individuals With Quadriplegia**
<https://projectboard.world/isef/project/163689>
Sultan Nasser Al-Malki, 17, Senior, Talal Eisa Ghanem, 17, Senior, Qatar Science and Technology Secondary School for Boys, Doha, Ain Khalid, Qatar, T: Derar Mallah

Finalist Directory

EBEDO26T S.A.F.E.–Shark Alert and Flagging Equipment: A Novel Approach to Shark Protection and Citizen-Oriented Threat Assessment

<https://projectboard.world/isef/project/164384>

Mahika Rao, 17, Senior, Jai Aadithya Ramesh, 17, Senior, Birla Public School, Doha, Abu Hamour, Qatar, T: Anu Antony

ENBMO43T Safety Wristband: Detecting Falls and Ensuring Safety in Emergencies

<https://projectboard.world/isef/project/165880>

Alanoud Elkady, 16, Sophomore, Reem Adnan Alkaladi, 16, Sophomore, Amna Bint Wahab Preparatory School for Girls, Doha, Al Sadd, Qatar, T: Noora Albordeni

ENEVO32T Vehicle Exhaust Conical Filtering Device for Capturing Greenhouse Gases (GHGs) and PM 2.5 Emissions With Monitoring and Notification Alert System

<https://projectboard.world/isef/project/163449>

Timothy De Guzman Del Rosario, 19, Senior, Ashton Kraven Altre Desiongco, 19, Senior, Philippine International School-Qatar, Doha, Qatar, T: Brayn Biazon

ETSD036T Humidity-Driven Smart Solar Panel Cleaning System

<https://projectboard.world/isef/project/164386>

Rashid Al-Kuwari, 17, Junior, Hamad Abdulaziz Al-Sumaiti, 16, Junior, Qatar Science and Technology Secondary School for Boys, Doha, Ain Khalid, Qatar, T: Ibrahim Al-Nuaimi

REPUBLIC OF MOLDOVA

Chisinau, Republic of Moldova, MDA001, Moldova Science and Engineering Fair

BMEDO43 The Identification of a Potential Novel Breast Cancer Biomarker Through Hypomethylation Analysis at Transcription Ending Site (TES)

<https://projectboard.world/isef/project/165401>

Felicia Iordachi, 18, Senior, Theoretical High School “Orizont, Durlesti”, Chiainau, Republic of Moldova, T: Svetlana Golubev

MATS025 Adjustment of Surface Properties of Microfluidic Chips Using Nanoparticles

<https://projectboard.world/isef/project/163587>

Bogdan Pisarenco, 17, Junior, Liceul Academice de Stiinte a Moldovei, Chişinău, Republic of Moldova, T: Tudor Braniste

ROMANIA

Suceava, Romania, ROM001, Romania Science and Engineering Fair

ETSD003 Elastic Waves: Applications of Elastic Wave Propagation in the Recovery of Depleted Oil Patches

<https://projectboard.world/isef/project/162398>

Ionut Gabriel Stan, 17, Junior, Liceul Teoretic International de Informatica Bucuresti, Bucharest, Romania, T: Mircea Ignat

ETSD004 A Theoretical and Experimental Study on Hybrid Electromechanical Actuators

<https://projectboard.world/isef/project/162523>

Mendel Emanuel Mendelsohn, 17, Junior, Liceul Teoretic International de Informatica Bucuresti, Bucharest, Romania, T: Mircea Ignat

ETSD005T Hawk Wing: A New Way To Improve Aircraft Efficiency Through Biomimicry

<https://projectboard.world/isef/project/162495>

David-Cristian Ghiberdic, 18, Senior, Rares Teodor Marinescu, 19, Senior, Filip Petru Buscu, 17, Junior, International Computer High School of Bucharest, Liceul Teoretic International de Informatica Bucuresti, Bucharest, Romania, T: George Chirila

ETSD006T Kinetic Assemblies: A Complete Solution for PCB Assembly

<https://projectboard.world/isef/project/162496>

Tudor Dochia, 17, Junior, Alexandru Turculeţ, 18, Senior, Paul Andrei Ungureanu, 19, Senior, Colegiul National “Petru Rares” Suceava, Suceava, Romania, T: Victor Sutac

ROBO008T Zoro the Autonomous Rescue Dog: An Inexpensive Simultaneous Localization and Mapping System Running on a Mobile Quadruped for Rough Terrain Operation in Dangerous Scenarios

<https://projectboard.world/isef/project/162466>

Codrin Crismariu, 18, Senior, Bianca Maria Hulub, 18, Senior, Informatics Liceum Grigore C. Moisil, Iasi, Romania, T: Mirela Tibu

Finalist Directory

SAUDI ARABIA

Riyadh, Saudi Arabia, SAU001, Mawhiba Science & Engineering Fair

BMED038 A Novel Enhancement of Statins' Solubility With Hydroxypropyl β -Cyclodextrin Inclusion Complex via Molecular Dynamics and *in vitro* Validation

<https://projectboard.world/isef/project/165024>

Elyas Khan, 17, Senior, Dar Alfikr Schools, Jeddah, Makkah, Saudi Arabia, T: Tarek Ahmed

CBIO026 *In silico* Study of Transdermal Drug Delivery Through the Stratum Corneum: Testing the Impact of Lateral Diffusion

<https://projectboard.world/isef/project/165022>

Faisal Bader Halawani, 17, Senior, Riyadh School for Boys and Girls, Riyadh, Saudi Arabia, T: Dmitry Logashenko

CBIO030 Mucins as Potential Markers for Disease Progression and Chemotherapy Response in Colorectal Cancer

<https://projectboard.world/isef/project/166129>

Ritaj Othman Rahmatullah, 17, Junior, Abdulrahman Fakieh Schools for Girls, Makkah, Western Province, Saudi Arabia, T: Abdulrahman Mujalli

CELLO31 Identification of Survivin as a Novel Longevity Biomarker: Toward Developing Novel Anti-Aging Therapeutics

<https://projectboard.world/isef/project/165464>

Lana Hamza Almazroei, 17, Senior, Dar Al-Tarbia Al-Hadetha, Jeddah, Saudi Arabia, T: Huda Alkhalaf

CHEM036 Synergistic Development of Perovskite Oxide Electrocatalysts Through Metal-Organic Framework Precursors for Energy Conversion Applications

<https://projectboard.world/isef/project/165019>

Abeer Ali Alyousef, 17, Junior, Dohat Alibdaa International Schools, Alahsa, Eastern Province, Saudi Arabia, T: Mahmoud Abdelnaby

CHEM038 Introducing Carbon Molecular Sieve Membranes Derived From Polymers of Intrinsic Microporosity for Efficient Gas Separation

<https://projectboard.world/isef/project/165424>

Merza Fouad Al Karam, 18, Senior, Rowad Alkhaleej International School, Dammam, Eastern Province, Saudi Arabia, T: Ingo Pinnau

CHEM039 External Magnetic Field Enhanced Plasmonic Au-WO₃ Thin Films for Photoelectrochemical Water Splitting

<https://projectboard.world/isef/project/165444>

Saleh Abdulaziz Alangari, 16, Junior, Riyadh School for Boys and Girls, Riyadh, Saudi Arabia, T: Abdullah Alotaibi

CHEM041 Promoting Novel Ni-Based Catalysts for Efficient Hydrogen-Rich Syngas Production in Dry Reforming of Methane

<https://projectboard.world/isef/project/165881>

Abdulaziz Saad Alharbi, 17, Senior, Taibah High School, Madinah, Western Region, Saudi Arabia, T: Ahmed Al-Fatesh

CHEM042 Harnessing DFT Technologies for Rapid Screening and Design of Efficient Carbon Nitride-Based Photocatalysts

<https://projectboard.world/isef/project/165945>

Hadwa Ibrahim Alruhaili, 17, Senior, Al Bayan Model School, Jeddah, Makkah, Saudi Arabia, T: Roshan Ajar

EAEV054 Novel Spinel Oxide Coatings on Stainless-Steel Mesh for Efficient Oil-Water Separation

<https://projectboard.world/isef/project/165426>

Yara Yousef AlKadi, 16, Sophomore, Dhahran Ahliyya School, Dammam, Eastern Province, Saudi Arabia, T: Mohammad Gondal

EAEV056 The Development of an Algorithm To Measure Aerosols in Clouds Using MODIS Satellite Data

<https://projectboard.world/isef/project/165690>

Yara Mohammed Albakri, 16, Junior, Andalus International School Ash Shati Girls Section, Jeddah, Makkah, Saudi Arabia, T: Nada Alduaig

Finalist Directory

- EBED033** **Designing a Novel Vertically-Stacked Nanowire-Based Complementary Field-Effect Transistor for Low-Power Applications**
<https://projectboard.world/isef/project/165951>
Faisal Alsayyari, 17, Senior, Al Faris International School, Riyadh, Saudi Arabia,
T: Bijo Joseph
- EGSD023** **Enhancing Sodium-Ion Batteries by Synthesizing a Novel Cathode Using Covalent Organic Frameworks Doped With Carbon Nanotubes**
<https://projectboard.world/isef/project/165413>
Sulaiman Abdulrahman Almesned, 18, Senior, Dhahran Ahliyya School, Dammam,
Eastern Province, Saudi Arabia, T: Husam Alshareef
- EGSD024** **Applying Magnetic Fields and Lewis Acids for a Highly Efficient and Cost-Effective Hydrogen Production From Seawater**
<https://projectboard.world/isef/project/165463>
Hamad Mohammed Alhussaini, 17, Senior, Riyadh School for Boys and Girls, Riyadh,
Saudi Arabia, T: Abdullah Alotaibi
- EGSD025** **Cost-Effective Ultrasound Utilization on Cement-Based Composites for Scalable Fabrication of Bifunctional All-solid-State Ultracapacitors**
<https://projectboard.world/isef/project/165475>
- ##** Latifa Hesham Alghannam, 17, Senior, KFUPM Schools, Dhahran, Eastern Province,
Saudi Arabia, T: Mohammed Gondal
- EGSD027** **Development of Novel Bi-functional Catalyst for LOHCs as Sustainable Hydrogen Storage and Transportation Applications**
<https://projectboard.world/isef/project/165822>
Shahad Musaad Almutlaq, 16, Junior, Dhahran Ahliyya School, Dammam, Eastern
Province, Saudi Arabia, T: Mohamed Shaikh
- EGSD032** **A Novel Multi-Functional BiVO₄/Pencil Graphite for Photo Electrochemical Wastewater Splitting for Green Hydrogen Production and Storage**
<https://projectboard.world/isef/project/165980>
Raghad Osamah Alghanim, 17, Senior, 8th Secondary School for Girls in Qatif, Qatif,
Eastern Province, Saudi Arabia, T: Nawal Al Abass
- ENBM037** **A Novel, Cost-Effective and Accessible 3D Printed Thrombectomy Device**
<https://projectboard.world/isef/project/165020>
Nasser Ahmad Alsowyan, 17, Senior, Unaizah International School, Unaizah, Qassim,
Saudi Arabia, T: Aris Konstantinidis
- ENEVO43** **Developing a New Alkaline-Activated Cement Based on Carbonation Process To Reduce CO₂ Emissions**
<https://projectboard.world/isef/project/165021>
Fatimah Alshakhs, 18, Senior, Alanjal Private School, Al Hofuf, Eastern Province, Saudi
Arabia, T: Salman Siddique
- ENEVO48** **Multi-Functional High-Flux Superhydrophilic/ Superoleophobic ZnO-Pillared MXene Membrane With Self-Cleaning Properties for Wastewater Treatment**
<https://projectboard.world/isef/project/165447>
Asma Hamad Alqasir, 17, Senior, Riyadh School for Boys and Girls, Riyadh, Saudi Arabia,
T: Isam Aljundi
- ENEVO50** **Novel Solar-Assisted Method for Mitigation of Methane Emissions via a New Highly Efficient Catalyst**
<https://projectboard.world/isef/project/165687>
Turki Muhanna Aldulami, 17, Senior, Alkifah Academy, Al Hufuf, Eastern Province, Ahsaa,
Saudi Arabia, T: Safyan Khan
- ENEVO53** **Using Black Soldier Fly Larvae for Carbon Emissions Reduction and High-Value Extractions Toward Sustainable Waste Management**
<https://projectboard.world/isef/project/165948>
Khalid Alhussayen, 18, Senior, Dar Althikr Private School, Jeddah, Mecca, Saudi Arabia,
T: Mustafa Khalifa

Finalist Directory

- ETSD038** **A Novel Water Harvesting Technology Based on 3D Printed Metal-Organic Frameworks**
<https://projectboard.world/isef/project/165026>
Lamees Abdulmohsen Abdulrahman Alqadi, 15, Freshman, 9TH Intermediate, Unaizah, Al Qassim, Saudi Arabia, T: Majid Alawad
- MATS032** **Development of Smart Self-Healing Polyurethane Microcapsules Utilizing an Enhanced ZnO/TiO₂ UV-Shielding Shell for Spacecraft Applications**
<https://projectboard.world/isef/project/165462>
Lana Alfehaid, 18, Senior, Alhussan International School- Riyadh, Riyadh, Saudi Arabia, T: Mohammed Alamoudi
- MATS033** **Development of Electrolyte Additive for Self-Corrosion Control of Aluminum Air Battery Electrodes**
<https://projectboard.world/isef/project/165466>
Jamal Mohammed Al Logmani, 17, Junior, King Fahd University of Petroleum and Minerals (KFUPM) Boys High School, Dhahran, Eastern Province, Saudi Arabia, T: Saviour Umoren
- MATS035** **Synthesis of Graphene From Noxious Solid Waste Petroleum Coke: Evaluation for Supercapacitor Application**
<https://projectboard.world/isef/project/165686>
Hammad Ahmed Al-Dossary, 16, Junior, Aljam'aa High School, Dhahran, Eastern Province, Saudi Arabia, T: Rabiah Khan
- MATS036** **Development of Anti-Dust Nanostructured Silicon Dioxide Coating for Solar Cells**
<https://projectboard.world/isef/project/165820>
Areej Alqarni, 15, Junior, Al-Batool International School, Mecca, Makkah, Saudi Arabia, T: Mohammed Bahattab
- MATS038** **Development of a Biocide-Free Polyurethane-Based Coating for Effective Antifouling in Marine Vessels**
<https://projectboard.world/isef/project/165947>
- ##** Tahani Adel Ahmed, 18, Senior, KFUPM Schools, Dhahran, Eastern Province, Saudi Arabia, T: Zozo Albayoumi
- PLNT040** **The Effects of Polyvinyl Alcohol (PVA) Polymer on Bioactive Compounds of *Juniperus procera* (L.) Plant**
<https://projectboard.world/isef/project/165684>
- #** Layan Almalki, 17, Senior, Alfaisaliah Islamic Schools, AlKhobar, Saudi Arabia, T: Abdulrahman Alhashimi
- PLNT045** **Utilizing Tobacco Mosaic Virus as a Viral Vector in the in Planta Production of Antimicrobial Peptides**
<https://projectboard.world/isef/project/165946>
Tamara Osman Radi, 18, Senior, Jeddah Knowledge International School, Jeddah, Makkah, Saudi Arabia, T: Magdy Mahfouz
- ROBO044** **Fabricating and Testing a Novel Memristive Device for Optimized Neuromorphic Vision Applications**
<https://projectboard.world/isef/project/165425>
Adeeb Salem Alshehry, 17, Senior, Al-Hussan High School, Dammam, Eastern, Saudi Arabia, T: Nazek El-Atab
- SOFT032** **Developing a Novel Paradigm for the Distributed Storage of Digital Information**
<https://projectboard.world/isef/project/165688>
Lianne Ahmed Algrafi, 17, Senior, Dar AlFikr Schools, Jeddah, Makkah, Saudi Arabia, T: Salman Ghori
- TMED036** **Receptor Targeting Nanobodies: Locking the Door for All MERS-CoV Mutations as a Novel Therapeutic Approach**
<https://projectboard.world/isef/project/165023>
Laila Hosam Zowawi, 16, Junior, Encyclopedia of Science Schools, Riyadh, Riyadh, Saudi Arabia, T: Mohamed Alfaleh
- TMED039** **Using Novel Benzimidazole Sulfonate Derivatives for Inhibitory Activity on Enzymes Associated With Alzheimer's Disease**
<https://projectboard.world/isef/project/165415>
Lina Sattam Almutairi, 16, Junior, Al Rowad International School, Riyadh, Riyadh, Saudi Arabia, T: Muhammad Taha

Finalist Directory

TMED040 **Folate Complex and pH-Responsive SPIONs/MCF as a Novel Delivery System To Improve Tamoxifen's Selectivity and Toxicity Impact**
<https://projectboard.world/isef/project/165448>
Fatimah Ahmed Alabdullah, 17, Senior, Safwa First Secondary School, Safwa, Eastern, Saudi Arabia, T: Rabindran Balasamy

SINGAPORE

Singapore, Singapore, SGPO01, Singapore Science and Engineering Fair

CBIO013 **Atomically Yours: Novel DeepGraphDTI Takes Fight Against Future Pandemics to the Next Level**
<https://projectboard.world/isef/project/162662>

Wan Qin Lim, 18, Senior, Hwa Chong Institution, Singapore, Singapore, T: Edwin Zheng

ENBM011 **STEPS Ahead: Self-Powered Triboelectric Nanogenerator for Dynamic Multidirectional Pressure Sensing**
<https://projectboard.world/isef/project/162666>

Jiaqi Wu, 17, Senior, NUS High School of Mathematics & Science, Singapore, Singapore, T: Tiong Eng Ng

ETSD017 **SMART (Sustainable, Modular, Additively-manufactured, Robust, Tower-style) Urban Farming**
<https://projectboard.world/isef/project/162660>

Gedeon Kusuma Ang, 16, Junior, Raffles Institution, Singapore, Singapore, T: Swee Leong Sing

MATS021T **Haema-Lights: Facile Method of Site-selective Synthesis of Fluorescent Ag-Fe₂O₃ Nanocomposites for Optical Electron Detection**
<https://projectboard.world/isef/project/162131>

Yue Yin, 17, Senior, Aseera Jannath, 17, Senior, Raffles Institution, Singapore, Singapore, T: Abigayle Ng

PHYSO20 **Precession, Nutation and Dynamic Trajectory of a Magnetic Rod in an Axisymmetric Magnetic Field**
<https://projectboard.world/isef/project/162659>

Martin Zhen Xuan Koh, 17, Senior, NUS High School of Mathematics & Science, Singapore, Singapore, T: Bernard Ricardo

ROBO019T **State Space Models Are All You Need**
<https://projectboard.world/isef/project/162678>

Aidan Ong, 18, Senior, Junxiang Cai, 17, Senior, Hwa Chong Institution, Singapore, Singapore, National Junior College, Singapore, Singapore, T: Adeline Chia Wan Jie
T: Tat Leong Lee

SLOVAKIA

Bratislava, Slovakia, SVK002, AMAVET-Slovak Association for Youth, Science & Technology
ENEVO08T **MARS-PCBs: Microbially Assisted Remediation of Stabilized Polychlorinated Biphenyls**
<https://projectboard.world/isef/project/162420>

Jozef Jabczun, 18, Junior, Alex Kanderka, 17, Sophomore, Saint Nicholas Grammar School, Presov, Slovakia, Grammar School of Jan Adam Rayman, Presov, Presovsky kraj, Slovakia, T: Miriam Feretova

ROBO011 **Effective Robotic Swarm Controller Applied to Autonomous Swarm Assembly of Modular Flexible Production Lines**
<https://projectboard.world/isef/project/162419>

Michal Lajciak, 17, Senior, Stredna Priemyselna Skola, Dubnica nad Vahom, Trenciansky kraj, Slovakia, T: Jan Vachalek

Finalist Directory

SLOVENIA

Ljubljana, Slovenia, SVN001, Slovenia Science and Engineering Fair

EGSD003 Comparing Metal-Organic Batteries With Lithium, Aluminum and Zinc, Using Bioderived Organic Molecules for More Sustainable Batteries

<https://projectboard.world/isef/project/162400>

Filip Zver, 18, Junior, Gimnazija Franca Miklosica Ljutomer, Ljutomer, Slovenia,

T: Mateja Godec

SOUTH AFRICA

Johannesburg, South Africa, ZAF001, Expo for Young Scientists - South Africa

EAEO013 Exploring Seasonal Habitat Use by Juvenile Fish Species in Algoa Bay, South Africa Using Remote Underwater Video Surveillance

<https://projectboard.world/isef/project/162446>

Alutha Botha, 18, Senior, Nombulelo Secondary School, Makhanda, South Africa,

T: Thando Mhleka

EBED008 Improving Retail Security Using Metallic Barcoding System

<https://projectboard.world/isef/project/162497>

Keamogetse Precious Monnana, 17, Senior, Ramotshere High School, Zeerust,

North West, South Africa, T: Katlego Tau

ETSD007T Enhancing Bobsleigh Performance Through Biomimetic Design Inspired by the Peregrine Falcon (*Falco peregrinus*) and Kingfisher (*Alcedo atthis*)

<https://projectboard.world/isef/project/162449>

Zaahid Sader, 17, Junior, Nicholas Zhang, 17, Junior, UJ Academy Maths, Science & ICT

School of Specialisation, Crosby, Johannesburg, South Africa, T: Margaret Moshome

PLNT004 Analysis of the Effect of Rhizobium Bacterial Spp. on Seed Germination and Plant Growth of Non-Legume Monocotyledon and Dicotyledon Plants

<https://projectboard.world/isef/project/162467>

Likitha Chundru, 18, Senior, Bryanston High School, Johannesburg, Gauteng, South

Africa, T: Megan Lester

SOFT007 Community Support: Connecting In-Need Individuals With Essential Services in South Africa Through an Accessible Instant Messaging Service

<https://projectboard.world/isef/project/162471>

Matthew Collier-Reed, 18, Senior, Pinelands High School, Cape Town, Western Cape,

South Africa, T: Nicole Masureik

SOUTH KOREA

Daegu, South Korea, KOR001, Korea Code Fair

EBED028 BlindSense: AI-Based Smart Goggles That Provide 6th Sense for the Visually Impaired

<https://projectboard.world/isef/project/165049>

Doyun Kim, 18, Senior, Ilsan Daejin High School, Goyang, South Korea,

T: Sunghun Hwnag

EBED029T Rebeat: A Real-Time, Audiovisual Feedback System for Improving CPR Quality

<https://projectboard.world/isef/project/165063>

Jaeyoon Kim, 18, Senior, Seungho Ha, 17, Senior, Jin Park, 17, Senior, Ilsan Daejin High

School, Goyang, South Korea, Sunrin Internet High School, Seoul, South Korea, Hankuk

Academy of Foreign Studies, Yongin, Gyeonggido, South Korea, T: Sung Hun Hwang

SOFT020T Automatic Bus Reservation System for the Visually Impaired

<https://projectboard.world/isef/project/162860>

Seongbeen Ahn, 16, Sophomore, Yeseo Joo, 14, Freshman, Hanon Bae, 14, Freshman,

Haeundae High School, Haeundae Girls' Middle School, Haeundae-gu, Busan,

South Korea, T: Jieun Lee

SOFT031T SupportLess: Software Searching for Optimal Support Orientation in 3D Printing

<https://projectboard.world/isef/project/165047>

Jiseok Lee#, 17, Junior, Kyungrae Kim, 17, Junior, Jeohyeon High School, Goyang-si,

Gyeonggi-do, South Korea, T: Eunhui Shin

Finalist Directory

- SOFT039** **Crowd Avider: A Study on Development of Crowd Density Assessment Program Using Particle-Based Fluid Simulation and Time Series Data Prediction**
<https://projectboard.world/isef/project/166731>
Minjae Kim, 17, Senior, Incheon Science High School, Incheon, South Korea,
T: Seung Won Yang
- TECA011T** **HearBridge: AR Headset for Interactive Communication via Conversation Textualization and Sign Language Translation for the Hearing Impaired**
<https://projectboard.world/isef/project/165878>
Seongbin Byun##, 17, Senior, Hyunwoo Cho#, 17, Senior, Kyeongbuk High School, Daegu, South Korea, Korea Digital Media High School, Ansan-si, South Korea, T: Ensol Kang
- TECA012T** **Voicemath: A Program To Convert Commonly Spoken Mathematical Speech Into Equations Using Natural Language Processing**
<https://projectboard.world/isef/project/165043>
Hoonsung Lee, 18, Junior, Siwon Yun, 18, Senior, Cornerstone Collegiate Academy of Seoul, Korea Digital Media High School, Ansan-si, South Korea, T: Seongok Ma
- Cheonan-si, South Korea, KOR003, Korea Science Fair**
- BEHA004T** **Proposal of LLM-Based Chatbot for Clinical Psychological Counseling of Autistic Adolescents**
<https://projectboard.world/isef/project/162383>
Ryan Donghan Kwon, 18, Senior, Seojin Kim, 18, Junior, Yujin Cho, 17, Junior, Hana Academy Seoul, Eunpyeong-gu, Seoul, Branksome Hall Asia, Seogwipo-si, Jeju, South Korea, T: Hyungsik Jung
- BMED017** **Debunked: Steroid Risk in Systemic Sclerosis**
<https://projectboard.world/isef/project/162384>
Hyunseo Choi, 15, Sophomore, Saint Paul Preparatory Seoul, Seocho, Seoul, South Korea, T: Junsuk Ko
- EAEV029T** **Development of Multiparametric Microfluidic Chip Focusing on Water Quality Monitoring**
<https://projectboard.world/isef/project/162391>
Yena Lee, 18, Junior, Soyong Kang, 17, Junior, Jiwon Shin, 18, Junior, Korean Minjok Leadership Academy, Hoengseong, Gangwon, South Korea, T: Dongjin Kim
- EBED011T** **Development of Emotion Recognition Device for Visually Impaired**
<https://projectboard.world/isef/project/162389>
Seoyun Baek, 17, Junior, Jihoon Oh, 17, Junior, Jungwoo Brian Kim, 19, Junior, Korean Minjok Leadership Academy, Hoengseong, Gangwon, South Korea, T: Sojung Min
- ENEV021T** **The Development of an Innovative Demulsifier for the Separation of an Emulsion of Water-Soluble Cutting Oil**
<https://projectboard.world/isef/project/162086>
Hyunseung Lee, 17, Sophomore, Jungwoo Lee, 17, Junior, Chadwick International School, Seoul International School, Seoul, Gyunggi-Do, South Korea, T: Julie MacDonald
- ENEV022T** **Optimization of Irrigation by Novel Method of Sap Flow-Based Drip Irrigation**
<https://projectboard.world/isef/project/162092>
Hangyun Cho, 18, Junior, Yeonjun Ra, 17, Junior, Korean Minjok Leadership Academy, Hoengseong, Gangwon, South Korea, T: Alexander Ganse
- ETSD018T** **Spidersonde: A Novel Approach to Tropical Cyclone Reconnaissance via Biomimicry of Spiders' Ballooning**
<https://projectboard.world/isef/project/162088>
Minjun Kim, 18, Senior, Hyunbin Lee, 18, Senior, Eunjae Kim, 16, Junior, Cheongshim International Academy, Seoul, South Korea, T: Hyunuk Chung
- ETSD021T** **Drice: Drone-Based Real-Time Black Ice Detection System for Winter Driving Safety**
<https://projectboard.world/isef/project/162554>
Justin Moon, 17, Senior, Jinhoo Oh, 17, Senior, Seokhee Han, 17, Senior, Cheongshim International Academy, Seoul, South Korea, T: Dongwhan Shin
- MATH013** **A Study on Arc Index of Theta Curves**
<https://projectboard.world/isef/project/162390>
Yoonsang Lee, 18, Senior, Korea Science Academy of KAIST, Busan, South Korea,
T: Hun Kim

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- MATS016T** **A Recipe for Delicate Size Control of nZIF-8: The Ionic Liquid Microemulsion Method**
<https://projectboard.world/isef/project/162091>
Seonghyeok Choi, 18, Junior, Uijin Jung, 18, Junior, Seungmin Han, 18, Junior, Korea Science Academy of KAIST, Busan, South Korea, T: Eun-Young Choi
- MCRO009T** **Solution for Affordable Insulin: Efficient Production of Single Chain Insulin Through *P. fluorescens***
<https://projectboard.world/isef/project/162385>
Sihyeong Song, 18, Junior, Soyul Kim, 17, Junior, Hyolin Lim, 17, Junior, Korea Science Academy of KAIST, Busan, South Korea, T: Junghoon Ahn
- PHYS017** **Unveiling Galaxy Evolution Dependency on Local Environment of Galaxies Using DESI EDR1**
<https://projectboard.world/isef/project/162386>
Hyunseung Cho, 17, Junior, Seoul International School, Seoul, Gyunggi-Do, South Korea, T: Jiwon Jang
- PHYS022T** **Further Understanding of Gyroscopic Precession: Analysis in the Rotating Frame**
<https://projectboard.world/isef/project/162089>
Woongju Jason Lee, 18, Junior, Myeong Yoon, 18, Junior, Gyeonggi Science High School for the Gifted, Suwonsi, Gyeonggido, South Korea, T: Sanghyup Kim
- SOFT011T** **Automated Defect Detection Framework for Efficient Photovoltaic Panel Manufacturing**
<https://projectboard.world/isef/project/162388>
Jihwan Kim, 18, Junior, Seungjun Chu, 17, Junior, Busan Il Science High School, Busan, South Korea, T: Sujin Lee
- Seoul, South Korea, KOR002, YSC (National Science Research Competition)**
- ENBM061T** **Lightweight Walking Aid Ankle Exoskeleton Using Twisted String Actuator**
<https://projectboard.world/isef/project/167096>
Honggeun Ji, 17, Senior, Chan Shin, 18, Senior, Korea Science Academy of KAIST, Busan, South Korea, T: Joonbum Bae
- MATH024T** **Gauss Circle Problem Solving and Extending in 3D Shape Using Pick's Theorem**
<https://projectboard.world/isef/project/167097>
Taeyeon Kim, 16, Junior, Seowon Yoon, 17, Junior, Jae Ryoo, 16, Junior, Incheon Academy of Science and Arts, Incheon, South Korea, T: Se Hee Kim
- MATH026T** **Optimization of Group Division Method for Rock-Paper-Scissors Game Considering Efficiency and Fairness**
<https://projectboard.world/isef/project/167249>
Soonmin Kwon, 18, Senior, Minjung Lee, 17, Senior, Yoonwoo Ku, 18, Senior, Gyeonggi Science High School for the Gifted, Suwonsi, Gyeonggido, South Korea, T: Jaehee Park
- PHYS052T** **Identification of a Binary System by CCD Photometry and Analysis on the Physical Properties of Asteroid (39) Laetitia**
<https://projectboard.world/isef/project/167098>
SeongJun Ahn, 16, Junior, Ha Neul Kim, 16, Junior, Chung-Buk Science High School, Cheongju-Si, Chungcheongbukdo, South Korea, T: Young Kyun Ahn
- SPAIN**
- Barcelona, Spain, SPN001, Exporecerca Jove**
- CBIO042** **Structural and Evolutionary Analysis *in silico* of the Leigh Syndrome-Associated Protein SURF1**
<https://projectboard.world/isef/project/167688>
Laia Plans Gandia, 17, Senior, Daina Isard, Olesa de Montserrat, Barcelona, Spain, T: Oriol Lopera Ortega
- ENEV073** **Biodegradation of Bisphenol A, An Endocrine-Disrupting Chemical, by *Trametes versicolor* and *Pleurotus ostreatus***
<https://projectboard.world/isef/project/167872>
Maria Montserrat Santacana, 18, Senior, IES Eugeni d'Ors, Vilafranca del Penedes, Barcelona, Spain, T: Montserrat Sarra Adroguer

Finalist Directory

SRI LANKA

Piliyandala, Sri Lanka, LKA001, Sri Lanka Science & Engineering Fair

BMEDO26 Evaluation of Antidiabetic Activity of Flowers of Ranawara (*Cassia auriculata* L.)

<https://projectboard.world/isef/project/163703>

Karaldeniya Lekamge Nadeeja Prathibhana, 19, Senior, Thurstan College, Colombo, Western, Sri Lanka, T: Upeksha Abeysekera

ENBMO26 Mattress Ventilation System

<https://projectboard.world/isef/project/163702>

Senanayaka Mudiyansele Chirath Adithya Bimsara Senanayaka, 18, Senior, Saranath College, Kuliypitiya, North Western, Sri Lanka, T: Lasantha Dissanayake

ETSDO31 Innovated Faucet Socket for Water Taps

<https://projectboard.world/isef/project/163709>

Rathnayaka Mudiyansele Harsha Bandara Madawala, 19, Senior, Mayurapada Central College, Kurunegala, North Western Province, Sri Lanka, T: Nilan Liyana Arachchi

SWEDEN

Stockholm, Sweden, SWE001, Utställningen Unga Forskare

MATHO35 Finding Numerical Solutions to Partial Differential Equations With Deep Learning

<https://projectboard.world/isef/project/168025>

Holger Sven Richard Molin, 18, Senior, Procivitas Privata Gymnasium Helsingborg, Helsingborg, Sweden, T: Carl Martin Sikstrom

PHYSO59T Analysis of the Atmospheric Muon Flux Utilizing CosmicWatch Muon Detectors

<https://projectboard.world/isef/project/167871>

Johan Thord Stellan Andersson, 18, Senior, Jonah Friberg, 18, Senior, Julius Fredrik Johannes Lyreborn, 18, Senior, Berzeliuskolan, Linköping, Ostergotland, Sweden, T: Mikael Rydfalk

TMED079 Evaluating the Efficacy of Deep Learning Segmentation in Oncological Medical Imaging for Cancerous Region Identification

<https://projectboard.world/isef/project/168298>

Daria Dori Chamoun, 18, Senior, Viktor Rydbergs Gymnasium Odenplan, Stockholm, Stockholm, Sweden, T: Sarah Trask

SWITZERLAND

Bern, Switzerland, CHE001, Swiss Youth in Science

EBEDO09 Development and Construction of a TTL Processor

<https://projectboard.world/isef/project/162468>

Klaus Scheffler, 19, Senior, Gymnasium Kirschgarten, Basel, Basel-Stadt, Switzerland, T: Victor Yakhontov

MATSO05 The Development and Evaluation of 3D Printed, Hygromorphic, Biodegradable and Self-Loomotive Soft Robots (Hygrobots), as a Powerful Tool for Environmental Monitoring and Protection

<https://projectboard.world/isef/project/162580>

Gabriele Jose Dutli, 19, Senior, Kantonsschule Zurich Nord, Zurich, Switzerland, T: Christian Prim

PHYSO15 Data Set Filtering for Microlensing-Effect Identification

<https://projectboard.world/isef/project/162602>

Lamiah Hammam, 19, Senior, Kantonsschule Wattwil, St. Gallen, Switzerland, T: Rolf Heeb

THAILAND

Patumwan, Thailand, THA001, SST-NSM National Science Projects Competition

ANIMO23T Reducing Carbon Footprint and Producing Biofuel From Waste Degradation and Conversion by Black Soldier Fly

<https://projectboard.world/isef/project/163111>

Naphudon Sriratana, 15, Freshman, Paponphat Viroonvaiwut, 15, Freshman, Bangkok Christian College, Bangkok, Thailand, T: Wanida Bhu-iam

Finalist Directory

- ANIM028T** **Bee's Spa: An Artificial Mud Puddle for Highland Beekeeping To Reduce Bee Mortality During Drought Stress**
<https://projectboard.world/isef/project/164247>
Witsanuchai Hathakong#, 18, Junior, Tanapat Somyapornjarernchai, 17, Junior, Rattanakosin Phirasorn, 17, Junior, Damrongratsongkroh School, Muangchiangrai, Chiangrai, Thailand, T: Kiettsak Inrajsadon
- ANIM033T** **Innovation of Artificial Tree Branches for Raising Lac Insects To Establish Sustainable Lac Resin Production**
<https://projectboard.world/isef/project/166130>
Worarit Suyala, 18, Senior, Wipharat Ruaisapphokhin, 18, Senior, Huayso Wittayakhom Rachamangkhalaphisek, Chiang Khong, Chiang Rai, Thailand, T: Keerati Thayen
- PHYS038T** **Effect of the Apex Angle of a Triangular-Shaped Vibrating Structure on Acoustic Streaming**
<https://projectboard.world/isef/project/166131>
Korakrit Tonpongphan, 18, Senior, Verroj Boonyaraj, 17, Senior, Kamnoetvidya Science Academy, Rayong, Thailand, T: Parinya Sirimachan
- PHYS053T** **Comparison of the Spiral Wave on the Fabric and the Gravitational Wave From the Orbiting Binary**
<https://projectboard.world/isef/project/167372>
Kanisorn Sawangsawai, 18, Senior, Phudit Thanakulkairid, 18, Senior, Kamnoetvidya Science Academy, Rayong, Thailand, T: Parinya Sirimachan
- PLNT023T** **A Novel Duckweed Cultivation Method To Maximize Its Nutritional Value for Future Sustainable Food Development**
<https://projectboard.world/isef/project/162107>
Thanatkorn Chauvanasmith#, 16, Sophomore, Sunyapat Akkarajeerawat#, 16, Sophomore, Bangkok Christian College, Bangkok, Thailand, T: Chanan Keatsirisat
- ROBO033T** **VannameiVision: A Novel End-to-End Pipeline for Stock Quality Assessment With a Case Study in Shrimp Post-larvae Screening From Robust Data Acquisition to Autonomous Segmentation and Systematic Characterization of Count, Size and Vitality**
<https://projectboard.world/isef/project/163736>
Thinnaphat Siammai, 18, Senior, Patipond Tiyapunjanit, 17, Senior, Princess Chulabhorn Science High School Pathumthani, Ladlumkaew, Pathumthani, Thailand, T: Khunthong Klaythong
- ROBO034T** **EGA: An Autonomous Drone Navigation System for Anticipatory Patrols in Complex Forests Using Visual-Depth Reinforcement Learning With CNN in a Hyper-Realistic 3DGS Simulation To Provide Real-time Patrol Guidance by 3D EGA Map**
<https://projectboard.world/isef/project/163939>
Wattanapong Uttayota#, 19, Senior, Tanapat Charunworaphan#, 18, Senior, Noppawit Tharakittikirati#, 18, Senior, The Prince Royal's College, Mueang Chiang Mai, Chiang Mai, Thailand, T: Krittipong Wachirangkul
- TMED041T** **EiPCA-A Portable Self-Screening Electrocardiographic System for Rapid Screening of Cardiovascular Diseases Using EiPCA Formula and Lead Augmentation Algorithm To Convert 1-Lead to 12-Lead ECGs**
<https://projectboard.world/isef/project/165456>
Peerapat Wattanakit, 18, Senior, Patcharada Tawaditap, 18, Senior, Khunasin Suk Sri, 18, Senior, The Prince Royal's College, Mueang Chiang Mai, Chiang Mai, Thailand, T: Kutiya Piyarungsi
- Pathum Thani, Thailand, THA002, Young Scientists Competition**
- CHEM057T** **Interstellar Life Quest: Gold-Water Simulation**
<https://projectboard.world/isef/project/167256>
Worachon Promchaisri, 17, Junior, Jiratip Jedmongkolrat, 17, Junior, Kamnoetvidya Science Academy, Rayong, Thailand, T: Ukrit Keyen

Finalist Directory

- CHEM070T** **Activated Carbon Derived From Rice Husks Enhanced by Methylene Blue and Gamma Irradiation for Energy Storage Applications**
<https://projectboard.world/isef/project/167257>
Natavoranun Suwatanapongched, 17, Junior, Jittiyada Surawattanawiset, 17, Junior, Thannithi Anusontiwong, 17, Junior, Kamnoetvidya Science Academy, Rayong, Thailand, T: Suranan Anantachaisilp
- ENBM066T** **PoDE - A Platform Leveraging Characteristic Time Series Patterns of Oculomotor Control Attributable to Cholinergic Neuron Destruction in the Parietal Lobe, Indicating Early Alzheimer's Disease Utilizing the PoDE Neural Network**
<https://projectboard.world/isef/project/167374>
Lenny Thomas, 17, Senior, Tanyada Thongbai, 17, Senior, Tin Potikanond, 18, Senior, The Prince Royal's College, Mueang Chiang Mai, Chiang Mai, Thailand, T: Rungkan Wangboon
- ENEVO62T** **sPET: Miniature Enzyme From Metagenomic Mining for the Hydrolysis of Polyethylene Terephthalate (PET)**
<https://projectboard.world/isef/project/167255>
Wirunpat Jiratthitjaroen, 17, Junior, Pawonwan Chaiwong, 17, Junior, Abhipiya Pawabunsiriwong, 17, Junior, Kamnoetvidya Science Academy, Rayong, Thailand, T: Arjaree Thirach
- ETSD056** **TransitBot: Transitional Shape-Adaptive Wall-and-Pole Climbing Robot With Rotary Microspine Mechanism**
<https://projectboard.world/isef/project/167258>
Narawich Tantiphitakchote, 17, Junior, Kamnoetvidya Science Academy, Rayong, Thailand, T: Sarun Nounjeen
- MATS042T** **Alternative Organic Sanitary Pads From Plant Fibers Enhanced With Gooseberry Extract Coating**
<https://projectboard.world/isef/project/167262>
Sirirapha Panturaporn, 17, Junior, Sirirapha Panturaporn, 17, Junior, Montfort College, ChiangMai, Thailand, T: Junjira Chaiinseard

TUNISIA

- Moknine, Tunisia, TUN002, Tunisian Regional Science and Engineering Fair**
- ENEVO77** **Development of Oil Collecting Submarine Using AI and Hydro-Filter Solution**
<https://projectboard.world/isef/project/168115>
Ayhem Bouker, 17, Junior, Lycee Privee des Elites 2, Sousse, Tunisia, T: Hatem Slimane
- ROBO077** **Renovation of Olive Cultivation Sector Using AI**
<https://projectboard.world/isef/project/168131>
Ala Bouhaouel, 17, Junior, Lycée 2 Mars 1934, Ksar Hellal, Tunisia, T: Hatem Slimane
- ROBO079** **Development of a Comprehensive Monitoring System for Bee Health and Behavior Analysis Using Intelligent Sound Device**
<https://projectboard.world/isef/project/168134>
Nour El Houda Jenzeri, 16, Sophomore, Lycee Teboulba, Teboulba, Tunisia, T: Hatem Slimane

TURKEY

- Ankara, Turkey, TURO02, Tubitak Fair**
- BCHM012T** **Design, Synthesis and Biological Evaluation of a Hybrid Boronic Acid-Quinolinone Derivative as a Novel Acid Ceramidase Inhibitor To Target Breast Cancer**
<https://projectboard.world/isef/project/162522>
Muhammet Fazil Baliıci, 18, Senior, Rukiye Nur Dogan, 18, Junior, Sebnem Sena Bilgin, 17, Junior, Kartal Anadolu Imam Hatip High School, Istanbul, Turkey, T: Pinar Dundar
- CBIO006T** **An Innovative Pipeline Integrating Mendelian Randomization for Personalized Disease Risk Assessment and Therapeutic Drug Identification**
<https://projectboard.world/isef/project/162610>
Irem Yuce, 18, Senior, Yusuf Said Aktan, 18, Senior, Kerem Berk Bozkurt, 18, Senior, Ankara Fen Lisesi, Ankara, Turkey, T: Aynur Elif Kekeç

Finalist Directory

- CELLO18T** **Modeling the Possible Connection Between the Variation of Homozygous Birc6 Gene and the Premature Ovarian Insufficiency on Zebrafish (*Danio rerio*)**
<https://projectboard.world/isef/project/162140>
Zeren Ovu1, 17, Junior, Deren Zehra Unuvar, 17, Senior, Izmir Ozel Ege Lisesi, Izmir, Turkey, T: Yasemin Yavuz
- CHEMO18T** **Preparation of Environmentally Friendly Adsorbents for the Treatment of Water and Development of an Innovative Treatment Method ‘Stick Sieve’**
<https://projectboard.world/isef/project/162534>
Ela Gungor, 17, Junior, Yagmur Deniz Ciftci, 17, Junior, Zeliha Ada Iplikci, 16, Junior, Izmir Bahcesehir College 50th Year Anatolian High School, Izmir, Bornova, Turkey, T: Serap Yildirim Metin
- EBED006T** **A Mesh Network-Integrated Multi-Robot Team With Electronic Nose for Human Detection Under Rubble in Post-Disaster Scenarios**
<https://projectboard.world/isef/project/162436>
Muhammet Basar Ozcan, 18, Senior, Burak Eren Demir, 18, Senior, Salih Celik, 17, Senior, Ataturk High School of Science, Istanbul, Turkey, T: Mehmet Durmus
- ENBM004T** **Purification of Tyrosinase From Cultivated Mushrooms for the Development of a Tyrosinase-Based Dopamine Biosensor Utilizing Carbon Quantum Dots**
<https://projectboard.world/isef/project/162450>
Mehmet Emre Endar, 17, Senior, Doruk Saran, 17, Senior, Efe Dora Durmaz, 17, Senior, Sehit Prof. Dr. Ilhan Varank Bilim ve Sanat Merkezi, Balikesir, Karesi, Turkey, T: Pinar Sabaz
- ENBM005T** **Measurement of the Anterior Chamber Depth in the Eye With the Optical Polarimetry System**
<https://projectboard.world/isef/project/162613>
Kuday Baki Tosun, 18, Senior, Eren Kahrirman, 18, Senior, Takev Science High School, Izmir, Aegean, Turkey, T: Mert Duman
- ENEVO18T** **Development of a Solar Powered Buoy To Measure and Report the Pollution Level of Wetlands**
<https://projectboard.world/isef/project/162499>
Eray Akin, 17, Senior, Nisa Iltekin, 18, Senior, Murat Leylekoglu, 18, Senior, Izmir Fen Lisesi, Izmir, Bornova, Turkey, T: Gulseren Coskun
- MATH006** **Euler-phi Partitions, p-Euler-phi Partitions, Inverse-p-Euler-phi Partitions and Their Generating Functions**
<https://projectboard.world/isef/project/162418>
Arda Ozcelebi, 17, Junior, Izmir Ozel Ege Lisesi, Izmir, Turkey, T: Okan Aciksoz
- MATS006T** **A Novel Organic Bioelectronic Circuit Component – Chlorophyll Applied Optical Capacitor**
<https://projectboard.world/isef/project/162513>
Nazli Ayse Buyukkale, 17, Junior, Alp Murat Kincak, 18, Senior, Nisan Dincer, 16, Junior, Istanbul Fuat Sezgin Bilim ve Sanat Merkezi, Istanbul, Atasehir, Turkey, T: Selim Okmen
- PHYSO10T** **Modeling and Simulating the Effects of Parabolic Ring Cavity Geometry on Atom Interferometer and Quantum Accelerometers**
<https://projectboard.world/isef/project/162448>
Halil Ibrahim Yenitürk, 16, Junior, Tuna Ozer, 16, Junior, Ankara Fen Lisesi, Ankara, Turkey, T: Halit Koca
- ROBO010T** **Pupil Motion-Based Support Device That Aims To Increase the Neck Mobility of Patients With Neck Movement Disabilities**
<https://projectboard.world/isef/project/162417>
Mustafa Ali Sahin, 18, Senior, Beyza Nur Ocak, 18, Senior, Naz Findik, 17, Junior, Gaziantep Private Sanko College, Gaziantep, Turkey, T: Neriman Ersonmez
- TECA001** **HAGU: AI-Generated Harmonically Rich Classical Guitar Pieces**
<https://projectboard.world/isef/project/162063>
Burak Sina Akbudak, 18, Senior, Izmir Fen Lisesi, Izmir, Bornova, Turkey, T: Sertac Ates
- TMED082T** **The Effects of *Amphimallon solstitiale* Larva on Gene Expression Level *in vitro* Atopic Dermatitis Model**
<https://projectboard.world/isef/project/162628>
Nihan Desdicioglu, 15, Sophomore, Eylul Lavaskan, 15, Sophomore, Zeynep Erva Yildirim, 17, Junior, Aziz Sancar Fen Lisesi, Sevgi Private School, Ankara, Turkey, T: Emine Yildirim

Finalist Directory

UKRAINE

Kyiv, Ukraine, UKR001, Eco-TechnoUkraine

EAEV084 Fire Impactology: Modeling and Estimating the Impact of Wildfire Emissions on Public Health

<https://projectboard.world/isef/project/167743>

Polina Yaryfa, 16, Junior, School 306, Kyiv, Ukraine, T: Anna Megalinska

ETSD058 Impact-Resistant Ambulance Platform With the Properties of a Robotic Manipulator but With the Price of a Regular Gurney

<https://projectboard.world/isef/project/167373>

Bohdan Hlavatskyi, 17, Junior, Lviv Lyceum of Technology, Lviv, Ukraine, T: Viktor Koldun

MATH037 Simulation of Armed Conflict Using Unmanned Aerial Vehicles (UAVs) in Ground Combat Operations

<https://projectboard.world/isef/project/168205>

Volodymyr Borysenko, 17, Junior, Cherkassy School Number 28, Cherkasy, Ukraine, T: Ihor Ivanov

UNITED ARAB EMIRATES

Dubai, United Arab Emirates, ARE003, National Science Technology and Innovation (NSTI) Festival

BEHA016T Tamkeen Hub: Elevating Student Readiness and Involvement To Take Action for a Sustainable Future

<https://projectboard.world/isef/project/162755>

Shamma Khalid Al Suwaidi, 15, Junior, Maitha Mashhoom AlMansoori, 16, Junior, Mira Alkahaleh, 14, Sophomore, Dubai National School-Al Barsha, Dubai, United Arab Emirates, T: Nafissa El Jabban

CHEM028 Surface-Coordination Functionalization of Metal-Organic Framework for Selective Carbon Dioxide Capture and Reversible Hydrogenation to Formic Acid

<https://projectboard.world/isef/project/163096>

Saif Hassan Karam, 16, Junior, Secondary Model School For Boys, Al Sabkha, Sharjah, United Arab Emirates, T: Ayat Al Nimer

ETSD023T Adaptive Biomimetic Aircraft (ABA): Nature-Inspired Enhancement of the Aerodynamic Design of Aircrafts To Improve Sustainable Performance

<https://projectboard.world/isef/project/162754>

Ayesha Omar AlMheiri, 16, Junior, Jamila Khalid Albeshri, 16, Junior, Sura Omar Al Osayat, 17, Junior, Dubai National School - Al Barsha, Dubai, United Arab Emirates, T: Yusra Elkalyoubi

UNITED STATES OF AMERICA

ALABAMA

Montgomery, USAL01, Greater East Alabama Regional Science and Engineering Fair

BMED028 Modifying Oncolytic Adenovirus for Osteosarcoma Treatment

<https://projectboard.world/isef/project/164248>

Annie Bao, 15, Freshman, Auburn Junior High School, Auburn, Alabama, T: Jacque Middleton

EAEV053 Developing a Novel Wildfire Spread Prediction Model Using Spatio-Temporal Analysis and Time-Series Forecasting

<https://projectboard.world/isef/project/165406>

Kevin Yan, 17, Junior, Auburn High School, Auburn, Alabama, T: Jacque Middleton

EBED027 Detecting Forest Fires and Park Visitors in Distress Using Radio Systems

<https://projectboard.world/isef/project/164387>

John Willis Parsons, 17, Junior, Auburn High School, Auburn, Alabama, T: Jacque Middleton

Birmingham, USAL02, Central Alabama Regional Science and Engineering Fair

ANIM016 The Effects of Electrical Stimulation on Planaria Tissue Regeneration

<https://projectboard.world/isef/project/162062>

Ashu Anand, 16, Junior, Alabama School of Fine Arts, Birmingham, Alabama, T: Hungsin Chin

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- EAEV034** **Assessing Environmental Toxicity Across Varied Habitats Through *Daphnia magna* Analysis**
<https://projectboard.world/isef/project/162563>
Greeshma Sarah Vinoy, 15, Freshman, Alabama School of Fine Arts, Birmingham, Alabama, T: Hui Li
- ENBM031** **Parametric Design Optimization of Soft Pneumatic Network Actuators for Rehabilitation**
<https://projectboard.world/isef/project/164249>
Abhai Anand, 18, Senior, Alabama School of Fine Arts, Birmingham, Alabama, T: Hungsin Chin
- PHYS027** **Exploring Wave Properties of Light Through Simplified Double Slit Experiment**
<https://projectboard.world/isef/project/162561>
Leonardo Francisco Hernandez, 17, Junior, Homewood High School, Birmingham, Alabama, T: Jacob Helf
- Huntsville, USAL03, North Alabama Regional Science and Engineering Fair**
- ROBO051** **Frontier-Based Exploration Adapted for Searching With Drones**
<https://projectboard.world/isef/project/166132>
Gabe Gordon, 17, Senior, Life Christian Academy, Harvest, Alabama, T: Jess Gordon
- ROBO052** **Increasing the Efficiency of the Transformer Architecture of ChatGPT During Inference Using Nanophotonics**
<https://projectboard.world/isef/project/166134>
Connie Ashley Guo, 17, Senior, James Clemens High School, Madison, Alabama, T: Kathryn Weir
- TMED049** **To Identify a Multi-Gene Biomarker Based on Most Frequently Occurring Genetic Mutations Across Cancers Through Bioinformatics and Verify Its Efficacy To Detect a Wide Range of Cancers Using Statistical Analysis**
<https://projectboard.world/isef/project/166135>
Sahishnu Saha, 16, Junior, James Clemens High School, Madison, Alabama, T: Katie Weir
- Mobile, USAL04, Mobile Regional Science Fair**
- CBIO022** **Identifying Apple Snail Sequences Suitable for RNAi Pesticide Design**
<https://projectboard.world/isef/project/164252>
Madeline Borchert, 16, Sophomore, Alabama School of Mathematics and Science, Mobile, Alabama, T: Natalie Ortell
- ETSD034** **Proposing and Simulating a Novel Solar Sail Deployment Mechanism for Nanosatellites**
<https://projectboard.world/isef/project/164251>
Yunseo Ha, 17, Junior, Alabama School of Mathematics and Science, Mobile, Alabama, T: Jessica Alexander
- Auburn, USAL50, Alabama Science and Engineering Fair**
- BEHA051** **Voxel-Based Morphometry and Time Frequency Analysis of Epilepsy for Detection of Ictal Impaired Consciousness**
<https://projectboard.world/isef/project/168029>
Rhyana Mahatsente, 16, Sophomore, Northridge High School, Tuscaloosa, Alabama, T: Erin Heck
- EAEV098** **Anticipating Wastewater Emergencies in Alabama Using a Predictive Maintenance Machine Learning Model**
<https://projectboard.world/isef/project/168145>
Max Urban Lizee, 17, Junior, Indian Springs School, Indian Springs, Alabama, T: William Belser
- MATS050** **Machine-Learning-Driven Discovery of Novel Acoustic Metamaterials for Broadband Noise Mitigation**
<https://projectboard.world/isef/project/168028>
Will Bao, 17, Junior, Auburn High School, Auburn, Alabama, T: Jacque Middleton

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ALASKA

Anchorage, USAK50, Alaska Science and Engineering Fair

EAEV077 **Comparison of Quantitative PCR and Metabarcoding Methods for the Enumeration of Sockeye Salmon Using Environmental DNA: Year 2 of an Ongoing Study**
<https://projectboard.world/isef/project/167320>

Elizabeth Shao Djajalie, 18, Senior, Thunder Mountain High School, Juneau, Alaska,
T: Carol May

ROBO082 **Guiding Vector Field Implementation and Error Correction Analysis**

<https://projectboard.world/isef/project/168245>

Manning Zhang, 16, Junior, West Anchorage High School, Anchorage, Alaska,
T: Alexander Troll

ARIZONA

Sierra Vista, USAZ02, SSVEC's Youth Engineering and Science Fair

EAEV031 **Ferrofluid Extraction of Microplastics**
<https://projectboard.world/isef/project/162706>

Juliannah Gavin, 17, Senior, Veritas Christian Community School, Sierra Vista, Arizona,
T: Daniel Doyle

***EBED015T** **Improved Pass System for Schools With Integrated Lock**

Dylan Rubstello#, 18, Senior, Kade Landon Spilsbury, 17, Junior, Janessa Jo Oudenhoven,
17, Junior, Buena High School, Sierra Vista, Arizona, T: Amy Martinez

Tucson, USAZ03, Southern Arizona Research, Science and Engineering Fair

BMED029 **Unraveling the Achilles' Heel of Human Tumors: Moving Toward Inducing Mutational Meltdown by Deciphering the Most Deleterious Mutational Processes**

<https://projectboard.world/isef/project/164256>

Auhona Hia Shil, 17, Senior, University High School, Tucson, Arizona,
T: Dhruva Bhattacharya

CBIO012 **A-BIRD: Automated Bird Recognition Device — Revolutionizing Ornithological Research for Global Bird Conservation**

<https://projectboard.world/isef/project/162064>

Finnegan Liam McGill, 16, Sophomore, Tanque Verde High School, Tucson, Arizona,
T: Grazyna Zreda

CELLO27 **The Function of p53 in Intestinal Epithelium Wound Healing**

<https://projectboard.world/isef/project/164253>

Sohini Mallick, 17, Senior, University High School, Tucson, Arizona, T: Elyse Wexler

CHEM035 **Novel TMOS-Dependent Synthesis of Water-Stable CsPbBr₃-SiO₂ Nanoparticles for Bioimaging Applications**

<https://projectboard.world/isef/project/164388>

Katherine Lam, 17, Junior, University High School, Tucson, Arizona, T: Kevin Nieves
Pichardo

EBED023 **Cardboard Packaging Waste Minimization: Autonomous Box Selection by Stereoscopic RGB-Depth Vision System and Complementary Deep Learning Classification**

<https://projectboard.world/isef/project/164255>

Jimmy Kwon, 16, Junior, BASIS Tucson North, Tucson, Arizona, T: John-Paul Mann

ENEV038 **Applications of the Engineered Novel Solid and Liquid Bioplastics From Invasive Algae and Waste Corncobs**

<https://projectboard.world/isef/project/164389>

Julianna Serna, 17, Senior, Harvest Preparatory Academy, Yuma, Arizona, T: Alfred Santos
PLNT034 **Germination Characteristics and Metal Tolerance of *Atriplex lentiformis* and *Atriplex canescens* Seeds Under Zinc Stress**

<https://projectboard.world/isef/project/164390>

Maritza Roberts, 19, Senior, BASIS Tucson North, Tucson, Arizona, T: John Mann

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- PLNT035T** **Pest Buster! Pests Repelling Biodegradable Weed Barrier Infused With Grape Skin and Turmeric Extracts: Year 2 Study**
<https://projectboard.world/isef/project/164391>
Michael Tristan Castro Lucero, 17, Junior, Humberto Gil Villalobos, 16, Junior, Harvest Preparatory Academy, Yuma, Arizona, T: Alfred Santos
- Phoenix, USAZ50, Arizona Science and Engineering Fair**
- ANIMO41T** **Investigating the Apoptotic Induction Potential of Various Chemical Food Preservatives on *Caenorhabditis elegans***
<https://projectboard.world/isef/project/167760>
Ohm Patel, 16, Junior, Jishnu Nayak, 16, Junior, Arizona College Prep High School, Chandler, Arizona, T: Rachna Nath
- BMED075** **A Novel Identification of the Epigenetic Enzyme JMJD1a in Neuroinflammation**
<https://projectboard.world/isef/project/167851>
- #
- BMED077** **FungiBug: Detection of Fungal Infection via a Rapid, Accurate, Handheld Small Blood Volume Diagnostic Device and Color Analysis**
<https://projectboard.world/isef/project/168030>
Rishabh Sreepathy, 16, Sophomore, ASU SCENE, Tempe, Arizona, T: Nicole Herbots
- CBIO043** **Elucidating RSV-Host Protein-Protein Interactions: Novel implementation of Graph Attention Networks (GAT) and Structural Visualization**
<https://projectboard.world/isef/project/167756>
- #
- EAEV086** **Aquatic Toxicity of Sunscreen Ingredients in Freshwater Ecosystems**
<https://projectboard.world/isef/project/167757>
Mallika Joy Sinha, 15, Sophomore, BASIS Peoria, Peoria, Arizona, T: Pallavi Payal
- ENBM067** **A Rigid-Elastic Hybrid Finger Exoskeleton Rehabilitation System (FERS) for Stroke Patients With Motor Impairment**
<https://projectboard.world/isef/project/167634>
Brad Wu, 15, Sophomore, Arizona College Prep High School, Chandler, Arizona, T: Rachna Nath
- ENBM070** **A Portable Tricep Support Exosuit Built From Soft Pneumatic Actuators**
<https://projectboard.world/isef/project/167755>
Christina Vo, 16, Junior, ASU SCENE, Tempe, Arizona, T: Karishma Patnaik
- ENEV074** **Natural Aqua Purifier: A Novel and Sustainable Water Purification Approach Utilizing Natural Coagulants for Easy Implementation in Rural Regions**
<https://projectboard.world/isef/project/167878>
Iraj Shroff, 15, Freshman, BASIS Chandler, Chandler, Arizona, T: Daniel Hodge
- ETSD066** **I.D.A.S—Interlocking Drone Aerial Swarm: Enhancing Thrust and Battery Configuration Flexibility**
<https://projectboard.world/isef/project/167758>
- #
- MATS048T** **Enhancing TeaWaste-Based Biopolymer Nanocomposite Performance Through a Biomimetic Cuticular Hydrocarbon Coating: A Sustainable Packaging Alternative**
<https://projectboard.world/isef/project/167863>
Siya Poddar, 15, Sophomore, Amal Fayad, 18, Senior, Arizona College Prep High School, Chandler, Arizona, T: Rachna Nath
- MCRO032T** **Bacterial Acoustic: Investigating the Impact of White Noise on the Growth of *E. coli***
<https://projectboard.world/isef/project/167633>
Andrea Angelye Betancourt Anaya, 16, Junior, Diana Paula Navarro Ruiz, 17, Junior, Diane Sofia Ladino, 16, Junior, Harvest Preparatory Academy, Yuma, Arizona, T: Alfred Santos
- PHYS054** **Beyond the Star: A Data-Driven Approach to Exoplanet Classification**
<https://projectboard.world/isef/project/167631>
Prithika Chauhan, 16, Junior, Hamilton High School, Chandler, Arizona, T: Debbie Nipar
- PLNT058** **A Prickly Project: Extracting and Quantifying Oxalate Concentrations in *Opuntia engelmannii***
<https://projectboard.world/isef/project/167759>
Ella Walsh, 17, Junior, University High School, Tucson, Arizona, T: Elyse Wexler

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ROBO076 **Designing a Drone-Based Sensor Deployment for Improved Forest Monitoring**
<https://projectboard.world/isef/project/168032>
Annalise Marie Baniecki, 18, Senior, ASU SCENE, Tempe, Arizona, T: Karishma Patnaik

ARKANSAS

Little Rock, USAR01, Ouachita Mountains Regional Science & Engineering Fair
MCRO017 **From Hot Springs and Sulfur to Iron and Belly Buttons: A Quest for Novel Antibiotics**
<https://projectboard.world/isef/project/163104>
Anna Patrycja Kiyari Valdivia, 15, Freshman, Lakeside High School, Hot Springs, Arkansas, T: Patrycja Krakowiak

Fayetteville, USAR03, Northwest Arkansas Regional Science and Engineering Fair
EGSD017 **Effects of Temperature on the Performance and Efficiency of Proton Exchange Membrane Hydrogen Fuel Cells (PEMFC)**
<https://projectboard.world/isef/project/162094>

Xavier Christopher Herzig, 17, Junior, Alma High School, Alma, Arkansas, T: Robbie Pham
ENBM017 **GlaucoScreen: A Novel Deep Learning-Based System for Glaucoma Detection and Progression Monitoring**
<https://projectboard.world/isef/project/162861>

Siddhartha Reddy Milkuri, 17, Junior, Bentonville High School, Bentonville, Arkansas, T: Clint Holderby

ENBM019 **A Holistic Multi-Modal GenAI System: Early Detection and Predictive Treatment Monitoring Using Chest X-rays and Cough Audio for Tuberculosis**
<https://projectboard.world/isef/project/162868>

Chandra Kiran Koushik Suda, 17, Senior, Bentonville High School, Bentonville, Arkansas, T: Clint Holderby

Jonesboro, USAR04, Northeast Arkansas Regional Science Fair
BEHA033 **Quantifying the Awareness of Sex-Based Disparity in Mental Health Treatment in Adolescents via Implicit Association Testing**
<https://projectboard.world/isef/project/166136>

Abigail Mae Province, 17, Junior, Salem High School, Salem, Arkansas, T: Katie Southard
ETSD045 **Efficiency in Small Scale CPU Cooling**
<https://projectboard.world/isef/project/166529>

Brandon Lee Elrod, 18, Senior, Harrisburg High School, Harrisburg, Arkansas, T: Chad Lacy

Little Rock, USAR05, Central Arkansas Regional Science and Engineering Fair
BMED014 **Transcriptomic Alterations in an *in vitro* Model of Nonalcoholic Fatty Liver Disease**
<https://projectboard.world/isef/project/162684>

Olya Sophia Tryndyak, 16, Junior, Little Rock Central High School, Little Rock, Arkansas, T: Lee Conrad

CBIO010 **Using Machine Learning To Detect Sequential Patterns in the Temporal Ordering of Dynamic States as Candidate Biomarkers for Parkinson's Disease**
<https://projectboard.world/isef/project/162647>

Yahya Younus, 16, Junior, Little Rock Central High School, Little Rock, Arkansas, T: Patrick Foley

CELL009 **Elucidating Novel Mechanisms: Berberine Mitigates Cisplatin-Induced Hepatorenal Mitochondrial Dysfunction Through Preservation of Electron Transport Chain Integrity**
<https://projectboard.world/isef/project/162674>

Bhavana Sridharan, 18, Senior, Little Rock Central High School, Little Rock, Arkansas, T: April Owen

MATH011 **Effects of Race on Abortions Conducted Over Time in the US**
<https://projectboard.world/isef/project/162690>

Aniyah Meghani, 15, Sophomore, Little Rock Central High School, Little Rock, Arkansas, T: Mary Maris

Finalist Directory

- PLNT015** **The Effects of Caffeine on *Glycine max* (Soybean) Proteogenomics**
<https://projectboard.world/isef/project/162691>
Jana Abuelem, 15, Junior, Pulaski Academy, Little Rock, Arkansas, T: Tanner Clements
- Monticello, USAR06, Southeast Arkansas Regional Science Fair**
- ROBO046** **Home Occupancy Simulation Using Machine Learning**
<https://projectboard.world/isef/project/165810>
Humam Al-Shami, 16, Junior, Arkansas Connections Academy, Bentonville, Arkansas,
T: Ahmad Al-Shami
- Hot Springs, USAR07, West Central Regional Science Fair**
- CHEM007** **Estimating f-Electron Shielding Constants Using Subsequent Ionization Energies**
<https://projectboard.world/isef/project/162564>
Nasya Choy, 17, Senior, Arkansas School for Mathematics, Sciences and the Arts, Hot Springs, Arkansas, T: Burt Hollandsworth
- CHEM013** **GC/MS Validation and the Kinetics of Dye Degradation by Titania Nanoparticles**
<https://projectboard.world/isef/project/162715>
Michelle Lin, 18, Senior, Arkansas School for Mathematics, Sciences and the Arts, Hot Springs, Arkansas, T: Brian Monson
- TMED009** **Small Molecule Stabilization of the CARD11 G-quadruplex Represses Transcription: Developing a Therapeutic Target for Diffuse Large B-Cell Lymphoma**
<https://projectboard.world/isef/project/162615>
Aarohi Sonputri, 18, Senior, Arkansas School for Mathematics, Sciences and the Arts, Hot Springs, Arkansas, T: Whiteny Holden, Ph.D.
- Conway, USAR50, Arkansas State Science Fair**
- BCHM029** **Integrative Assessment of the Novel Radioprotective Efficacy of Cardamomin: A Comprehensive *in vitro* and *in silico* Analysis**
<https://projectboard.world/isef/project/167115>
- # Siddharth Sridharan, 16, Sophomore, Little Rock Central High School, Little Rock, Arkansas, T: April Owen
- EAEV099** **Forecasting the Future: A Predictive Modeling Approach to Deciphering Climate Change's Impact on US County-Level Soybean Yields**
<https://projectboard.world/isef/project/168189>
Bennet Chen, 15, Freshman, Little Rock Central High School, Little Rock, Arkansas,
T: Tarsha Parker
- ENEV065** **Analyzing and Applying Biological Charcoal for High-Concentration Carbon Dioxide Storage**
<https://projectboard.world/isef/project/167380>
Jack Quinton Lowenthal, 16, Junior, Pulaski Academy, Little Rock, Arkansas,
T: Tanner Clements
- ROBO066** **Optimizing Lip Reading Using Convolved Neural Networks**
<https://projectboard.world/isef/project/167263>
Daniel Nkunga, 18, Senior, Arkansas School for Mathematics, Sciences and the Arts, Hot Springs, Arkansas, T: Nick Seward
- TMED075** **The Effect of UPPI, A Novel Metabolic Suppressor vs. Oncolytic Viruses on Pancreatic Cancers**
<https://projectboard.world/isef/project/167820>
Dishant Sharma, 18, Senior, Little Rock Central High School, Little Rock, Arkansas,
T: Patrick Foley
- CALIFORNIA**
- Santa Ana, USCA01, Orange County Science and Engineering Fair**
- BMED030** **Modeling California Heat Wave Exposure and Links to Dementia-Like Neurodegeneration in Elderly**
<https://projectboard.world/isef/project/164257>
Annika Chatterjee, 15, Freshman, University High School, Irvine, California,
T: Tom Shrake

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- CHEM049** **Quantifying Live Cell Liquid-Liquid Phase Separation Condensates**
<https://projectboard.world/isef/project/166571>
Lilian Gan, 17, Junior, University High School, Irvine, California, T: Tim Smay
- EBED035** **ErgO: A Novel Mouse-Keyboard Ring for Repetitive Strain Injury (RSI)**
<https://projectboard.world/isef/project/166530>
Sophia Dai, 16, Junior, University High School, Irvine, California, T: Tim Smay
- MCRO023** **A Bioinformatic Analysis of Foliar Fungal Endophytes in Litter Decomposition**
<https://projectboard.world/isef/project/166536>
Matthew Chang, 17, Junior, Woodbridge High School, Irvine, California,
T: Jennifer Blackie
- PHYS047** **A Novel Computer Vision Approach to Radial Velocity Extraction
for Exoplanet Detection**
<https://projectboard.world/isef/project/166689>
Katelyn Gan, 17, Junior, Sage Hill School, Newport Beach, California, T: Beril Tekin
- PLNT049** **Lighting the Path to Photosynthetic Efficiency in Vertical Farming**
<https://projectboard.world/isef/project/166542>
Aryan Sharma, 15, Freshman, Orange County School of the Arts, Santa Ana, California,
T: Kristen Lee
- ROBO057** **AdvMed: Detecting Adversarial Attacks in Medical Deep Learning Systems**
<https://projectboard.world/isef/project/166535>
Ayushi Mehrotra, 17, Junior, Troy High School, Fullerton, California, T: David Kim
- SOFT035** **Software for Customized Development of Partial Hand Prostheses in the 3D-Printed
Prosthetics Community**
<https://projectboard.world/isef/project/166532>
Katherine Cha Robertson, 18, Senior, Sage Hill School, Newport Beach, California,
T: Dinh Nguyen
- SOFT036** **Unmasking Cybersecurity Vulnerabilities in Direct and Transitive OSS Dependencies**
<https://projectboard.world/isef/project/166534>
Sebastian Rae Alexis, 15, Sophomore, Northwood High School, Irvine, California,
T: Angie Olivares
- Sherman Oaks, USCA02, Los Angeles County Science and Engineering Fair**
- ANIM036** **Hot Button: Non-Invasive Approach for Studying Emotion States in Mice**
<https://projectboard.world/isef/project/166931>
David Rodrigo Backer Peral, 18, Senior, La Canada High School, La Canada, California,
T: Karl Geckle
- ANIM037** **Concentration-Dependent Effects of Dietary Niacin and NAD⁺ in Longevity, Memory
and Motor Function of *Drosophila melanogaster***
<https://projectboard.world/isef/project/166932>
Olivia Saun So, 17, Junior, Harvard-Westlake Upper School, Studio City, California,
T: Nathan Cardin
- BMED063** **The Effects of Different Diets on Neurological Function; Implications for Alzheimer's
and Parkinson's Disease**
<https://projectboard.world/isef/project/166960>
Ella Rose Tulloch, 15, Freshman, Archer School for Girls, Los Angeles, California,
T: Jerilyn Neshek
- CELLO38** **Recombinant Synthesis of Hyaluronidase With Modified IgE-Binding Epitope
for the Purpose of Reduced Allergenicity**
<https://projectboard.world/isef/project/166738>
Zachary Russell Jones, 17, Senior, Hart High School, Santa Clarita, California,
T: Paula Bae
- EAEV067** **Analysis of the Effectiveness of the Salinas de San Pedro Salt Marsh To Purify Polluted
Water of Los Angeles/Long Beach Harbor**
<https://projectboard.world/isef/project/166693>
Lea Segal, 16, Sophomore, Palos Verdes Peninsula High School, Rolling Hills Estates,
California, T: Mark Greenberg

Finalist Directory

- ENBM072 Self-Assembling Chimeric Polypeptides as Drug-Carrying Nanoparticles for Anti-Cancer Chemotherapy**
<https://projectboard.world/isef/project/166691>
Andrew Huang, 15, Sophomore, Webb School of California, Claremont, California,
T: Joseph Martin
- SOFT043 Gaze Link: A Multi-language Low-Cost Mobile Eye-Gesture Communication System With Large Language Models for People With Amyotrophic Lateral Sclerosis**
<https://projectboard.world/isef/project/166933>
Xiangzhou Sun, 17, Junior, Webb School of California, Claremont, California, T: Joseph Martin
- Fresno, USCA03, Fresno County Science Fair**
- CBIO023 Chromoplexy Rearrangements: Investigating the Functional and Diagnostic Role of Novel Mutational Mechanisms Uncovered in Cancer Genomes**
<https://projectboard.world/isef/project/164259>
Jaspreet Kaur Sahota, 16, Sanger West High School, Fresno, California, T: Joel Orellana
- MATS031 Development of a Non-Synthetic Filter To Protect Against Ultraviolet Radiation Induced Erythema: *Dugesia tigrina* as an *in vivo* Experimental Model on the Effects of Botanical Extracts as Radioprotective Substances**
<https://projectboard.world/isef/project/164261>
Isabelle Ann Luna, 16, Junior, Sanger High School, Sanger, California, T: Davin Aalto
- PLNT032 Rapid Detection of Superweeds (Herbicide-Resistant Weeds) Utilizing Novel Full-Spectrum Imaging and a Hyperparameter-Tuned Convolutional Neural Network (CNN)**
<https://projectboard.world/isef/project/164258>
- #** Pauline Victoria Allasas Estrada, 17, Junior, Clovis North High School, Fresno, California,
T: Kay Barrie
- ROBO035 The Virtual Cardiologist: Three Deep Learning Pipelines in an Inexpensive Portable Device and Web/Mobile Application for Rapid Cardiovascular Diagnosis and Clinical Decision-Making**
<https://projectboard.world/isef/project/164260>
Shiv Mehrotra-Varma, 17, Junior, Clovis North High School, Fresno, California,
T: Kay Barrie
- Bonita, USCA05, Greater San Diego Science and Engineering Fair**
- BMED059 Integrated Stress Response Activation Discovered To Be the Predominant Response to Mitochondrial Dysfunction: A Therapeutic Target Advancement**
<https://projectboard.world/isef/project/166695>
Zinia Khattar, 16, Junior, Del Norte High School, San Diego, California, T: Andrea Callicott
- ENBM034 ARFSNet — Deep Learning for Amblyopia Risk Factor Screening**
<https://projectboard.world/isef/project/164397>
Arnav Dagar, 16, Sophomore, Canyon Crest Academy, San Diego, California,
T: Kevin Hare
- ENEV039 From Trash to Treasure: Fighting Desertification With Sustainable Soil Amending Hydrogels Synthesized From Food Waste**
<https://projectboard.world/isef/project/164398>
Sarah Rumei Gao, 18, Junior, Canyon Crest Academy, San Diego, California, T: Ed Gerstin
- ETSD037 An Autonomous Unmanned Aerial Vehicle (UAV) System for Ocean Hazard Recognition and Rescue: Scout and Rescue UAVs**
<https://projectboard.world/isef/project/164396>
Angelina Kim, 16, Junior, The Bishop's School, La Jolla, California, T: Anthony Pelletier
- TMED035 Photobiomodulation on *in vivo* and *in vitro* Wound Models Under Simulated Microgravity for Future Space Travel**
<https://projectboard.world/isef/project/164393>
Leanne Fan, 16, Sophomore, Westview High School, San Diego, California,
T: Scott Halander
- TMED061 Deep Learning Multi Modal Melanoma Detection**
<https://projectboard.world/isef/project/166961>
Nithika Vivek, 15, Sophomore, Del Norte High School, San Diego, California,
T: Karthik Ramesh

Finalist Directory

Novato, USCA06, Golden Gate STEM Fair

- EGSD034** **PuraFlo: Centrifugation-Based Water Filtration System To Reduce Turbidity in Water Treatment and Ecosystems**
<https://projectboard.world/isef/project/166740>
- ### Jordan Prawira, 17, Senior, Mountain House High School, Mountain House, California, T: Steven Geuss
- PLNT051** **How the Germination of *Eschscholzia californica* (California Poppy) and *Phacelia campanularia* (California Bluebell) When Subjected to Eucalyptol From Eucalyptus Trees Is Affected by Chicken Manure and Ammonium Plant Supplement**
<https://projectboard.world/isef/project/166697>
- Theodore Jack Catrini, 18, Senior, Archie Williams High School, San Anselmo, California, T: Anna Leemon

Palo Alto, USCA07, Synopsys Silicon Valley Science and Technology Championship presented by the Santa Clara Valley Science and Engineering Fair Association

- BEHA061** **GaitNet: A Medically Interpretable Video-Based System for Assessing Parkinsonian Gait Impairment Severity Using 2-Stream Spatiotemporal Neural Network**
<https://projectboard.world/isef/project/168161>
- # Andrew Y. Liang, 17, Junior, The Harker School, San Jose, California, T: Anuradha Datar
- BMED064** **DEList: Identifying Cancer Genes Associated With Circadian Regulator ARNTL2 Using a Novel RNA-Seq Multi-Dataset Strategy**
<https://projectboard.world/isef/project/166963>
- # Ella Yee, 18, Senior, The Harker School, San Jose, California, T: Chris Spenner
- BMED089** **Multi-omic Profiling Identifies p63 as a Novel Genetic Determinant Driving Lung Fibrosis and Cancer, Targetable for Treatment**
<https://projectboard.world/isef/project/168328>
- Ariana Motaghiannezam, 17, Junior, Los Altos High School, Los Altos, California, T: Tory Johnson
- CBIO037** **Leveraging Deep Learning Models To Identify Structurally Adequate Drug Candidates for Parkinson's Disease**
<https://projectboard.world/isef/project/166936>
- Raghav Venkata Garimella, 16, Junior, Evergreen Valley High School, San Jose, California, T: Ihwa Miao
- EAEV091** **CABMS: The First System Against California Marine Biotoxins Through Deep, Spatiotemporal, Multivariate Prediction and Sensor-Based Data Transmission**
<https://projectboard.world/isef/project/168013>
- Yuqin Ma, 16, Sophomore, The Harker School, San Jose, California, T: Anuradha Datar
- ENBM060** **AI-Powered Vision for Enhanced Spatial Navigation of the Visually Impaired**
<https://projectboard.world/isef/project/166962>
- Aryan Ganesh, 15, Sophomore, Christopher High School, Gilroy, California, T: Zhiyun Zhang
- ENBM075** **Clear: Utilizing Glasses-Based Beamformers To Improve Speech Clarity and Spatial Context for the Hearing Impaired**
<https://projectboard.world/isef/project/168010>
- Armaan Christopher Gomes, 16, Junior, Homestead High School, Cupertino, California, T: Kathleen Shreve
- PHYS049** **Discovery of Two Potentially Habitable Super-Earths! StealthPlanetFinder: Innovative and Computationally Efficient Algorithms To Detect Exoplanets Overcoming Low Signal-to-Noise Ratio**
<https://projectboard.world/isef/project/166938>
- Khedaar Kashyap, 17, Junior, Leland High School, San Jose, California, T: Jeff Lutz
- PHYS050** **New Population of Asteroids Discovered! Rapidly Finding and Tracking Faint Near-Earth Asteroids Using an Accurate Deep Learning-Based Process**
<https://projectboard.world/isef/project/166940>
- # Gauri Vani Vani Todur, 16, Sophomore, Santa Clara High School, Santa Clara, California, T: Suzanne Miller Moody

Finalist Directory

- SOFT044 Solving Second-Order Cone Programs in Matrix Multiplication Time**
<https://projectboard.world/isef/project/166934>
Michelle Wei, 17, Senior, The Harker School, San Jose, California, T: Chris Spenner
- TMED059 Bringing Interpretability and Medical Explainability to Deep Learning: Diagnosis of Age-Related Macular Degeneration**
<https://projectboard.world/isef/project/166937>
Lily Shi, 16, Sophomore, The Harker School, San Jose, California, T: Anu Datar
- TMED060 Enabling Scalable Precision Medicine With STAD: A Novel Computational Platform for Early Recurrence-Free Survival Prediction and Biomarker Discovery in Digital Pathology for Gastrointestinal Cancer Patients**
<https://projectboard.world/isef/project/166939>
Vrishank Chandrasekhar, 17, Junior, Lynbrook High School, San Jose, California, T: Kenneth Iams
- Walnut Creek, USCA08, Contra Costa County Science and Engineering Fair**
- BCHM018 Human Milk Immune Complexes Isolated Following Pregnancies Complicated by COVID-19 Infection Contain SARS-CoV-2 Nsp13 Helicase and Biologically Active Factors**
<https://projectboard.world/isef/project/165671>
Vaishnavi Kolluru, 17, Senior, Dougherty Valley High School, San Ramon, California, T: Matthew Gormley
- EBED024 Development of a Multi-Sensor System To Prevent Child Vehicular Heatstroke**
<https://projectboard.world/isef/project/164263>
Clara Kerr, 15, Sophomore, The Athenian School, Danville, California, T: Phillip Kerr
- ROBO036T SCOMAE: Diagnosing Tuberculosis From Cough Acoustics Using Supervised Contrastive Masked AutoEncoders**
<https://projectboard.world/isef/project/164262>
Michael Xu, 17, Junior, Faisal Isam Nabulsi, 16, Junior, The Taft School, Watertown, Connecticut, Acalanes High School, Lafayette, California, T: Alvin Reiff
T: Marissa Meadows
- Danville, USCA09, The Alameda County Science and Engineering Fair**
- BMED045 Grand Theft Transcription Factor: Reversing Tumor Cell Immortality by Transcription Factor Relocalization**
<https://projectboard.world/isef/project/165467>
Joshua Wu, 16, Sophomore, Dublin High School, Dublin, California, T: Julianne Sundstrom
- ENBM038 Generative Electrical Impedance Tomography From Multichannel Stethoscope Sounds**
<https://projectboard.world/isef/project/165030>
Meera Iyer, 16, Junior, James Logan High School, Union City, California, T: Abigail Noche
- ENBM039T OralAI: A Fluorescence-Based Mobile System for Dental Disease Prevention**
<https://projectboard.world/isef/project/165032>
Ayush Garg, 16, Junior, Divij Motwani, 17, Junior, Dublin High School, Dublin, California, Palo Alto Senior High School, Palo Alto, California, T: Ashwini Avadhani
- ENBM041 NeuroHAT: Democratizing Brain-Wellness Monitoring Developing A Wearable System With fNIRs & EEG Multimodality Classification Engine and Miniaturized Device**
<https://projectboard.world/isef/project/165472>
- #**
- ENEVO44 CarboFlux Network: Novel Sensor Node Design for Enhanced CO₂ Flux Measurement and Global Ecosystem Monitoring**
<https://projectboard.world/isef/project/165035>
Sahiti Bulusu, 17, Junior, BASIS Independent Fremont, Fremont, California, T: Anuj Chaudri
- ROBO043 Urban Slum Detection and Mapping: Semantic Segmentation on VHR Satellite Imagery**
<https://projectboard.world/isef/project/165033>
Meenakshi Nair, 16, Junior, Mission San Jose High School, Fremont, California, T: Nitya Mani

Finalist Directory

Palos Verdes Peninsula, USCA10, Palos Verdes Peninsula Unified School District Science and Engineering Fair

- CELL008** **CD38 Identifies a Subset of Natural Killer Cells With Differential Phenotype and Function**
<https://projectboard.world/isef/project/162422>
William James Corry, 18, Senior, Palos Verdes High School, Palos Verdes Estates, California, T: Julie Munoz
- EGSD008** **Bio-Inspired Wing Design, Aerodynamic Simulations and Autonomous Flight Tests for Airborne Wind Energy**
<https://projectboard.world/isef/project/162359>
Aiden Kwon, 16, Sophomore, Palos Verdes Peninsula High School, Rolling Hills Estates, California, T: Mark Greenberg
- MATS012** **Biomimetic, Micro-Structured and Hydrophobic Surfaces for Blood-Repellent Medical Devices**
<https://projectboard.world/isef/project/162358>
Madison Julianna Gambin, 16, Junior, Palos Verdes Peninsula High School, Rolling Hills Estates, California, T: Mark Greenberg
- MCRO007** **Fueling the Future: Isolation of *Chlorella vulgaris* Biomass From Novel Media Structure**
<https://projectboard.world/isef/project/162321>
Mark Y. Lin, 18, Senior, Palos Verdes High School, Palos Verdes Estates, California, T: Julie Munoz
- PHYS031** **A Novel System for Long-Range Wireless Power Transmission**
<https://projectboard.world/isef/project/163655>
Anish Anand, 16, Sophomore, Palos Verdes Peninsula High School, Rolling Hills Estates, California, T: Mark Greenberg
- TECA003** **Celestial Symphony: MIDI Sonification of Multiparametric Supernova Data Into a Euphonious Composition**
<https://projectboard.world/isef/project/162485>
Vanya Viti Agrawal, 18, Senior, Palos Verdes High School, Palos Verdes Estates, California, T: Julie Munoz
- TECA016** **Creating an Artificial Intelligence Neural Network To Critique Expressive Piano Performance**
<https://projectboard.world/isef/project/162326>
Henry Huang, 15, Freshman, Palos Verdes Peninsula High School, Rolling Hills Estates, California, T: Mark Greenberg
- TMED010** **Optimizing a High Throughput Screen for Testing Therapeutics in a Novel Mouse Model of *Ataxia telangiectasia***
<https://projectboard.world/isef/project/162323>
Christine Xie, 18, Senior, Palos Verdes High School, Palos Verdes Estates, California, T: Julie Munoz
- Santa Cruz, USCA11, Santa Cruz County Science and Engineering Fair**
- EAEV044** **A Comparative Analysis of Machine Learning Models for Wildfire Prediction**
<https://projectboard.world/isef/project/164264>
Brent Chung-wei Kong, 17, Junior, Scotts Valley High School, Scotts Valley, California, T: Yu Zhang
- Salinas, USCA12, Monterey County Science and Engineering Fair**
- ETSD049** **AI-Powered Magnetic Inspection Robot for Advanced Structural Health Monitoring of Ferromagnetic Structures**
<https://projectboard.world/isef/project/166698>
Angelina Tseng, 16, Junior, Santa Catalina School, Monterey, California, T: Christian Reilly
- San Bernardino, USCA13, San Bernardino, Inyo, Mono, (SIM) Science and Engineering Fair**
- BMED056** **Investigating the Effects of Lutein on Retinal Cytoarchitecture in Age-Related Macular Degeneration**
<https://projectboard.world/isef/project/166519>
Snow J. Cameron, 17, Senior, Upland High School, Upland, California, T: Chris Morgan

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- EGSD0337** **Hot Sand Thermoelectric Battery**
<https://projectboard.world/isef/project/166572>
Michael Sean Stodelle, 15, Freshman, Lucas Torres, 17, Senior, Redlands East Valley High School, Redlands, California, T: Emil Radoi
- ROBO037** **Mechanical Ornithology: Revolutionizing Flight Maneuver Mechanisms Through Modelling Morphological Bird Structures and Airfoil Characteristics**
<https://projectboard.world/isef/project/164265>
Leila Maleki, 15, Sophomore, Chino High School, Chino, California, T: Shaddy Viste
- ROBO061T** **Smart Device for the Visually Impaired**
<https://projectboard.world/isef/project/166795>
Danaya Jaslene Figueroa#, 17, Junior, Priscilla Elena Munoz#, 17, Junior, Grand Terrace High School, Grand Terrace, California, T: Consuelo Guerrero T: Matthew Johnson
- Riverside, USCA15, Riverside County Science and Engineering Fair**
- BCHM030T** **Evolving an Epidemic: Optimizing Sialic Acid Receptor Configurations To Increase the Binding Affinity of Avian Influenza H5N1 to Human Cell Glycoproteins**
<https://projectboard.world/isef/project/167364>
Andre Thaitai Vo, 17, Junior, Brian Minh Duc Ngo, 16, Junior, Yoonchan Caden Lee, 16, Junior, Martin Luther King High School, Riverside, California, T: Michelle Hampton T: Andrea Olivia-Taylor
- CHEM020** **Fabrication and In-Depth Evaluation of Self-Sensing Metallo-Polyelectrolyte Complexed Gels for Metal Ion Filtration**
<https://projectboard.world/isef/project/162703>
- # Angelina Yang, 17, Senior, Eleanor Roosevelt High School, Eastvale, California, T: Lindsay Moulton
- EBED012** **Wired for Sustainability: Innovative Copper Infrastructure Design Solutions To Optimize Copper-Based Systems Without Performance Loss**
<https://projectboard.world/isef/project/162704>
Harleen Kaur Virk, 15, Freshman, Eleanor Roosevelt High School, Eastvale, California, T: Kelly Howell
- Bakersfield, USCA16, Kern County Regional Science Fair**
- CBIO024** **Detection of MRI Imaged Brain Tumors Using EfficientNet-Based Convolutional Neural Networks**
<https://projectboard.world/isef/project/164266>
Ishmeet Singh, 15, Sophomore, Stockdale High School, Bakersfield, California, T: Jill Reynolds
- ETSD077** **Enhancing Flight Efficiency: Redesigning the Sukhoi-Su 30MKI Airfoil Geometry for Improved Speed and Maneuverability in Sustained Flight**
<https://projectboard.world/isef/project/168329>
Cade Carl Nahama, 18, Senior, Bakersfield High School, Bakersfield, California, T: Eli Hamm
- Camarillo, USCA17, Ventura County Science Fair**
- BMED080** **The Synergistic Effect of Omega-3 Fatty Acids (DHA and EPA) and Zinc Picolinate on Traumatic Brain Injury in *Galleria mellonella***
<https://projectboard.world/isef/project/168113>
Benjamin Chung, 17, Junior, Thousand Oaks High School, Thousand Oaks, California, T: Nikki Malhotra
- Thousand Oaks, USCA50, California Science & Engineering Fair**
- BMED090** **Development of a Cathepsin B-Responsive Hydrogel for the Targeted Delivery of Cancer Immunotherapy**
<https://projectboard.world/isef/project/168548>
Noah Russell Kaleekal, 15, Sophomore, Irvington High School, Fremont, California, T: Priya Srinath
- ENEV081** **Microby: Efficiently Discovering Novel, Low-Cost Enzyme-Based Plastic Biodegrading Microorganisms and Improving Their Heterologous Gene Expression via Deep Learning Enzyme Engineering**
<https://projectboard.world/isef/project/168549>
Krish Pai, 17, Junior, Canyon Crest Academy, San Diego, California, T: Ed Gerstin

Finalist Directory

SOFT058 **Securing Global Food: Biopolymers, Cryptography and Visual Transformers for Affordable Anti-Counterfeit Seed Protection**
<https://projectboard.world/isef/project/168550>
Diana Martynova, 16, Sophomore, Los Gatos High School, Los Gatos, California,
T: Janice Mortensen

COLORADO

Alamosa, USCO01, San Luis Valley Regional Science Fair, Inc.

EAEV036 **Applied Mycology: Do Fungal Endophyte Communities Differ Between Western Spruce Budworm Infested Douglas Fir and Uninfested Douglas Fir?**
<https://projectboard.world/isef/project/162756>
Hannah Elizabeth Shelton, 18, Junior, Centauri High School, La Jara, Colorado,
T: Andrew Shelton

SOFT010 **Help! I Need Somebody: An Assistive Device That Notifies Emergency Services Once a Fall Has Been Detected**
<https://projectboard.world/isef/project/162692>
Maria Faith Sears, 17, Junior, Monte Vista High School, Monte Vista, Colorado,
T: Loree Harvey

Brush, USCO03, Morgan-Washington Bi-County Science Fair

PLNT013T **Plant Warfare: Investigating the Mechanisms of Plant Allelopathy on Agriculture Crops**
<https://projectboard.world/isef/project/162717>
Zander Willam-Michael Braun, 15, Freshman, Joshua Adam Wells, 15, Freshman, Weldon Valley High School, Weldona, Colorado, T: Krista Dunn

Colorado Springs, USCO04, Pikes Peak Regional Science Fair

EGSD051 **Effects of Mooring Systems on Submerged Point Absorber Wave Energy Converters**
<https://projectboard.world/isef/project/168541>
Natalie Elizabeth Muro, 16, Sophomore, William J. Palmer High School, Colorado Springs, Colorado, T: Nathaniel Lohmann

TMED011 **Healthy Gut! Healthy You!: Using *Dorotocephala dactyligeria* as a Model To Treat Gastrointestinal and Psychological Disorders With Novel Regenerative Enzymes**
<https://projectboard.world/isef/project/162624>
Vanya Lavu, 17, Junior, The Classical Academy-North, Colorado Springs, Colorado,
T: Margaret Zielinski

Joes, USCO08, Northeast Colorado Regional Science Fair

BMED009 **Sorry, I Didn't See You: Testing the Effects of Photosensitive Medications on Crystallin Alpha To Study the Development of Cataracts**
<https://projectboard.world/isef/project/162644>
Maria Abigail Horn, 18, Senior, Yuma High School, Yuma, Colorado, T: Amy Melby

Boulder, USCO09, Corden Pharma Colorado Regional Science Fair

BCHM014 **Toxin-Like Microproteins: A Novel Approach To Unveil the Intricacies of Acetylcholine Receptors**
<https://projectboard.world/isef/project/163941>
Angelina Yufei Wang, 17, Junior, Fairview High School, Boulder, Colorado, T: Paul Strode

CHEM015T **Natural Eutectogels as a Novel Material for Green Wearable Electronics**

<https://projectboard.world/isef/project/162568>
Sophia Zhang, 14, Sophomore, Claire Qingying Huang, 16, Junior, Fairview High School, Boulder, Colorado, T: Paul Strode

EAEV021 **National Ground-Level NO₂ Predictions via Satellite Imagery Driven Hybrid Neural Networks**

<https://projectboard.world/isef/project/162723>
Elton Cao, 17, Senior, Fairview High School, Boulder, Colorado, T: Paul Strode

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Denver, USCO10, Denver Regional Science and Engineering Fair

EAEV025 **Detention Basin Systems: Mitigating Stormwater in Hampden Heights and Its Implications on Cherry Creek Water Quality**

<https://projectboard.world/isef/project/162640>

Elizabeth Vossler, 17, Junior, Denver School of the Arts, Denver, Colorado,
T: Donny Roush

PHYS013 **Toward Realization of Novel Quantum Materials via Magneto-Synthesis**

<https://projectboard.world/isef/project/162721>

Tristan Rei Cao, 16, Sophomore, Stargate School, Thornton, Colorado, T: Gang Cao

SOFT009 **Feel The Ball: Convert Ball Motion to Touch for Vision/Hearing-Impaired Sport Audiences**

<https://projectboard.world/isef/project/162672>

Amy Zhang, 14, Freshman, Lakewood High School, Lakewood, Colorado, T: Casey Walter

Pueblo, USCO11, Southern Colorado Regional STEM Fair

ENBM014T **Lung Transplant Theory: Mechanical Pumps and How the Body Accepts Foreign Ventilators**

<https://projectboard.world/isef/project/162349>

Emma Katherine Perry, 16, Sophomore, Kennedy Faye Camacho-Orona, 16, Sophomore,
South High School, Pueblo, Colorado, T: Allison Hellman

Fort Collins, USCO50, Colorado Science and Engineering Fair

ANIM045 **Spatial Analysis of Chronic Wasting Disease in Northeastern Colorado Deer Populations**

<https://projectboard.world/isef/project/168138>

Lydia Mekelburg, 17, Junior, Yuma High School, Yuma, Colorado, T: Amy Melby

CBIO053T **G.L.O.W.: A Novel Hybrid Neural Network Approach for Glioblastoma Localization Using Carcinogenic Oxidative Stress Biomarkers**

<https://projectboard.world/isef/project/168140>

Julia Gao, 14, Freshman, Om Vegesna, 15, Freshman, Fairview High School, Boulder,
Colorado, T: Paul Strode

EGSD047 **Waste to Watts: Converting Locally Sourced Organic Waste Material Into Activated Carbon-Based Supercapacitors**

<https://projectboard.world/isef/project/168139>

Shrey Rohilla, 17, Junior, The Classical Academy - North, Colorado Springs, Colorado,
T: Jennifer Smith

ENEV014 **Paper for the Planet: Development of a Novel Paper Inoculated With Wildflower Seed and Carbon-Sequestering Fungi**

<https://projectboard.world/isef/project/162701>

Naomi Kruse, 15, Sophomore, Schullandheim Homeschool, Colorado Springs, Colorado,
T: Tami Kruse

ETSD075 **Is It Clogged? Production of an Instrument To Detect Clogged Sprinkler Heads and Notify a Cellular Device**

<https://projectboard.world/isef/project/168243>

Haydan Ray Drullinger, 16, Sophomore, Liberty High School, Joes, Colorado,
T: Linda Fogale

CONNECTICUT

Sandy Hook, USCT50, Connecticut Science & Engineering Fair

CBIO025 **A Novel Machine Learning Model for Estrous Cycle Classification**

<https://projectboard.world/isef/project/164399>

Saachi Goyal, 16, Junior, Academy of Information Technology and Engineering,
Stamford, Connecticut, T: Rachel Ross

CBIO033 **A Deep Semi-Supervised Domain Generalization Approach for Epileptic Seizure Prediction Using Electroencephalography (EEG)**

<https://projectboard.world/isef/project/166539>

Sunwoo (Ria) An, 16, Freshman, Loomis Chaffee School, Windsor, Connecticut,
T: Koby Osei-Mensah

Finalist Directory

- ENBM063** **A 2-DOF Pneumatic Shoulder Rehabilitation Device Based on Soft Materials**
<https://projectboard.world/isef/project/167265>
Meiyin Ren, 17, Junior, Westminster School, Simsbury, Connecticut, T: Suzanne Bailey
- SOFT048** **DETICKT IT: A Machine Learning-Based Application for Real-Time Tick Identification and Spatiotemporal Disease Risk Assessment**
<https://projectboard.world/isef/project/167679>
Antonia Maria Kolb, 18, Senior, King School, Stamford, Connecticut, T: Victoria Schulman
- TMED052** **Fabrication of a Europium-Based Magnetic Nanosensor for the Detection of D-Serine in Early-Onset Alzheimer's**
<https://projectboard.world/isef/project/166573>
Ava Sophia Jackson, 16, Junior, Greenwich High School, Greenwich, Connecticut, T: Andrew Bramante
- TMED053** **Oral Delivery of Anticoagulant Dabigatran via a Mg-Micromotor Encapsulant Within a Gastric-Resistant Tablet for Ischemic Stroke Treatment**
<https://projectboard.world/isef/project/166574>
Lula Wang, 15, Freshman, Greenwich High School, Greenwich, Connecticut, T: Andrew Bramante
- TMED054** **Development and *in vitro* Verification of a Polymersome for Blood-Brain Barrier Transport Through a Novel Machine Learning Model**
<https://projectboard.world/isef/project/166575>
- #** **Ashley Taylor Malkin, 17, Junior, Greenwich High School, Greenwich, Connecticut, T: Andrew Bramante**

FLORIDA

- Okeechobee, USFL01, Heartland Regional Science and Engineering Fair**
- BMED003** **E-cadherin Expression as a Predictor of Epithelial to Mesenchymal Transition in Early Onset Colorectal Cancer**
<https://projectboard.world/isef/project/162345>
Anika Bhandare, 14, Freshman, Sebring High School, Sebring, Florida, T: Amy Bubb
- ENEV003** **Protecting Sea Grass Habitats: Designing an Automatic Water Filtration System for Turbidity Mitigation**
<https://projectboard.world/isef/project/162356>
Clea Shanen Judilla, 18, Senior, Okeechobee High School, Okeechobee, Florida, T: Wendy Reister
- Bradenton, USFL02, Manatee STEM Competition**
- CELLO21** **Evaluating the Impact of Temperature Increases and Ultraviolet Radiation on *Naegleria fowleri* Using the Model Organism *Chaos carolinensis***
<https://projectboard.world/isef/project/162869>
Amy Tan Lu, 17, Junior, Manatee High School, Bradenton, Florida, T: Christine Miller
- Deland, USFL04, Tomoka Region Science and Engineering Fair**
- EAEV006T** **Enhancing Carbon Sequestration of Sedum Acre by Integrating Silica-Composited Biochar: A Novel and Sustainable Bioremediation Approach To Mitigate Climate Change**
<https://projectboard.world/isef/project/162392>
Ahmed Eldeeb, 18, Senior, Salsabeel Tamer Eldeeb, 15, Freshman, Spruce Creek High School, Port Orange, Florida, T: Anne Cooney
- Lehigh Acres, USFL05, Thomas Alva Edison Kiwanis Science and Engineering Fair**
- BEHA017** **A Novel Approach to the Effect of Bisphenol A on the Neurodevelopment of *Drosophila melanogaster* Larvae**
<https://projectboard.world/isef/project/162758>
Mehereen Chowdhury, 17, Junior, Canterbury School, Fort Myers, Florida, T: Christina Deeter

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- EAEV035** **Developing an Oil Spill Remediation System That Utilizes Ferrofluids' Polar-Incongruencies To Bind to Petroleum and Integrate It Into a System Primed for Magnetic Removal vs. Bagasse, Coconut Coir and Pine Shaving Remediation Systems for Sustainable Energy Regeneration**
<https://projectboard.world/isef/project/162583>
Bianca Trope, 18, Senior, Community School of Naples, Naples, Florida, T: Kelly Percivall
- ENBM016** **Revolutionizing Diabetes Care: Optimizing Hydrogel Beads for Pancreatic Islet Viability**
<https://projectboard.world/isef/project/162574>
Megan D'Souza, 17, Junior, Community School of Naples, Naples, Florida, T: Kelly Percivall
- ENEV024** **Utilizing a Consortium of Haematococcus, Spirulina and Chlorella vulgaris To Create an Open System Photobioreactor That Generates Electricity, Reduces Galvanic Corrosion of the Electrodes and Maintains the Ability of the System To Purify Air (A 4th Year Study)**
<https://projectboard.world/isef/project/162577>
Amaya Jennifer Etcheverry, 17, Community School of Naples, Naples, Florida, T: Kelly Percivall
- ETSD022** **Utilizing Computational Fluid Dynamics for Enhanced Aircraft Efficiency: Optimizing HERO 1 Aircraft Performance via Variable Winglet Configurations**
<https://projectboard.world/isef/project/162586>
San Vo, 17, Senior, Community School of Naples, Naples, Florida, T: Kelly Percivall
- MCRO014** **Comprehensive *in vitro* and *in vivo* Evaluation of Antidiabetic, Antifungal, Antioxidant, Larvicidal, Bioelectricity and Anticancer Activity of Six Native Plant Species: Innovations for Novel Drug Discovery**
<https://projectboard.world/isef/project/162344>
Kurukulasuriya Nishini Fernando, 16, Sophomore, Dunbar High School, Fort Myers, Florida, T: Justin Summy
- Valparaiso, USFL07, East Panhandle Science and Engineering Fair**
- ENEV006** **A Natural and Cost-Effective Process of Bioremediation for Contaminated Soils**
<https://projectboard.world/isef/project/162492>
Zoe Orange, 18, Senior, Paxton High School, Paxton, Florida, T: Brande Stephenson
- TECA002** **International Math Sign Language (IMSL): Standardizing a "Universal Language" for the Deaf Community**
<https://projectboard.world/isef/project/162447>
Aurora Mendenhall, 17, Senior, Niceville High School, Niceville, Florida, T: Scarlett Brock
- Gainesville, USFL08, Alachua Region Science and Engineering Fair**
- EAEV014** **Global Microplastic Pollution – The Emerging Health Crisis: The Ecotoxicological Effects of Microplastics on Aquatic Organisms and Translating to Humans via A.I. Machine Learning and a Novel Low-Cost Water Filtration System**
<https://projectboard.world/isef/project/162556>
Abhith Kumar Kasala, 15, Sophomore, Gainesville High School, Gainesville, Florida, T: Lisa Sauberan
- Fort Lauderdale, USFL09, Broward Regional Science & Engineering Fair**
- BMED076** **Discovery of Rs887829 as the Genetic Polymorphism Responsible for Reduced UGT1A1 mRNA Expression in a Diverse Cohort**
<https://projectboard.world/isef/project/167864>
Jonah Gideon Ferber, 17, Senior, Pine Crest School, Fort Lauderdale, Florida, T: Jennifer Gordinier
- CBIO039** **Variational Autoencoder as a Robust Clinical Classification Tool for Dementia**
<https://projectboard.world/isef/project/167381>
William Wakefield, 17, Junior, Pine Crest School, Fort Lauderdale, Florida, T: Jennifer Gordinier

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- EBED041** **Continuous Hemodynamics Monitor: Novel Smart Sensor for Real-Time Postoperative Cardiac Care**
<https://projectboard.world/isef/project/167526>
Calvin Thomas Mathew, 17, Junior, American Heritage School, Plantation, Florida,
T: Juliana Caulkins
- Jacksonville, USFL10, Northeast Florida Regional Science and Engineering Fair**
BEHA002 **Targeting ADHD With a Noninvasive System To Improve Concentration Based on Electroencephalogram and Neurofeedback Methodology**
<https://projectboard.world/isef/project/162393>
Emma Christine Lee, 17, Junior, Stanton College Preparatory School, Jacksonville, Florida, T: Nicolle Arteaga
- CELL050** **Establishing Disease Modeling of CADASIL Using Human Induced Pluripotent Stem Cell-Derived Pericytes**
<https://projectboard.world/isef/project/168333>
Sarah Chaeyoon Park, 16, Junior, The Bolles School, Jacksonville, Florida,
T: Kathryn Halloran
- ENBM002** **Hollow Organ Simulator for *in vitro* Testing**
<https://projectboard.world/isef/project/162378>
Alexander Radu Chindris, 17, Junior, Episcopal School of Jacksonville, Jacksonville, Florida, T: Marion Zeiner
- Newberry, USFL11, Suwannee Valley Regional Science and Engineering Fair**
CHEM009 **Does Temperature Affect the Dissolved Oxygen Concentration Within Hydroponic Solutions?**
<https://projectboard.world/isef/project/162433>
Cylar Peyton Robinson, 14, Freshman, Fort White High School, Fort White, Florida,
T: Wayne Oelfke
- Bartow, USFL12, Polk Region Science and Engineering Fair**
BCHM003 **Investigating Neurotransmitter Precursor Amino Acid Stability and Acidity at Varying Human Body Temperatures**
<https://projectboard.world/isef/project/162494>
Syed Imtiaz Rob, 16, Junior, Haines City IB East, Lake Wales, Florida, T: Madhu Thomas
- PLNT003** **Should Trees Melow-Tone-In for Citrus Greening?**
<https://projectboard.world/isef/project/162535>
Isabella Wenxiu Wang, 17, Senior, Haines City IB East, Lake Wales, Florida,
T: Royden Jones
- Viera, USFL13, Brevard South Science and Engineering Fair**
BCHM033 **The Effect of Liposomes on Drug Delivery of Ascorbic Acid**
<https://projectboard.world/isef/project/167802>
Thien-Nhi Allison Nguyen, 17, Senior, West Shore Junior/Senior High School, Melbourne, Florida, T: Mary Schropp
- BEHA001** **Understanding the Impact of Celebrity Endorsements on the Artificial Growth of Cryptocurrencies Using a Multi-Dimensional Latent Class Analysis and a Software-Based Approach (Year 3)**
<https://projectboard.world/isef/project/162360>
Rushil Shah, 18, Senior, West Shore Junior/Senior High School, Melbourne, Florida,
T: Mary Schropp
- EBED002** **3rd-Eye: A Novel Embedded System for Driver Attentiveness Monitoring Using Machine Learning (Year 3)**
<https://projectboard.world/isef/project/162340>
Pranav Ponnusamy, 18, Senior, West Shore Junior/Senior High School, Melbourne, Florida, T: Mary Schropp
- Satellite Beach, USFL14, Brevard Intracoastal Regional Science and Engineering Fair**
CELL002 **NanoFusion: Revolutionizing CRISPR/Cas9 Delivery to MCF-7 Adenocarcinoma via Exosome-Liposome Synergy**
<https://projectboard.world/isef/project/162607>
Emilee Carmen Mangual, 18, Senior, Satellite High School, Satellite Beach, Florida,
T: Magdalena Molledo

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- ENEV005** **An Integrated Algae Mitigation System To Seek and Abate Harmful Algal Blooms (Year 5)**
<https://projectboard.world/isef/project/162575>
Sharanya S. Natarajan, 16, Sophomore, Edgewood Junior Senior High School, Merritt Island, Florida, T: Meredith Reninger
- TMED006** **Creation of a Duchenne Muscular Dystrophy Myoblast Cell Culture Model by Knocking Out the Dystrophin Gene Using CRISPR/Cas-9 for High Throughput Drug Screening**
<https://projectboard.world/isef/project/162588>
Sarah Jane Miller, 17, Junior, Satellite High School, Satellite Beach, Florida, T: Magdalena Molledo
- Miami, USFL15, South Florida Science and Engineering Fair**
- ANIM011** **Temperature, Precipitation and Cuban Tree Frog Sightings**
<https://projectboard.world/isef/project/162625>
Elena Kristina Beck, 16, Sophomore, Coral Reef Senior High School, Miami, Florida, T: Lauriann Carbajal
- BMED011** **Impact of *P. gingivalis* Derived RagA and RagB on Osteoclastogenesis**
<https://projectboard.world/isef/project/162510>
Jade Kettlyne Lubin, 16, Junior, American Senior High School, Hialeah, Florida, T: Michael Enriquez
- CBIO009** **The Effect of Somatic Mutations in Glioblastoma Multiforme on Patient Survival**
<https://projectboard.world/isef/project/162373>
Neelesh Pandey, 17, Junior, Gulliver Preparatory School, Pinecrest, Florida, T: Yoly McCarthy
- EAEV010** **An Artificial Intelligence Tool for Intensity Estimation of Global Tropical Cyclones**
<https://projectboard.world/isef/project/162334>
Sunny You, 17, Senior, Miami Palmetto Senior High School, Pinecrest, Florida, T: Pamela Shlachman
- MATH017** **Genetic Variations Associated With Dyslexia and ADHD: A Comparative GWAS Study**
<https://projectboard.world/isef/project/162328>
Romy Ella Cohen, 16, Junior, iPrep Academy North, Miami, Florida, T: David Buncher
- MCRO004** **Enhanced Antibacterial Effect of Blue Light in Combination With an Amazonian Tree Sap (*Croton lechleri*)**
<https://projectboard.world/isef/project/162363>
Dieter Manstein, 17, Junior, Ransom Everglades School, Miami, Florida, T: Susan Mactye
- ROBO028** **Syncardia: AI at the Heart of Early Cardiovascular Disease Detection**
<https://projectboard.world/isef/project/163590>
Ethan Thomas, 17, Junior, Ransom Everglades School, Miami, Florida, T: Susan Mactye
- Ocala, USFL16, Big Springs Regional Science Fair**
- ANIM001** **Effect of Aggregate Size on Oyster Spat Recruitment**
<https://projectboard.world/isef/project/162060>
Delaney Peterson, 14, Freshman, Belleview High School, Belleview, Florida, T: Erin Benavides
- MCRO001** **Next-Generation Antibiotics: Isolating and Screening Novel Bacteriocins**
<https://projectboard.world/isef/project/162431>
Rishit Arnav Shaquib, 17, Senior, Vanguard High School, Ocala, Florida, T: Candace Roy
- SOFT003** **TALK: An American Sign Language Computer Program**
<https://projectboard.world/isef/project/162372>
Miguel Atabay Secillano III, 14, Freshman, Vanguard High School, Ocala, Florida, T: Christina Davis
- Davenport, USFL17, Dr. Nelson Ying-Orange County Science Exposition**
- CHEM011** **Nutritional Values in Insects: A Spectrophonic Analysis**
<https://projectboard.world/isef/project/162629>
Will Martyny, 17, Junior, Trinity Preparatory School, Winter Park, Florida, T: Romina Jannotti

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- ENEV080** **Year II: Resistant Electromagnet Propulsion for Petroleum Removal Employing Biocompatible Magnetorheological Fluid in Oil Spill Applications**
<https://projectboard.world/isef/project/168546>

Tiffani Rai Gay, 17, Junior, Orlando Science Schools, Orlando, Florida, T: Judith Bright
- MATS008** **Fabrication of Superhydrophobic Materials Through Femtosecond Laser Ablation**
<https://projectboard.world/isef/project/162525>
Jerry Chen, 17, Junior, Trinity Preparatory School, Winter Park, Florida, T: Romina Jannotti
- MCRO006** **Year 2: A Novel Biodegradable Sorbent for Oil Spills**
<https://projectboard.world/isef/project/162623>
Mahie Mangesh Patil, 14, Freshman, Orlando Science Schools, Orlando, Florida,
T: Judith Bright
- Wildwood, USFL18, Sumter County Regional Science Fair**
- ANIM002** **Male *Aedes aegypti*: Biotic Effects of Chilling Associated With an SIT Program**
<https://projectboard.world/isef/project/162319>

Kadie Mariano, 18, Senior, Wildwood High School, Wildwood, Florida, T: Emily Keeler
- BCHM001** **Micro-Algae Biomass via *Chlorella vulgaris* To Replace Crude Oils in Order To Overcome Gaseous and Aerosol Pollutants**
<https://projectboard.world/isef/project/162341>
Yousra Saif Abumouilish, 14, Sophomore, Wildwood High School, Wildwood, Florida,
T: Emily Keeler
- EAEV003** **Tree Rings as a Potential Monitoring Tool for Saltwater Intrusion**
<https://projectboard.world/isef/project/162457>

Alynza Isabella McBride, 17, Junior, South Sumter High School, Bushnell, Florida,
T: Emily Keeler
- PHYS002** **Analysis of Optimal Rotor Shape: Year 3**
<https://projectboard.world/isef/project/162337>

Jose M. Carvajal-Beltran, 17, Junior, Wildwood High School, Wildwood, Florida,
T: Emily Keeler
- SOFT004** **Coding an Algorithmic Day Trading Strategy—Power of 3**
<https://projectboard.world/isef/project/162343>
Armand Grable, 18, Senior, Wildwood High School, Wildwood, Florida, T: Emily Keeler
- St. Augustine, USFL21, St. Johns County STEM Fair**
- BMED004** **CRISPR Gene Edited Glioblastoma Multiforme Cell Line as a Model for Testing Antigen Specificity of CAR T Cell Therapy**
<https://projectboard.world/isef/project/162483>
Diana Chirila, 18, Senior, Ponte Vedra High School, Ponte Vedra, Florida, T: Marna Fox
- Sanford, USFL23, Seminole County Regional Science, Mathematics & Engineering Fair**
- CELL003T** **Rosmarinic Acid Attenuates Malignant Phenotypes *in vivo* via DNMT1 Gene Pathway: Implications for Cancer Therapeutics**
<https://projectboard.world/isef/project/162414>
Luis Angel Villalobos, 16, Sophomore, Krish Sejjpal, 16, Junior, Seminole High School, Sanford, Florida, T: Jarrod Miller T: Jaron Miller
- PHYS008** **Dust-Repellent and Self-Cleaning Coatings for Solar Panels on Earth, the Moon and Mars (Year Two)**
<https://projectboard.world/isef/project/162560>
Arvid Charles Larsson Vaidyanathan, 16, Junior, Winter Springs High School, Winter Springs, Florida, T: Christopher Adamson
- SOFT056** **"Who Makes the Rules?": Using Generative Artificial Intelligence To Write Novel Rules To Effectively Find Previously Unnoticed Security Vulnerabilities in Open Source Code**
<https://projectboard.world/isef/project/168241>
Meghna Vikram, 16, Junior, Paul J. Hagerty High School, Oviedo, Florida,
T: Channing Porter
- Stuart, USFL25, Martin County Regional Science and Engineering Fair**
- BEHA054** **A Review of the Use and Promotability of Mental Health Apps by Teenagers**
<https://projectboard.world/isef/project/168056>

Nira Goyal, 17, Senior, Martin County High School, Stuart, Florida, T: Shannon Parks

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Tallahassee, USFL26, Capital Regional Science and Engineering Fair

CELLO04 Modulating Integrin Expression in Pancreatic Tumor Cells

<https://projectboard.world/isef/project/162367>

Rohan Agashe, 17, Junior, Lawton Chiles High School, Tallahassee, Florida,

T: Bonni Warren

ETSD009 Novel Approach To Calculation of Bike Route Distance Using Concept of Fractal Dimension

<https://projectboard.world/isef/project/162362>

Mikhail Dmitrievich Abraimov, 16, Sophomore, Lawton Chiles High School, Tallahassee, Florida, T: Bonni Warren

Tampa, USFL27, Hillsborough Regional Science Fair

EAEV095 Experimental Investigation of Phytodesalination and Growth Rate of Duckweed (*Lemna minor*) in Salt Water Hydroponics and Developing a Generalized Linear Model for Desalination

<https://projectboard.world/isef/project/168126>

Swara Patel, 15, Freshman, Carrollwood Day School, Tampa, Florida, T: Carrie Prieto

PLNT016 Advancing Sustainable Citrus Greening Disease Management: A Comprehensive Eco-Friendly Approach for the Management of Candidatus *Liberibacter asiaticus* Using Trunk Injection of *Murraya koenigii*-Derived Biological Extract and Its Validation Through Precision Agriculture Tools

<https://projectboard.world/isef/project/162673>

Tanishka Balaji Aglave, 15, Freshman, Strawberry Crest High School, Dover, Florida,

T: Dianne Schroeder

PLNT044 The Effects of *Glomus intraradices* on Root Growth and Nitrogen Consumption of Italian Genovese Basil in the Kratky System

<https://projectboard.world/isef/project/165928>

Summer Kaylyn Davies, 17, Senior, Strawberry Crest High School, Dover, Florida,

T: Christina Rutledge

Melbourne, USFL28, Brevard Mainland Regional Science and Engineering Fair

ENBM003 Detecting Myofascial Tightness in Order To Reduce Undiagnosed Pain, Year 2

<https://projectboard.world/isef/project/162616>

Sophia Weiner, 18, Senior, Holy Trinity Episcopal Academy, Melbourne, Florida,

T: Daniel Angotti

ENEV025 BioRegen Polymer: A Regenerative Approach to Upcycling Waste From the Seafood Industry and Paper Waste Into Innovative and Environmentally Regenerative Biobased Polymers and Data Analysis Using the ARIMA and Linear Regression Models

<https://projectboard.world/isef/project/162596>

Aswath Rajesh, 14, Freshman, Viera High School, Viera, Florida, T: Elizabeth Youngs

PLNT007 Silver Armor Against Bacteria: A Battle of Antimicrobial Effectiveness

<https://projectboard.world/isef/project/162608>

Alina Zaidi, 16, Sophomore, Holy Trinity Episcopal Academy, Melbourne, Florida,

T: Daniel Angotti

West Palm Beach, USFL29, Palm Beach Regional Science and Engineering Fair

BCHM028 Developing a Polyethylene Glycol Hydrogel-Based Controlled Delivery System Using the Alkyl Radical Initiator AIPH as an Antitumor Therapy

<https://projectboard.world/isef/project/166913>

Aishwarya Deshpande, 15, Sophomore, American Heritage School of Boca Delray, Delray Beach, Florida, T: Brittnee McDole

BMED072 Elucidating the Impact of *Lactobacillus casei* ATCC 393 on Amyloid Plaque Generation in Alzheimer's Model *Caenorhabditis elegans* GRU102

<https://projectboard.world/isef/project/167769>

Lahari Challa, 15, Sophomore, American Heritage School of Boca Delray, Delray Beach, Florida, T: Brittnee McDole

EAEV074 Implementation of *Gracilaria* as a Biofilter for Nutrient Pollution

<https://projectboard.world/isef/project/167041>

Yashwin Mithil Adusumilli, 16, Junior, Florida Atlantic University High School, Boca Raton, Florida, T: Katherine Hendrickson

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- EGSD038 Chlorine-Emulsified PDMS for Water Droplet-Based Energy Harvesting**
<https://projectboard.world/isef/project/167109>
Catherine Zhao, 17, Junior, American Heritage School of Boca Delray, Delray Beach, Florida, T: Brittnee McDole
- ENBM064 A Novel Application of a Lateral Flow Immunoassay To Develop a Non-Invasive and Rapid Whole Blood Diagnostic Method for Alzheimer's Disease**
<https://projectboard.world/isef/project/167267>
Dishika Parikh, 17, Junior, American Heritage School of Boca Delray, Delray Beach, Florida, T: Brittnee McDole
- ENEVO61 Exploring the Effects of Aquatic Phytoremediation on Excessive Nutrients Using *Lemna minor***
<https://projectboard.world/isef/project/167111>
Nakul Balaji, 15, Sophomore, Florida Atlantic University High School, Boca Raton, Florida, T: Katherine Hendrickson
- MCRO031 Isolating and Annotating Novel Bacteriophages That Infect *Gordonia rubripertincta*: A Comparison Between Evergreen22 (Frib8) and KayGee**
<https://projectboard.world/isef/project/167382>
- # Chloe Barreto-Massad, 18, Senior, American Heritage School of Boca Delray, Delray Beach, Florida, T: Brittnee McDole
- TMED066 Analyzing the Effects of Curcumin and Turmeric on the Accumulation of Tau and Amyloid Protein and Its Further Implications Into Alzheimer's Disease**
<https://projectboard.world/isef/project/167635>
- # Aayushi Ranjan, 17, Senior, American Heritage School of Boca Delray, Delray Beach, Florida, T: Brittnee McDole
- Land O' Lakes, USFL30, Pasco Regional Science and Engineering Showcase**
- EAEO04 ForestCast: Developing a Novel Convolutional Neural Network To Enhance Prevention of Fragmentation in the United States**
<https://projectboard.world/isef/project/162423>
Tristan Taylor Pasquale, 16, Junior, Wiregrass Ranch High School, Wesley Chapel, Florida, T: Branden Anglin
- PHYS007 A Re-Engineering of the PID Controller Using a Novel 10-MF Fuzzy Logic Module for Regulating the Electromagnetic Force in Magnetic Levitation (Maglev) Vehicles**
<https://projectboard.world/isef/project/162425>
Ian Kim, 17, Junior, Wiregrass Ranch High School, Wesley Chapel, Florida, T: Branden Anglin
- TMED003 Investigating Biofilm-Related Biomarkers To Predict Therapy Response in Colorectal Cancer Tumors: Year 2**
<https://projectboard.world/isef/project/162424>
- # Meghna Manjith, 18, Senior, Wiregrass Ranch High School, Wesley Chapel, Florida, T: Branden Anglin
- Vero Beach, USFL31, Indian River Regional Science and Engineering Fair**
- ANIM005 A Study of Amyotrophic Lateral Sclerosis: Observations of *Drosophila melanogaster* Larval and Adult Motor Function After Cycad Exposure**
<https://projectboard.world/isef/project/162322>
Sienna Lily Mallon, 17, Junior, Saint Edward's School, Vero Beach, Florida, T: Laxmikant Pathade
- Sarasota, USFL32, Sarasota County STEM Fair**
- BCHM037 ERPD: A Novel Protein Design Approach to Engineering and Optimizing Smaller Fluorescent Proteins**
<https://projectboard.world/isef/project/168195>
Xinyi Liu, 17, Junior, Pine View School, Osprey, Florida, T: Hali Flahavan
- ENBM076 Utilizing 3D Additive Biomanufacturing To Develop a Biocompatible, Customizable and Durable Mechanical Aortic Valve — Year 2**
<https://projectboard.world/isef/project/168127>
Aadi Nishant Bhensdadia, 15, Freshman, Pine View School, Osprey, Florida, T: Hali Flahavan

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- ROBO081** **Detection of Diabetic Retinopathy With a Deep Learning Algorithm**
<https://projectboard.world/isef/project/168194>
Selena Shen, 15, Freshman, Pine View School, Osprey, Florida, T: Hali Flahavan
- Howey In The Hills, USFL34, Lake County Regional Science & Engineering Fair**
- BCHM005** **Effects of Dietary Supplements on Simulated Arterial Plaque**
<https://projectboard.world/isef/project/162667>
Esme Catherine Dellinger, 15, Freshman, Tavares High School, Tavares, Florida,
T: Courtney Stokes
- SOFT018** **Pet Tracker ID (Year 2): Manage Your Pet's Data From Any Device, Anywhere in the Cloud With Pet Tracker ID**
<https://projectboard.world/isef/project/162542>
- # Jasmine Alexandria Gaines, 16, Sophomore, East Ridge High School, Clermont, Florida,
T: Eric Calabrese
- Orange Park, USFL35, Clay Rotary Regional Science and Engineering Fair**
- PHYS006** **Ionic Wind: A Novel Approach for Generating Thrust Utilizing Electric-Powered Propulsion**
<https://projectboard.world/isef/project/162451>
Austin Christopher Hallett, 16, Junior, Clay High School, Green Cove Springs, Florida,
T: William Derousie
- ROBO005** **Applying a Simplified Motion Profiling Algorithm to a Target Following Arm With Two Degrees of Freedom: A Three Year Study**
<https://projectboard.world/isef/project/162500>
- # Alexander James Gordon, 18, Senior, Ridgeview High School, Orange Park, Florida,
T: Bethany Derousie
- Orlando, USFL50, State Science and Engineering Fair of Florida - Ying Scholars**
- ANIM010** **Year 5: Engineering a Novel IoT Trapping System With a Multiple Linear Regression Model Toward Eco-Friendly, High-Efficacy, Low-Cost Honey Bee Pest Treatment and Management**
<https://projectboard.world/isef/project/162630>
- # Atreya Manaswi, 18, Junior, Orlando Science Schools, Orlando, Florida, T: Judith Bright
- BCHM035** **The Effect of Potential Anti-Inflammatory Sex Hormones To Model the Gender and Age Discrepancy in Alzheimer's Disease Using *C. elegans* as a Model Organism for a Preventative Mechanism**
<https://projectboard.world/isef/project/168117>
- # Emma Marie Colarte Delgado, 17, Junior, American Heritage School, Plantation, Florida,
T: Juliana Caulkins
- CBIO050** **The Role of Cell-to-Cell Transmission in HIV Infection: Insights From a Mathematical Modeling Approach, Year 2**
<https://projectboard.world/isef/project/168055>
Sophia Rong, 16, Junior, F. W. Buchholz High School, Gainesville, Florida,
T: Lisa Sauberan
- CHEM066** **Novel Elastomeric Polystyrene via Photopolymerization and Post-Functionalization of Durable Ultra-High Molecular Weight Perfluorostyrene Copolymer**
<https://projectboard.world/isef/project/168108>
Nathan Wei, 17, Senior, F. W. Buchholz High School, Gainesville, Florida, T: Marc Moody
- EAEV007** **3D-Printed Hemp-Based Artificial Coral Reefs as Biodegradable Solution for Marine Restoration**
<https://projectboard.world/isef/project/162545>
- # Anabella Haynes Platt, 18, Senior, Episcopal School of Jacksonville, Jacksonville, Florida,
T: Marion Zeiner
- MCRO038T** **Combating Superbugs: Using Natural Compounds as Down-Regulators of Biofilms Formation in ESKAPE Pathogens (An *in silico* Study)**
<https://projectboard.world/isef/project/168110>
Jai Gupta, 16, Sophomore, Avi Gupta, 16, Sophomore, Seminole High School, Sanford, Florida, T: Kristie Long

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PHYS064 **Using LTE Modeling To Find Unique Molecular Tracers for Star Formation Processes in the Central Molecular Zone of the Milky Way**

<https://projectboard.world/isef/project/168116>

Peter Lansing, 17, Junior, Pine Crest School, Fort Lauderdale, Florida, T: Jennifer Gordinier

PLNT006 **Combating Huanglongbing Through the Development of a Non-phytotoxic Oxytetracycline Formulation and Novel Fluorescence-Based Detection System**

<https://projectboard.world/isef/project/162558>

Moitri Santra, 15, Sophomore, Oviedo High School, Oviedo, Florida, T: William Furiosi

GEORGIA

Atlanta, USGA03, Atlanta City Science & Engineering Fair

CBIO019 **Assessing Proxy Gene Expression Following Expression CROP-Sequencing**

<https://projectboard.world/isef/project/162095>

Katherine Hazel Garcia Martinez, 17, Senior, Benjamin E. Mays High School, Atlanta, Georgia, T: Sharon Hubbard-Belcher

ENBM009 **Assessing the Bone Health of Sickle Cell Mice: A Histological Study of Cathepsin K Knockout**

<https://projectboard.world/isef/project/162600>

Taylor Woods, 18, Senior, Daniel McLaughlin Therrell High School, Atlanta, Georgia, T: Robert Hairston

ENEVO23T **REALM: Using Deep-Learning Algorithms, Neural Networks and a Mobile App To Transform Communal Recycling and Education**

<https://projectboard.world/isef/project/162093>

Tejas Vinod Kadadi, 17, Junior, Anish Iyer, 17, Junior, The Westminster Schools, Atlanta, Georgia, T: Alison Aitken

Stone Mtn, USGA04, Dekalb Science & Engineering Fair

BEHA007 **Elucidating the Behavioral, Pathogenetic and Therapeutic Implications of Selectively Inhibited Monogenic Variants in Fragile X Syndrome Associated Genetic Epilepsy in *Drosophila melanogaster***

<https://projectboard.world/isef/project/162342>

Deeksha Khanna, 18, Senior, Chamblee Charter High School, Chamblee, Georgia, T: Jacqueline Stephens

EGSD001T **Eco-Friendly Generation of Methane and Oxygen From Atmospheric Carbon Dioxide and Water Through the Sabatier Process**

<https://projectboard.world/isef/project/162486>

Jack Bolte, 17, Senior, Matthew Wang, 18, Senior, Aiden Lee, 16, Senior, Chamblee Charter High School, Chamblee, Georgia, T: Regan Willson T: Leila Warren

McDonough, USGA06, Henry County Science and Engineering Fair

EBED003 **Terahertz Gap Communication Using Black Body Radiation**

<https://projectboard.world/isef/project/162311>

Jonathan Luke Dorminy, 17, Junior, Sola Fide Home School, McDonough, Georgia, T: Ann Dorminy

MATS011 **Biomimicry in Architecture: The Effect of Bio-Inspired Structures on the Compressive Strength to Density Ratio**

<https://projectboard.world/isef/project/162645>

Samantha Dalby, 15, Sophomore, Woodland High School, Stockbridge, Georgia, T: Jormell Cofield

Milledgeville, USGA07, Georgia College & State University Regional Science and Engineering Fair

ANIM019 **It's a Bloody Topic, Part II**

<https://projectboard.world/isef/project/162109>

Nicholas Herbert Jackson, 17, Senior, Johnson County High School, Wrightsville, Georgia, T: Michael Caneega

Finalist Directory

- MCRO012 Ribosplode! Macrolide-Mediated Ribosomal Polymorphisms**
<https://projectboard.world/isef/project/162320>
Amarri Zion Robinson, 16, Junior, John S Davidson Fine Arts School, Augusta, Georgia,
T: Sierra Mannix
- Griffin, USGA09, Griffin RESA Regional Science Fair**
- BMED007 How Fermented Foods Affect Fruit Fly Insulin Resistance by Gender**
<https://projectboard.world/isef/project/162316>
Vedita Sawhney, 17, Junior, McIntosh High School, Peachtree City, Georgia,
T: Seth Bishop
- ENBM007T Beat the Heat: A Novel AI-Based Approach To Save Lives From Heat Exhaustion**
<https://projectboard.world/isef/project/162338>
Oluwatimileyin Noah Thomas, 15, Freshman, Colin Christian Hacker, 15, Freshman,
Asher Chilson Levine, 15, Freshman, McIntosh High School, Peachtree City, Georgia,
T: Seth Bishop
- TECA017T Game On, Stress Off: Unveiling the Relaxation Potential of Video Games**
<https://projectboard.world/isef/project/162357>
Lynda Georgina Coots, 17, Senior, Tania Menchaca, 18, Senior, Miguel Angel Ramos, 18,
Senior, Newton College and Career Academy, Covington, Georgia, T: Laura Lambert
- Suwanee, USGA11, Gwinnett Regional Fair**
- BMED027 PTPMT1 Deficiency in the Mouse Bone Marrow Microenvironment**
<https://projectboard.world/isef/project/163731>
Rayna Xinyang Chang, 18, Senior, Gwinnett School of Mathematics, Science, and
Technology, Lawrenceville, Georgia, T: Courtney Cox
- EBED022T DoorBully: A Mechatronic Locking System Enhanced by IoT Connectivity and Machine Learning for Rapid School Safety Lockdown Response**
<https://projectboard.world/isef/project/163730>
Rohan Kumar#, 17, Senior, William H. Susskind, 18, Senior, Paul Duke STEM High School,
Norcross, Georgia, T: Tiffany Bookal
- ENBM028 Use of Polymer Coated Nanoparticles for Inactivation of MS2**
<https://projectboard.world/isef/project/163729>
Samantha Grace Caswell, 17, Junior, Gwinnett School of Mathematics, Science,
and Technology, Lawrenceville, Georgia, T: Courtney Cox
- PLNT030 Accelerating Plant Growth With Electro-Horticulture**
<https://projectboard.world/isef/project/163727>
Shriya Tailor, 16, Junior, Peachtree Ridge High School, Suwanee, Georgia,
T: Michael Crawford
- ROBO031 Optimizing Traffic Systems Through Queuing Theory and Simulation**
<https://projectboard.world/isef/project/163728>
Jack Wilford Hunsaker, 17, Junior, North Gwinnett High School, Suwanee, Georgia,
T: Charles Daab
- TMED030T IdentiCan: The App That Detects Brain, Breast, Lung, Skin and Pancreatic Cancer**
<https://projectboard.world/isef/project/163942>
Nyambura Sallinen, 15, Freshman, Keshvee Sekhda, 15, Freshman, Lanier High School,
Buford, Georgia, North Gwinnett High School, Suwanee, Georgia, T: William Jacks T:
Charles Daab
- Conyers, USGA12, Rockdale Regional Science & Engineering Fair**
- BCHM007T Designing a Cost-Effective Lateral Flow Assay for Hypercalcemia Detection and Formulation of Therapeutic Supplements To Modulate Serum Calcium Concentrations**
<https://projectboard.world/isef/project/162565>
Alexa Apiyo#, 17, Senior, Jaycee Louanne Herth, 18, Senior, Rockdale Magnet School
for Science and Technology, Conyers, Georgia, T: Shelley Seagraves
- ENEVO12 GO-FeO Fluid: A Novel Method To Remove Microplastics**
<https://projectboard.world/isef/project/162559>
Hannah Camille Coley, 17, Junior, Rockdale Magnet School for Science and Technology,
Conyers, Georgia, T: Scott Robinson

Finalist Directory

- TMED017T Targeted Cancer Treatments With Ultrasonic Transportation**
<https://projectboard.world/isef/project/162562>
Kathryn Stoltz, 18, Senior, Camila Moreno#, 18, Senior, Rockdale Magnet School for Science and Technology, Conyers, Georgia, T: Scott Robinson
- Marietta, USGA14, Cobb/Paulding Regional Science Fair**
- CBIO028 Neuropath: Multi-Computational Framework for Developing a Receptor-Based Transcytosis Approach To Facilitate BDNF Transmission for Alzheimer's Progression Prevention**
<https://projectboard.world/isef/project/165661>
Arpit Rajkumar Ramani, 16, Sophomore, Wheeler High School, Marietta, Georgia, T: Ashley Deason
- ENBM044 DeepRet: Novel Multi-Stage Deep Learning-Based Low-Cost Retinal Imaging System To Enable Accessible Glaucoma Screening in Low-Resource Environments**
<https://projectboard.world/isef/project/165884>
Rohan Kalia, 17, Junior, Wheeler High School, Marietta, Georgia, T: Ashley Deason
- Jonesboro, USGA15, Clayton County Regional Science & Engineering Fair**
- CHEM006 The Impact of Fertilizer on pH and Dissolved Oxygen in Freshwater Ecosystems**
<https://projectboard.world/isef/project/162490>
Kyleigh Conley, 17, Junior, Elite Scholars Academy, Jonesboro, Georgia, T: Reshawndra Hutchins-Trapp
- EAEVO15 Determining the Most Effective Ratio of Natural Materials for Water Filtration**
<https://projectboard.world/isef/project/162541>
Stephanie Tochi Ezenne, 16, Sophomore, Jonesboro High School, Jonesboro, Georgia, T: Angela Ugbajah
- Athens, USGA50, Georgia State Science and Engineering Fair**
- ANIM046 Biodiversity Survey of Watersnake Populations in Northwest Georgias Using eDNA qPCR Analysis**
<https://projectboard.world/isef/project/168142>
Nicholas Lee Alexander, 18, Senior, Paulding County High School, Dallas, Georgia, T: Marc Pedersen
- BMED083 The Effect of α -ketoglutarate on a Tau-Based Model of Neurodegeneration in *Drosophila melanogaster***
<https://projectboard.world/isef/project/168144>
Varsha Ram, 17, Junior, Milton High School, Milton, Georgia, T: Catherine Riley
- PHYS066 Optimizing the Laser Alignment Process: Automated Alignment for Enhanced Efficiency in Magneto-Optical Trap Calibration**
<https://projectboard.world/isef/project/168196>
Tatyana Marie McVay, 18, Senior, Paul Duke STEM High School, Norcross, Georgia, T: Tiffany Bookal
- ROBO078 Zenith Soar X-4: Autonomous Drone for Autonomous Drone for Disaster Relief and Detection**
<https://projectboard.world/isef/project/168143>
Daniel Tyreese Williams, 18, Senior, East Coweta High School, Sharpsburg, Georgia, T: Karen Pompeo
- HAWAII**
- Honolulu, USHI01, Hawaii Association of Independent Schools Science and Engineering Fair**
- ANIM007 Utilizing Microbiome Transplants To Improve Landscape-Scale Mosquito Suppression**
<https://projectboard.world/isef/project/162498>
Logan Tokuzo Kaenohomekahau'oli Lee, 17, Junior, Iolani School, Honolulu, Hawaii, T: Yvonne Chan
- CBIO003 Multilayer Analysis of the Effect of Neighborhood Influence, Socioeconomic Status and Zoning Laws on the Gut Microbiome and Cardiometabolic Health of Native Hawaiian Pacific Islanders on Oahu**
<https://projectboard.world/isef/project/162509>
Elle Rose Sugimoto, 17, Junior, Iolani School, Honolulu, Hawaii, T: Yvonne Chan

Finalist Directory

Waipahu, USHI02, Leeward District Science and Engineering Fair

BEHA010T Finding Relief in Back Pain Through an Accessible Laptop Stand

<https://projectboard.world/isef/project/162642>

Nichelle Corpuz, 17, Junior, Zea Hope Galacgac, 16, Junior, Waipahu High School, Waipahu, Hawaii, T: Tanya Cobbin

ETSD014T Maximizing Cross Bracing Efficiency on Towers

<https://projectboard.world/isef/project/162716>

Jenna Liang, 15, Sophomore, Travis Osaki, 15, Freshman, Pearl City High School, Pearl City, Hawaii, T: Anthony Ferro

ROBO016 Using Computer Vision To Analyze Traffic

<https://projectboard.world/isef/project/162638>

Aaron-James Santa Cruz, 17, Junior, Waipahu High School, Waipahu, Hawaii, T: Lucile Immamura

Puunene, USHI03, Maui County Regional Science and Engineering Fair

ENEVO37T Evaluating Native Hawaiian Plant Species' Contributions to Post-Fire Silt Sock Bioremediation in Lahaina

<https://projectboard.world/isef/project/164267>

Kadence Merritt, 18, Senior, Bennett Miguel Pahili Takahama, 18, Senior, Kamehameha Schools Maui, Makawao, Hawaii, T: Malia Panglao

MATS040T Finding the Optimal Stickiness of a Table Tennis Paddle To Produce the Most Spin

<https://projectboard.world/isef/project/166796>

Kaleikaumaka Roback, 18, Senior, Kiai Souza, 18, Senior, Kamehameha Schools Maui, Makawao, Hawaii, T: Malia Panglao

Lihue, USHI04, Kauai Regional Science & Engineering Fair

MCRO008 Identifying Photosynthetic Microeukaryotes and Cyanobacteria in the Diet of Tilapia in the 'Alekoiko Fishpond Using eDNA

<https://projectboard.world/isef/project/162502>

Jeanine Marie Grace Longboy, 17, Senior, Kauai High School, Lihue, Hawaii, T: Alexa Nelson

Hilo, USHI05, Hawaii District Science and Engineering Fair

CHEM014 Improving the Palatability and Marketability of Noni Juice, a Medicinal Fruit Juice, Using Rotary Evaporation

<https://projectboard.world/isef/project/162394>

Beatrice Eubin Kim-Lee, 18, Senior, Waiakea High School, Hilo, Hawaii, T: Chad Higa

EAEVO18 Heavy Metal Contamination of Soils From Sugarcane Farming: How Safe Is the County Park?

<https://projectboard.world/isef/project/162430>

Austyn Olivia Bugado, 15, Freshman, Hilo High School, Hilo, Hawaii, T: Pascale Pinner

Kaneohe, USHI06, Windward District Science and Engineering Fair

MCRO015T Antimicrobial Properties of Exoskeletons

<https://projectboard.world/isef/project/162526>

Amara Lewis, 18, Senior, Linda Colleen Crawford, 17, Senior, Kailua High School, Kailua, Hawaii, T: Sara Anglin

PLNT005 The Affects of Fungicides on the Presence of Chlorophyll in *Ohia lehua*

<https://projectboard.world/isef/project/162437>

Tani-Lei Rieko Nishikawa, 17, Junior, Kailua High School, Kailua, Hawaii, T: Sara Anglin

Aiea, USHI07, Central Oahu District Science and Engineering Fair

ANIM003 Deep-Sea Octocoral Biogeography: Exploring Genetic and Oceanographic Patterns Through MutS Phylogenetic Analysis

<https://projectboard.world/isef/project/162333>

Kendall Mae Allman, 16, Junior, Admiral Arthur W. Radford High, Honolulu, Hawaii, T: Daniella Griffay

PLNT012 The Growth of Spinach in Vertical and Horizontal Hydroponics

<https://projectboard.world/isef/project/162339>

Lauren Johnson, 17, Junior, Mililani High School, Mililani, Hawaii, T: John Sandvig

Finalist Directory

Honolulu, USHI08, Honolulu District Science & Engineering Fair

EAEV023 **Sponge Studies: Assessing the Effects of Environmental Impacts on Marine Sponge Detritus Production and Use as a Natural Deep Sea eDNA Sampler**

<https://projectboard.world/isef/project/162621>

Kian Kenneth Francisco Sanchez, 17, Junior, University Laboratory School, Honolulu, Hawaii, T: Jennifer Seki-Wong

EAEV030 **Strengthening Natural Dyeing: A Comparative Study of Mordants for Sustainable Textile Coloration**

<https://projectboard.world/isef/project/162695>

Leilani Phan, 17, Junior, Kalani High School, Honolulu, Hawaii, T: Bryan Silver

ENBM029 **Analyzing the Correlation of Blood Pressure Monitoring Using Pulse Transit Time**

<https://projectboard.world/isef/project/163943>

Chloe Ho, 16, Junior, Kalani High School, Honolulu, Hawaii, T: Bryan Silver

Kailua-Kona, USHI09, West Hawaii District Fair

ANIM012 **Effects of Urbanization on Moth Mating Behavior: Insights From Street Lighting Exposure**

<https://projectboard.world/isef/project/162617>

Jeannik Littlefield, 16, Sophomore, Hawaii Preparatory Academy, Kamuela, Hawaii, T: Johanna Anton

Honolulu, USHI50, Hawaii State Science and Engineering Fair

ANIM047 **Determining the Distribution of Arginine in *Gracilaria salicornia* and *Codium edule* and Fibropapillomatosis Rates in *Chelonia mydas* in Kāne'ohe Bay**

<https://projectboard.world/isef/project/168166>

Maddux Alexander Springer, 18, Senior, Iolani School, Honolulu, Hawaii, T: Joanna Kobayashi

BEHA053 **Quantifying the Impact of Urban Form and Residential Zoning Law on the Housing Market**

<https://projectboard.world/isef/project/168054>

Chisato Kei Tarui, 17, Junior, Iolani School, Honolulu, Hawaii, T: Yvonne Chan

BMED081 **Caffeine: Effects on SKOV-3 Human Ovarian Cancer Cells**

<https://projectboard.world/isef/project/168129>

Faith Teresa Pomaika'iokeakua Brooks, 17, Senior, Kamehameha Schools Kapalama Campus, Honolulu, Hawaii, T: Kalpana Tata

PHYS068 **The Formation of the Krebs Cycle Molecules in the Simulated Interstellar Medium Sheds Light on Origin of Life**

<https://projectboard.world/isef/project/168331>

Nana Hara, 17, Junior, Iolani School, Honolulu, Hawaii, T: Yvonne Chan

PLNT064 **Harmonious Hydration: A Comparative Analysis of Water Conservation and Germination Efficacy in Wicking Beds vs. Nursery Pots**

<https://projectboard.world/isef/project/168130>

Kruze Homaikala'iku Lani, 15, Freshman, Molokai High School, Ho'olehua, Hawaii, T: Emilio Macalalad

PLNT066 **Investigating the Effectiveness of Fungicides on Disinfecting Ceratocystis Lukuohia Fungi Spores From Ambrosia Beetle Frass**

<https://projectboard.world/isef/project/168210>

Sarina Lam, 15, Freshman, Hilo High School, Hilo, Hawaii, T: Pascale Pinner

TMED081 **The Role of DNA Methylation in the Inflammatory Response Following the Consumption of Glutamate in a Patient With Psoriatic Arthritis: A Case Study in Personalized Medicine**

<https://projectboard.world/isef/project/168336>

Jaymie Miyoko Frith, 18, Iolani School, Honolulu, Hawaii, T: Yvonne Chan

Finalist Directory

ILLINOIS

Chicago, USILO1, Chicago Public Schools Student Science Fair

BMED039 **Overexpression of JAK3 in Coronary Arteries of Kawasaki Disease Patients Reveals a New Potential Therapeutic Target**

<https://projectboard.world/isef/project/165040>

Julia Minji Kim, 17, Senior, Walter Payton College Preparatory High School, Chicago, Illinois, T: Walter Kinderman

BMED046 **The Effect of Cisplatin on Gene Expression in Breast Cancer**

<https://projectboard.world/isef/project/165476>

Landra Elyse Ream, 16, Junior, Lane Technical College Prep High School, Chicago, Illinois, T: Lucy Young

EAEV050 **A Novel Approach for Tropical Cyclone Track Forecast Across the Atlantic Basin**

<https://projectboard.world/isef/project/165039>

Nikita Agrawal, 18, Senior, Whitney M. Young Magnet High School, Chicago, Illinois, T: Anna Gallardo

EAEV052 **Effect of Burn Scars on Macroinvertebrate Biodiversity**

<https://projectboard.world/isef/project/165054>

Alexander Adam Czempinski, 17, Junior, Lane Technical College Prep High School, Chicago, Illinois, T: Arthur Wawrzyczek

Bowen, USILO4, Illinois Junior Academy of Science Region X Science Fair

EAEV051 **Exploring the Environmental Impact of Copper II Sulfate on *Dugesia tigrina* and *Lemna minor***

<https://projectboard.world/isef/project/165041>

Elizabeth Kay Hubbard, 17, Freshman, Southeastern Junior/Senior High School, Augusta, Illinois, T: Sara Guymon

ENEV046T **Eco-Engineered Floating Wetlands: A Promising Technique To Improve Water Quality**

<https://projectboard.world/isef/project/165060>

Abigail Nicole Shaffer, 17, Senior, Savannah Rae Ramsey, 17, Junior, Southeastern Junior/Senior High School, Augusta, Illinois, T: Sara Guymon

Evanston, USILO5, Illinois Junior Academy of Science North Suburban Region 6 Science and Engineering Fair

BMED013 **NeuroHero: A Novel QEEG and HRV-Based Neural Network for Explainable Post-Anoxic Coma Prognosis**

<https://projectboard.world/isef/project/162636>

Mithun Ganapathy Arun, 17, Junior, William Fremd High School, Palatine, Illinois, T: Jennifer Thorstenson

CBIO047 **Predicting Optimal Combinations of Regulatory Transcription Factor Perturbations To Simulate Complex Cell-State Conversion Paths Using Combinatorial Optimization and Machine Learning**

<https://projectboard.world/isef/project/168021>

Shaurya Agrawal, 18, Senior, Adlai E. Stevenson High School, Lincolnshire, Illinois, T: Susan Brontman

PHYS018 **Investigating Type Ia Supernovae Formation Processes via the Kinematics of Their Ejecta**

<https://projectboard.world/isef/project/162631>

Isabella Katie Chen, 17, Junior, William Fremd High School, Palatine, Illinois, T: Jennifer Thorstenson

PHYS021 **ZooVera: Novel Application of Transfer Learning for Classifying Galaxy Morphologies in Simulated LSST Data**

<https://projectboard.world/isef/project/162639>

Cibi Vadivel, 17, Junior, Lake Zurich High School, Lake Zurich, Illinois, T: McKenna Serowka

Finalist Directory

TMED019 **Neuroprotective Effects of a Combination of Celastrol and Naproxen on Acute Traumatic Brain Injury in a *Drosophila melanogaster* Model as a Potential Novel Pharmaceutical**
<https://projectboard.world/isef/project/162637>
Amelia Hammersley, 16, Junior, Oak Park and River Forest High School, Oak Park, Illinois,
T: Allison Hennings

INDIANA

Terre Haute, USIN20, Hoosier Science and Engineering Fair Region 1

MATS052T **How Palm Trees Inspire, The Resistance Desired: An Improved Exterior Wall Siding That Defends Against Tornadoes**
<https://projectboard.world/isef/project/168197>
Gavin Christopher Lacefield, 15, Freshman, Divinity Paradise Goff, 15, Freshman,
New Tech Institute, Evansville, Indiana, T: Jill Valentine

Terre Haute, USIN21, Hoosier Science and Engineering Fair Region 2

BMED071 **Identification of Lung Cancer Biomarkers Through Coding Sequences Targeted by miRNAs**
<https://projectboard.world/isef/project/167751>
Kyle Yang, 14, Freshman, Carmel High School, Carmel, Indiana, T: Yongsheng Bai

SOFT050 **Advancing Bias Mitigation in Machine Learning Models: The Use of Feature-Wise Mixing Across Diverse Classifiers for Contextual Bias Mitigation**

<https://projectboard.world/isef/project/167752>
Yash Vardhan Tomar, 14, Freshman, West Lafayette Junior/Senior High School, West Lafayette, Indiana, T: Rebecca Creech

Terre Haute, USIN22, Hoosier Science and Engineering Fair Region 3

EAEV096 **pH Affect on *Zea mays L.* and Its Ability To House Nematodes**
<https://projectboard.world/isef/project/168132>
Adam Eugene Thomas Lesko, 15, Freshman, Northwestern High School, Kokomo, Indiana, T: Linda Wilson

ROBO072 **Design of Jellyfish-Inspired Robot for Corals Ecosystem Protection and Restoration**

<https://projectboard.world/isef/project/167832>
Qinyu Zheng, 17, Junior, Culver Academies, Culver, Indiana, T: David Lawrence

Terre Haute, USIN23, Hoosier Science and Engineering Fair Region 4

ETSD067 **Safety-Prioritized Robust Macroscopic 3D Traffic Flow Optimization Model**
<https://projectboard.world/isef/project/167833>

Mira Nuthakki, 16, Sophomore, Carmel High School, Carmel, Indiana, T: David James

ETSD073 **A Multi-Usage Hydraulic-Powered Underwater Robot Arm**

<https://projectboard.world/isef/project/168133>
Zhenhe Shi, 16, Sophomore, Culver Academies, Culver, Indiana, T: David Lawrence

Terre Haute, USIN24, Hoosier Science and Engineering Fair Region 5

BEHA060 **The Effect of Hearing Loss on Anxiety and Insomnia**

<https://projectboard.world/isef/project/168316>
Norah Claire Ahmed, 16, Sophomore, Evansville Day School, Evansville, Indiana,
T: Ashley Moran

EAEV085 **Forecasting Urban Water *Escherichia coli* Contamination Using Machine Learning Models**

<https://projectboard.world/isef/project/167753>

Vidhatri L. Iyer, 16, Sophomore, University High School of Indiana, Carmel, Indiana,
T: Erica Posthuma

Terre Haute, USIN25, Hoosier Science and Engineering Fair Region 6

ANIM044 **The Use of Lichen-Derived Secondary Metabolites as Pesticides**

<https://projectboard.world/isef/project/168121>
Samuel Reed Martin, 16, Sophomore, Northwestern High School, Kokomo, Indiana,
T: Linda Wilson

Finalist Directory

- BCHM034** **Novel Complementary and Alternative Medicines To Mollify Long COVID and Post-COVID Conditions Studied Using Controlled Environment Agriculture**
<https://projectboard.world/isef/project/167874>
Rohan Prakash Bhosale, 17, Junior, Carmel High School, Carmel, Indiana, T: Prakash Bhosale
- Terre Haute, USIN26, Hoosier Science and Engineering Fair Region 7**
- BMED088** **The Impact of Paclitaxel and Doxorubicin on APC Knockout Cells in Breast Cancer**
<https://projectboard.world/isef/project/168304>
Emily Claire Archambeault, 17, Junior, Marian High School, Mishawaka, Indiana, T: Ken Andrzejewski
- MATH031** **Balancing Misclassification Costs (BMC) in Imbalanced Classification**
<https://projectboard.world/isef/project/167761>
Sophia Fu, 17, Junior, Carmel High School, Carmel, Indiana, T: Haoda Fu
- Terre Haute, USIN27, Hoosier Science and Engineering Fair Region 8**
- EBED044** **Bending Shape Self-Sensing Pneumatic Grasper: Intelligent Evolution of Soft Robots**
<https://projectboard.world/isef/project/167931>
Tony Zhou, 17, Junior, Culver Academies, Culver, Indiana, T: David Lawrence
- ENBM069** **FlexiSpine: An Adaptive Robotic Brace for Personalized Spinal Deformity Treatment**
<https://projectboard.world/isef/project/167754>
Minran (William) Wang, 17, Junior, Culver Academies, Culver, Indiana, T: David Lawrence
- Terre Haute, USIN50, Hoosier Science and Engineering Fair**
- EGSD046** **A Pyrrole Modified 3,4-Propylenedioxythiophene (ProDOT) Conjugated Polymer as Hole Transport Materials for Efficient and Stable Perovskite Solar Cells**
<https://projectboard.world/isef/project/168120>
Raunak Dani, 17, Senior, West Lafayette Junior/Senior High School, West Lafayette, Indiana, T: Letian Dou
- MATS053** **Camouflaged Edible QR Code Bioprinting: Combatting Medicine Counterfeiting**
<https://projectboard.world/isef/project/168312>
Joshua Kim, 18, Senior, West Lafayette Junior/Senior High School, West Lafayette, Indiana, T: Rebecca Creech
- TMED073** **Advancing Early Detection of Kidney Cancer (Year 3): A Novel Automated Workflow for High-Throughput Proteomic Profiling of Urinary Extracellular Vesicles**
<https://projectboard.world/isef/project/167762>
Zheng-Chi Lee, 18, Senior, West Lafayette Junior/Senior High School, West Lafayette, Indiana, T: Rebecca Creech
- IOWA**
- Cedar Rapids, USIA01, Eastern Iowa Science and Engineering Fair**
- ENBM035** **Design and Development of an Open-Source, Myo-Electric Robotic Upper Limb Prosthesis Using Additive Manufacturing**
<https://projectboard.world/isef/project/164400>
Benjamin William Lothamer, 15, Freshman, Mid-Prairie Home School Education Center, Kalona, Iowa, T: Chris Hagedorn
- MCRO019** **The Antibacterial Effect of *Allium sativum* on Gram-Positive and Gram-Negative Bacteria Phase II**
<https://projectboard.world/isef/project/165037>
Antariksha Sharma, 16, Sophomore, Maharishi School of the Age of Enlightenment, Fairfield, Iowa, T: Asha Sharma
- TMED037** **Advancing Wound Infection Assessment by Utilizing pH-Sensitive Curcuma longa, Phase II**
<https://projectboard.world/isef/project/165036>
Ishita Mukadam, 18, Senior, Maharishi School of the Age of Enlightenment, Fairfield, Iowa, T: Asha Sharma

Finalist Directory

Mapleton, USIA02, Western Iowa Science and Engineering Fair

- PLNT036** **Enhancing Field Litter Decomposition: The Impact of Soil Amendments**
<https://projectboard.world/isef/project/164401>
Taylor Janelle Ommen, 16, Junior, West Central Valley High School, Stuart, Iowa,
T: Gail Kunch
- PLNT037** **Phase II: An Analysis of the Effects of Drought on Nancy's Calico Flour Corn**
<https://projectboard.world/isef/project/164402>
Hannah Grace Woudstra, 19, Senior, Sioux Center High School, Sioux Center, Iowa,
T: Christine Brassler

Ames, USIA50, State Science and Technology Fair of Iowa

- ANIM050** **Can They Eat It? Creating an Eco- and Livestock-Friendly Hay String**
<https://projectboard.world/isef/project/168540>
Allison Renae Gruntmeir, 17, Freshman, Central Lee High School, Donnellson, Iowa,
T: Alicia Schiller
- BMED073** **The Impact of Adenylate Cyclase 3 Loss in SF1 Neurons on Obesity**
<https://projectboard.world/isef/project/167831>
Sabrina Du, 16, Junior, West High School, Iowa City, Iowa, T: Carolyn Walling
- CBIO045** **ViGAR: Viral Genome Annotation With Recurrent Neural Networks — Facilitating Drug Therapy Research for Thousands of Understudied Viruses**
<https://projectboard.world/isef/project/167929>
Ritvik Gupta, 15, Sophomore, Johnston High School, Johnston, Iowa, T: NA NA
- CELLO44T** **A Mechanistic Analysis of Intraneuronal Amyloid β Aggregation Caused by Cellular Dysfunction in Alzheimer's Disease**
<https://projectboard.world/isef/project/167865>
Ananya Balaji#, 16, Junior, Avyay Balaji#, 16, Junior, Ames High School, Ames, Iowa,
T: DeAnna Tibben
- CELLO48** **DVL Inhibits the YAP1 Bypass Mechanism of KRAS Inactivation**
<https://projectboard.world/isef/project/168164>
Amal Eltayib, 15, Sophomore, Iowa City High School, Iowa City, Iowa, T: Carolyn Walling
- EAEV092** **Pura Arem: Computational Analysis and Prototype Optimization of a Novel Multi-Stage Extension Designed To Reduce PM10, CO₂, CO Exiting TWC-OC Catalytic Converters**
<https://projectboard.world/isef/project/168053>
Shanza Sami, 15, Sophomore, West High School, Iowa City, Iowa, T: Carolyn Walling
- MATS051** **Investigating the Effects of Carbon-Based Nanomaterials on the Combustion Properties of Multicomponent Fuel Droplets**
<https://projectboard.world/isef/project/168174>
Anjali Lodh, 16, Junior, West High School, Iowa City, Iowa, T: Carolyn Walling
- MCRO027** **Efficacy of Biosecurity Measures Related to Boot Hygiene for On-Farm Veterinary Care**
<https://projectboard.world/isef/project/167108>
Valerie Savanna Rahe, 15, Sophomore, Beckman Catholic High School, Dyersville, Iowa,
T: Cheryl Kluesner
- SOFT047** **Detecting and Quantifying Emotional Loneliness Risk in the Digital Age: An Innovative Lexicon-Based Text Analysis Method Combining Deep Learning and Rule-Based Classification**
<https://projectboard.world/isef/project/167268>
Winston Derek-Xu Fan, 16, Sophomore, West High School, Iowa City, Iowa,
T: Carolyn Walling

KANSAS

El Dorado, USKS50, Kansas State Science and Engineering Fair

- PHYS043** **Identifying Glitches in a Gravitational Wave Detector Through CNNs**
<https://projectboard.world/isef/project/166576>
Ananya Agrawal, 16, Sophomore, Blue Valley West High School, Overland Park, Kansas,
T: Heather Hall

Finalist Directory

KENTUCKY

Louisville, USKY02, Louisville Regional Science and Engineering Fair

BCHM008 Analysis of Novel Multi-Enzyme Formulation's Synergistic Implications for the Enhanced Interventional Disruption of *E. coli* Biofilms

<https://projectboard.world/isef/project/162719>

Muhilan Balasubramanian, 17, Junior, Ballard High School, Louisville, Kentucky, T: Kathy Cail

CBIO014 Modeling Neuron Energy Efficiency and Consumption Using Hodgkin-Huxley Equations With Analysis and Application

<https://projectboard.world/isef/project/162649>

Zahra Chasmawala, 17, Junior, The Carol Martin Gatton Academy of Mathematics and Science in Kentucky, Bowling Green, Kentucky, T: Cheryl Kirby-Stokes

EGSD015 Increasing Green Hydrogen Production Accessibility: Novel Synthesis of Maghemite Nanosphere Electrode for Bifunctional Alkaline Water Splitting

<https://projectboard.world/isef/project/162655>

Asa Ashley, 16, Junior, The Carol Martin Gatton Academy of Mathematics and Science in Kentucky, Bowling Green, Kentucky, T: Cheryl Kirby-Stokes

ENBM010 CereVis: A Novel Multimodal Comprehensive Surgical Assistance System for Brain Tumors Utilizing Machine Learning for Pre-Operative Planning and Intra-Operative Surgery

<https://projectboard.world/isef/project/162650>

Gopalaniket Tadinada, 15, Freshman, North Oldham High School, Goshen, Kentucky, T: Cristine McMahan

PHYS019 Celestium: Optimized and Accurate Planetary and Interplanetary Satellite Modeling via Utilization of Novel Algorithms and Advanced Differential Equations

<https://projectboard.world/isef/project/162635>

Nikhil Dileep Kumar, 17, Senior, The Carol Martin Gatton Academy of Mathematics and Science in Kentucky, Bowling Green, Kentucky, T: Richard Schugart

Louisville, USKY03, Dupont Manual High School Regional Fair

BMED031 Lithium Iron Phosphate Promotes Tumor Cell Growth by Shaping Mitochondrial Function

<https://projectboard.world/isef/project/164269>

Lucy Angel Teng, 16, Junior, duPont Manual High School, Louisville, Kentucky, T: Keri Polevchak

EBED025 Omni Wheel: An Innovative Wheel Design for a Walker With Pressure Tracking, Lidar Sensing and Braking Capability

<https://projectboard.world/isef/project/164271>

Annika Chadha, 14, Freshman, duPont Manual High School, Louisville, Kentucky, T: Valerie Conti

ROBO038 Design of a Low-Cost, Low Inertia, Backdrivable Upper-Body Humanoid

<https://projectboard.world/isef/project/164268>

Jilly Abraham Choi, 17, Junior, duPont Manual High School, Louisville, Kentucky, T: Keri Polevchak

SOFT027 The Guided Inquiry Neural Network (GINN): Developing a Novel Machine Learning Architecture for Differential Diagnosis in Primary Care Settings Utilizing Data Masking, Bayesian Inference and Feature Importance

<https://projectboard.world/isef/project/164270>

Saveer Jain, 17, Junior, duPont Manual High School, Louisville, Kentucky, T: Keri Polevchak

TMED031 Development and Validation of a Novel Breath Analysis and Machine Learning Platform for Non-Invasive Diagnosis of Heart Failure

<https://projectboard.world/isef/project/163944>

Justin Huang, 17, Junior, duPont Manual High School, Louisville, Kentucky, T: Keri Polevchak

Finalist Directory

Lexington, USKY05, Central Kentucky Regional Science and Engineering Fair

- ETSD035** **An Improved Color Filter Array Design Using Metafilters**
<https://projectboard.world/isef/project/164272>
Alex John Thuringer, 18, Senior, Paul Laurence Dunbar High School, Lexington, Kentucky, T: Elizabeth Pelphrey
- MATH014** **Twisted Homogeneous Racks Over the Alternating Groups**
<https://projectboard.world/isef/project/162656>
Joseph Amichai Vulakh, 18, Senior, Paul Laurence Dunbar High School, Lexington, Kentucky, T: Elizabeth Pelphrey
- MATS014** **Novel Chemical Doping Strategy To Enhance N-Type Organic Electrochemical Transistors**
<https://projectboard.world/isef/project/162664>
Grace Sun, 16, Junior, Paul Laurence Dunbar High School, Lexington, Kentucky, T: Elizabeth Pelphrey

Richmond, USKY50, Kentucky Science and Engineering Fair

- EAEV075T** **The Efficiency and Health Implications of Bio-Flame Retardants**
<https://projectboard.world/isef/project/167117>
Emerson Wyatt, 16, Junior, Tanisha Rinit Pancholi, 16, Junior, duPont Manual High School, Louisville, Kentucky, T: Keri Polevchak
- EBED036** **Vital Signs-Based Biometric Authentication and Health Monitoring Using a mmWave Radar**
<https://projectboard.world/isef/project/166741>
Summer Li, 16, Junior, duPont Manual High School, Louisville, Kentucky, T: Keri Polevchak
- ENBM059** **DengueScreen: A Novel Computer Vision-Based Diagnostic Alternative for Dengue Fever Prioritizing Efficiency, Cost-Effectiveness and Accuracy**
<https://projectboard.world/isef/project/166911>
Jackson Wilson, 18, Senior, Highlands High School, Fort Thomas, Kentucky, T: Nina Kearns
- PLNT050** **Hyperaccumulation of Arsenic in Rice Plants: A Low-Cost Approach to Arsenic Degradation**
<https://projectboard.world/isef/project/166577>
Sivani R. Babu, 16, Sophomore, duPont Manual High School, Louisville, Kentucky, T: Keri Polevchak
- ROBO060** **TempURRA-NET With Lane.EV: A Novel Lane Detection Architecture With Enhanced Reproducibility Through the Lane.EV Evaluation Platform**
<https://projectboard.world/isef/project/166597>
Jayden Geonu Jeong, 15, Sophomore, Paul Laurence Dunbar High School, Lexington, Kentucky, T: Elizabeth Pelphrey
- SOFT042** **Q-LEARN: Optimizing Student Data Analysis With Quantum Computing Algorithms**
<https://projectboard.world/isef/project/166912>
DaYou Choi, 16, Sophomore, Eminence High School, Eminence, Kentucky, T: Jennifer Gilbert

LOUISIANA

Baton Rouge, USLA01, Louisiana Region VII-Science and Engineering Fair

- BCHM015** **Alterations in Neuromodulatory Proteins in Single APP Knock-in Mice Assessed Following Ketamine Therapy**
<https://projectboard.world/isef/project/163945>
Abhinav Pathak, 16, Junior, Baton Rouge Magnet High School, Baton Rouge, Louisiana, T: Tiffany Moore
- CELLO28** **Microfluidic 3D Co-Culture of Estrogen Receptor Positive Breast Cancer and Stromal Cells To Study Endocrine Resistance**
<https://projectboard.world/isef/project/164273>
Tejasvi Tyagi, 16, Junior, Baton Rouge Magnet High School, Baton Rouge, Louisiana, T: Tiffany Moore

Finalist Directory

- SOFT028** **Impacts of a Hidden Layer Design on CNN for Traffic Sign Recognition**
<https://projectboard.world/isef/project/164274>
Sofia Chenglan Zhu, 15, Sophomore, Baton Rouge Magnet High School, Baton Rouge, Louisiana, T: Tiffany Moore
- Bossier City, USLA02, Bossier Parish Community College Louisiana Region I Science and Engineering Fair**
- CELL019** **The Efficacy of AarF Domain-Containing Kinase 1 Knockout in Reducing the Proliferation of Hepatocellular Carcinoma Cells**
<https://projectboard.world/isef/project/162759>
Arjun Desai, 17, Junior, Caddo Parish Magnet High School, Shreveport, Louisiana, T: Cameron Hall
- SOFT012** **A Physiological Self-Supervised Attention-Based Approach for Sound Source Separation in Auditory Scenes**
<https://projectboard.world/isef/project/162632>
- # Sophie Chen, 17, Senior, Caddo Parish Magnet High School, Shreveport, Louisiana, T: Cameron Hall
- TMED018** **Homotopic Connectivity as a Biomarker of Alzheimer's Disease**
<https://projectboard.world/isef/project/162676>
- # Anika Alla, 18, Senior, Caddo Parish Magnet High School, Shreveport, Louisiana, T: Cameron Hall
- Houma, USLA03, Terrebonne Parish Science Fair**
- EAEV016** **Sharks in the Bayou: How Fast Is Salt Water Entering our Freshwater Bayou Ecosystem?**
<https://projectboard.world/isef/project/162432>
Abigail Makay Straley, 17, Junior, Terrebonne High School, Houma, Louisiana, T: Rayemona Boyd
- MATS026** **Is Your Clothing Really That Safe?**
<https://projectboard.world/isef/project/163591>
Madelyn Melancon, 15, Freshman, Terrebonne High School, Houma, Louisiana, T: Andree Caudill
- Lake Charles, USLA05, Louisiana Region V Science and Engineering Fair**
- EAEV026** **Use of Surfactants To Promote Agricultural Sustainability and Soil Fertility in Arid Climates**
<https://projectboard.world/isef/project/162382>
- ## Susanna Angel Chiruguru, 16, Junior, LaGrange Senior High School, Lake Charles, Louisiana, T: Suresh Chiruguru
- EGSD010** **Vibrations to Voltage: Sustainable Acoustic Energy Harvesting With Piezoelectricity**
<https://projectboard.world/isef/project/162314>
Gyeongyun Lily Min, 16, Junior, Alfred M. Barbe High School, Lake Charles, Louisiana, T: Yvette Richey
- New Orleans, USLA08, Greater New Orleans Science and Engineering Fair**
- BMED022** **Circulating Chymase and Chronic Kidney Disease: A Multivariable Analysis of Current Treatments, Demographics and Clinical Risk Factors**
<https://projectboard.world/isef/project/162876>
- # Vaishnavi Sai Kumbala, 16, Junior, Haynes Academy for Advanced Studies, Metairie, Louisiana, T: Ronald Coats
- ENEV027** **Smart Trash Bins for Identification of Trends and Factors in Municipal Waste Disposal**
<https://projectboard.world/isef/project/162875>
Cole Bui, 17, Junior, Patrick F. Taylor Science & Technology Academy, Westwego, Louisiana, T: Cheryl Bordelon

Finalist Directory

- MATH018** **On an Approximation of Divisor Sum Functions With Bernoulli Polynomials and the Hardy Littlewood Function**
<https://projectboard.world/isef/project/162871>
Quang Tran, 18, Junior, Patrick F. Taylor Science & Technology Academy, Westwego, Louisiana, T: Cheryl Bordelon
- ROBO025T** **A Novel Approach to the Application of Machine Learning in the Mitigation of Waste Pollution**
<https://projectboard.world/isef/project/162872>
Jai Bansal, 16, Sophomore, Jackson David Paul Dirks, 16, Sophomore, Isidore Newman School, New Orleans, Louisiana, T: David Kern
- Baton Rouge, USLA50, Louisiana Science and Engineering Fair**
- CBIO040** **Categorization of Kidney Cancer Using Machine Learning Based on lncRNA Expression**
<https://projectboard.world/isef/project/167639>
Lily Esther Bodily, 16, Sophomore, Caddo Parish Magnet High School, Shreveport, Louisiana, T: Cameron Hall
- EAEV081** **The Impact of Ozone Pollution on the Growth, Health and Physiological Development of Food Crops**
<https://projectboard.world/isef/project/167649>
Julia Claire Bodin, 15, Sophomore, St. Joseph's Academy, Baton Rouge, Louisiana, T: Jacqueline Savoia
- EBED040** **Mitigation of Pressure Injuries Utilizing an Inertial Wearable, Computer Vision and Machine Learning**
<https://projectboard.world/isef/project/167603>
Maya Julia Trutschl, 16, Sophomore, Caddo Parish Magnet High School, Shreveport, Louisiana, T: Cameron Hall
- ENEV068** **The Effectiveness of Mushrooms as a Biodegrading Agent for Common Waste**
<https://projectboard.world/isef/project/167638>
Esha Reddy Pingili, 15, Freshman, Caddo Parish Magnet High School, Shreveport, Louisiana, T: Amanda Lawrence
- ETSD060** **How Airfoil Designs Affect Aircraft Aerodynamics**
<https://projectboard.world/isef/project/167637>
Mathias Javier Gomez, 16, Sophomore, Baton Rouge Magnet High School, Baton Rouge, Louisiana, T: Tiffany Moore
- TECA009** **Determining the Effects of Implicit Bias on an Individual's Global Perspective**
<https://projectboard.world/isef/project/167604>
Lola Catherine Avery, 16, Junior, St. Joseph's Academy, Baton Rouge, Louisiana, T: Jacqueline Savoia
- TMED065** **Metabolic Disease Prevention in Obese and Hypertensive Pregnant Mothers and Offspring**
<https://projectboard.world/isef/project/167606>
Kelly Fan, 15, Sophomore, Baton Rouge Magnet High School, Baton Rouge, Louisiana, T: Tiffany Moore
- MAINE**
- Bar Harbor, USME50, Maine State Science Fair**
- MATSO49** **Exploration of Bio-Textiles for a Sustainable Fashion Industry**
<https://projectboard.world/isef/project/168012>
Aurora Batsheva Milton, 17, Senior, Cape Elizabeth High School, Cape Elizabeth, Maine, T: Amy de Vries
- MCRO035** **Influence of Phage Transduction on Antimicrobial Resistance Properties of ESKAPEE Bacteria**
<https://projectboard.world/isef/project/168035>
Joshua Andrew Teano Placides, 17, Junior, Oceanside High School, Rockland, Maine, T: Mary Gaudette

Finalist Directory

- PLNT062T** **Healthy Hydroponics: Creating a Plant Health Monitoring System in Hydroponics Using Photogrammetry and a Convolutional Neural Network**
<https://projectboard.world/isef/project/168105>
Brandon Nguyen, 17, Junior, Brayon Nguyen, 17, Junior, Bangor High School, Bangor, Maine, T: Barbara Stewart
- MARYLAND**
- Annapolis, USMD01, Anne Arundel County Regional Science and Engineering Expo**
- *ENBMO22T** **Haptic Sound Guide: An Innovative, Affordable Approach To Combat Hearing Loss and Deafness**
John David Paulenich, 18, Senior, Ayden Joseph Marhefka, 16, Junior, Broadneck High School, Annapolis, Maryland, T: Rebecca Wallace
- ENEVO28** **Aerosol-Driven Purification: A Novel Method for Purifying Water Utilizing Phase Changes**
<https://projectboard.world/isef/project/162877>
- ##** Megan Reyna Yeager, 17, Junior, Chesapeake Science Point Public Charter School, Hanover, Maryland, T: Robert Woerner
- ENEVO31T** **Ground Truthing the Chesapeake Bay: Developing a Remotely Operated Vehicle With Water Sampling Capabilities**
<https://projectboard.world/isef/project/163105>
Elias John Arnold, 18, Senior, Eric Xiang Gu, 18, Senior, South River High School, Edgewater, Maryland, T: Brian Davidson
- Frederick, USMD02, Frederick County Science and Engineering Fair**
- ENBMO51T** **SAAR: Surgical Aid for Anatomical Reconstructions Using Projector-Based Augmented Reality and Computer Vision Systems**
<https://projectboard.world/isef/project/166543>
Karthik Muthukkumar#, 17, Junior, Pranav Sristy#, 16, Junior, Tarun Malarvasan#, 16, Junior, Urbana High School, Ijamsville, Maryland, T: Elizabeth McCook
- PHYSO39** **A Preliminary Study on the Effects of Solar Proton Events on the South Atlantic Anomaly**
<https://projectboard.world/isef/project/166137>
Neha Nair, 18, Senior, Middletown High School, Middletown, Maryland, T: Eileen Chestnutt
- New Market, USMD03, ScienceMontgomery**
- ENBMO78** **MiniMesh: Real-Time 5,000-Node Anatomical Human Body Mesh Reconstruction for Portable Devices**
<https://projectboard.world/isef/project/168169>
- #** Daniel Mathew, 17, Senior, Poolesville High School, Poolesville, Maryland, T: Zachary Kingman
- ENEVO79** **Democratizing Desalination: Study of Materials and Methods To Make Desalination Less Energy Intensive and Affordable**
<https://projectboard.world/isef/project/168170>
Ahil Thendral, 16, Sophomore, Northwest High School, Germantown, Maryland, T: Nathalie Fuentes
- PHYSO63** **Measuring Quantum Entanglement Entropy in Gaussian Boson Sampling**
<https://projectboard.world/isef/project/168114>
Jason Youm, 17, Junior, Montgomery Blair High School, Silver Spring, Maryland, T: John Delaney
- Capitol Heights, USMD05, Prince George's Area Science Fair**
- BMEDO44** **Discovering the Oncogenic Addiction of CD47 in Breast Cancer**
<https://projectboard.world/isef/project/165412>
Yashasri Gouda, 18, Senior, Eleanor Roosevelt High School, Greenbelt, Maryland, T: Yau Jong Twu
- CHEMO40T** **Solvent Effects on Fluorescence of Tryptophan**
<https://projectboard.world/isef/project/165809>
Chioma Elizabeth Okonkwo, 17, Senior, Chelsea Quainoo, 18, Senior, Charles Herbert Flowers High School, Springdale, Maryland, T: Karen Shelton

Finalist Directory

ENEV070 **Sticky Styrofoam**
<https://projectboard.world/isef/project/167767>
Aarav Ronak Sharma, 15, Sophomore, Great Mills High School, Great Mills, Maryland,
T: Charles Skinner

Baltimore, USMD07, Morgan State University Science-Mathematics-Engineering Fair
ANIM051 **"Fin"-tastic Fish: Efficacy of Nonsteroidal Aromatase Inhibitors on the Sex Differentiation and Gonadal Development of Female Zebrafish**
<https://projectboard.world/isef/project/168898>
Lavender Hall, 18, Senior, Baltimore Polytechnic Institute, Baltimore, Maryland,
T: Nicole Rosen

SOFT057 **Save 12 Billion Dollars: Embedding Artificial Intelligence in Banking To Prevent Credit Card Fraud**
<https://projectboard.world/isef/project/168311>
Sai Siddhish Chandra Sekaran, 15, Sophomore, Centennial High School, Ellicott City, Maryland, T: Toni Ireland

MASSACHUSETTS

Cambridge, USMA50, Massachusetts State Science & Engineering Fair

BCHM031 **AP Using Machine Learning Algorithms To Predict Whether Phytochemicals Are Cancerous or Anti-Cancerous**
<https://projectboard.world/isef/project/167642>
Arnab Chetty, 16, Sophomore, Acton Boxborough Regional High School, Acton, Massachusetts, T: Brian Dempsey

BEHA043T **Study Smarter, Not Harder: The Neuropsychology Behind Studying Techniques in Correlation to Academic Performance of Adolescents**
<https://projectboard.world/isef/project/167529>

Gianna Nalumansi, 17, Junior, Ananya Mathur, 16, Junior, Mariyam Patel, 17, Junior, Billerica Memorial High School, Billerica, Massachusetts, T: Tanya Chiarella
BEHA055 **Ginsenoside CK and RK1's Effect on High Intensity Social Behaviors of Aggression in a Tauopathy Model of Alzheimer's Disease in Drosophila melanogaster**
<https://projectboard.world/isef/project/168111>

Jia Kaur Anand, 18, Senior, Saint Mark's School, Southborough, Massachusetts,
T: Lindsey Lohwater

BMED074 **The Influence of Ginger Root Extract on Female Reproductivity in *Caenorhabditis elegans***
<https://projectboard.world/isef/project/167834>

Avery Catherine Leonard, 18, Senior, Saint Mark's School, Southborough, Massachusetts, T: Lindsey Lohwater

BMED085 **Nature's Guide to Organ Preservation: The Application of *Chrysemys picta* Brumation Techniques To Extend the Preservation Period of Organs**
<https://projectboard.world/isef/project/168191>

Camilla Mina Royal, 16, Junior, Foxborough Regional Charter School, Foxborough, Massachusetts, T: David Dipaolo

EAEV045 **Sustainable Salads for Small Spaces: The Comparison of *Lactuca sativa* Growth Between Traditional Farming and Aeroponic Growing**
<https://projectboard.world/isef/project/164275>

Teagan Penelope Chisholm-Godshalk, 16, Sophomore, Westfield High School, Westfield, Massachusetts, T: Jon Tyler

EAEV048 **How Does the Species of Microalgae Reduce the Effects of Carbon Dioxide in Seawater on Calcium Carbonate?**
<https://projectboard.world/isef/project/164404>

Anna Li, 16, Sophomore, North Quincy High School, Quincy, Massachusetts,
T: Claire Boudreau

ENBM062 **Orthotic Hand Brace To Improve Range of Motion in Patients With Cerebral Palsy**
<https://projectboard.world/isef/project/167114>

Sophia Belle Caramanica, 16, Junior, Massachusetts Academy of Math and Science at WPI, Worcester, Massachusetts, T: Kevin Crowthers

Finalist Directory

- ETSD059** **Design of a Multi-Legged Robot With Extraterrestrial Terrain Exploration, Sample Retrieval and Transportation Functions**
<https://projectboard.world/isef/project/167609>
Yanchen (Samuel) Lu, 16, Freshman, Groton School, Groton, Massachusetts,
T: Sandra Kelly
- ETSD061** **Higher-Efficiency Altitude-Adaptive Dynamic Rocket Engine Nozzle**
<https://projectboard.world/isef/project/167641>

Timucin Erbas, 17, Senior, Acton Boxborough Regional High School, Acton,
Massachusetts, T: Brian Dempsey
- ETSD074** **Minimizing Fuel-Oxidizer Mixture Inhomogeneities in Rotating Detonation Engines**
<https://projectboard.world/isef/project/168147>
Kayla Dayani Vallecillo, 16, Junior, Massachusetts Academy of Math and Science at WPI,
Worcester, Massachusetts, T: Kevin Crowthers
- PHYS057** **A Novel Hadronization Model Explaining Charm-Quark Hadronization in Different Collision Systems Through Yet-Unobserved Excited States and Cluster Volume Dependence**
<https://projectboard.world/isef/project/167750>
Shuhan Luo, 18, Junior, Worcester Academy, Worcester, Massachusetts,
T: Hanna Shebert
- PHYS060T** **From Curveballs to Global Shipping: The Impact of Surface Conditions on the Magnus Effect**
<https://projectboard.world/isef/project/167876>
Misha Olegovich Mishechkin, 18, Senior, Vishnu Kiran Angiras, 18, Senior, Tahanto Regional High School, Boylston, Massachusetts, Shrewsbury High School, Shrewsbury, Massachusetts, T: Tannis Smith
- ROBO056** **SplattingTAPIR: Utilizing TAPIR and 3D Gaussian Splatting for Efficient Robust Reconstruction**
<https://projectboard.world/isef/project/166522>
Tim Nguyen, 18, Senior, Boston Latin School, Boston, Massachusetts, T: Scott Balicki
- TMED064** **ALLOcate: A Low-Cost Automatic Artificial Intelligence System for the Real-Time Localization and Classification of Acute Leukemia in Bone Marrow Smears**
<https://projectboard.world/isef/project/167375>
Ethan Shuai Yan, 14, Freshman, Groton School, Groton, Massachusetts,
T: Benjamin Robb
- MICHIGAN**
- Farmington, USMIO2, Science and Engineering Fair of Metropolitan Detroit**
- BMED047** **A ChatGPT-Empowered Application in Biomedical Research**
<https://projectboard.world/isef/project/165812>
Judy Eliana Bai, 16, Sophomore, Greenhills School, Ann Arbor, Michigan, T: Catherine Renaud
- ENBM045** **Cost-Efficient and Precise Manometer for Thoracentesis**
<https://projectboard.world/isef/project/165899>
Qian Li, 17, Junior, Huron High School, Ann Arbor, Michigan, T: Andrew Collins
- ENEV051** **Revision in Airfoil Design To Increase Fuel Efficiency in Commercial Aircraft**
<https://projectboard.world/isef/project/165888>
Sungwon Lee, 17, Junior, Troy High School, Troy, Michigan, T: Rebecca Brewer
- ROBO047** **Extraterrestrial Exploration Hexapod With Tactile AI-Based Gait Adjustment**
<https://projectboard.world/isef/project/165900>
Haodong Wei, 16, Sophomore, Cranbrook Kingswood School, Bloomfield Hills, Michigan,
T: Stephanie Kokoszka
- ROBO068** **Multi-Scale Knowledge Transfer Convolutional Transformer: A Novel Deep Learning Framework for 3D Brain Vessel Segmentation**
<https://projectboard.world/isef/project/167270>
Michael Junzhe Hua, 14, Freshman, Cranbrook Kingswood School, Bloomfield Hills,
Michigan, T: Stephanie Kokoszka

Finalist Directory

- TMED047** **The Secrets of Healthy Aging: Semi-Automated Discovery of Natural Senolytics**
<https://projectboard.world/isef/project/165886>
Tesko Venkata Sai Ram Charan Chaganti, 16, Junior, Canton High School, Canton, Michigan, T: Kevin Kollar
- Bloomfield Hills, USMIO3, Flint Regional Science & Engineering Fair**
- CHEM031** **Biodegradable Agricultural Mulch Films From Wastepaper Pulp and Calcium Alginate**
<https://projectboard.world/isef/project/163946>
Louis Zican Huang, 15, Sophomore, Herbert Henry Dow High School, Midland, Michigan, T: Kristin Weston
- EAEV049** **Magnetizing Oil: A New Paradigm for Cleaning Up Aquatic Oil Spills**
<https://projectboard.world/isef/project/164405>
Miriam Noelle Haddad, 17, Junior, Saginaw Arts and Sciences Academy, Saginaw, Michigan, T: Matthew Miller
- TMED038** **Predictive Model for the Development and Spread of Bacterial Resistance in Relation to Antibiotic Consumption in Hospital Settings**
<https://projectboard.world/isef/project/165059>
Anthony Daoud, 17, Senior, Saginaw Arts and Sciences Academy, Saginaw, Michigan, T: Matthew Miller
- TMED046** **Predictive Modeling of Brain Tumor Evolution and Anatomical Invasion: A Novel 3D Time Series Forecasting Approach for Enhanced Treatment Planning**
<https://projectboard.world/isef/project/165696>
Akhilesh Kanmanthreddy, 16, Junior, Saginaw Arts and Sciences Academy, Saginaw, Michigan, T: John Barnes
- Kalamazoo, USMIO7, Southwest Michigan Science & Engineering Fair**
- ENBM025** **Developing Optimal Fused Deposition Modeling Surfaces for Cell Growth in Lab-on-a-Chip Applications**
<https://projectboard.world/isef/project/163672>
Suraj Dixit, 16, Junior, Kalamazoo Area Mathematics and Science Center, Kalamazoo, Michigan, T: Rebecca Joyce
- TMED028T** **Revolutionizing Non-Invasive Skin Cancer Detection Through a Novel Vision Transformer Application**
<https://projectboard.world/isef/project/163671>
Aryaman Om Mishra, 16, Junior, Jason Shaye, 17, Junior, Kalamazoo Area Mathematics and Science Center, Kalamazoo, Michigan, T: Rebecca Joyce
- Farmington, USMI50, Michigan Science and Engineering Fair**
- CELLO32T** **Decoding ASXL3: A Novel Biomarker for Neurodevelopmental Disorders**
<https://projectboard.world/isef/project/165894>
Maya Sarah Hammoud, 16, Sophomore, Lara Hammoud, 16, Sophomore, Detroit Country Day School, Beverly Hills, Michigan, T: Lara McMillan
- ROBO065** **Optimal Sparsification and Low-Rank Decomposition of Deep Reinforcement Learning Policies for Surgical Robot Task Automation**
<https://projectboard.world/isef/project/167183>
Vikram Srinivas Goddla, 18, Senior, Detroit Country Day School, Beverly Hills, Michigan, T: Patricia Hanlan
- MINNESOTA**
- Duluth, USMNO2, Northeast Minnesota Regional Science Fair**
- EAEV001** **Meet the New Neighbor: Can Gray Wolves (*Canis lupus*) Establish Territories in Areas of Higher Human and Road Density Than Expected?**
<https://projectboard.world/isef/project/162335>
Grace Kathryn Lavan, 17, Senior, Cloquet Senior High School, Cloquet, Minnesota, T: Cynthia Welsh
- TMED002** **Disinfectant Properties of *Nuphar advena*: An Ethnopharmaceutical Approach**
<https://projectboard.world/isef/project/162380>
Johanna Lynn Bernu, 17, Junior, Cloquet Senior High School, Cloquet, Minnesota, T: Cynthia Welsh

Finalist Directory

Mankato, USMN03, Southern Minnesota Regional Science and Engineering Fair

EGSD007 **Are Tesla Turbines Worth It? A Deep Dive Into Tesla Turbines' Viability in the Hydroelectric Industry**

<https://projectboard.world/isef/project/162573>

Mitchel Lee Masters, 17, Senior, Lake Crystal Wellcome Memorial, Lake Crystal, Minnesota, T: Kelly Moeller

Plymouth, USMN04, Twin Cities Regional Science Fair

BMED018 **Beyond Scans: Predicting Alzheimer's Through MRI and Handwriting Analysis**

<https://projectboard.world/isef/project/162654>

Riddhi Pritam Singhvi, 13, Freshman, Stillwater Area High School, Stillwater, Minnesota, T: Sanjay Singhvi

CHEM021 **Development of Novel Biodegradable Bioplastics Using Mango Peels Intended for Packaging Film**

<https://projectboard.world/isef/project/162682>

Alyssa Wang, 15, Freshman, East Ridge High School, Woodbury, Minnesota, T: Andrew Grall

PLNT024 **The Effectiveness of Biochar as an Amendment on the Growth of *Raphanus sativus* on MGS-1 (Mars Global Simulant) and the Development of a Model for Regeneration of Water and Oxygen for Life Support Sustenance on Mars**

<https://projectboard.world/isef/project/162126>

Sriram Sureshkumar, 17, Junior, Mahtomedi High School, Mahtomedi, Minnesota, T: Asha Shivashankar

ROBO020 **Evaluating the Efficiency of Different Machine Learning Models in Locating the /s/ Phoneme**

<https://projectboard.world/isef/project/162675>

Ethan John Nguyen Finch, 15, Freshman, Stillwater Area High School, Stillwater, Minnesota, T: Shelly Holmberg

Crookston, USMN05, Western Minnesota Regional Science Fair

BEHA006 **The Power of Suggestion: A Study of the Placebo Effects of Caffeine on Short-Term Memory**

<https://projectboard.world/isef/project/162641>

Alexis Kay Scheid, 15, Freshman, Park Christian School, Moorhead, Minnesota, T: Krista Holter

Rochester, USMN07, Rochester Regional Science & Engineering Fair

CBIO016 **Combating the Drug Epidemic: A Machine-Learning Framework To Predict Novel Drug-Drug Interaction Risks of Illicit Drug Abuse**

<https://projectboard.world/isef/project/162722>

Dean Wang, 16, Junior, Century High School, Rochester, Minnesota, T: Sarah Michet

EGSD014T **An Investigation of High-Capacity Lithium-Ion Battery Anodes**

<https://projectboard.world/isef/project/162663>

Erik Hill, 17, Junior, Ezra Francois Weldegabriel, 15, Junior, Ardashir Aidan Kocer, 16, Sophomore, Century High School, Rochester, Minnesota, Mayo High School, Rochester, Minnesota, T: Arthur Trimble

Plymouth, USMN09, St. Paul Science Fair

SOFT015 **SignalGrab: A Machine Learning Approach to Helping Color-Blind Drivers**

<https://projectboard.world/isef/project/162130>

Bora Mandic, 17, Junior, Saint Paul Academy and Summit School, Saint Paul, Minnesota, T: Kate Lockwood

SOFT021 **Project Calliope: Quantum Resistant Encryption Using Asymmetric Numeral Systems**

<https://projectboard.world/isef/project/162878>

Huxley Grey Westemeier, 16, Sophomore, Saint Paul Academy and Summit School, Saint Paul, Minnesota, T: Kate Lockwood

Finalist Directory

Plymouth, USMN10, Western Suburbs Science Fair

CELLO15 **Using Iron and Graphene Oxide Nanoparticles To Induce Targeted Apoptosis in Cancerous Cells**

<https://projectboard.world/isef/project/162693>

Georgia Cornelia Constantin, 18, Senior, Minnetonka High School, Minnetonka, Minnesota, T: Kimberly Hoehne

EGSD018 **SkyWindFarm: Harnessing High-Altitude Wind Power in Scalable Manner**

<https://projectboard.world/isef/project/162120>

Yash Dagade, 18, Senior, Eden Prairie High School, Eden Prairie, Minnesota, T: Princesa Hansen

ENEVO20 **Food Waste-Based Biocoagulants: A Novel Approach To Sustainably Remove Polystyrene Microplastics for Future Alternatives in Water Treatment**

<https://projectboard.world/isef/project/162669>

Tyler Alan Clair, 17, Junior, Minnetonka High School, Minnetonka, Minnesota, T: Princesa Hansen

PLNT020 **Mars or Bust! A Method To Build a Martian Regolith-Based Substrate for Sustainable Agriculture on Mars**

<https://projectboard.world/isef/project/162668>

Quinn Jacie Hughes, 17, Junior, Minnetonka High School, Minnetonka, Minnesota, T: Princesa Hansen

ROBO021 **Neuroevolution of Spiked Neural Networks With HyperNEAT**

<https://projectboard.world/isef/project/162687>

Anthony Chen Pu, 16, Junior, Minnetonka High School, Minnetonka, Minnesota, T: Caitlin McWhirter

St. Paul, USMN50, Minnesota Academy of Science State Science & Engineering Fair

BMED053 **Deciphering DUX4 (Year II): Is Transient Expression of the DUX4 Gene Sufficient To Cause Muscular Dystrophy?**

<https://projectboard.world/isef/project/165950>

Corinne Moran, 18, Senior, Breck School, Golden Valley, Minnesota, T: Kati Kragtorp

EBED037 **ViABL: Visual Assistant for the Blind With VLMs**

<https://projectboard.world/isef/project/166742>

Finn James Cairns, 17, Junior, Saint Paul Academy and Summit School, Saint Paul, Minnesota, T: Kate Lockwood

ENBM050 **Like Trying To Find a Needle in a Blood Sac: Novel Hemostatic Gelatin Microneedle Adhesive (Gel MNA) Polymerized With Commercial Coagulation Agents Achieves Accessible Hemorrhage Treatment**

<https://projectboard.world/isef/project/166540>

Fernanda Arreola-Lucio, 18, Senior, Minnetonka High School, Minnetonka, Minnesota, T: Kimberly Hoehne

ROBO050T **Collision-Free Commutes: Designing a Blind Spot Detection System for Cyclists Using an Ultrasonic Sensor and Computer Vision**

<https://projectboard.world/isef/project/165973>

Noah Getnick, 18, Senior, Evan Johnstone, 18, Senior, Breck School, Golden Valley, Minnesota, T: Kati Kragtorp

MISSISSIPPI

Long Beach, USMS01, Mississippi Region VI Science and Engineering Fair

BEHA019 **Illuminating Minds: Shining a Light on Atypical Dyslexia Therapies**

<https://projectboard.world/isef/project/162881>

Madilyn Ann Dickinson, 16, Junior, St. Patrick Catholic High School, Biloxi, Mississippi, T: Deborah Worrel

TMED024 **Efficacy of TAK-003 (Qdenga) Recombinant Chimeric Attenuated Vaccine Collated With Gross Environmental Reverberation of Bangladeshi Preventative Efforts**

<https://projectboard.world/isef/project/162882>

Adler Isabella Paige Brogdon, 17, Junior, St. Patrick Catholic High School, Biloxi, Mississippi, T: Deborah Worrel

Finalist Directory

Booneville, USMS02, Mississippi Region IV Science Fair

PLNT056 **Growth Rates: Annuals in Varied Humidity**

<https://projectboard.world/isef/project/167530>

Carter Bond Gowen, 14, Freshman, EAGLE Homeschool Association, Rienzi, Michigan,
T: Brandon Gowen

Cleveland, USMS03, Mississippi Region III Science and Engineering Fair

EAEV024 **Biodegradation of Plastic by *Galleria mellonella*, *Tenebrio molitor* and *Zophobas morio***

<https://projectboard.world/isef/project/162474>

Lisa Renee Seid, 18, Senior, The Mississippi School for Mathematics and Science,
Columbus, Mississippi, T: Joseph Barnard

ETSD015 **Modeling Lattice Fins as Flight Control Surfaces for a Precision Guided Landing of Reusable Rockets Continuation Study**

<https://projectboard.world/isef/project/162427>

Rushyendranath Reddy Nalamalapu, 18, Senior, Mississippi School for Mathematics and Science, Columbus, Mississippi, T: Joseph Barnard

Jackson, USMS05, Mississippi Region II Science and Engineering Fair

BMED034 **Suppression of Neurokinin B With Hormone Antagonists**

<https://projectboard.world/isef/project/164406>

Celia Lane, 17, Junior, St. Andrew's Episcopal School, Ridgeland, Mississippi,
T: Marks McWhorter

BMED052 **Investigating the Effects of Glyphosate on Biological Processes Using *Drosophila melanogaster* as a Model Organism**

<https://projectboard.world/isef/project/165901>

Ivie Jacine Kirkland, 17, Senior, Mississippi School for Mathematics and Science,
Columbus, Mississippi, T: Joseph Barnard

CHEM048 **Electrolysis Experiment To Calculate Avogadro's Number**

<https://projectboard.world/isef/project/166538>

Law Stanley, 17, Junior, Jackson Academy, Jackson, Mississippi, T: Richard West

Mississippi State, USMS06, Mississippi Region V Science and Engineering Fair

ETSD026 **Ecological Benefits of a Magnetohydrodynamic Drive**

<https://projectboard.world/isef/project/162891>

Jonathan Stancill, 17, Junior, The Mississippi School for Mathematics and Science,
Columbus, Mississippi, T: Joseph Barnard

PHYS028 **Simulating Efficiency of Tokamak Fusion Reactor Wall Materials in Neutron Moderation for Lithium Breeding**

<https://projectboard.world/isef/project/162885>

Roman Edward Lockett, 17, Senior, Mississippi School for Mathematics and Science,
Columbus, Mississippi, T: Joseph Barnard

Oxford, USMS07, Mississippi Region VII Science and Engineering Fair

BMED060 **The Analysis of 20 Hemp Commercial Products for Their Claimed vs. Found CBD, THC and Impurity Contents To Determine Their Safety and Efficacy Outcomes**

<https://projectboard.world/isef/project/166743>

Farida Omar Marzouk, 15, Sophomore, Oxford High School, Oxford, Mississippi,
T: Deborah Jones

SOFT040 **A Novel Approach to Detecting Academic Dishonesty Involving Artificial Intelligence**

<https://projectboard.world/isef/project/166744>

Jun Jang, 15, Sophomore, Oxford High School, Oxford, Mississippi, T: Deborah Jones

Hattiesburg, USMS50, Mississippi Science and Engineering State Fair

ANIM035 **Divergent Survival Patterns in Boar Spermatozoa Linked to Oxidative Stress During Prolonged Chilled Storage**

<https://projectboard.world/isef/project/166745>

Joe Yang, 17, Junior, Mississippi School for Mathematics and Science, Columbus,
Mississippi, T: Joseph Barnard

EAEV072T **Analyzing the Efficiency of Different Microalgae Strains in Nitrogen Reduction**

<https://projectboard.world/isef/project/166966>

Kinsley Collum, 17, Senior, Laykin Dixon, 18, Senior, The Mississippi School for Mathematics and Science, Columbus, Mississippi, T: Joseph Barnard

Finalist Directory

MISSOURI

Cape Girardeau, USMO01, Southeast Missouri Regional Science Fair

EGSD020 Efficiency of a 3D-Printed Pico-Hydroelectric Generation System Using a Fused Deposition Modeling Printer

<https://projectboard.world/isef/project/162879>

Simon David Wibbenmeyer, 18, Senior, Perryville Senior High School, Perryville, Missouri, T: Leanne Thele

PLNT025 Exploring the Impact of PFAS on *Phaseolus vulgaris* and *Cucurbita pepo* in Vegetable Gardens

<https://projectboard.world/isef/project/162890>

Emma Mae Fetterhoff, 16, Sophomore, Perryville Senior High School, Perryville, Missouri, T: Leanne Thele

PLNT039T The Effect of Obtaining Catechin From the Invasive Species *Centaurea stoebe* on Natural Grass Growth

<https://projectboard.world/isef/project/165460>

Ezekiel Pyland, 17, Senior, Mason Lee Zoellner, 18, Senior, Perryville Senior High School, Perryville, Missouri, T: Leanne Thele

Joplin, USMO03, Missouri Southern Regional Science Fair

PHYS045 Various Quantitative Relationships Between *in situ* Parameters of a Sample of Quasars and Variables Associated With the Emitted Electromagnetic Radiation of This Sample

<https://projectboard.world/isef/project/166598>

Christian Wyatt Cavener, 16, Junior, Joplin High School, Joplin, Missouri, T: Karisa Boyer

TMED055 Novel Utilization of Blood Work Monitoring (NavDx) for Early Detection of Cervical and Anal Cancers

<https://projectboard.world/isef/project/166599>

Caroline Elizabeth Erisman, 18, Senior, Joplin High School, Joplin, Missouri, T: Karisa Boyer

Kansas City, USMO04, Greater Kansas City Science & Engineering Fair

CBIO038 SynAPPse: A Novel QSAR Modeling App for the Rapid Identification of AChE Inhibitors for Alzheimer's Disease

<https://projectboard.world/isef/project/167273>

Mahi Kohli, 15, Freshman, Olathe North High School, Olathe, Kansas, T: Rhonda Reist

ENEV066 Microplastic Flotation: A Novel Method To Analyze and Remove Microplastics

<https://projectboard.world/isef/project/167384>

Elizabeth Rose Barnes, 15, Sophomore, Shawnee Mission West High School, Overland Park, Kansas, T: Kenneth Lee

MCRO028 The Effect of Oat Mass on *Physarum polycephalum* Path Efficiency

<https://projectboard.world/isef/project/167276>

Soyee Cho, 18, Senior, Olathe North High School, Olathe, Kansas, T: Matthew Richard

TMED063 A Single-Handed Approach to Adhesive Bandage Strip Application for Enhanced Sterility and Convenience

<https://projectboard.world/isef/project/167277>

Adriana Sarinana, 17, Senior, Van Horn High School, Independence, Missouri, T: Debbie Cox

Wentzville, USMO05, Missouri Tri-County Regional Science and Engineering Fair

BEHA018 The Effects of a Compression Vest on Salivary Cortisol Fluctuation in Canines During Nail-Trimming Procedures

<https://projectboard.world/isef/project/162880>

Anna Marie Hermann, 18, Senior, Wentzville Holt High School, Wentzville, Missouri, T: Jennifer Hess

St. Louis, USMO07, Academy of Science–Greater St. Louis Science Fair

BMED082 Obesity and Fresh Food Access: New Evidence and Solutions From Geospatial Data

<https://projectboard.world/isef/project/168136>

Saswat Sasha Tripathi, 16, Junior, Parkway West High School, Chesterfield, Missouri, T: Chloe Gallaher

Finalist Directory

- BMED084** **Ashwagandha as Treatment for Inflammatory Bowel Disease in Zebrafish Models**
<https://projectboard.world/isef/project/168185>
Sophia Noel Ford, 18, Senior, Cor Jesu Academy, St. Louis, Missouri, T: Dawn Johnson
- Greenfield, USMO08, Ozarks Science and Engineering Fair**
- CBIO041** **Detect Early Melanoma Cancer Using Machine Learning**
<https://projectboard.world/isef/project/167643>
Nathan Wu, 16, Junior, Greenwood Laboratory School, Springfield, Missouri,
T: Kristy Gilmore
- ETSD062** **Toroidal Propellers: A Novel Approach to a Quieter Future for Two-Bladed Aircraft**
<https://projectboard.world/isef/project/167644>
Joseph Tietze, 18, Senior, Lebanon High School, Lebanon, Missouri, T: Ryne Emerick
- Hillsboro, USMO09, Mastodon Art/Science Regional Fair**
- BEHA034** **Investigation Into the Use of Crickets as a Home-Grown Sustainable Food Source**
<https://projectboard.world/isef/project/166138>
Cordelia Manuella Elder, 18, Senior, St. Clair High School, St. Clair, Missouri,
T: Ben Martin
- ROBO049** **Automated Identification of Invasive Honeysuckle**
<https://projectboard.world/isef/project/165972>

Cameron James Tedrick, 17, Junior, St. Clair High School, St. Clair, Missouri,
T: Ben Martin
- Fayette, USMO10, Central Methodist Eagles Science and Engineering Fair**
- BEHA026** **Methamphetamine's Influence on the Blood-Brain Barrier: Dissecting Changes in Microvascular Endothelial Cell Structure and Function**
<https://projectboard.world/isef/project/164291>
Shrivats Manikandan, 16, Sophomore, Kirksville Senior High School, Kirksville, Missouri,
T: Daniel Floyd
- MONTANA**
- Billings, USMT01, MSU Billings Science Expo**
- PHYS069** **Alpha Range: Analysis of the Range of Alpha Particles in Materials Using a Cloud Chamber**
<https://projectboard.world/isef/project/168332>
Mason Alexander Mickelson, 17, Junior, Laurel High School, Laurel, Montana,
T: Hannah Kellinger
- Great Falls, USMT04, Great Falls College MSU Regional Science & Engineering Fair**
- BMED061** **Mobile Waves and Water Fleas: A *Daphnia* Study**
<https://projectboard.world/isef/project/166790>
Bailey Skeie Anderson, 15, Freshman, Simms High School, Simms, Montana,
T: Malary Moultray
- PLNT026** **Agricultural Implications of Extraterrestrial Colonization**
<https://projectboard.world/isef/project/163108>
Ian Russell Benjamin, 17, Senior, North Toole County High School, Sunburst, Montana,
T: Amanda Nix
- Missoula, USMT50, Montana Science Fair**
- ANIMO43** **The Effect of Wing Posture on Gust Rejection During Emulated Gliding Flight in Starlings**
<https://projectboard.world/isef/project/168112>
Brayden Wallace, 18, Senior, Sentinel High School, Missoula, Montana, T: Kelly Nelson
- BMED091** **The Relationship Between Elongator Protein 3 (ELP3) and Neurodegenerative Disease: Investigating the Neuromuscular Junction in an Elongator Mouse Model of ALS**
<https://projectboard.world/isef/project/168800>
Devyn Venice Deschamps, 18, Senior, Hellgate High School, Missoula, Montana,
T: Willow Affleck
- TMED080** **Wildfire Smoke Health Study: Historical Exposures Affect Long-Term Health**
<https://projectboard.world/isef/project/168301>
Amy Boote, 18, Senior, Sentinel High School, Missoula, Montana, T: Kelly Nelson

Finalist Directory

NEBRASKA

Hastings, USNE01, Central Nebraska Science and Engineering Fair

BMEDO68T Investigating the Effects of Levetiracetam on Seizures in Shaking-Sensitive *Drosophila melanogaster*

<https://projectboard.world/isef/project/167245>

Berkley Jacobitz, 16, Sophomore, Peyton Hartman, 15, Sophomore, Adams Central Jr.-Sr. High School, Hastings, Nebraska, T: Jay Ceclre

EAEVO68 The Bioactivity of *Lepidium sativum* Meal on Aquatic Organisms

<https://projectboard.world/isef/project/166746>

Michael Tophoj, 17, Junior, Ogallala High School, Ogallala, Nebraska, T: Jennifer Jones

ETSDO47 Magnesmooth: Magnetizing the Ingenuity of Transportation

<https://projectboard.world/isef/project/166608>

Dominic Stutesman, 18, Senior, Adams Central Jr.-Sr. High School, Hastings, Nebraska, T: Jay Ceclre

Nebraska City, USNE02, Greater Nebraska Science and Engineering Fair

ENBMO58 Detection of Brain Structural Alterations Due to Chronic Nicotine Abuse Using *in vivo* Diffusion Tensor Magnetic Resonance Imaging

<https://projectboard.world/isef/project/166901>

Anushka Sajja, 15, Sophomore, Millard North High School, Omaha, Nebraska, T: Heather Bieber

NEVADA

Spring Creek, USNV01, Elko County STEM Fair

BCHMO38 Exploring Hidden Sugar

<https://projectboard.world/isef/project/168232>

Makenna Curtis, 15, Freshman, Elko High School, Elko, Nevada, T: Kristen Birdzell

EGSDO50 Insulation for Greener Buildings

<https://projectboard.world/isef/project/168310>

Takota Hastiin Matsaw, 16, Sophomore, Owyhee High School, Owyhee, Nevada, T: Dietlinde Bender-Dann

Las Vegas, USNV02, Beal Bank USA Southern Nevada Regional Science & Engineering Fair

ETSDO19 Testing of an Insulative Reusable Heat Shield Based on Novel Aerogel Blanket Technologies Through Physical Heat Exposure

<https://projectboard.world/isef/project/162096>

Aaron Jisung Lee, 18, Senior, The Meadows School, Las Vegas, Nevada, T: Brianna Cotter

TMEDO20 Developing a Rapidly Dissolving, Biodegradable Microneedle Patch and Standard Curve for Minimally Invasive Filtration Marker Delivery and Point-of-Care Renal Analysis

<https://projectboard.world/isef/project/162694>

Yajur Chandar, 16, Sophomore, The Davidson Academy of Nevada, Reno, Nevada, T: Elizabeth Walenta

NEW HAMPSHIRE

Nashua, USNH50, New Hampshire Science & Engineering Expo

BEHAO29 Inducing an Autonomous Sensory Meridian Response (ASMR) With Electroencephalography as a Novel Intervention To Improve Mental Function

<https://projectboard.world/isef/project/165897>

Jaansi Patel, 16, Junior, Phillips Exeter Academy, Exeter, New Hampshire, T: Ranila Haider

EGSDO22 Energy-Generating and Power-Storing Seashell

<https://projectboard.world/isef/project/164295>

Anfeng Anfeng Xie, 16, Sophomore, St. Paul's School, Concord, New Hampshire, T: Mark Hermano

ENBMO47 Micro RNA223 Biomarker-Based Exponential Rolling Circle Amplification CRISPR-Cas12a System for Disease Detection and COPD Diagnostics

<https://projectboard.world/isef/project/166139>

Robin Chris Dao, 17, Sophomore, Phillips Exeter Academy, Exeter, New Hampshire, T: Yiming Dong

Finalist Directory

NEW JERSEY

Lebanon, USNJ01, Terra North Jersey STEM Fair

CBIO035 **GenLSD: A Deep Generative Approach to Ligand and Structure-Based Drug Design**
<https://projectboard.world/isef/project/166595>

Elliott Junhan Yoon, 17, Senior, Tenafly High School, Tenafly, New Jersey,
T: Aparna Subramaniam

CHEM053 **Green Synthesis of Black TiO₂ Nanoparticles: A Promising Candidate for Solar-Driven Photocatalytic Water Decontamination**

<https://projectboard.world/isef/project/166593>

Gracelynn Hao, 17, Senior, Bridgewater-Raritan High School, Bridgewater, New Jersey,
T: Fangze Shang

ETSD050 **SkyLinker: UAV Autonomous Perpetual Solar Flight for Facilitation of Mobile Communication and Long-Distance Surveillance**

<https://projectboard.world/isef/project/166748>

Michael Xu, 16, Sophomore, Delbarton School, Morristown, New Jersey, T: Brian Theroux

MATH022 **Factorization Properties of Puiseux Monoids**

<https://projectboard.world/isef/project/166610>

Jason Mao, 17, Junior, The Academy for Mathematics, Science & Engineering, Rockaway, New Jersey, T: Zhengyu Mao

PHYS046 **MergeFinder: A Deep Learning Model for Galaxy Merger Identification**

<https://projectboard.world/isef/project/166609>

Allison Lee, 16, Junior, East Brunswick High School, East Brunswick, New Jersey,
T: Jennifer Post

PLNT055 **Reducing Per-and Polyfluoroalkyl Substances (PFAS) Water Contamination With Mycorrhizal Hydroponics Plants**

<https://projectboard.world/isef/project/167363>

Neel Ahuja, 17, Junior, Millburn High School, Millburn, New Jersey, T: Christopher Cook

Jersey City, USNJ02, Jersey City Medical Center/Barnabas Health STEM Showcase

BEHA052 **The Influence of Gender on Relapse in Adults Addicted to Social Media**

<https://projectboard.world/isef/project/168040>

Prisha Malhotra, 17, Junior, Dr. Ronald E. McNair Academic High School, Jersey City, New Jersey, T: Maria Osoria

BMED078 **Observing Effects of Nicotine on *Drosophila melanogaster* Possessing the Mutated RAS-Gene as Model for Cancer Progression in Humans Using GAL4-UAS System**

<https://projectboard.world/isef/project/168038>

Sanjana Nanduru, 17, Junior, Dr. Ronald E. McNair Academic High School, Jersey City, New Jersey, T: Maria Osoria

CHEM065 **Advancing Antibiotic Detection: Engineering a Novel Chitosan-Zinc Oxide-Modified Graphite Electrochemical Sensor for Ciprofloxacin Detection**

<https://projectboard.world/isef/project/168037>

Meghana Addanki, 16, Sophomore, Dr. Ronald E. McNair Academic High School, Jersey City, New Jersey, T: Maria Osoria

ROBO083 **Autonomous Search and Rescue Robot**

<https://projectboard.world/isef/project/168326>

Claudio Alberto Martinez, 18, Senior, Jose Marti STEM Academy, Union City, New Jersey,
T: Jennifer Donnelly

Hackensack, USNJ04, BCA Research Expo

BMED033 **The Relationship Between Tumor-Induced Osteoclastogenesis and Osteoprotegerin**

<https://projectboard.world/isef/project/164293>

Ria Kamat, 17, Junior, Bergen County Academies, Hackensack, New Jersey,
T: Donna Leonardi

ENBM033 **To Infinity Egg Beyond: Novel Systems for Hyper-Customizable Egg Models**

<https://projectboard.world/isef/project/164292>

Muhammad Hosam Eldin El-Sherbiny, 16, Junior, Bergen County Academies, Hackensack, New Jersey, T: Carlos Nodarse

Finalist Directory

- PHYS034** **Gear-Based Topological Mechanical Metamaterials**
<https://projectboard.world/isef/project/164294>
Belen Ariana Franco de la Matta, 17, Junior, Bergen County Academies, Hackensack, New Jersey, T: Ozgur Dogru
- NEW MEXICO**
- Albuquerque, USAI50, National American Indian Science and Engineering Fair**
- EAEV101** **Investigating Concentrates of Uranium and Other Hazardous Metals/Metalloids in the Surrounding Environments of Uranium-Contaminated Waters on the Navajo Nation**
<https://projectboard.world/isef/project/168539>
Haylei Redhouse, 18, Junior, Navajo Preparatory School, Farmington, New Mexico, T: Yolanda Flores
- EGSD048** **Renewable Energy Using Peltier Tiles**
<https://projectboard.world/isef/project/168178>
Jessica Haley Castro, 17, Junior, Saint Pius X High School, Albuquerque, New Mexico, T: Jay Penn
- Albuquerque, USNM01, Central New Mexico Regional Science and Engineering Challenge**
- ANIM031** **The Beetles: Examining the Effect of Isolated Supplementation in Cigarette Beetles To Optimize Nutrient and Biomass Transfer via Consumption**
<https://projectboard.world/isef/project/165042>
George Miles Privett, 18, Senior, Rio Rancho High School, Rio Rancho, New Mexico, T: Jennifer Miyashiro
- CHEM052** **Analyzing Per- and Polyfluoroalkyl Substances (PFAS) Through Atomistic Simulations**
<https://projectboard.world/isef/project/166592>
Akilan Sankaran, 16, Junior, Albuquerque Academy, Albuquerque, New Mexico, T: David Metzler
- EGSD030** **A Self-Adjusting Resonating Piezoelectric Vibration Energy Collector Based on a Cantilever Structure**
<https://projectboard.world/isef/project/165960>
Jiayang Wang, 17, Junior, Menaul School, Albuquerque, New Mexico, T: Jacqueline Acosta
- ROBO059** **Democratizing Multi-Species Object Detection in Drone Imagery for Cost-Effective Population Monitoring of Endangered Animals**
<https://projectboard.world/isef/project/166591>
Sowmya Sankaran, 14, Freshman, Albuquerque Academy, Albuquerque, New Mexico, T: Elliot Wilkinson
- Farmington, USNM02, San Juan New Mexico Regional Science and Engineering Fair**
- CBIO015** **Using DNA for Data Storage Including Quantum Dot Identifiers and Blockchain**
<https://projectboard.world/isef/project/162651>
Tamarron Tome Austin, 17, Senior, Navajo Preparatory School, Farmington, New Mexico, T: Yolanda Flores
- CHEM026** **Chemical Analyses of Archeological Pottery Sherds Found Along the Colorado River, Grand Canyon, Arizona**
<https://projectboard.world/isef/project/162599>
Aspyn Amira Sage Kaskalla, 14, Sophomore, Navajo Preparatory School, Farmington, New Mexico, T: Yolanda Flores
- Grants, USNM03, Four Corners Regional Science and Engineering Fair**
- PHYS029** **Glowing, Glowing, Gone!**
<https://projectboard.world/isef/project/162892>
Brandi L. Bassett, 18, Senior, Grants High School, Grants, New Mexico, T: Cody Hayes
- *SOFT022** **ASL Trainer: American Sign Language Programmed Visual Learning**
Faith Abigail Valdez, 18, Senior, Grants High School, Grants, New Mexico, T: Cody Hayes
- Las Vegas, USNM05, Northeastern New Mexico Regional Science and Engineering Fair**
- MATH034** **Virtually Reconstructing an Ancient Musical Instrument**
<https://projectboard.world/isef/project/168011>
Helena Welch, 15, Sophomore, Los Alamos High School, Los Alamos, New Mexico, T: Cynthia Welch

Finalist Directory

- PHYS065** **Magnetic Reconnection**
<https://projectboard.world/isef/project/168123>
Tate Plohr, 15, Freshman, Los Alamos High School, Los Alamos, New Mexico,
T: Eva Abeyta
- Roswell, USNM07, Southern New Mexico STEM Research Challenge**
- BMED058** **Strengthening Defenses: Analyzing the Immunomodulatory Potential of β -Glucan of Ordinary Mushrooms in Coffee**
<https://projectboard.world/isef/project/166615>
Clarisse Telles Alvares Coelho, 18, Senior, New Mexico Military Institute, Roswell,
New Mexico, T: Demvia Maslian
- ENBM079** **Low-Cost Electroencephalography Device With Open-Source Brain-Computer Interfacing and Various Applications**
<https://projectboard.world/isef/project/168192>
- #** Lucas Tang, 15, Sophomore, New Mexico Military Institute, Roswell, New Mexico,
T: Demvia Maslian
- ENEVO56T** **Phytoremediation Potential of *Yucca elata*, *Carya illinoensis* and *Opuntia ficus-indica* for Arsenic and Pollutant Removal in Drinking Water: A Sustainable and Affordable Approach**
<https://projectboard.world/isef/project/166589>
Danna Renteria, 17, Junior, Maggie Lonsinger, 17, Junior, Carlos Adrian Martinez, 18,
Junior, Alta Vista Early College High School, Anthony, New Mexico, T: Rachel Acuna
- Socorro, USNM50, New Mexico Science and Engineering Fair**
- BEHA057** **Numbing Factor: Synthetically Produced Anti-Inflammatories on the Behavior, Mortality and Metabolism of *Lumbricus terrestris***
<https://projectboard.world/isef/project/168186>
Sawyer Sides, 17, Senior, Taos Academy Charter School, Taos, New Mexico,
T: Laura Tenorio
- BMED086** **Machine Learning Approaches To Determine Clinical Factors for Prediction of Immune Factors in Melanoma**
<https://projectboard.world/isef/project/168199>
Arjun Ganesh, 17, Junior, Albuquerque Academy, Albuquerque, New Mexico,
T: Avinash Sahu
- EAEVO97** **A Novel Real-Time Camera Fusion Model for Tracking Smoke Plumes**
<https://projectboard.world/isef/project/168137>
- #** Gene Goh Huntley, 16, V. Sue Cleveland High School, Rio Rancho, New Mexico,
T: Leah Felty
- ENEVO54T** **Unraveling the Metal-Water-Daphnia Nexus in Tap Water, Well Water and Mine Creek Water: Health Effects and Natural Bio-Adsorbents for Water Quality Enhancement**
<https://projectboard.world/isef/project/165953>
Steven Xu#, 17, Junior, Sylvia Xu, 15, Sophomore, Enzi Chen Karuho, 15, Junior,
New Mexico Military Institute, Roswell, New Mexico, T: Demvia Maslian
- MCROO42T** **Project Pestalotiopsis: Decomposition of Plastic Using Fungi**
<https://projectboard.world/isef/project/168317>
Lukas Taylor Colburn, 43, Sophomore, Ryan James Tortalita, 17, Junior, Grants High
School, Grants, New Mexico, T: Cody Hayes

NEW YORK

- Poughkeepsie, USNY01, Dutchess County Regional Science Fair**
- ENEVO71** **Bio-Buffers—Remediating Estuarine Water Pollution**
<https://projectboard.world/isef/project/167806>
- #** Naflah Farid Mohammed, 17, Senior, John Jay Senior High School, Hopewell Junction,
New York, T: Mary Jane McFarland
- ETSD072** **Pressure Loss and Thrust Optimization for Electroaerodynamic Propulsion Electrode Geometry in Drone Applications**
<https://projectboard.world/isef/project/168057>
Shiven Dabhi, 16, Junior, Roy C Ketcham Senior High School, Wappingers Falls,
New York, T: Kyle Bautista

Finalist Directory

Halesite, USNYO2, Long Island Science and Engineering Fair

- ANIM017** **Cocoa's Cognitive Triumph: The Rescue of the Alzheimer's Model of *Drosophila melanogaster* With *Theobroma cacao* Supplementation**
<https://projectboard.world/isef/project/162686>
Kaitlin Kaiting Ho, 16, Junior, North Shore High School, Glen Head, New York,
T: Molly Mordechai
- ANIM020** **C-Fos and Reelin Protein Localization: Brain Fluorescence Imaging of Activity Pathways in Mice During Sensory Behavior Tasks**
<https://projectboard.world/isef/project/162117>
Katherine Lee, 17, Junior, Jericho High School, Jericho, New York, T: Erin Walsh
- BCHM011** **A Novel Role for $\alpha\text{IIb}\beta\text{3}$ in the Development of Procoagulant Platelets via Phosphatidylserine (PS) Exposure**
<https://projectboard.world/isef/project/162111>
Rishi Aravind, 17, Senior, Half Hollow Hills High School East, Dix Hills, New York,
T: Michael Lake
- BEHA013** **Impacts of Sucralose on Hedonic Feeding Behaviors in *C. elegans* for Implications in Human Obesity and Eating Disorders**
<https://projectboard.world/isef/project/162705>
Syon Khatter, 18, Senior, Plainview-Old Bethpage John F. Kennedy High School,
Plainview, New York, T: Raymond Tesar
- BEHA014** **Design of Generic Epinephrine Auto-Injector Minimizes Administration Error and Fingertick Injury**
<https://projectboard.world/isef/project/162689>
Stasya Selizhuk, 17, Senior, Half Hollow Hills High School East, Dix Hills, New York,
T: Michael Lake
- BMED015** **CLDN5 Downregulation and Albumin: Investigating Hallmarks of Blood-Brain Barrier Breakdown as Novel Biomarkers of Suicide Neuropathology**
<https://projectboard.world/isef/project/162702>
Natasha Kulviwat, 17, Senior, Jericho High School, Jericho, New York, T: Erin Walsh
- ##**
- BMED016** **Integrated *in silico* and *in vitro* Experimental Strategies for the Application of Carbon Quantum Dots in Alzheimer's Research**
<https://projectboard.world/isef/project/162685>
Alena Tsai, 16, Junior, Manhasset High School, Manhasset, New York, T: Alison Huenger
- CBIO011** **Utilizing Deep Learning To Facilitate Diagnosis of Look-Alike Leukemia Subtypes**
<https://projectboard.world/isef/project/162665>
Tessla Chan, 16, Sophomore, Roslyn High School, Roslyn Heights, New York,
T: Allyson Weseley
- CELL013** **Targeting of Epichaperome Downregulates HCFC1-Mediated Transcription of Oncogenes: Implications in Breast Cancer Therapy**
<https://projectboard.world/isef/project/162679>
Ava Brooke Goldsmith, 17, Senior, John F. Kennedy High School, Bellmore, New York,
T: Barbi Frank
- EAEV032** **Using Machine Learning Species Distribution Modeling as a Novel Approach To Efficiently Predict Forest Development Suitability**
<https://projectboard.world/isef/project/162698>
Yoav Zeev Muscal, 18, Senior, Plainview-Old Bethpage John F. Kennedy High School,
Plainview, New York, T: Raymond Tesar
- EAEV033** **Global Soil Respiration Insights Through Machine Learning: Projections and Future Climate Change Implications**
<https://projectboard.world/isef/project/162539>
Manfred Lim, 16, Junior, Jericho High School, Jericho, New York, T: Erin Walsh
- EBED013** **Project Vision: Assisted Navigation and Waypoint Positioning Through 3D Mapping**
<https://projectboard.world/isef/project/162699>
- #** James Nagler, 17, Senior, Garden City High School, Garden City, New York,
T: Steven Gordon

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- EGSD013** **Anisotropic Ion Transport Properties in Thin-Film Solid Polymer Electrolytes**
<https://projectboard.world/isef/project/162680>
Michelle Luo, 18, Senior, William A. Shine Great Neck South High School, Great Neck, New York, T: James Truglio
- ENEV019** **The Enhancement of a Novel 3D-Printed Electrolysis Device Through the Implementation and Optimization of Spacer Designs**
<https://projectboard.world/isef/project/162681>
Dylan Yeohoon Yoon, 18, Senior, Manhasset High School, Manhasset, New York, T: Alison Huenger
- MATH016** **Fibonacci Analogues of Legendre's Formula and Fine's Theorem**
<https://projectboard.world/isef/project/162139>
Arav Chand, 16, Sophomore, Half Hollow Hills High School West, Dix Hills, New York, T: Michael Lake
- MATS019** **DNA Crystallography: Exploring Small-Molecule Interactions With DNA for a Novel Nanoscale Drug Delivery Platform**
<https://projectboard.world/isef/project/162110>
Samyra Mahiba, 16, Junior, Jericho High School, Jericho, New York, T: Erin Walsh
- MCRO011** **Secretion of the *Francisella tularensis* Protein FTL_1123 by *Escherichia coli* Containing the HlyBD Operon**
<https://projectboard.world/isef/project/162670>
Mehek Kaur Sawhney, 17, Junior, Commack High School, Commack, New York, T: Jeanette Collette
- PLNT019** **Growth Promotion of Hydroponic *Lactuca sativa var. capitata* and Microgreen *Raphanus sativus* When Exposed to *Pseudomonas psychrotolerans* Consistently Throughout the Growth Period**
<https://projectboard.world/isef/project/162725>
Leah Fromm, 17, Senior, East Hampton High School, East Hampton, New York, T: Paul Rabito
- SOFT014** **A Configurable Compiled Programming Language With Integrated Transpilation**
<https://projectboard.world/isef/project/162118>
Milan Lustig, 17, Junior, Cold Spring Harbor Jr/Sr High School, Cold Spring Harbor, New York, T: Jaak Raudsepp
- TMED022** **Effect of Calcitriol on Menstrual Effluent-Derived Endometrial Stromal Cell Viability, Decidualization and Proliferation**
<https://projectboard.world/isef/project/162119>
Sophia Antonina Tarasenko, 17, Junior, Jericho High School, Jericho, New York, T: Erin Walsh
- New York, USNY03, Terra New York City STEM Fair**
- ANIM048T** **Using SLEAP AI To Quantify Octopus Eating Habits**
<https://projectboard.world/isef/project/168200>
Desiree Yang, 16, Junior, Mariel Alexa Silber, 17, Junior, Tasnim Ghoniem, 16, Junior, Staten Island Technical High School, Staten Island, New York, T: John Davis
- BEHA048** **The Recursive Relationship Between Personalized Music Choice and Adolescent Mental Wellness: An Empirical Study**
<https://projectboard.world/isef/project/167835>
Aanya Gupta, 16, Junior, Horace Mann School, Bronx, New York, T: Alyssa Shearer
- BEHA050** **The Use of Rhythmic Light Therapy To Entrain Gamma Oscillations and the Circadian System in Patients With Alzheimer's Disease and Related Dementias (ADRD)**
<https://projectboard.world/isef/project/167879>
Jessica Singh, 18, Senior, The Bronx High School of Science, Bronx, New York, T: Richard Lee
- CBIO044** **Novel Drug Discovery Methodology Using Machine Learning for Gene Expression-Based Virtual Screening Predicts Novel Compounds To Reverse Alzheimer's Disease With Applications to Cancer and Longevity by Inhibiting CtBP2 Expression**
<https://projectboard.world/isef/project/167877>
- #** Kun-Hyung Roh, 19, Senior, Bronx High School of Science, Bronx, New York, T: Vladimir Shapovalov

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- CBIO048** **De novo Drug Design as GPT Language Modeling: Large Chemistry Models With Supervised and Reinforcement Learning**
<https://projectboard.world/isef/project/168050>
Gavin Ye, 17, Junior, Columbia Grammar and Preparatory School, New York City, New York, T: Ilya Yashin
- CBIO051** **3-Dimensional Visualization of Cell Behavior and Movement in Tissue**
<https://projectboard.world/isef/project/168119>
Taj Rex Chhabra, 17, Junior, Hunter College High School, New York, New York, T: Mrinalni Sharma
- CELLO46** **Analysis of Distinctive microRNA Conservation Patterns as Markers for Unique microRNA Processing Mechanisms**
<https://projectboard.world/isef/project/168051>
Jonathan Lin, 17, Senior, Bronx High School of Science, Bronx, New York, T: Marisa Wagner
- EAEVO93T** **Algae as a Resource for Bioplastic Production: Evaluating Species-Specific Characteristics and Biodegradability of *Closterium*, *Chlorella*, *Scenedesmus*, *Volvox*, *Spirogyra*, *Saccharina latissima* and *Alaria esculenta***
<https://projectboard.world/isef/project/168059>
Pretom Chowdhury, 16, Junior, Madison Janice Bennett, 16, Junior, Joseph Jeong, 16, Junior, Forest Hills High School, Queens, New York, T: Matthew Woo
- MATH032** **The Classification and the Hilbert Polynomials of the Coloring of Qundles With Size 6**
<https://projectboard.world/isef/project/167840>
- ##** Aaron Kim, 19, Bronx High School of Science, Bronx, New York, T: Vladimir Shapovalov
- MCRO034T** **Implications of the Impact of Dietary Supplements on Cardiovascular Health Through Gut Microbiome Production of Trimethylamine-N-Oxide**
<https://projectboard.world/isef/project/167868>
Elya Meylikhov, 17, Senior, Denis Meylikhov, 17, Senior, Brooklyn Technical High School, Brooklyn, New York, T: Michael Estrella
- PHYS058** **Deep Learning on a Novel Ising Model To Study Arctic Sea Ice Dynamics**
<https://projectboard.world/isef/project/167837>
Ellen Luoja Wang, 16, Junior, Horace Mann School, Bronx, New York, T: Alyssa Shearer
- PLNT061** **The Role of TALE Homeodomain Proteins in the Haploid to Diploid Transition of the Fern *Ceratopteris richardii***
<https://projectboard.world/isef/project/168061>
Eva Uddin, 17, Senior, The Bronx High School of Science, Bronx, New York, T: Emily Schmidt
- ROBO074** **Enhancing Mobility Assistance: A Point Cloud and IMU-Based Terrain-Adaptive Lower Extremity Exoskeleton Design**
<https://projectboard.world/isef/project/167838>
Jiawen Zhang, 17, Junior, Horace Mann School, Bronx, New York, T: Alyssa Shearer
- Mahopac, USNY05, Regeneron-Westchester Science and Engineering Fair**
- BEHA027** **Audience-Induced Stress Impacts Performance and Mental Health at Super Smash Brothers Ultimate eSport Events**
<https://projectboard.world/isef/project/164296>
Jack Patrick Bergmann, 18, Senior, Ossining High School, Ossining, New York, T: Angelo Piccirillo
- BEHA030** **Investigating Fear and Anxiety in Adolescence by Distributing the FSSC-R in a High School Setting**
<https://projectboard.world/isef/project/165955>
Maya Elizabeth Donnelly, 18, Senior, Somers High School, Lincolnale, New York, T: William Maelia
- BEHA031** **Predicting Future Internal Migration Patterns Within the United States Resulting From Shifts in Temperature and Precipitation**
<https://projectboard.world/isef/project/165961>
Gautam Gupta, 18, Senior, Briarcliff High School, Briarcliff Manor, New York, T: Melissa Carnahan

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- BMED042** **Validating and Evaluating Expression of New Tumor Targets Across Cancers: Protein X as a Potential Target for Cancer Drug Development**
<https://projectboard.world/isef/project/165061>
Erin Jiachi Song, 17, Senior, Horace Greeley High School, Chappaqua, New York,
T: Jerry Zupan
- BMED049** **Pencil Beam Scanning FLASH Radiotherapy Increases Acute Gastrointestinal Toxicity**
<https://projectboard.world/isef/project/165818>
Irene Basu, 17, Senior, Pelham Memorial High School, Pelham, New York, T: Steven Beltecas
- BMED054** **STING-Rich Ciliated Cells Protect the Fallopian Tube From Early Transformation in the Development of Ovarian Cancer**
<https://projectboard.world/isef/project/165966>
Justin Baldassarre, 18, Senior, Hastings High School, Hastings-on-Hudson, New York,
T: Melissa Shandroff
- BMED055** **Validation of Ventilation and Perfusion Using Non-Contrast Computerized Tomography**
<https://projectboard.world/isef/project/166140>
Alexandra Elizabeth Tombleson, 18, Senior, Mamaroneck High School, Mamaroneck, New York, T: Guido Garbarino
- CELLO30** **Characterization and Therapeutic Application of the ICOS Receptor To Treat Peripheral T Cell Lymphoma**
<https://projectboard.world/isef/project/164423>
Vivek Malik, 16, Junior, Hackley School, Tarrytown, New York, T: Andrew Ying
- CELLO34** **Elucidating a Novel Pathway Underlying Yeast Prion Replication: Atg17 and the Essentiality of Specific Genes in Yeast Prion Propagation**
<https://projectboard.world/isef/project/165962>
Zachary Pero, 17, Senior, Byram Hills High School, Armonk, New York,
T: Caroline Matthew
- CELLO35** **Autophagy in Non-Cell Autonomous Regulation of Adipogenesis**
<https://projectboard.world/isef/project/165974>
Kevin Khitrov, 17, Senior, Ardsley High School, Ardsley, New York, T: James Dowd
- EAEV058** **Forecasting Post-Wildfire Vegetation Recovery in California Using a Convolutional Long Short-Term Memory Tensor Regression Network**
<https://projectboard.world/isef/project/165944>
Jiahe Liu, 17, Senior, Edgemont High School, Scarsdale, New York, T: Talia Dardis
- EAEV059** **Global Pesticide Use and Parkinson's Disease Incidence: Using Data Science To Optimize Pesticide Regulations and Linking Glyphosate Exposure to Neural Inflammation**
<https://projectboard.world/isef/project/165963>
Angelina Imad Ayoubi, 17, Senior, Somers High School, Lincolndale, New York,
T: William Maelia
- EAEV060** **Reconstructing Late Pleistocene Changes in the Western Equatorial Pacific Thermocline and Analyzing the Viability of Coarse Fraction as a Temperature Proxy**
<https://projectboard.world/isef/project/165964>
Miles Hamilton, 18, Senior, Hastings High School, Hastings-on-Hudson, New York,
T: Melissa Shandroff
- EGSD031** **Harvesting Energy at Your Fingertips: Harnessing Mechanical Energy From Typing for Sustainable Power Generation**
<https://projectboard.world/isef/project/165965>
- # Sienna Marie Giuseppi, 17, Senior, Pelham Memorial High School, Pelham, New York,
T: Steven Beltecas
- ENBM046** **Pro-Inflammatory Macrophages Induce Pyroptotic Death of β -Cells: Modeling Macrophage-Mediated Pancreatic Endocrine β -Cell Damage Using Human Pluripotent Stem Cell-Derived Vascularized Macrophage-Islet Organoids**
<https://projectboard.world/isef/project/165956>
Aadita Roy, 17, Senior, Pelham Memorial High School, Pelham, New York,
T: Steven Beltecas

Finalist Directory

- MATH021** **The Perforation of p-adics: Closing a Gap in Hensel's Lemma Through the Convergence Inequality**
<https://projectboard.world/isef/project/165817>
Imaad Uzun, 17, Senior, New Rochelle High School, New Rochelle, New York,
T: Jeff Wuebber
- MCRO021** **Isolation of Novel Mycobacteriophages From Soil**
<https://projectboard.world/isef/project/165891>
Anhad Sandeep Kataria, 17, Junior, Ardsley High School, Ardsley, New York,
T: James Dowd
- PLNT043** **Extents of Marine Salinization Increasing Thermal Tolerance in Seagrass**
<https://projectboard.world/isef/project/165816>
Karun Krish Kulamavalavan, 17, Junior, New Rochelle High School, New Rochelle,
New York, T: Jeff Wuebber
- ROBO048** **Developing Practical Early Countermeasures to Wildfires: An Explainable AI Approach**
<https://projectboard.world/isef/project/165957>
Ryo Ide, 17, Junior, Harrison High School, Harrison, New York, T: Allison Blunt
- TECA018** **Novel Annotations in Machine Translation Facilitate Foreign Language Acquisition: A Proof-of-Concept Study**
<https://projectboard.world/isef/project/164290>
Elena Prisament, 18, Senior, Ossining High School, Ossining, New York,
T: Angelo Piccirillo
- Syracuse, USNY06, Central New York Science and Engineering Fair**
- CBIO049** **Computational Assessment of Apigenin as a Prospective Protein-Based Therapeutic Targeting Mucin-1**
<https://projectboard.world/isef/project/168058>
Migual Mathis, 18, Senior, Syracuse Academy of Science, Syracuse, New York, T: Amy Ay
- CELLO49** **Cancer Therapeutics—Harnessing Integrin Inhibition Property of Modified Naturally Secreted Peptide**
<https://projectboard.world/isef/project/168165>
Manya Kukkar, 15, Sophomore, Vestal Senior High School, Vestal, New York,
T: Vinita Asija
- Saratoga Springs, USNY07, Greater Capital Region Science and Engineering Fair, Inc.**
- ENBM032** **TonoSense: A Novel IOP Monitoring Device for At-Home Glaucoma Screening**
<https://projectboard.world/isef/project/164288>
Tarun Jacob, 18, Senior, Niskayuna High School, Niskayuna, New York, T: Laura Favata
- ETSD029** **An Investigation of Jet-Assisted Surface-Mounted Actuators in Laminar and Turbulent Boundary Layers**
<https://projectboard.world/isef/project/163692>
Lilly Ann Mertzluft, 18, Senior, Burnt Hills-Ballston Lake High School, Burnt Hills,
New York, T: Regina Reals
- TMED029** **VoiceAD: A Crosslingual Speech-Based Classifier for Early Detection of Alzheimer's Disease**
<https://projectboard.world/isef/project/163691>
Allison Wu, 16, Junior, Emma Willard School, Troy, New York, T: Laszlo Bardos
- Utica, USNY08, Utica University Regional Science Fair**
- MCRO024** **The Effect of Exogenous Aromatic Alcohols on Growth and Flocculation of Commercial Beer-Brewing Strains of *Saccharomyces cerevisiae* in Beer Wort**
<https://projectboard.world/isef/project/166588>
Angelina Le, 17, Junior, Thomas R. Proctor High School, Utica, New York,
T: Lawrence Aaronson
- Syracuse, USNY09, Terra Rochester Finger Lakes Science & Engineering Fair**
- PHYS040** **Development of New Beam Configurations for OMEGA To Achieve Highly Uniform Indirect Drive Implosions With Cubic Symmetry**
<https://projectboard.world/isef/project/166141>
Edward Wu, 17, Senior, Pittsford Sutherland High School, Pittsford, New York,
T: Daniel Hosey

Finalist Directory

- PHYS042** **Statistical Analysis and Bayesian Estimation of Distributions of Millisecond Pulsar Parameters for Optimizing Pulsar Searches**
<https://projectboard.world/isef/project/166541>
Maureen Zhang, 17, Senior, Pittsford Sutherland High School, Pittsford, New York, T: Daniel Hosey
- Syracuse, USNY11, Terra WNY STEM Fair**
- BMED032T** **Synergistic Solutions Prove Promising in the Fight Against Squamous Cell Carcinoma Cancer**
<https://projectboard.world/isef/project/164286>
Frances Jane Teaman, 16, Sophomore, Vera Anjali Vishwanath, 15, Sophomore, City Honors School, Buffalo, New York, T: Todd Richards
- TMED027** **A Preclinical Study on Wee1 Inhibitors for Enhancing Chemotherapy Response in Bladder Cancer**
<https://projectboard.world/isef/project/163452>
Jonathan Li, 17, Junior, Williamsville East High School, East Amherst, New York, T: Li Wang
- Syracuse, USNY13, Terra Northeast Regional STEM Fair**
- BEHA056T** **The Effect of a High School Cell Phone Ban on Cyberbullying**
<https://projectboard.world/isef/project/168125>
Ellie Theresa LeRoy, 18, Senior, Cora Sloan Benardot, 17, Senior, Franklin Academy High School, Malone, New York, T: Denise Rogers
- Glen Cove, USNY50, New York State Science and Engineering Fair**
- BCHM022** **A Novel Approach to Characterizing Pathogenicity of SLC25A13 Variants in Cancer**
<https://projectboard.world/isef/project/166148>
Amy Hong Xiao, 17, Junior, Garden City High School, Garden City, New York, T: Steven Gordon
- CBIO034** **Overlooked Covariates in Metabolite Abundance Levels: Systematically Quantifying the Information Overlap Between Gene Expression and Metabolism Across Multiple Cancer Types**
<https://projectboard.world/isef/project/166583>
Thomas Cong, 17, Senior, Ossining High School, Ossining, New York, T: Angelo Piccirillo
- CBIO036** **A Lens Into Vision: Modeling the Stimuli-Driven Differential Responses of Lobula Columnar Cells in *Drosophila***
<https://projectboard.world/isef/project/166611>
Erin Wong, 17, Junior, William A. Shine Great Neck South High School, Great Neck, New York, T: Nicole Spinelli
- CELLO39T** **The Identification of ACVR1 Phosphorylation Sites Critical to Activation of the ACVR1 Signaling Pathway in Fibrodysplasia Ossificans Progressiva (FOP)**
<https://projectboard.world/isef/project/166750>
Kevin Gong, 16, Junior, Eric Zhou, 16, Junior, Briarcliff High School, Briarcliff Manor, New York, Loomis Chaffee School, Windsor, Connecticut, T: Gilana Reiss
- CELLO41** **Determination of Primary Retinoblastoma Extracellular Vesicle Uptake Pathway via Surface Protein Inhibitors**
<https://projectboard.world/isef/project/166902>
Arjun Sankaran Menon, 17, Junior, Horace Greeley High School, Chappaqua, New York, T: Jerry Zupan
- EAEV065** **Spectroscopic and Colorimetric Analysis of Textiles Dyed With Local Invasive Plant Species and Waste-Derived Mordants**
<https://projectboard.world/isef/project/166142>
Lucia Marie Lammers, 17, Senior, Harrison High School, Harrison, New York, T: Allison Blunt
- ENBM056** **Investigating the Effects of Hemarthrosis on the Structure and Function of ACL Repair**
<https://projectboard.world/isef/project/166798>
Kento Luke Hong, 17, Junior, Edgemont High School, Scarsdale, New York, T: Talia Dardis

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- ENEV058** **Piezocatalysis With Optimized Turbulent Flow in Hydro Turbine for Eutrophication Remediation**
<https://projectboard.world/isef/project/166612>
Emily Zhao, 17, Junior, Manhasset High School, Manhasset, New York, T: Alison Huenger
- PHYSO44** **Analysis of Fourier Transforms Using a Combined Encoder-Decoder and Deep Neural Network Model: A Novel Method for Determining Chromaticity**
<https://projectboard.world/isef/project/166584>
Nora Kathleen Kane, 18, Senior, Lynbrook Senior High School, Lynbrook, New York, T: Kathleen McAuley
- PLNT047** **The Efficacy of Rhodophyta as a Seaweed Liquid Fertilizer Through Okra and Arabidopsis Growth, Pigment Concentration and Macronutrient/Micronutrient Distribution Using Tender Energy Spectroscopy**
<https://projectboard.world/isef/project/166150>
Jessica Mary Curran, 18, Senior, Westhampton Beach High School, Westhampton Beach, New York, T: Dianna Gobler
- ROBO053** **Revolutionizing Waste Management: A Machine Learning and Computer Vision-Enabled Robot Arm for Efficient Garbage Recycling**
<https://projectboard.world/isef/project/166144>
Partap Sidhu, 15, Freshman, Bethpage High School, Bethpage, New York, T: Nicole Dulaney
- ROBO054** **An Improved Deep Neural Architecture Search Net-Based Wearable Object Classification System for the Visually Impaired**
<https://projectboard.world/isef/project/166149>
Aniketh Arvind, 18, Senior, Hackley School, Tarrytown, New York, T: Andrew Ying
- #
SOFT033 **Improving the Ransomware Detection/Mitigation Proof-of-Concept With Machine Learning**
<https://projectboard.world/isef/project/166143>
Eric Ruike Song, 18, Senior, Yorktown High School, Yorktown Heights, New York, T: Paul Rubeo
- #
TMED050 **Image Segmentation of Gastrointestinal Polyps in the Human Gastrointestinal Tract Using Machine Learning**
<https://projectboard.world/isef/project/166146>
Leo Jiyong Lee, 16, Junior, Regis High School, New York, New York, T: Xavier Simon
- TMED051** **The Modulation of Glial Cell Line-Derived Neurotrophic Factors as a Treatment for Locomotion Impairment in the SOD1 Mutant *Caenorhabditis elegans* Model**
<https://projectboard.world/isef/project/166147>
Megan Yoon Ah Lee, 17, Senior, Plainview-Old Bethpage John F. Kennedy High School, Plainview, New York, T: Raymond Tesar

NORTH CAROLINA

Charlotte, USNC01, Charlotte-Mecklenburg Regional Science Fair

- CHEM008** **Physicochemical Characterization of Zeolite Nanoresin for PFAS Removal and Water Purification**
<https://projectboard.world/isef/project/162516>
Maya Joy Caver, 16, Junior, Jay M. Robinson High School, Concord, North Carolina, T: Jordan Poler
- MATH003** **Enhancing Ethereum's Security With LUMEN, Novel Zero-Knowledge Algorithms Generating Transparent and Efficient SNARKs Based on Hidden Order Groups**
<https://projectboard.world/isef/project/162472>
Yunjia Quan, 17, Senior, Charlotte Country Day School, Charlotte, North Carolina, T: Laura Trojan
- ##
Durham, USNC03, North Carolina Science Fair Region 3B
- CELLO07** **An Exploration of the Epigenome: Establishing *Naegleria gruberi* as a Model Organism for Ten Eleven Translocation Enzyme Studies**
<https://projectboard.world/isef/project/162552>
Lara Ayca Dincer, 18, Senior, North Carolina School of Science and Mathematics, Durham, North Carolina, T: Jennifer Williams

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- EAEV019** **ANOMaLY: A Real-Time Globalized System for Effective Regional Mitigation of Agricultural Nitrous Oxide Emissions**
<https://projectboard.world/isef/project/162491>
Nikhil Vemuri, 17, Junior, North Carolina School of Science and Mathematics, Durham, North Carolina, T: Tim Anglin
- EAEV020** **Ecofriendly Design and Fabrication of a Microalgae-Based Sponge To Efficiently Remove Oil From Water for Environmental Remediation**
<https://projectboard.world/isef/project/162614>
Dhairya Agarwal, 18, Senior, North Carolina School of Science and Mathematics, Durham, North Carolina, T: Michael Bruno
- Raleigh, USNC50, North Carolina State Science Fair**
- BMED057** **Unraveling the Complex Interplay Between Immune Cells and Cancer Progression Utilizing a Novel Application of an Artificial Neural Network**
<https://projectboard.world/isef/project/166605>
Sreeja Appala, 15, Freshman, South Iredell High School, Statesville, North Carolina, T: Jennifer Cartelli
- CHEM058** **Synthesis and Evaluation of a Low-Cost Biopolymer Encapsulant for Lead Sequestration in Halide Perovskite Solar Cells**
<https://projectboard.world/isef/project/167278>
Abhinav Venkata Meduri, 18, Senior, North Carolina School of Science and Mathematics, Durham, North Carolina, T: Michael Bruno
- EAEV066** **A Novel Approach to Determining Oceanic Carbonate System Parameters Through Machine Learning and Remote Sensing**
<https://projectboard.world/isef/project/166604>
William Song Feng, 16, Junior, William G. Enloe High School, Raleigh, North Carolina, T: William Potter
- EAEV094** **A Novel Machine Learning Approach for Assessing PFAS Pollution in North Carolina Using Water Contamination Sources**
<https://projectboard.world/isef/project/168106>
Aadarsh Lakshmanan, 14, Freshman, Ardrey Kell High School, Charlotte, North Carolina, T: Pamela Weghorst
- EGSD045** **Genetically Modifying Wild Type K12 *E. coli* for the MtrC Gene for Production of Cytochrome C and Microbial Fuel Cell Application**
<https://projectboard.world/isef/project/168107>
Amy Onyinye Okonkwo, 18, Senior, North Carolina School of Science and Mathematics, Durham, North Carolina, T: Heather Mallory
- MCRO025** **Developing a Cost-Effective Alternative to Treating Small Intestinal Bacterial Overgrowth (SIBO)**
<https://projectboard.world/isef/project/166601>
- #** Isabel Marie Garcia, 16, Sophomore, Isaac Bear Early College High School, Wilmington, North Carolina, T: Bryan Bishop
- PHYS048** **Analyzing the Effects of General Relativity on Hypervelocity Star Ejection Velocities**
<https://projectboard.world/isef/project/166699>
Davin Payne Tipton, 18, Senior, North Carolina School of Science and Mathematics, Durham, North Carolina, T: Jonathan Bennett
- SOFT038** **AuralStudio: A Multisensory Development Environment With a Novel, Bytecode-Compiled Programming Language**
<https://projectboard.world/isef/project/166606>
Abhishek Amit Shah, 17, Junior, Green Level High School, Cary, North Carolina, T: Andrew Fox
- SOFT046T** **DynaGrad: A Novel Gradient Descent With Adaptive Dual Learning Rates and Momenta for Improved Optimization and Accelerated Convergence in Deep Neural Networks**
<https://projectboard.world/isef/project/167378>
Venkata Varshith Vadlamudi, 17, Senior, Pratisht Kamal, 17, Senior, William G. Enloe High School, Raleigh, North Carolina, T: William Potter

Finalist Directory

SOFT051 LISES: Legislative Information Simplification and Enhancement System for Mitigating Information Asymmetry in Governmental Policies

<https://projectboard.world/isef/project/168036>

Maruthi Mukhesh Vemula, 17, Senior, North Carolina School of Science and Mathematics, Durham, North Carolina, T: Quran Karriem

TMED056 Identifying Inhibitors and Inducers of the Alternative Lengthening of Telomeres (ALT) Pathway Through the Development of a High-Throughput Phenotypic Screen

<https://projectboard.world/isef/project/166603>

Bianca Chan, 17, Senior, North Carolina School of Science and Mathematics, Morganton, North Carolina, T: Jennifer Williams

TMED062 Design, Synthesis and Testing of Novel Small Molecule Interleukin-6 Inhibitors for the Amelioration of Inflammatory Bowel Disease

<https://projectboard.world/isef/project/167043>

Siddharth Maruvada, 18, Senior, North Carolina School of Science and Mathematics, Durham, North Carolina, T: Michael Bruno

NORTH DAKOTA

Flasher, USND01, Southwest Central North Dakota Regional Science and Engineering Fair

EGSD049 The Effect of Different Airfoils on Wind Turbine Energy Production

<https://projectboard.world/isef/project/168198>

Aidyn Fisher, 16, Sophomore, Scranton Public School, Scranton, North Dakota, T: Garret Roemmich

PLNT053 Effects of L-Glutamine on the Root Growth of Soybeans

<https://projectboard.world/isef/project/167247>

Paige Rilie Zenker, 16, Sophomore, Flasher High School, Flasher, North Dakota, T: Tana Schafer

PLNT054 Optimizing Nitrate Levels in Sudan Grass: Exploring the Impact of Fertilizer Quantity in Agricultural Practices

<https://projectboard.world/isef/project/167279>

Grant James Hauge, 18, Junior, Flasher High School, Flasher, North Dakota, T: Tana Schafer

Hankinson, USND03, Southeast North Dakota Regional Science and Engineering Fair

BEHA046 How Environmental Changes Impact Sleep

<https://projectboard.world/isef/project/167770>

Elise Michelle Elliot, 18, Senior, Hankinson Public School, Hankinson, North Dakota, T: Patty Kratcha

BMED069 I-Be-Proven Fast Dissolving

<https://projectboard.world/isef/project/167385>

Sara Elizabeth Pfeifle, 16, Sophomore, Ashley Public School, Ashley, North Dakota, T: Tucker Meidinger

MCRO026 The Microbiological Assessment of Air Quality and Surface Contamination in Agricultural Workspaces

<https://projectboard.world/isef/project/167042>

Amla Verda Prochnow, 15, Freshman, Hankinson Public School, Hankinson, North Dakota, T: Patty Kratcha

Grand Forks, USND05, Northeast North Dakota Regional Science and Engineering Fair

ENEVO57 Management of Nitrogen and Phosphorus Biogeochemical Cycles Through Harvest of *Chlorella vulgaris* and *Elodea canadensis*

<https://projectboard.world/isef/project/166607>

Malory Jane Kemp, 16, Sophomore, Cavalier Public High School, Cavalier, North Dakota, T: Deanna Grandalen

Tioga, USND06, Northwest North Dakota Regional Science Fair

EAEVO78 Water Conservation With Biodegradable Hydrogels

<https://projectboard.world/isef/project/167383>

Madison Evelyn Mock, 16, Sophomore, Trenton High School, Trenton, North Dakota, T: Robert Turcotte

Finalist Directory

- EAEV087** **Frequency Effects on Marine Systems**
<https://projectboard.world/isef/project/167763>
Karlee Rose Hoyt, 18, Senior, Trenton High School, Trenton, North Dakota,
T: Robert Turcotte
- PLNT059** **Organic vs. Synthetic Herbicides**
<https://projectboard.world/isef/project/167764>
Jenilynn R. Hanson, 17, Junior, Tioga High School, Tioga, North Dakota, T: Debra Moe
- Watford City, USD50, North Dakota State Science and Engineering Fair**
- CELLO42** **The Impact of Nicotine, Vaporizer, CBD Oils on Planarian Regeneration and Cell Memory**
<https://projectboard.world/isef/project/167107>
James Conner Gessey, 17, Junior, Flasher High School, Flasher, North Dakota,
T: Tana Schafer
- ENEV063** **Utilizing Machine Learning To Develop Image-Based Agricultural Optimization Software**
<https://projectboard.world/isef/project/167322>
Gavin Donald Kratcha, 18, Senior, Hankinson Public School, Hankinson, North Dakota,
T: Patty Kratcha
- ETSD057** **Minimizing the Impact of a Constant Force Using Metals**
<https://projectboard.world/isef/project/167367>
Denver Clarence Nelson, 17, Junior, Hankinson Public School, Hankinson, North Dakota,
T: Bria Eisen
- OHIO**
- Athens, USOH01, Southeastern Ohio Regional Science and Engineering Fair**
- EAEV080** **Development and Application of Water Quality Detection Method Based on Smartphone Color Recognition**
<https://projectboard.world/isef/project/167645>
Xinrui Han, 17, Senior, Athens High School, The Plains, Ohio, T: Laura Tuljak
- Mentor, USOH02, Northeastern Ohio Science and Engineering Fair**
- ANIM030** **Examination of the Effects of Noise Pollution on Bird Foraging Behavior**
<https://projectboard.world/isef/project/164425>
Robbie Land, 17, Senior, Mentor High School, Mentor, Ohio, T: Lori Cohen
- BEHA024** **Using Bidirectional Transformer Neural Networks for Advancing Gender Bias Recognition in STEM Job Advertisements**
<https://projectboard.world/isef/project/164281>
Nina Van Zandweghe, 17, Junior, Solon High School, Solon, Ohio, T: Ethan Haik
- CHEM033** **Drug Delivery of Nitric Oxide (NO) in Relation to Diabetes Mellitus**
<https://projectboard.world/isef/project/164279>
Nathan Devin Kalhan, 17, Junior, Hawken School, Gates Mills, Ohio, T: Lacy Chick
- *PLNT033** **Accounting for Climate Change in Projections of Soil Organic Carbon (SOC) Sequestration From Agriculture in Northeast Ohio**
Tatyana Sokolova Sowerby, 16, Junior, Mentor High School, Mentor, Ohio, T: Lori Cohen
- ROBO039** **Scents and Sensibility: Investigating the Influence of Visual Cues on Olfactory Perception of Humans and Building an AI-Based Electronic Nose To Compare the Two**
<https://projectboard.world/isef/project/164283>
John Newton Anand, 17, Junior, Anand Homeschool Academy, Akron, Ohio,
T: Ammu Anand
- Shaker Heights, USOH05, Hathaway Brown Upper School Fair**
- BMED035** **Association Between Trigeminal Neuralgia and Degenerative Cervical Myelopathy: A Cross-Sectional Study Using US Data**
<https://projectboard.world/isef/project/164416>
Elainie Christ Theodorou, 16, Junior, Hathaway Brown School, Shaker Heights, Ohio,
T: Janna Mino

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- CELLO29** **Development of Pre-Clinical Assays for Quality Control of Cancer Imaging Agents**
<https://projectboard.world/isef/project/164417>
Ashley Yaejin Chu, 16, Junior, Hathaway Brown School, Shaker Heights, Ohio,
T: Janna Mino
- ENBM036** **Neural Spike Sorting in the Primary Somatosensory Cortex**
<https://projectboard.world/isef/project/164426>
Arushi Dugar, 17, Junior, Hathaway Brown School, Shaker Heights, Ohio, T: Janna Mino
- TMED043** **MFN2, a Potential Therapeutic Target for Alzheimer's Disease**
<https://projectboard.world/isef/project/165674>
- ##** Julia Yuemin Zhu, 17, Senior, Hathaway Brown School, Shaker Heights, Ohio,
T: Janna Mino
- Bryan, USOH06, Northwest Ohio Science and Engineering Fair**
- ANIM015** **Evaluating Meat Quality of *Gallus gallus domesticus* After Treating With a Commercial Food Additive**
<https://projectboard.world/isef/project/162652>
Joscelyn Pearl Layman, 18, Senior, Hilltop High School, West Unity, Ohio,
T: Cristin Hagans
- BMED012** **People's Palatability Preferences of Gluten-Free Pie Crust Flours**
<https://projectboard.world/isef/project/162653>
Ingrid Lynn Hoffman, 18, Senior, Hilltop High School, West Unity, Ohio, T: Cristin Hagans
- Dublin, USOH50, Buckeye Science and Engineering Fair**
- ANIM022** **Carotenoid Biofortification of Yolks To Produce More Nutritious Eggs**
<https://projectboard.world/isef/project/162893>
- #** Kara Elizabeth Jones, 16, Junior, Central Christian School, Kidron, Ohio, T: Michelle Jones
- CELLO11** **The Role of Neuronal Primary Cilia in Alzheimer's Disease**
<https://projectboard.world/isef/project/162658>
Niklas E. Rietsch, 16, Junior, University School, Chagrin Falls, Ohio, T: Sara Laux
- EBED016** **Open FC**
<https://projectboard.world/isef/project/162886>
Charlie Pochet, 16, Sophomore, Dayton Regional STEM School, Kettering, Ohio,
T: Jillian Campbell
- ENBM020** **CFD Simulations Prevent Brain Aneurysms**
<https://projectboard.world/isef/project/162887>
Joseph Wright, 17, Senior, Dayton Regional STEM School, Kettering, Ohio, T: Jill Campbell
- ENBM021** **TremorSense: A Novel Parkinsonian Tremor Monitoring and Suppression System**
<https://projectboard.world/isef/project/162895>
Haasini Mendu, 16, Junior, William Mason High School, Mason, Ohio, T: Karen Young
- ROBO026** **Implementing a Novel Multimodal Neural Network Approach Using Dynamic Hyperparameter Selection Within an Unmanned Aerial Vehicle for the Early Detection of Crop Diseases**
<https://projectboard.world/isef/project/162884>
- #** Laasya Acharya, 16, Junior, William Mason High School, Mason, Ohio, T: Karen Young
- OKLAHOMA**
- Bartlesville, USOK02, Bartlesville District Science Fair**
- BMED008** **Antibiotics vs. Bacteria (Part 3)**
<https://projectboard.world/isef/project/162484>
Eve Lorelie Vaclaw, 17, Junior, Bartlesville High School, Bartlesville, Oklahoma,
T: Shelley Brown
- ROBO015** **Machine Learning in Robotics**
<https://projectboard.world/isef/project/162482>
Adit Paul, 15, Sophomore, Bartlesville High School, Bartlesville, Oklahoma, T: Jessica Strain
- TECA015** **Pick Me! Pick Me! Pick Me! Exploring Color Psychology in Marketing**
<https://projectboard.world/isef/project/162318>
Xenon Grason Spurlock, 16, Sophomore, Bartlesville High School, Bartlesville, Oklahoma, T: Jessica Strain

Finalist Directory

Tulsa, USOK10, Tulsa Regional Science Fair

BEHA022 Xylazine, Fentanyl and Synthetic Opioids as Emerging Threats in Oklahoma: A Qualitative Analysis of Perspectives on Harm Reduction and Overdose Response
<https://projectboard.world/isef/project/163712>

Harini Senthil, 17, Junior, Jenks High School, Jenks, Oklahoma, T: Mike Horn

ENBM023 Deep Generative Modeling for Robust fMRI Denoising

<https://projectboard.world/isef/project/163471>

Jack David Carson, 18, Senior, Booker T. Washington High School, Tulsa, Oklahoma, T: Sharon Lazdins

Stillwater, USOK50, Oklahoma State Science and Engineering Fair

***EAEV046T** Analyzing Detriments of Pesticide Runoff on Cellular Regeneration in *Dugesia dorotocephala* and Producing Solutions

Fin Salerno#, 16, Sophomore, Rylee Grace Ruddick#, 17, Junior, Bartlesville High School, Bartlesville, Oklahoma, T: Jessica Strain

PLNT038 Go Green: A Better SAP for Plants

<https://projectboard.world/isef/project/165052>

Likhitha Priya Pasala, 15, Freshman, Bartlesville High School, Bartlesville, Oklahoma, T: Shelley Brown

SOFT029 SPII Guard: Securing Personal Identifiable Information in Receipts Using Regular Expressions and Named Entity Recognition

<https://projectboard.world/isef/project/164278>

Erina Kato#, 17, Junior, Booker T. Washington High School, Tulsa, Oklahoma, T: Sharon Lazdins

OREGON

Gresham, USOR01, Gresham-Barlow Science Expo

CBIO020 Identification of Novel Target Genes and ML-Based Drug Repurposing and Discovery for Alzheimer's Disease in the Presence of Metabolic Comorbidities

<https://projectboard.world/isef/project/162138>

Shriya Pai, 16, Sophomore, Jesuit High School, Portland, Oregon, T: Lara Shamieh

ENBM013 FRESH Bioprinting-Based Synthesis and Biomechanical Characterization of Tissue-Engineered Vascular Grafts

<https://projectboard.world/isef/project/162129>

Liam Aranda-Michel, 17, Junior, Lake Oswego High School, Lake Oswego, Oregon, T: Susan Wentzien

MCRO022T Effects of Temperature on Oil Spill Bioremediation

<https://projectboard.world/isef/project/166152>

Bryson Yuteng Lindley, 15, Freshman, North Niko Nadeau, 17, Junior, Keely Ann Rezvani, 17, Senior, Sam Barlow High School, Gresham, Oregon, T: Neal Bridgnell

Beaverton, USOR04, Beaverton-Hillsboro Science Expo

CELLO17 Harnessing Heterotypic 3D Spheroid Culture Method for Pre-Clinical Testing of Computationally Identified Biomarkers of Drug Resistance in Breast Cancer

<https://projectboard.world/isef/project/162115>

Ekansh Mittal, 18, Senior, Westview High School, Portland, Oregon, T: Jose Medina-Hernandez

ENBM012 Electrogastrography and Personalized Transcutaneous Electrical Nerve Stimulation for Noninvasive, Low-Cost Diagnosis and Treatment of Gastroparesis

<https://projectboard.world/isef/project/162116>

Akash Ashish Pai, 16, Junior, Sunset High School, Portland, Oregon, T: Kathrine Kraft

MATS018 Toward a Closed Carbon Cycle: Novel Organic Microparticles and Encapsulants for Carbon Dioxide Capture and Conversion to Value-Added Products

<https://projectboard.world/isef/project/162104>

Autri Aparajita Das, 17, Junior, Sunset High School, Portland, Oregon, T: Korin Riske
ROBO023 CardioNet: Synthesis of a Diagnostic-Caliber 12-Lead Electrocardiogram Using Generative Neural Networks and Novel Feature Extraction Techniques

<https://projectboard.world/isef/project/162127>

Tanay Chitlur, 15, Sophomore, Westview High School, Portland, Oregon, T: Nagabhushan Chitlur

Finalist Directory

- TECA004T Revolutionizing Language Learning With Connexelerator: An AI-Powered Approach**
<https://projectboard.world/isef/project/162760>
Jared Lim, 17, Senior, Ethan Snow, 18, Senior, Liberty High School, Hillsboro, Oregon,
T: Steffan Ledgerwood
- Portland, USOR05, Aardvark Science Exposition**
- ANIM024 Analysis of Equine Gut Microbiota by Living Environment**
<https://projectboard.world/isef/project/163698>
Lauren Tittel, 17, Junior, Oregon Episcopal School, Portland, Oregon, T: Joshua Caditz
- BCHM020 Accelerated Biochemical Depolymerization of Polyethylene Terephthalate (PET) Using Bacterial Consortium and UV Pretreatment Over Six Weeks**
<https://projectboard.world/isef/project/165813>
Athena Hsu-Chen, 18, Senior, Oregon Episcopal School, Portland, Oregon,
T: Joshua Caditz
- SOFT024 Engineering a WebAssembly-Based Shell**
<https://projectboard.world/isef/project/163472>
Diego Zhen-Yi Frias, 17, Junior, Oregon Episcopal School, Portland, Oregon, T: Joshua Caditz
- TMED026 Selection of Specific Volatile Organic Compounds for the Early Detection of Pancreatic Cancer Using Fluorescent Dyes**
<https://projectboard.world/isef/project/162903>
Chandra Shriya Sai Myneni, 16, Junior, Oregon Episcopal School, Portland, Oregon,
T: Joshua Caditz
- Wilsonville, USOR06, CREST-Jane Goodall Science Symposium**
- EAEVO40 "Reef Safe" Sunscreen: The Impact of Zinc Oxide Particle Size on Chlorophyll A and B in *Zooxanthellae***
<https://projectboard.world/isef/project/163711>
Sydney Rae Taylor, 17, Junior, West Linn High School, West Linn, Oregon,
T: Danielle Schroeder
- MATS023 TNBCnano: Novel Layer-by-Layer Nanoparticles for Systemic Combination Delivery of MRP1 siRNA and Doxorubicin for Triple-Negative Breast Cancer Treatment**
<https://projectboard.world/isef/project/162896>
Suhaani Garg, 16, Junior, West Linn High School, West Linn, Oregon, T: Nancy Monson
- MCRO018 Bioinspired Materials To Reduce Infective Endocarditis in Artificial Heart Valves**
<https://projectboard.world/isef/project/163474>
Megan Alexandria Whitt, 16, Junior, Wilsonville High School, Wilsonville, Oregon,
T: Danielle Schroeder
- PLNT029 Sustainable Spirulina: Lysed *Arthrospira platensis* Phycocyanin-Rich Biofertilizer (APB) for DWC Hydroponic Applications**
<https://projectboard.world/isef/project/163700>
Aasha Patel, 17, Junior, Wilsonville High School, Wilsonville, Oregon,
T: Danielle Schroeder
- Bend, USOR08, Central Oregon Community College Regional Science Expo**
- CHEM024 Target-Specific Development of Pseudo-Natural Products Through the Combination of Natural Product Fragments**
<https://projectboard.world/isef/project/162128>
Curran Robert Jacobus, 17, Senior, Bend Senior High School, Bend, Oregon,
T: Casie Bullock
- ENEVO29T Exploring the Effects of Wood Species on Water Filtration**
<https://projectboard.world/isef/project/162898>
Connor Timothy Huet, 17, Junior, Tristan Frank Huet, 17, Junior, Bend Science Station,
Bend, Oregon, T: David Bermudez
- Banks, USOR50, Northwest Science Expo**
- BEHA041 Beyond the Classroom: Tracing Justice in Education Through Student Discipline and School Climate**
<https://projectboard.world/isef/project/167182>
Annamika Konkola, 16, Junior, West Linn High School, West Linn, Oregon,
T: Brian Delfatti

Finalist Directory

- CHEM069T** **Synthesis and Characterization of Property-Optimized Ionic Liquid for Post-Combustion Carbon Capture Discovered via Novel Deep Learning Model**
<https://projectboard.world/isef/project/168287>
Arjun Suresh Malpani#, 16, Junior, Siddharth Daniel D'costa#, 17, Junior, Sunset High School, Portland, Oregon, Jesuit High School, Portland, Oregon, T: Korin Riske
T: Lara Shamieh
- ENBM074** **FoGDTECT: A Novel Non-Invasive Freezing of Gait (FoG) Monitoring Solution Integrating Machine Learning and Mobile App Accelerometer Data**
<https://projectboard.world/isef/project/167867>
Akash Ragam, 16, Sophomore, Jesuit High School, Portland, Oregon, T: Lara Shamieh
- MATH030T** **An Elementary Method for Fast Modular Exponentiation With Factored Modulus**
<https://projectboard.world/isef/project/167692>
Anay Aggarwal, 16, Sophomore, Manu Isaacs, 15, Sophomore, Jesuit High School, Portland, Oregon, T: Lara Shamieh
- MCRO037** **Autoinducing Peptide Mimetics: An Advanced Method To Inhibit Quorum Sensing in *Staphylococcus aureus***
<https://projectboard.world/isef/project/168052>
Jasper Tong Gu, 16, Junior, Sunset High School, Portland, Oregon, T: Korin Riske
- ROBO080** **Generative Deep Learning-Based Data Augmentation Techniques via Adversarial and Diffusive Models for Enhanced Squamous Cell Carcinoma Histopathological Scan Diagnosis**
<https://projectboard.world/isef/project/168168>
Ashank Shah, 16, Junior, Sunset High School, Portland, Oregon, T: Korin Riske
- Dallas, USWA03, Central Sound Regional Science & Engineering Fair**
- BCHM017** **ALS-SynAegis: A Molecular Dynamics Study on TDP-43 Aggregation To Prevent Amyotrophic Lateral Sclerosis Onset**
<https://projectboard.world/isef/project/164407>
Aryaman Rtnunjay, 16, Junior, Nikola Tesla STEM High School, Redmond, Washington, T: Kate Allender
- BCHM019** **Locking the SUMO Switch: Design of Small Molecules To Inhibit Rhes SUMOylation Sites for Huntington's Disease**
<https://projectboard.world/isef/project/163593>
Bhavayahshree Navaneetha Krishnan, 16, Sophomore, North Creek High School, Bothell, Washington, T: Umamaheswari Deivasigamani
- BEHA023** **Toward Improved Recognition and Diagnosis of Autism Among Females—A Novel Approach Using Machine Learning**
<https://projectboard.world/isef/project/163732>
Aanika Tangirala, 17, Junior, Lakeside School, Seattle, Washington, T: Devin Parry
- EAEV057** **Forecasting Domoic Acid Levels From Harmful Algal Blooms Along the Pacific Northwest Coast**
<https://projectboard.world/isef/project/165929>
Anson Chen, 17, Junior, Nikola Tesla STEM High School, Redmond, Washington, T: Victoria Lu
- SOFT026** **COCOTerm: A Simulated Thermal Dataset for Training Wildlife Monitoring Models With Optical to Thermal Image Conversion**
<https://projectboard.world/isef/project/163582>
- ##** Vedant Srinivas, 17, Senior, Eastlake High School, Sammamish, Washington, T: Gopi Prashanth Gopal

PENNSYLVANIA

- Yardley, USNJ03, Mercer Science and Engineering Fair**
- EBED042** **3D Digital Holographic Microscopic Water Quality Detection System**
<https://projectboard.world/isef/project/167693>
Tingwen Chen, 18, Junior, Princeton International School of Math and Science, Princeton, New Jersey, T: Randy Weintraub

Finalist Directory

- MATSO41** **Novel Quantum Materials for Low Power Electronics**
<https://projectboard.world/isef/project/167106>
Shloka Shriram, 17, Junior, Princeton High School, Princeton, New Jersey,
T: Jacqueline Katz
- Duncannon, USPA01, Capital Area Science and Engineering Fair**
- ENBM030** **GB-NeuroAnalysis AI: Early Diagnosis of Glioblastoma Multiforme in MRI Images Through a Novel End-to-End Deep Learning Pipeline**
<https://projectboard.world/isef/project/163948>
Shaunak Dalal, 16, Sophomore, Hershey High School, Hershey, Pennsylvania,
T: Jason Sibbach
- ENEVO35** **The Homemade Integration of Biodegradable Materials Into Hydroponics: Using Sawdust and Tannins To Detoxify Greywater**
<https://projectboard.world/isef/project/163947>
- # Ian James Lentz, 17, Junior, Camp Hill High School, Camp Hill, Pennsylvania,
T: Amy Diehl
- Lancaster, USPA02, North Museum Science and Engineering Fair**
- CHEM032** **Polyhydroxybutyrate (PHB) Production in Bacteria: A Sustainable Approach to Eco-Friendly Plastics**
<https://projectboard.world/isef/project/163949>
Ella Morgan Stricker, 17, Junior, Elizabethtown Area High School, Elizabethtown, Pennsylvania, T: Theresa Swenson
- MATSO29** **The Effects of Wood Ash on the Properties of Concrete**
<https://projectboard.world/isef/project/163950>
Austin Van Grouw, 16, Sophomore, Warwick High School, Lititz, Pennsylvania,
T: Doug Balmer
- Exton, USPA03, Delaware Valley Science Fairs**
- ANIMO42** **BeeMind AI: Development of an AI-Based System To Assess Honey Bee Health, Behavior and Nutrient Effects on Learning and Memory**
<https://projectboard.world/isef/project/167830>
Matthew Allen Lo, 15, Freshman, The Haverford School, Haverford, Pennsylvania,
T: Daniel Goduti
- ANIMO49** **DOGMA (Dogs' Oncological Genomic Metabolite Analyzer): Diagnosis of CMTs in Dogs Using a Machine Learning Model**
<https://projectboard.world/isef/project/168240>
Asher Wang, 15, Freshman, Holicong Middle School, Doylestown, Pennsylvania,
T: Stephen Geneva
- CELLO47** **Investigating the Effects of Mutations of Crucial Amino Acids on the Protein Expression and Folding of CDK2 Cancer Gene**
<https://projectboard.world/isef/project/168109>
Yash Bhavsar, 15, Freshman, Moorestown High School, Moorestown, New Jersey,
T: Sean Watson
- CHEM068** **Optimizing Synthesis of mRNA Therapeutics**
<https://projectboard.world/isef/project/168237>
Srijay Sritaharan Chenna, 17, Senior, The Charter School of Wilmington, Wilmington, Delaware, T: Michael Valenti
- ENBM081** **Tremor Alleviation for Neuromuscular Disorders Using a Weighted Vibrating Glove Prototype**
<https://projectboard.world/isef/project/168238>
Kailey Bridget Miller, 18, Senior, Marine Academy of Technology and Environmental Science, Manahawkin, New Jersey, T: John Wnek
- ENBM082** **AquaGuard: A Device for Real-Time Drowning Detection in Swimming Pools Utilizing Visual-Spatial Perception With Deep Encoder-Decoder Neural Networks**
<https://projectboard.world/isef/project/168244>
Aadi Deshmukh, 15, Sophomore, Moravian Academy, Bethlehem, Pennsylvania,
T: Wendy Sheetz

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- ETSD076** **Quadruped Wild-Environment Ranger Based on Inverse Kinematics and Gait-Changes**
<https://projectboard.world/isef/project/168248>
Xiangbin Luo, 18, Junior, The Hill School, Pottstown, Pennsylvania, T: Jared Courtney
- PHYS055** **Effectiveness of Calculating the Redshift of Quasars Photometrically**
<https://projectboard.world/isef/project/167647>
Mohd Iftakhar Tarunno, 15, Sophomore, Upper Darby High School, Drexel Hill, Pennsylvania, T: Roseann Burns
- PLNT067** **Decoding Climate Resilience: Functional Profiling of Protein Phosphatase 2C Family Genes for Abiotic Stress Tolerance in Rice**
<https://projectboard.world/isef/project/168239>
Nandini Rastogi, 17, Junior, Rastogi Homeschool, Monroe Township, New Jersey, T: Yajamana Ramu
- SOFT052** **Developing a Novel Holistic, Personalized Dementia Risk Prediction Model via Integration of Machine Learning and Network Systems Biology Approaches**
<https://projectboard.world/isef/project/168062>
- ##** Srilekha Mamidala, 18, Senior, Garnet Valley High School, Glen Mills, Pennsylvania, T: Brenda Frost
- TMED068** **Investigating the Efficacy and Mechanisms of Mesenchymal Stem Cell Therapy in Celiac Disease: Year 2**
<https://projectboard.world/isef/project/167646>
- ##** Grace S. Yacobe, 17, Junior, Academy of Notre Dame de Namur, Villanova, Pennsylvania, T: Jessica Reid
- TMED072** **Advancing Diabetic Retinopathy Detection: Reducing Misdiagnosis Using Deep Ensemble Learning**
<https://projectboard.world/isef/project/167691>
Jophy Lin, 16, Sophomore, Manalapan High School, Manalapan Township, New Jersey, T: Jelena Komitas
- Pittsburgh, USPA04, Pittsburgh Regional Science & Engineering Fair**
- ROBO069** **Improving the Fairness of Artificially Intelligent Skin Disease Detectors Using Stable Diffusion**
<https://projectboard.world/isef/project/167690>
Olina Mukherjee, 18, Senior, Pittsburgh Allderice High School, Pittsburgh, Pennsylvania, T: Michael Carey
- ROBO070** **EnVID: A Novel Predictive Vision Framework With Temporal Contrast for Resource-Efficient Single Object Tracking in Dynamic Visual Fields**
<https://projectboard.world/isef/project/167817>
Sritej Sai Padmanabhan, 15, Sophomore, North Allegheny Senior High School, Wexford, Pennsylvania, T: Keith Zielen
- ROBO071** **Geometric Self-Supervised Learning: A Novel AI Framework Toward Quantitative and Explainable Diabetic Retinopathy Detection**
<https://projectboard.world/isef/project/167823>
Lucas Pu, 16, Junior, North Allegheny Senior High School, Wexford, Pennsylvania, T: Keith Zielen
- TMED077** **EyeSpeak: A Real-Time, Non-Invasive Tear Test for Detection of Major Depressive Disorder (MDD)**
<https://projectboard.world/isef/project/168049>
James Xiao, 16, Sophomore, North Allegheny Senior High School, Wexford, Pennsylvania, T: Keith Zielen
- Reading, USPA05, Reading and Berks Science and Engineering Fair**
- BMED040** **The Effect of Sugar Substitutes on Amyloid- β Plaque Aggregation: A Novel Link Between Type 2 Diabetes and Alzheimer's Disease**
<https://projectboard.world/isef/project/165056>
- #** Paige Hinkle, 16, Junior, Wilson High School, West Lawn, Pennsylvania, T: Amy Greene
- BMED041** **Investigating the Relationship Between Ciliogenesis and MED12 Expression in Hardikar Syndrome**
<https://projectboard.world/isef/project/165057>
Sindura Sridhar, 17, Junior, Wilson High School, West Lawn, Pennsylvania, T: Joseph Melograna

Finalist Directory

ENEVO45 **The Influence of Visible Light on the Consumption Rate of Expanded Polystyrene by *Zophobas morio* Larvae**
<https://projectboard.world/isef/project/165058>
Tyler Joseph Ferenz, 17, Junior, Daniel Boone Area High School, Birdsboro, Pennsylvania, T: Dana Godfrey

York, USPA06, York County Science and Engineering Fair

BCHM016 **Is the 17 β -Estradiol Aptamer Able To Be Modified Using 3-Cyanovinylcarbazole Photo-Cross-Linking To Achieve Site-Specific Intra-Molecular Binding at the Eighth and Twenty-Ninth Positions, and Will the Modified 17 β -Estradiol Aptamers Still Bind to the Target 17 β -Estradiol Hormone?**
<https://projectboard.world/isef/project/163953>
Neva Kirk-Jadric, 17, Junior, York Academy Regional Charter School Upper School, York, Pennsylvania, T: Roni Reed

RHODE ISLAND

Warwick, USRI50, Rhode Island Science and Engineering Fair

ANIM032 **Effect of Alloferon on the Survival Rate and Flight Performance of Honey Bees**
<https://projectboard.world/isef/project/165930>
Jimin Shon, 18, Junior, Portsmouth Abbey School, Portsmouth, Rhode Island, T: Stephen Zins

BMED048 **Jumping Genes: A Potential Molecular Target for Alzheimer's Disease Intervention**
<https://projectboard.world/isef/project/165815>
Isabelle XinYi Chen, 17, Junior, Barrington High School, Barrington, Rhode Island, T: Diana Siliezar

SOUTH CAROLINA

Charleston, USSC03, Low Country Science Fair

PLNT022 **How Magnetic Fields Aid in the Adaptation of Plants to Microgravity Environments in Space**
<https://projectboard.world/isef/project/162105>
Alaina Nicole Trueblood, 17, Junior, Lowcountry Leadership Charter School, Charleston, South Carolina, T: June Lowry

Columbia, USSC04, USC Central South Carolina Region II Science and Engineering Fair

ETSD052T **Barrier Tech Innovations**
<https://projectboard.world/isef/project/166797>
Thomas Conyers, 18, Senior, Milan Taylor Polite, 15, Junior, Center for Advanced Technical Studies, Chapin, South Carolina, T: Sherry Clapp

SOUTH DAKOTA

Aberdeen, USSD01, Northern South Dakota Science and Math Fair

CHEM043 **The Discovery of Promising Macrolide Antibiotic Molecules Through Nucleophilic Substitution Reactions With H NMR Verification**
<https://projectboard.world/isef/project/165976>
Christian Tyler Wells, 18, Senior, Aberdeen Central High School, Aberdeen, South Dakota, T: Charles Hermansen

EAEV063T **Effects of Road Runoff on Arugula**
<https://projectboard.world/isef/project/165977>
Grant Daniel Fritz, 18, Senior, Samson Flakus, 18, Senior, Aberdeen Central High School, Aberdeen, South Dakota, T: Charles Hermansen

EGSD028 **Chlorophyll and Accessory Pigments in Dye-Sensitized Solar Cells**
<https://projectboard.world/isef/project/165892>
Kirra Stillman, 17, Junior, Aberdeen Central High School, Aberdeen, South Dakota, T: Amy Dix

Finalist Directory

Brookings, USSD02, Eastern South Dakota Science and Engineering Fair

BEHA042 Identification of Single Nucleotide Polymorphisms Associated With Genes Involved in Cocaine Dependence

<https://projectboard.world/isef/project/167365>

Owen Watson, 18, Senior, O’Gorman High School, Sioux Falls, South Dakota,
T: Randy Faustino

ENEV072T Using Fall Leaves To Make Biodegradable Films

<https://projectboard.world/isef/project/167847>

Anika Hooda, 16, Junior, Sampada Nepal#, 18, Senior, Brookings High School, Brookings, South Dakota, T: Laura Hummel

MCRO029 Sustaining Tomorrow: AI Solutions Toward Biological Recycling of Polyurethane Plastic Waste

<https://projectboard.world/isef/project/167366>

Malya M. Chakravarty, 15, Freshman, Brookings High School, Brookings, South Dakota,
T: Laura Hummel

Rapid City, USSD03, High Plains Regional Science and Engineering Fair

***ENBM057 Ultrasonic Haptic Awareness: Phase 2**

Shawn Wendelin Quinn, 19, Senior, Timber Lake High School, Timber Lake, South Dakota, T: LuAnn Lindskov

TENNESSEE

Chattanooga, USTN01, Chattanooga Regional Science and Engineering Fair

BMED019 Accelerating Breast Cancer Diagnoses: Leveraging Machine Learning To Accurately Predict Breast Cancer Presence and Growth With Hormonal Data

<https://projectboard.world/isef/project/162103>

Joshua Hyungwan Kim, 15, Sophomore, McCallie School, Chattanooga, Tennessee,
T: Ashley Posey

EAEV037 Transgenerational Effects of Atrazine on *Caenorhabditis elegans* Brood Size

<https://projectboard.world/isef/project/162761>

Rachel Fang Chen, 18, Senior, Baylor School, Chattanooga, Tennessee, T: Ramon Herrera

Knoxville, USTN04, Southern Appalachian Science and Engineering Fair

CHEM060T Lithium Mining: A Quantification of Extraction Methods

<https://projectboard.world/isef/project/167803>

Margaret Feng, 16, Sophomore, Sophia Nicole Havrylyak, 15, Sophomore, Farragut High School, Knoxville, Tennessee, T: Neely Tonos

ROBO073 Iterative Misclassification Error Training (IMET): An Optimized Neural Network Training Technique for Medical Image Classification

<https://projectboard.world/isef/project/167836>

Ruhaan Singh, 16, Sophomore, Farragut High School, Knoxville, Tennessee,
T: Matthew Milligan

Memphis, USTN05, Memphis-Shelby County Science and Engineering Fair

CBIO052 Using Artificial Intelligence To Predict the Ventricular Origins of Premature Ventricular Contractions Based on 12-Lead EKG Data

<https://projectboard.world/isef/project/168128>

Abhiram Battini, 16, Junior, Lausanne Collegiate School, Memphis, Tennessee,
T: John Jefferies

Nashville, USTN06, Middle Tennessee Science and Engineering Fair

BEHA035 Chronic Developmental Manganese Exposure Affects Behavioral Phenotypes in Dopamine Transporter Mutant Mice

<https://projectboard.world/isef/project/166585>

Ashley Anne Maliakal, 17, Junior, Harpeth Hall, Nashville, Tennessee, T: Valerie Guent

EAEV076 Assessment of the Effect of Microcystin on Cellular Regeneration of *Dugesia dorotocephala*

<https://projectboard.world/isef/project/167242>

Britany Alejandra Zambrano Lozano, 17, Senior, John Overton High School, Nashville, Tennessee, T: Gregory Smith

Finalist Directory

TMED069 **The Development of a Low-Cost Delivery Mechanism for Denatonium Benzoate on Coin Batteries as a Deterrent Against Ingestion by Children**
<https://projectboard.world/isef/project/167648>
Andrew Ruochong Gan, 17, Junior, Brentwood High School, Brentwood, Tennessee,
T: Xavier Brown

TEXAS

Dallas, USTX01, Beal Bank Dallas Regional Science and Engineering Fair

CBIO007 **Diagnosing Progressive Supranuclear Palsy (PSP) Through Image-Recognition of the Hummingbird Sign Using Convolutional Neural Networks (CNN)**
<https://projectboard.world/isef/project/162626>

Vaani Chellamuthu, 15, Sophomore, Plano East Senior High School, Plano, Texas,
T: Julie Baker

CELLO12 **Selenoprotein O Protects Against Oxidative Stress and Incorporates Various Nucleotides in AMPylation**
<https://projectboard.world/isef/project/162549>

##
CHEM012 **Chemical Modification of Acetaminophen To Decrease Liver Toxicity**
<https://projectboard.world/isef/project/162520>

Chloe Yehwon Lee, 16, Junior, Plano East Senior High School, Plano, Texas, T: Julie Baker

EAEVO42 **Finding an Accessible, Environmentally Friendly Solution to Water Purification II: Testing the Effectiveness of *Aloidendron barberae* and *Bambusa dolichomerithalla* as Natural Coagulants on Heavy Metal and SOC Concentration Using Spectrophotometry/AAS**
<https://projectboard.world/isef/project/163718>

Katherine Lee, 18, Senior, Plano West Senior High School, Plano, Texas, T: Bev Mahoney

EBED007 **GIVS: A Novel, Generative Artificial Intelligence Vision System for the Visually Impaired**
<https://projectboard.world/isef/project/162597>

Ryan Xu, 15, Sophomore, Jasper High School, Plano, Texas, T: David Kraft

EGSD006 **"The Bionic Leaf": Developing a Novel Bi-Functional Nickel Oxide Catalyst To Use With the Bacterium *Ralstonia eutropha* for Artificial Photosynthetic Systems**
<https://projectboard.world/isef/project/162461>

Arya Nitin Gurumukhi, 15, Sophomore, Plano East Senior High School, Plano, Texas,
T: Julie Baker

ETSD012 **Simply Stir: A Novel Approach of Harvesting Low-Grade Thermal Energy Using the Seebeck Effect To Power an Automatic Stirrer**
<https://projectboard.world/isef/project/162465>

Keshav Gopalan Anand, 14, Freshman, Plano East Senior High School, Plano, Texas,
T: Julie Baker

ROBO013 **GaitGuardian: Real-Time Freezing of Gait Prediction and Progression Analysis for Parkinson's Disease**
<https://projectboard.world/isef/project/162537>

Viren Rayappa Bankapur, 17, Junior, Independence High School, Frisco, Texas,
T: Justin Morgan

TMED015 **The Therapeutic Potential of Suppressing Chemokine Receptor CXCR4 Pathway Components in Small Cell Lung Cancer (SCLC) Through First-Generation Potent Inhibitors**
<https://projectboard.world/isef/project/162543>

Nishi Soni, 18, Senior, Centennial High School, Frisco, Texas, T: Derek McDowell

El Paso, USTX02, Sun Country Science Fair

EAEVO05 **Paper Trails: Using the *Opuntia ficus-indica* To Make Paper Production More Sustainable**
<https://projectboard.world/isef/project/162493>

Galilea Velasco, 17, Junior, El Paso High School, El Paso, Texas, T: Brian Gillis

Finalist Directory

- MCRO005** **Antibacterial Properties of Dog Saliva Against *Streptococcus pyogenes*, *Staphylococcus aureus* and *Escherichia coli* for Potential Human Benefits**
<https://projectboard.world/isef/project/162463>
Sofia Pinon, 14, Freshman, Socorro High School, El Paso, Texas, T: Maria Rubio
- SOFT017** **Algorithms To Detect Color Variations for the Visually Impaired**
<https://projectboard.world/isef/project/162529>
Mercedes Lopez, 18, Senior, Socorro High School, El Paso, Texas, T: Maria Rubio
- Arlington, USTX03, Fort Worth Regional Science and Engineering Fair**
- ANIM013** **Implications for Diabetes-Related Developmental and Phenotypic Variation via Sugar Modulation on Zebrafish Embryogenesis**
<https://projectboard.world/isef/project/162435>
Sanjana Ramineni, 17, Senior, Texas Academy of Mathematics and Science, Denton, Texas, T: James Duban
- BEHA005** **Mathematical Analysis of Preparatory Neural Activity To Predict Physical Behavior in Motor Sequences**
<https://projectboard.world/isef/project/162594>
Ria Garg, 17, Senior, Texas Academy of Mathematics and Science, Denton, Texas, T: James Duban
- EAEVO22** **The Utilization of Labeo catla Fish Scales for the Effective Defluorination of Water With Excessive Fluoride Concentrations To Refine Water in Developing Countries**
<https://projectboard.world/isef/project/162503>
Sumaira Nawar Ullah, 16, Junior, Colleyville Heritage High School, Colleyville, Texas, T: Sonya Loughran
- EGSD009T** **Synthesizing Sustainable Biodiesel Through Chemical Alteration of Plant-Based Lipids**
<https://projectboard.world/isef/project/162460>
David Hoff, 18, Senior, Archit Thiruvallurai, 17, Senior, Colleyville Heritage High School, Colleyville, Texas, T: Sonya Loughran
- MATS013** **Effects of pH on the Crystallinity and Chemical Properties of Gallium Oxyhydroxide**
<https://projectboard.world/isef/project/162579>
Pavan Singh Ahluwalia, 15, Sophomore, Harmony School of Innovation-Fort Worth, Fort Worth, Texas, T: Robert Strickland
- PHYS014** **Reinforcement Learning-Based Kinematic Controller and Proportional-Integrative-Derivative-Based Dynamic Controller for Soft Robots**
<https://projectboard.world/isef/project/162634>
Anirudh Mazumder, 16, Junior, Texas Academy of Mathematics and Science, Denton, Texas, T: Benjamin Warren
- ROBO017** **FISQ: A Few-Shot, Interpretable and Self-Supervised Quantum Machine Learning Approach to Automated Real-Time Prediction Over Multiple Domains**
<https://projectboard.world/isef/project/162587>
Shobhit Agarwal, 17, Senior, Rick Reedy High School, Frisco, Texas, T: Ryan Patton
- Weslaco, USTX04, Rio Grande Valley Regional Science and Engineering Fair**
- EAEVO28T** **Health of the Laguna Madre Watershed Year 4: Study on the Efficacy of Mitigation Concepts Utilizing Phytoremediation**
<https://projectboard.world/isef/project/162718>
Christian Alexander Pena, 18, Senior, Sofia Ana Cornejo, 18, Senior, Homer Hanna High School, Brownsville, Texas, T: Louis Ara
- TECA013** **Copyright Protection Through AI Art Detection**
<https://projectboard.world/isef/project/162720>
Tianna Ivy Resendez, 17, Junior, Brownsville Early College High School, Brownsville, Texas, T: Samuel Ortiz
- TMED023T** **A Field Study on Arsenic in South Texas Drinking Water: Assessing Risk and Identifying Solutions**
<https://projectboard.world/isef/project/162866>
Alan Gael Garcia#, 18, Senior, Zeviel Abraham Pineda, 16, Sophomore, Veterans Memorial Early College High School, Brownsville, Texas, T: Bianca Castaneda

Finalist Directory

- TMED042** **An Investigation of the Combination of Y15 and Metformin for the Treatment of Platinum-Resistant Ovarian Cancer**
<https://projectboard.world/isef/project/165669>
Isabela Lucero Mendez, 16, Junior, Brownsville Early College High School, Brownsville, Texas, T: Samuel Ortiz
- Houston, USTX05, Science Engineering Fair of Houston**
- ANIM008** **Why Is the Mare Acting Like a Stallion?: Novel Test To Diagnose Granulosa Cell Tumor**
<https://projectboard.world/isef/project/162540>
- #
BEHA009T **Projective Testing as Windows to the Mind: Unveiling Anxiety's Expression Through Artistic Mediums in Teenagers**
<https://projectboard.world/isef/project/162598>
Rhea Ahuja, 16, Junior, Aryan Shah, 16, Junior, William P. Clements High School, Sugar Land, Texas, T: Brionna Fenech
- CBIO004** **BioVision: A Novel in silico Drug Discovery Pipeline To Predict Drug Candidates for Non-Small Cell Lung Cancer**
<https://projectboard.world/isef/project/162453>
Patrick Warren McKenna, 17, Senior, College Park High School, The Woodlands, Texas, T: Joseph Ewbank
- EGSD005** **DynaCap: A Dynamic Wheel Cover System for Improving Range and Performance While Reducing CO₂ Emissions From Automobiles**
<https://projectboard.world/isef/project/162458>
- #
ETSD008 **Modelling Lunar Drivetrain Technology Through the Design of a Differential Swerve Drive**
<https://projectboard.world/isef/project/162505>
Sumana Subramanian, 18, Senior, Clear Brook High School, Friendswood, Texas, T: Alaina Garza
- ETSD010** **BLA Wing: Boundary Layer Adhesion Prototype To Minimize Aircraft Stalling via Wind Tunnel Testing Apparatus**
<https://projectboard.world/isef/project/162532>
Kaitlyn Elizabeth Bird, 18, Senior, College Park High School, The Woodlands, Texas, T: Joseph Ewbank
- MATH002** **Symmetry, Fixed Points and Quantum Billiards: A Confluence of Ideas**
<https://projectboard.world/isef/project/162454>
Anna Oliva, 17, Junior, Carnegie Vanguard High School, Houston, Texas, T: Daniel Onofrei
- MATS015** **Fabrication of a Radiopaque Resorbable Polymer for Medical Device Development**
<https://projectboard.world/isef/project/162462>
Sophie Therese Melancon, 17, Junior, Kinder High School for Performing and Visual Arts, Houston, Texas, T: Eastman Landry
- PHYS011** **Investigating the Use of Parallel Computing With Quantum Computers**
<https://projectboard.world/isef/project/162517>
Jesse Daniel Miller, 17, Junior, College Park High School, The Woodlands, Texas, T: Joseph Ewbank
- PLNT008T** **QuackWrap: Utilizing the Optimized Starch Content Within *Lemna minor* To Synthesize Biodegradable Plastics**
<https://projectboard.world/isef/project/162455>
Felix Yizhuo Li#, 18, Senior, Anshul Ashesh Desai#, 18, Senior, College Park High School, The Woodlands, Texas, T: Stephanie Marts
- ROBO027T** **Easy AED: An Autonomous VTOL Emergency Equipment Delivery Drone System**
<https://projectboard.world/isef/project/162899>
Ayaan Javaid Dhuka#, 17, Junior, Caiman Antonio Moreno-Earle#, 16, Junior, Landon Doughty#, 17, Junior, Saint John's School, Houston, Texas, T: Franco Posa
- SOFT006** **FlashGuard: Developing Epileptic Activity and Trigger Content Detection Software Using a Computer-Based Application for Real-Time Monitoring and Seizure Reporting**
<https://projectboard.world/isef/project/162536>
Ishan Pendyala, 16, Sophomore, Friendswood High School, Friendswood, Texas, T: Patrick Rosenberg

Finalist Directory

Kilgore, USTX06, East Texas Regional Science Fair

PLNT002 Effects of Protist as a Biofertilizer on the Rate of Growth in Plants

<https://projectboard.world/isef/project/162464>

Cailyn Jean Crow, 18, Senior, Lufkin High School, Lufkin, Texas, T: Travis Garcia

Laredo, USTX07, United Independent School District Regional Science Fair

BCHM006 JQ1 Epigenetic Modulation of Pancreatic Beta-Cells (INS-1) Normalizes Glucose Sensitivity Under Hyperglycemia: Therapeutic Preventive Implications for Type II Diabetes Mellitus

<https://projectboard.world/isef/project/162524>

Mateo Hernandez Hernandez, 17, Senior, John B. Alexander High School, Laredo, Texas, T: Veronica Villarreal

Lubbock, USTX08, South Plains Regional Science and Engineering Fair

MCRO002 Ketones Produced by *Bacillus subtilis* Bacteria: Assessing Inhibition and Morphological Changes on Deadly Bat Fungus *Pseudogymnoascus destructans* (Year 9)

<https://projectboard.world/isef/project/162519>

Calvin Kirtley Harold Carpenter, 18, Senior, All Saints Episcopal High School, Lubbock, Texas, T: Penny Carpenter

PLNT010 Evaluation of Soil Health Through Long Term Chemical Applicants on Golf Course Fairways Watered With Poor Quality Water

<https://projectboard.world/isef/project/162627>

Aaron Joseph Chaloupka, 17, Senior, Christ the King Cathedral School, Lubbock, Texas, T: Alicea Chaloupka

Odessa, USTX09, Permian Basin Science & Engineering Fair

PHYS004 Ad Astra! Testing Rocket Fin Configurations and Their Effect on Flight Stability

<https://projectboard.world/isef/project/162332>

Evan David Cave, 15, Freshman, Cave Homeschool, Ballinger, Texas, T: Amber Cave

San Antonio, USTX11, Alamo Regional Science and Engineering Fair

ANIM006 Effects of the Anti-Diabetic Pharmaceutical Metformin on the Behavior Patterns of *Danio rerio*

<https://projectboard.world/isef/project/162518>

Lyla Michelle Arnold, 17, Junior, Young Women's Leadership Academy, San Antonio, Texas, T: Karen Harris

CELL006 Identifying the Molecular Link Between Endoplasmic Reticulum Morphology and Divalent Magnesium Cation Signaling Through Protein Sequence Similarity Search Tools and Phylogenetic Analysis

<https://projectboard.world/isef/project/162514>

Aarav Gedala, 16, Junior, Keystone School, San Antonio, Texas, T: Jason Nydegger

EAEVO11T The Effects of Deuterium Oxide on the Regeneration Rates of Planarians and on the Growth Rates of Watercress Plants

<https://projectboard.world/isef/project/162508>

Aadhya Reddy Bobbala, 13, Freshman, Kunling Wu, 15, Freshman, Keystone School, San Antonio, Texas, T: Jason Nydegger

EAEVO12 Can Light Pollution Color Impact Melatonin in Mallows or Metamorphosis?

<https://projectboard.world/isef/project/162595>

Josephine Elizabeth Schultz, 16, Junior, Winston Churchill High School, San Antonio, Texas, T: Georgianna Gould

EBED005 Giving Robot Hands a Feeling

<https://projectboard.world/isef/project/162469>

Edward Ming Bao, 16, Sophomore, BASIS San Antonio Shavano Campus, San Antonio, Texas, T: Sarah Chavez

ETSD011 An Accessible, Adaptable, 6-Axis, Low-Cost, 3D-Printed Robotic Arm Solution

<https://projectboard.world/isef/project/162544>

Frank Eugene Lucci, 16, Sophomore, BASIS San Antonio Shavano Campus, San Antonio, Texas, T: Sarah Chavez

Finalist Directory

- TMED007 Utilizing Indocyanine Green and Sodium Alginate With Microsphere Drug Delivery and Infrared Imaging: A Model To Create More Accessible Therapeutic and Diagnostic Tools for Cardiovascular Disease and Cancer**
<https://projectboard.world/isef/project/162470>
Rashmi Rani Basu, 17, Junior, Keystone School, San Antonio, Texas, T: Jason Nydegger
- Waco, USTX12, Central Texas Science and Engineering Fair**
- *CELL005 An Analytic Study of the Effects of Fluids and Salinity on Blood Glucose Levels To Combat Hyperglycemia and Diabetes Mellitus**
Madeleine Yeawon Mack, 14, Sophomore, China Spring High School, China Spring, Texas, T: Max Rutherford
- MATS002 Investigating an Ecofriendly and Economically Viable Alternative to *Quercus rubra* (Northern Red Oak) and *Quercus alba* (White Oak) Woods in Construction Through a Tensile Examination of a Composite Prototype Composed of Polyethylene terephthalate (PET), Polycarbonate and *Agave sisalana***
<https://projectboard.world/isef/project/162346>
Jorge David Leon Martinez Morris, 16, Sophomore, China Spring High School, China Spring, Texas, T: Max Rutherford
- Austin, USTX13, Greater Austin Regional Science and Engineering Fair**
- BCHM004 The Design of Spirooxindole-Pyrrolidinyl Scaffold as an Inhibitor of the MDM2 Protein**
<https://projectboard.world/isef/project/162550>
Gargi Sharma, 16, Sophomore, Round Rock High School, Round Rock, Texas, T: Marla Menchaca
- CELLO10 How Does a Combination of Alpha-Lipoic Acid and Vitamin D3 Affect the Movement of *Caenorhabditis elegans* Carrying a Gene Mutation Modeling Familial ALS?**
<https://projectboard.world/isef/project/162551>
Raina Desai, 17, Senior, Vista Ridge High School, Cedar Park, Texas, T: Rhonda Christman
- EBED014 SkyCatcher: An Annular-Structured UAV for Enhanced Grasping and Delivery Solutions**
<https://projectboard.world/isef/project/162533>
Zijun Xu, 17, Junior, Saint Stephen's Episcopal School, Austin, Texas, T: Danielle Horton
- MATH009 Predicting the Unpredictable: A Novel Mathematical Model To Analyze and Accurately Predict Multiple Sclerosis Patient Outcomes**
<https://projectboard.world/isef/project/162555>
Uma Sthanu, 16, Sophomore, Westwood High School, Austin, Texas, T: Avni Kantawala
- PHYS012 Development and Demonstration of a Low-Cost Strip-PET Scanner Prototype**
<https://projectboard.world/isef/project/162538>
Samikshya Mahapatra, 16, Junior, College Station High School, College Station, Texas, T: Ian Taulli
- TMED012 Selection and Preclinical Testing of DNA Aptamers as Targeted Tau Therapies: A Novel Approach To Slow the Progression of Tauopathies**
<https://projectboard.world/isef/project/162553>
Maya Reddy, 17, Junior, Leander High School, Leander, Texas, T: John Duffy
- Laredo, USTX14, Laredo Independent School District Science Fair**
- MATH020 Bayes Theorem: Perseverance**
<https://projectboard.world/isef/project/165402>
Austlynn Olivia Quiroz, 17, Junior, Joseph W. Nixon High School, Laredo, Texas, T: Melissa Allred
- Corpus Christi, USTX15, Coastal Bend Regional Science Fair**
- BMED006 Preclinical Investigation To Develop Anti-Platelet and Cholesterol-Lowering Agent for Prevention and Treatment of Stroke**
<https://projectboard.world/isef/project/162609>
Sharmada Palakurthi, 16, Sophomore, W.B. Ray High School, Corpus Christi, Texas, T: Pedro Benavidez

Finalist Directory

- MATS017** **Colorimetric Smart Packaging System: A Carbohydrate-Based Plastic Alternative for Detecting Food Spoilage**
<https://projectboard.world/isef/project/162102>
Cuauhtemoc Zamora, 17, Junior, Veterans Memorial High School, Corpus Christi, Texas, T: Porfirio Zamora
- Burburnett, USTX16, Red River Regional Science and Engineering Fair**
CBIO05T **Preliminary Pancreatic Cancer Screening: A Cheap and Efficient Approach Employing Convolutional Neural Networks on CT Scans**
<https://projectboard.world/isef/project/162374>
Jun Eugene Park, 17, Junior, Evan Liang, 17, Junior, Zara Asad Farooq, 17, Senior, Rider High School, Wichita Falls, Texas, T: Trevor Wildman
- College Station, USTX50, Texas Science and Engineering Fair**
BCHM023 **Targeting Amyloid- β Plaques: *In silico* Protein Modeling of Novel Antibody for Halting Alzheimer's Disease Progression**
<https://projectboard.world/isef/project/166586>
Aarush Kudariya, 16, Sophomore, Seven Lakes High School, Katy, Texas, T: Joshua Andrews
- BEHA032** **Prevention of Gun Violence Through the Buffering Effects of Intellectual Humility in Traumatized Psychopaths**
<https://projectboard.world/isef/project/165971>
Maya Shah, 16, Junior, Martin STEM School, Arlington, Texas, T: Mudita Shah
- CELLO36** **Tinted Truths: Revealing the Relationship Between Tartrazine and the Dysregulation of Retrotransposons and p53 Expression in *Drosophila melanogaster***
<https://projectboard.world/isef/project/166587>
Manya Gummaraju, 17, Junior, Plano East Senior High School, Plano, Texas, T: Julie Baker
- CHEM051T** **From Crown to Current Year III: Engineering Cellulosic Fiber-Based Battery Cells—A Safe and Scalable Alternative to Lithium Technology**
<https://projectboard.world/isef/project/166581>
Shivani Mundra###, 18, Senior, Madelyn Puza##, 18, Senior, College Park High School, The Woodlands, Texas, T: Stephanie Marts
- EAEV062T** **Acoustic Filtration: Harnessing Ultrasonic Technology for the Streamlined Removal of Microplastic Particles From Water Flow**
<https://projectboard.world/isef/project/165969>
Justin Yizhou Huang, 17, Junior, Victoria Ou, 17, Junior, College Park High School, The Woodlands, Texas, T: Larissa Coffee
- ENBM053** **Development of an Accessible pH-Monitoring Wound Dressing for Early Detection of Surgical Site Infections**
<https://projectboard.world/isef/project/166582>
Ellie Chong, 14, Freshman, Highland Park High School, Dallas, Texas, T: Bridget Myers
- ENBM054** **NitinArm: Using Shape-Memory Alloy Actuation To Engineer a Lighter, Cheaper, More Dextrous Trans-Radial Prosthetic**
<https://projectboard.world/isef/project/166613>
Shreyas Vatts, 18, Senior, College Park High School, The Woodlands, Texas, T: Joseph Ewbank
- ENEV055T** **Sensor-Assisted, Noninvasive Monitoring for Operational, Investigative and Predictive Hive Health Management for Honey Bee Colonies—Sustainable Bee Keeping**
<https://projectboard.world/isef/project/166579>
Suchir Kumar, 17, Junior, Naithruv Kashyap, 17, Junior, Westwood High School, Austin, Texas, T: Avni Kantawala
- ETSD048** **Exploring Eutectic Alloys in Microgravity: Advancing Space-Based Manufacturing Through Controlled Freezing**
<https://projectboard.world/isef/project/166614>
Victoria Grace Mascorro, 18, Senior, Valle Verde Early College High School, El Paso, Texas, T: Sarah Welsh

Finalist Directory

- MATS030T** **Engineering a Greener Future: A Novel, Biodegradable, Self-Powered, Chitosan-Based Food Packaging Material**
<https://projectboard.world/isef/project/164243>
Nikita Catherine D'Souza, 17, Junior, Grace Yuan, 17, Junior, College Park High School, The Woodlands, Texas, T: Stephanie Marts
- PHYS037** **Kelvin-Helmholtz Instability: Studying the Effects of Density and Velocity on Vortex Formations**
<https://projectboard.world/isef/project/165970>
Shuhei Ogasawara, 15, Sophomore, John Jay Science and Engineering Academy, San Antonio, Texas, T: Jean Karst
- PLNT031** **Aqua-Arsenic Remediation: Analysis of the *Oryza sativa* metagenome and Wet Lab Approach To Increase *O. sativa* Tolerance to Drought and Arsenic Through Hyper Expression of Aquaporin OsNIP2;1, OsNIP3;2, OsPIP2;2 Genes (Year IV)**
<https://projectboard.world/isef/project/164244>
Prisha Bhat, 16, Junior, Plano East Senior High School, Plano, Texas, T: Julie Baker
- ##
- UTAH**
- Farmington, USUT01, North Davis Area Science and Engineering Fair**
- BMED065** **Breaking Diagnostic Barriers: Migraines Diagnosis and Handwriting Analysis**
<https://projectboard.world/isef/project/166965>
Rowan Byassee, 17, Junior, Farmington High School, Farmington, Utah, T: Jana Barrow
- CELLO43** **Dissecting Glioblastoma: CRISPR Knockout of Hif-1ALPHA Disrupts Downstream Targets**
<https://projectboard.world/isef/project/167323>

Neve Eliza Bawden, 15, Sophomore, Bountiful High School, Bountiful, Utah, T: Ruth Cole
- ETSD055** **Optimizing Angle of Attack To Maximize Lift in a High-Endurance UAV**
<https://projectboard.world/isef/project/167105>
Michael H. Archer, 16, Sophomore, Bountiful High School, Bountiful, Utah, T: Ruth Cole
- PLNT042** **Impact of Strontium Aluminate Nanoparticles on Xylem Occlusion**
<https://projectboard.world/isef/project/165814>
Zack Aaron Nelson, 17, Junior, Farmington High School, Farmington, Utah, T: Jana Barrow
- Cedar City, USUT02, Southern Utah Science and Engineering Fair**
- BCHM026** **Casein Hydrolysate and the Effects on the Heart Rate of *Daphnia magna***
<https://projectboard.world/isef/project/166786>
Skylee Diane Winger, 16, Junior, Success Academy DSU, St. George, Utah, T: Megan Liljenquist
- CELLO40** **4H Leukodystrophy Disease Model in Zebrafish**
<https://projectboard.world/isef/project/166847>
Isabel Rhodes, 16, Junior, Success Academy DSU, St. George, Utah, T: Megan Liljenquist
- CHEM050** **Filtering Algae and Macromolecules Using PDMS Frits**
<https://projectboard.world/isef/project/166578>
Emma Denece Monson, 16, Junior, SUCCESS Academy-SUU, Cedar City, Utah, T: Kimberly McCollum
- Ogden, USUT03, Weber Area Science and Engineering Fair**
- CHEM067** **The Ultimate Plant-Powered Bike Lube**
<https://projectboard.world/isef/project/168201>
Brandon Ambridge Dunn, 17, Junior, Fremont High School, Plain City, Utah, T: Robert Riley
- EGSD044T** **Viability of Alternative Fuel Sources for Agriculture Applications in the Pursuit of Lowering Carbon Emissions**
<https://projectboard.world/isef/project/168104>
Kiersten Mitchell, 16, Sophomore, Garrison Justen Selman, 16, Sophomore, Fremont High School, Plain City, Utah, T: Laurel Selman
- ETSD069** **Bulletproof Backpack: A Unique Solution for Unique Times**
<https://projectboard.world/isef/project/168009>
Ammon Remy, 18, Freshman, Wahlquist Junior High School, Farr West, Utah, T: Cooper Remkes

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- ETSD070** **Analyzing the Potential of Lift Ionic Thrusters Can Produce by Increasing Efficiency**
<https://projectboard.world/isef/project/168018>
Aaron Woodland, 17, Junior, Fremont High School, Plain City, Utah, T: Robert Riley
- PLNT060T** **How Corn Silage Planting Population Affects Yield and Quality**
<https://projectboard.world/isef/project/168034>
McCoy Marriott, 16, Sophomore, Owen Carl Hill, 17, Sophomore, Fremont High School, Plain City, Utah, T: Cassie Joiner
- Provo, USUT04, Central Utah STEM Fair**
- EAEV055** **Phytoremediation and Harvester Ants: A Method for Identification of Plant Species Suitable for Heavy Metal Remediation**
<https://projectboard.world/isef/project/165676>
Talmage Wallace, 17, Junior, Salem Hills High School, Salem, Utah, T: Adam Barlow
- EGSD029** **Electrifying Lake Mud – More Power**
<https://projectboard.world/isef/project/165949>
Fianna Jean Smith, 17, Junior, Herriman High School, Herriman, Utah, T: Rachael Coleman
- PHYS036** **Identifying Possible Transiting Exoplanets in the TESS Database**
<https://projectboard.world/isef/project/165896>
Zoe Danielle Dickson, 17, Junior, Lone Peak High School, Highland, Utah, T: Denise Stephens
- ROBO045** **A Novel Approach for Optimization of Genetic Algorithm Parameters Used in Solving NP-Complete Problems via the Generic Sudoku NxN Paradigm**
<https://projectboard.world/isef/project/165673>
Sky Teeples, 18, Senior, Provo High School, Provo, Utah, T: Hyrum Everitt
- Salt Lake City, USUT05, University of Utah Science and Engineering Fair**
- ANIM026** **Silhouettes of Sound (Visualizing Animal Vocalizations for Species Identification)**
<https://projectboard.world/isef/project/163720>
Aadhi Umamageswaran, 15, Sophomore, West High School, Salt Lake City, Utah, T: Enrique Arce-Larreta
- BCHM010** **Biomedically Functional Sugars: Transforming Glycan-Based Drug Design Through Streamlined Methods and Novel Metabolic Glycan Tracking**
<https://projectboard.world/isef/project/162084>
Aidan Yu, 17, Junior, West High School, Salt Lake City, Utah, T: Enrique Arce-Larreta
- BEHA015** **Differential Empathy, Social Dominance Orientation and the Limitations of Social Science Research**
<https://projectboard.world/isef/project/162097>
Sierra Anne Sun, 17, Junior, The Waterford School, Sandy, Utah, T: Daniel Osipovitch
- ROBO022** **Creating More Intuitive Prostheses Using an Objective Detection Response Task To Measure Cognitive Load**
<https://projectboard.world/isef/project/162083>
Mingchuan Cheng, 16, Junior, West High School, Salt Lake City, Utah, T: Enrique Arce-Larreta
- TMED021** **A Novel Therapeutic Approach for Peripheral Neural Sheath Tumors**
<https://projectboard.world/isef/project/162085>
Sahil Rajiv Shah, 17, Junior, The Waterford School, Sandy, Utah, T: Brian Na
- Ogden, USUT07, Harold W. & Helen M. Ritchey Science and Engineering Fair of Utah**
- BMED036** **Effects of Antioxidants on ARPE-19 Cells When Subject to UV-A Light**
<https://projectboard.world/isef/project/164419>
Shreya Garg, 15, Freshman, Logan High School, Logan, Utah, T: Christina Howell
- ENEVO41** **Designing a Highly Efficient Process for Sequential Removal of Heavy Metals in Wastewater Treatment**
<https://projectboard.world/isef/project/164415>
Angela Zhan, 16, Junior, Logan High School, Logan, Utah, T: Christina Howell
- ENEVO42** **A Novel Shade Dome To Reduce Water Evaporation in the Great Salt Lake**
<https://projectboard.world/isef/project/164418>
Christina Zhang, 18, Senior, InTech Collegiate High School, North Logan, Utah, T: Tracy Davidson

Finalist Directory

ROBO042 mmWave Beamforming Using Multimodal Sensor Fusion and Machine Learning in Autonomous Vehicular Communications

<https://projectboard.world/isef/project/164427>

Ethan Zhu, 16, Junior, Green Canyon High School, North Logan, Utah,
T: Christopher MacMurdo

VERMONT

Northfield, USVT50, Vermont Science, Technology, Engineering and Mathematics Fair

EAEVO69T Sub-Lethal Salt Level Impacts on the Upper Thermal Limit of Copepods

<https://projectboard.world/isef/project/166904>

Wynne Ruth Adamson, 17, Senior, Rama AL Namee, 18, Senior, Elizabeth Nahstoll, 18, Senior, South Burlington High School, South Burlington, Vermont, T: Nathaniel Moore

VIRGINIA

Arlington, USVA01, Northern Virginia Science and Engineering Fair

CELLO22 Harnessing the Signalosome To Enhance ex vivo Generation of Tumor Antigen-Specific T-Cells

<https://projectboard.world/isef/project/162902>

Olivia Grace Bartrum, 18, Senior, Wakefield High School, Arlington, Virginia, T: Jay Calfee

TMED025 Alcott: A Convolutional Neural Network To Predict Multimeric Interactions in HIV-1 Neural Infection

<https://projectboard.world/isef/project/162901>

Anna Grace Mohanty, 16, Junior, Washington-Lee High School, Arlington, Virginia,
T: Lourdes Sotomayor

Charlottesville, USVA02, Virginia Piedmont Regional Science Fair

BMED037 Recasting an Anti-Psychotic as a Prevention for Multiple Arthritides: Discovery of a Novel Receptor and Mechanism of Action

<https://projectboard.world/isef/project/164420>

Vidya Ambati, 17, Junior, Albemarle High School, Charlottesville, Virginia, T: Brian Werner

ROBO058 Real or Fake? Using Artificial Intelligence To Detect Filtered Images

<https://projectboard.world/isef/project/166544>

Tamara Cecilia Maddox Otten, 16, Junior, Mountain Vista Governor's School, Warrenton, Virginia, T: Stephanie Burke

Fairfax, USVA03, Fairfax County Regional Science and Engineering Fair

BEHA021 The Effect of Absence of Select Languages on Amount of Divergence in Reconstruction of Proto-Romance

<https://projectboard.world/isef/project/163476>

Joshua (Shua) Michel, 17, Junior, Chantilly High School, Chantilly, Virginia, T: Eric Cohen

BEHA059 Cortical Connectivity Analysis in Pediatric ADHD: Integrating EEG Data, Deep Learning Models and Reaction Times for a Novel Cognitive Assessment

<https://projectboard.world/isef/project/168250>

Medha Pappula, 16, Sophomore, Thomas Jefferson High School for Science and Technology, Alexandria, Virginia, T: Michelle Gilligan

BMED023 Improving Racial Equity in Skin Cancer Detection: Using Artificial Intelligence-Driven Synthetic Image Generation and Cascading Convolutional Neural Networks To Diagnose Cancer in Lesions of Varying Skin Tones

<https://projectboard.world/isef/project/162900>

Kate Choi, 17, Junior, The Potomac School, McLean, Virginia, T: Isabelle Cohen

EAEVO41 A Novel Mathematical Model To Predict Wastewater Induced Earthquakes

<https://projectboard.world/isef/project/163713>

Wesley Kang, 17, Junior, James Madison High School, Vienna, Virginia,
T: Jyothsna Vallampati

EGSD021 Optimizing Graphitic Carbon Nitride To Create a Safe, Effective and Economic Form of Hydrogen Storage

<https://projectboard.world/isef/project/163956>

Valeria Martin Novoa, 16, Sophomore, James Madison High School, Vienna, Virginia,
T: Jyothsna Vallampati

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- ENEVO40** **A Novel Framework Using Generative Adversarial Networks (GANs) To Create Land Resource Management Strategy Through Economic-Environmental Payoff Optimization**
<https://projectboard.world/isef/project/164414>
Sanchali Banerjee, 17, Junior, Thomas Jefferson High School for Science and Technology, Alexandria, Virginia, T: Katherine Phillips
- ENEVO52T** **Robee: A Novel Autonomous Pollinator**
<https://projectboard.world/isef/project/165889>
Danial Jawad Syed#, 17, Junior, Isabel Victoria Aysa-Lastra, 17, Senior, Hayfield Secondary School, Alexandria, Virginia, T: Julie Riley
- ETSD033T** **Designing an AI-Guided Hybrid Vertical Takeoff and Landing Aircraft for Wartime Humanitarian Aid**
<https://projectboard.world/isef/project/163955>
Matthew Lee, 16, Junior, Benjamin Wilson Hall, 17, Senior, Wilbert Tucker Woodson High School, Fairfax, Virginia, T: Ellen Babcock
- MATS027T** **Utilizing the Chirality-Induced Spin Selectivity Effect Through Chiral Carbon Nanotubes To Polarize Current for Spin-Transfer Torque in Spintronic Devices**
<https://projectboard.world/isef/project/163721>
Surbhi Singla, 15, Sophomore, Ryan Jeet Singh, 15, Sophomore, Thomas Jefferson High School for Science and Technology, Alexandria, Virginia, T: Mark Hannum
- MCRO020** **Detecting and Degrading Formaldehyde Using Synthetic Biology and Engineering Techniques**
<https://projectboard.world/isef/project/165474>
Shumvobi Mitra, 16, Sophomore, Langley High School, Mclean, Virginia, T: Christina O'Malley
- Crozet, USVA04, Shenandoah Valley Regional Science and Engineering Fair**
- CHEM029** **Understanding the Role of Glycerol in a Biodegradable Plastic**
<https://projectboard.world/isef/project/163477>
Cindy Y. Liu, 18, Senior, Harrisonburg High School, Harrisonburg, Virginia, T: Suzanne Smith
- Lynchburg, USVA05, Central Virginia Regional Science Fair**
- ENEVO33** **Sustainable Soil Conservation in Honduras: Harnessing Biovinyl From Sugarcane Waste for Erosion Prevention**
<https://projectboard.world/isef/project/163583>
Seyeon (Gloria) Park, 16, Junior, Virginia Episcopal School, Lynchburg, Virginia, T: Chad Hanning
- PLNT028** **The Effect of Agricultural Pesticides on the Early Growth and Development of *Z. mays***
<https://projectboard.world/isef/project/163592>
Lindley Crosby, 16, Junior, Central Virginia Governor's School for Science and Technology, Lynchburg, Virginia, T: Michelle Douglass
- Manassas, USVA06, Prince William-Manassas Regional Science and Engineering Fair**
- ANIM039** **Rhythms and Blues: Examining Potential Health Hazards of Blue Light-Induced Circadian Disruption in *Drosophila melanogaster***
<https://projectboard.world/isef/project/167104>
- ##** Rania S. Lateef, 17, Junior, Governor's School at Innovation Park, Manassas, Virginia, T: Stephanie Brown
- BMED066T** **Analyzing the Implications of Endocrine Disruptors on the Ovulatory Function of *Caenorhabditis elegans***
<https://projectboard.world/isef/project/167103>
Layla Moussavi#, 18, Senior, Lyla Bianca Browne#, 18, Senior, Fayza Mehrin, 18, Senior, Governor's School at Innovation Park, Manassas, Virginia, T: Elizabeth Romano
- EBED045** **Developing Ultra-Lite ML Models for Crash Detection in Noisy Environments**
<https://projectboard.world/isef/project/168296>
Burak Ayyorgun, 17, Junior, Battlefield High School, Haymarket, Virginia, T: Kevin Marsh

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- ENBM083** **BrainStorm: Reconstructing Natural Vision From fMRI Using Generative Models for Communication and Covert Awareness in Neurological States**
<https://projectboard.world/isef/project/168249>
Yashvir Sabharwal, 17, Junior, Battlefield High School, Haymarket, Virginia,
T: Katherine Fielding
- ETSD039** **Impact of Toroidal Propeller Design on Unmanned Aerial Vehicle Acoustic Signature and Aerodynamic Performance**
<https://projectboard.world/isef/project/165461>
Hannah Brooke Jansen, 17, Junior, Governor's School at Innovation Park, Manassas, Virginia, T: Elizabeth Romano
- Ashburn, USVA07, Loudoun County Science and Engineering Fair**
- BCHM025** **A Comprehensive LC-MS Metabolomics Approach Reveals a Novel Panel of Markers in an APOE4 Mouse Model of Alzheimer's Disease**
<https://projectboard.world/isef/project/166785>
Reyhan Haider, 17, Junior, Freedom High School, Chantilly, Virginia, T: Meth Jayatilake
- EBED034** **Performing Optical Fast Fourier Transforms Through the Use of Silicon Photonics**
<https://projectboard.world/isef/project/165968>
Jagadeepam Maddipatla, 18, Senior, Rock Ridge High School, Ashburn, Virginia,
T: Dylan Cashman
- ETSD042** **Submersible Aerial Vehicle Design Study**
<https://projectboard.world/isef/project/165942>
Chetana Gunawardhana, 17, Senior, Broad Run High School, Ashburn, Virginia,
T: Patricia Brown
- ROBO055** **Development of a Photogrammetry-Enabled Quadcopter With LiDAR Collision Avoidance and Real-Time Detection for Optimized Hurricane Disaster Response and Mapping**
<https://projectboard.world/isef/project/166153>
Abhigya Goel, 18, Senior, Academies of Loudoun, Leesburg, Virginia, T: Michael Croly
- TMED048** **Analyzing the Effects of Altretamine Chemotherapy Drug on *Drosophila melanogaster* Ocular Melanoma Models**
<https://projectboard.world/isef/project/165952>
Diya Ghosh, 18, Senior, Academies of Loudoun, Leesburg, Virginia, T: Michael Croly
- Roanoke, USVA08, Western Virginia Regional Science Fair**
- EAEV061T** **Using Montmorillonite Clay To Remediate Algal Blooms**
<https://projectboard.world/isef/project/165967>
Laila Alam, 18, Senior, Emily Madison Duncan, 17, Junior, Roanoke Valley Governor's School for Science and Technology, Roanoke, Virginia, T: Joanne Villers
- PLNT041T** **Evaluation of Cuscuta Interaction With *Arabidopsis thaliana* Expressing RUBY Reporter**
<https://projectboard.world/isef/project/165811>
Kane Reczek, 16, Junior, Hannah Rae Mizuba, 16, Junior, Roanoke Valley Governor's School for Science and Technology, Roanoke, Virginia, T: Cynthia Bohland
- ROBO041T** **A Low-Cost Prosthetic Hand: Integrating sEMG Technology With a Machine Learning Model and a User-Friendly Application for Model Training**
<https://projectboard.world/isef/project/164408>
Will James Henderson, 17, Junior, Jeremiah Chase Noel, 16, Junior, Roanoke Valley Governor's School for Science and Technology, Roanoke, Virginia, T: Connor Wade
- Norfolk, USVA09, Tidewater Science and Engineering Fair**
- BMED079** **Anti-Cancer Drug Resistance in Lung Cancer Can Be Attributed to Its Ability To Develop Senescence**
<https://projectboard.world/isef/project/168047>
Malini Dharni, 17, Junior, New Horizons Governor's School for Science and Technology, Hampton, Virginia, T: Jiashi Hou

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- MATH036** **Data-Driven Predictive Mathematical Model of Fish Population Dynamics**
<https://projectboard.world/isef/project/168103>
Eleanor Kathleen Rossi, 15, Sophomore, Jamestown High School, Williamsburg, Virginia,
T: Christopher McKinney
- PLNT063** **Genetic Diversity and Tracing the Origin of Wasabi (*Eutrema japonicum*) on Ulleung Island, Korea**
<https://projectboard.world/isef/project/168048>
Grace Eunhye Son, 18, Senior, Tabb High School, Yorktown, Virginia, T: Gina Speight
- Radford, USVA10, Blue Ridge Highlands Regional Science Fair**
- ANIM021** **Organic Mercury and Avian Foraging: The Impact of Methylmercury Exposure on the Feeding Efficiency of Invertivorous Passerines**
<https://projectboard.world/isef/project/162864>
Xavier Edward Gamil Gitre, 16, Sophomore, Blacksburg High School, Blacksburg, Virginia, T: Katharine Davis
- CELLO20** **Investigating the Impact of Parasitic Worm-Induced Secretions on Anaphylaxis**
<https://projectboard.world/isef/project/162867>
Ethan Ririe, 17, Senior, Blacksburg High School, Blacksburg, Virginia, T: Katharine Davis
- Richmond, USVA13, Metro Richmond Science and Engineering Fair**
- ANIM025** **The Effect of Tempo Speed Vibrations of *Daphnia magna***
<https://projectboard.world/isef/project/163710>
Neha Reddy Beeravalli, 15, Freshman, Science, Math, and Technology Center at Mills E. Godwin High School, Henrico, Virginia, T: Samantha Cope
- ROBO024T** **A Low-Cost Bionic Transradial Electromyographic Prosthesis Using Transformer-Based Deep Learning Algorithms**
<https://projectboard.world/isef/project/162753>
Zachary Schwehr#, 17, Junior, Sriman Sai Achanta, 17, Junior, Mills E. Godwin High School, Henrico, Virginia, T: Samantha Cope
- Roanoke, USVA50, Virginia State Science and Engineering Fair**
- BCHM036** **On the Synthesis of Hydroxyapatite Nanoparticles From Eggshells via the Sol-Gel Method**
<https://projectboard.world/isef/project/168176>
Viraj Luthra, 14, Freshman, Chantilly High School, Chantilly, Virginia, T: Anila Gill
- MCRO039** **Optimal Sound Frequencies for Targeted *E. coli* Biofilm Eradication on Indwelling Medical Devices**
<https://projectboard.world/isef/project/168141>
Gabriela Konde, 17, Junior, George C. Marshall High School, Falls Church, Virginia, T: Amy Osborn
- MCRO040** **Biofilm Composition in Fungi *Fusarium* and Development of a Multi-Targeted Antifungal Treatment To Inhibit Proliferation**
<https://projectboard.world/isef/project/168183>
Ray Zhang, 16, Junior, Thomas Jefferson High School for Science and Technology, Alexandria, Virginia, T: Katherine Phillips
- PLNT065** **Effectiveness of *Glycine max* on Microplastic Removal From Soil**
<https://projectboard.world/isef/project/168184>
Josephine Nguyen Eaton, 17, Junior, Roanoke Valley Governor's School for Science and Technology, Roanoke, Virginia, T: Joanne Villers
- TECA019T** **Diffusion-Based Conditional Mesh Synthesis for Rapid 3D Visual Design**
<https://projectboard.world/isef/project/168135>
Sritan Motati#, 18, Senior, Siddhant Sood, 18, Senior, Anant Khandelwal, 18, Senior, Thomas Jefferson High School for Science and Technology, Alexandria, Virginia, T: Paul Kosek

Finalist Directory

WASHINGTON

Prosser, USWA01, Mid-Columbia Regional Science and Engineering Fair

ENBMO18 **A Eye Intelligence: The Future of Disease Detection Through the Eyes**

<https://projectboard.world/isef/project/162863>

Advaita Motkuri, 16, Junior, Richland High School, Richland, Washington, T: Krystal Bass

ETSD025 **How Magnetically Suspended Tires Utilizing High-Temperature Superconductivity and Electromagnetism Creates the Most Eco-Friendly Vehicle**

<https://projectboard.world/isef/project/162865>

Isabella Alexandria Pinto, 17, Junior, Hanford High School, Richland, Washington,
T: Jeffrey Rader

TECA014 **Tactron: A Low-Cost Refreshable Tactile Graphics Display**

<https://projectboard.world/isef/project/163479>

Matthew Yao, 16, Junior, Walla Walla High School, Walla Walla, Washington,
T: Korrie Beemer

Edgewood, USWA04, Southwest Washington Science and Engineering Fair

EBED019 **MagGrid: Non-Levitative Electromagnet Robot Propulsion Method for 2D Material Handling**

<https://projectboard.world/isef/project/163482>

Shangqiu Li, 16, Sophomore, Camas High School, Camas, Washington,
T: Brianna Abraham

Spokane, USWA05, Eastern Washington Regional Science and Engineering Fair

MATSO28 **Design of Active Magnetic Field Stabilization for Quantum Gas Experiments**

<https://projectboard.world/isef/project/163733>

Mir Park, 17, Junior, Pullman High School, PULLMAN, Washington, T: Olivia Craine

TMED033 **Hypertrophic Cardiomyopathy in Student Athletes: HCM Detection From Echocardiograms Through a CNN Deep Learning Algorithm**

<https://projectboard.world/isef/project/164240>

Amanda Nguyen, 16, Junior, Lewis & Clark High School, Spokane, Washington,
T: Eric Strate

TMED034 **CNS-Permeable Glutamate Carboxypeptidase-II (GCPII) Inhibitors as Potential Therapeutics in the Treatment of Traumatic Brain Injury (TBI)**

<https://projectboard.world/isef/project/164242>

Padmaja Senthil Kumar, 18, Senior, Lewis & Clark High School, Spokane, Washington,
T: Eric Strate

Silverdale, USWA50, Washington State Science and Engineering Fair

BMED087 **Developing a Single-Cell Atlas of the Macaque Placenta and Fetal Brain To Characterize Zika Infection Dynamics in Pregnancy**

<https://projectboard.world/isef/project/168315>

Richard JD Li, 17, Senior, Bellevue Senior High School, Bellevue, Washington,
T: Hazel Huang

CBIO054 **T-STM: Spatiotemporal Modeling of the Tumor-Microenvironment for *in silico* Testing of Immunomodulatory Drug Combinations for Enhanced Triple Negative Breast Cancer Immunotherapy**

<https://projectboard.world/isef/project/168247>

Ajeet Sai Venkatesh, 17, Junior, Nikola Tesla STEM High School, Redmond, Washington,
T: Kate Allender

EAEVO89 **Clean Water: Analysis of Interfacial Tension Anionic Surfactant Effects on Evaporative Rate, Molecular Similarity Analysis and Oil Spill Modeling**

<https://projectboard.world/isef/project/167846>

Lakshmi Agrawal, 16, Sophomore, Interlake High School, Bellevue, Washington,
T: Nick DeMello

ETSD071 **Taming the Oblique Wing: Improving Fuel Efficiency by Developing and Flight Testing an Oblique Wing Aircraft Utilizing a Novel Control Method**

<https://projectboard.world/isef/project/168045>

Kevin Shen, 17, Junior, Olympia High School, Olympia, Washington, T: Brian Wright

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- PHYS062** **An Investigation of New Brown Dwarf Spectral Binary Candidates From the Backyard Worlds: Planet 9 Citizen Science Initiative**
<https://projectboard.world/isef/project/168046>
Alexia Carolina Bravo, 17, Senior, Union High School, Camas, Washington,
T: Adam Schmierer
- PHYS067T** **Implementation of an Integrated Machine Learning Pipeline for LIGO Continuous Gravitational Wave Searches**
<https://projectboard.world/isef/project/168313>
Harini Thiagarajan, 17, Senior, Vishal Ranganath Yalla, 16, Junior, North Creek High School, Bothell, Washington, T: Scott Henning
- TMED067** **Understanding the Relationship Between the Gut Microbes and Leukemia Growth**
<https://projectboard.world/isef/project/167636>
Keshav G. Iyer, 16, Junior, Nikola Tesla STEM High School, Redmond, Washington,
T: Kate Allender

WEST VIRGINIA

Keyser, USWV01, Eastern Panhandle Science and Engineering Fair

- SOFT005** **Bridging the Gap Using EdTech and AI: Enhancing Understanding Proficiency and English-to-Portuguese Translations**
<https://projectboard.world/isef/project/162547>
Sydney Renee Bostic, 16, Junior, Spring Mills High School, Martinsburg, West Virginia,
T: Jana Woofter
- TMED004** **Under Pressure... Wounds: The Prevention of Bedsores**
<https://projectboard.world/isef/project/162506>
Nathaly Marie Espada, 18, Senior, Hedgesville High School, Hedgesville, West Virginia,
T: William Humbert

Charleston, USWV50, West Virginia State Science and Engineering Fair

- CELLO16** **DNA Damage and Repair Mechanism in Duckweed (*Spirodela polyrrhiza*) Under Ultraviolet (UV-B) Radiation Stress**
<https://projectboard.world/isef/project/162688>
Manvitha Adagoor Sanjaya, 15, Freshman, George Washington High School, Charleston, West Virginia, T: Noah Moody
- MATH008** **Injective Chromatic Index of Packet Radio Networks: Improved Upper Bounds**
<https://projectboard.world/isef/project/162648>
Austin Luo, 16, Junior, Morgantown High School, Morgantown, West Virginia,
T: Stacey Yuhase
- PHYS016** **Two-Step X-Ray Transit Identification: Bayesian Block Simplification and Sequential Machine Learning Techniques**
<https://projectboard.world/isef/project/162671>
Lauren Jiayi Shen, 18, Senior, Morgantown High School, Morgantown, West Virginia,
T: William Gibson

WISCONSIN

Glendale, USWIO2, Nicolet Science and Engineering Fair

- ENEVO26** **Improvement and Empirical Testing of a Novel Autonomous Microplastics-Collecting Semisubmersible**
<https://projectboard.world/isef/project/162752>
Luksina Ziddane Isahaku, 17, Junior, Nicolet High School, Glendale, Wisconsin,
T: Stephanie Rasmussen

Milwaukee, USWIO3, University School of Milwaukee - Science Fair

- CELLO26** **Dissecting NK Cell Profiles at Single Cell Resolution: A Comparative Transcriptomic Analysis Across Liver, Spleen, Bone Marrow and Peripheral Blood**
<https://projectboard.world/isef/project/163734>
Anjali Elizabeth George, 17, Senior, University School of Milwaukee, Milwaukee, Wisconsin, T: Robert Juranitch

Finalist Directory

EGSD012 Optimizing Dye-Sensitized Solar Cell Efficiency Through Pre-Extraction Light Intensity Acclimation of Organic Dyes

<https://projectboard.world/isef/project/162677>

Mairin Jarvis Castellano, 17, Junior, University School of Milwaukee, Milwaukee, Wisconsin, T: Amber Bakkum

TMED032 A Novel Genomic Variant Algorithm for Identifying the Pathological Mechanism of Rare Genetic Diseases in Order To Target Personalized Therapies

<https://projectboard.world/isef/project/164238>

Mia Ida Crawford, 18, Senior, University School of Milwaukee, Milwaukee, Wisconsin, T: Robert Juranitch

Madison, USWIO4, Capital Science and Engineering Fair

BCHM013 Characterization of Antimicrobials From the Soil Bacterium *Xenorhabdus szentirmaii*

<https://projectboard.world/isef/project/162862>

Ritisha Dey, 16, Junior, Shorewood High School, Shorewood, Wisconsin, T: Kelsey Burke

MATS024 When the Paint's On, the Heat's Gone

<https://projectboard.world/isef/project/163483>

Sophie Shi, 15, Sophomore, Middleton High School, Middleton, Wisconsin, T: Lei Shi

Fond du Lac, USWI50, Badger State Science and Engineering Fair

BMED021 Comparing the Functional Capacity and Transcriptional Profiles of Chimeric Antigen Receptor (CAR) T Cells and Bispecific T Cell Engagers (BiTEs)

<https://projectboard.world/isef/project/162601>

Anand Sebastian George, 16, Sophomore, University School of Milwaukee, Milwaukee, Wisconsin, T: Robert Juranitch

CBIO017 A Novel Alignment-Free Genome Sequence Comparison Using Fourier Power Spectrum: Define Distance Metrics Leveraging Singular Value Decomposition

<https://projectboard.world/isef/project/162633>

Aidan Wang, 18, Senior, University School of Milwaukee, Milwaukee, Wisconsin, T: Robert Juranitch

ENBM015 An Auxiliary Rehabilitation Device for Parkinson's Patients With Finger Muscle Tremors and Stiffness

<https://projectboard.world/isef/project/162368>

Liyang Han, 16, Sophomore, Brookfield Central High School, Brookfield, Wisconsin, T: Ryan Osterberg

WYOMING

Greybull, USWY01, Northern Wyoming District Science Fair

PLNT009 A Continuing Analysis of Nematode Viability: Mitigation of Agrochemical Impacts Across Different Soil Profiles Utilizing Organic Carbon and Nitrate

<https://projectboard.world/isef/project/162576>

Tyler Reuben Searfoss, 18, Senior, Greybull High School, Greybull, Wyoming, T: Joel Kuper

Laramie, USWY50, Wyoming State Science Fair

PHYS033 Characterizing a Novel Flare in the Distant Quasar VIII Zw233

<https://projectboard.world/isef/project/163957>

Padmalakshmi Ramesh, 17, Junior, Laramie High School, Laramie, Wyoming, T: Michael Brotherton

UNITED STATES VIRGIN ISLANDS

Frederiksted, United States Virgin Islands, TEVIO2, Good Hope Country Day School Science Fair

EGSD043 Linear vs. Parabolic Concentrated Solar-Thermal Power

<https://projectboard.world/isef/project/168026>

Vedant Mittal, 16, Sophomore, Good Hope Country Day School, Kingshill, United States Virgin Islands, T: Jane Coles

Finalist Directory

ENEV075 **Ecological Extrusion: A Low-Cost Device To Use Plastic Waste for 3D Printing**
<https://projectboard.world/isef/project/168027>
Tristan Shuichi Samuel, 14, Freshman, Good Hope Country Day School, Kingshill, United States Virgin Islands, T: Jane Coles

VIETNAM

Ha Noi City, Vietnam, VNM001, Ha Noi Science Fair

BEHA058T **The Impact of Short-Form Videos on the Learning Habits and Social Interactions of High School Students**

<https://projectboard.world/isef/project/168209>

Vu Gia Nguyen Nguyen, 16, Sophomore, Duc Minh Le, 16, Junior, Chu Van An Upper Secondary, Ha Noi, Vietnam, T: Hong Hanh Phan

CHEM055T **Research on Synthesizing N-Acetyl-DL-Leucine for Pharmaceutical Products**

<https://projectboard.world/isef/project/167102>

Nam Khanh Hoang, 18, Senior, Phan Anh Dinh, 15, Sophomore, Viet Duc Upper Secondary School, Hanoi, Vietnam, Nguyen Hue High School for Gifted Students, Ha Noi, Vietnam, T: Huyen Bui

EBED043T **Applying AI, IoT and Chat-GPT to the Silkworm Farming Model of Farmers**

<https://projectboard.world/isef/project/167815>

Ha Thanh Phong Le, 15, Sophomore, Hoang Truong Giang Le, 15, Sophomore, Phan Dinh Phung High School, Tan Tien Village, Lam Dong, Vietnam, T: Sy Phan

ENBM080T **Designing and Integrating TelePort HyperDi Multimenter Into an AI-Telehealth System for Cost-Effective Digital Testing, High-Throughput Screening and Real-Time Medical Care Assistance for Diabetes and Hypertension**

<https://projectboard.world/isef/project/168208>

Thuy Trang Vo, 15, Sophomore, Quoc Manh Nguyen, 18, Senior, High School for Gifted Students, Hanoi National University of Education, Hanoi, Vietnam, T: Kien Tran

ENEV076T **Optimized Routing Model for Municipal Solid Waste (MSW) Transportation System Leveraging Real-Time Data**

<https://projectboard.world/isef/project/168043>

Duong Quoc Bao Hoang, 15, Sophomore, Ngoc Phuong Linh Doan, 16, Sophomore, Tran Phu Gifted High School, Hai Phong, Vietnam, T: Thi Hai Ly Nguyen

MATS047T **Green Synthesis of Reduced Graphene Oxide/CoFe₂O₄/Fe Nanocomposite for the Photocatalytic and Fenton-Like Degradation of Glyphosate in Water**

<https://projectboard.world/isef/project/167804>

Chu Quang Minh Pham, 17, Junior, Tran Khac Nguyen Pham, 16, Junior, Tuyen Quang Upper Secondary for the Gifted, Tuyen Quang, Vietnam, T: Chau Thien Hoang

SOFT055T **Integration of Deep Learning Into Automatic Volumetric Cardiovascular Dissection and Reconstruction in Simulated 3D Space for Medical Practice**

<https://projectboard.world/isef/project/168207>

Le Quoc Bao Nguyen, 18, Senior, Tuan Hy Le, 17, Senior, Le Hong Phong High School for the Gifted, Ho Chi Minh, Vietnam, T: Quoc Anh Triet Do

TECA020 **Novel Electronic Gloves: Converting Sign Language to Natural Language for People With Hearing and Speech Impairment**

<https://projectboard.world/isef/project/168292>

Ngoc Long Tran, 17, Junior, Le Quy Don High School for the Gifted, Quang Tri, Dong Ha, Quang Tri, Vietnam, T: Van Lam Ho

TMED074T **Machine Learning Integrated Software for Prediction, Diagnosis and Prognosis of Amyotrophic Lateral Sclerosis**

<https://projectboard.world/isef/project/167813>

Viet Ha Hoang, 17, Senior, Phuong Tue Bui, 15, Sophomore, Tran Phu Gifted High School, Hai Phong, Vietnam, T: Thi Hai Ly Nguyen

Finalist Directory

ZIMBABWE

Harare, Zimbabwe, ZWEO01, Zimbabwe National Science Fair

EGSD011 **Making Biofuel Using Waste Maize Cobs Pretreated With a White Rot Fungus**

<https://projectboard.world/isef/project/162707>

Kimberly Tanaka Marimo, 19, Junior, Dominican Convent High School Harare, Harare, Zimbabwe, T: Coughlan Ndambakuwa

ENEVO10T **Briefcase-Sized Low Temperature Solar Thermal Desalination System**

<https://projectboard.world/isef/project/162590>

Nkosilathi Ndlovu, 19, Senior, Thabani Ndlovu, 13, Freshman, Citadel International School, Mutare, Manicaland, Zimbabwe, Princeton Institute, Mutare, Manicaland, Zimbabwe, T: Paul Chikuruwo T: Tawanda Kambarami

ENEVO11 **A Low-Cost and High-Performance Xylem-Activated Carbon Filter Water Purification Device: A Novel Approach to the Global Clean Water Crises**

<https://projectboard.world/isef/project/162603>

Ruvarashe Moyo, 18, Senior, USAP Community School, Harare, Mashonaland East, Zimbabwe, T: Alistar Panashe

College and Career Fair

**Thanks to the following colleges, universities
and other organizations for their support.**

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- Kansas State University Department of Entomology
- King Abdulaziz & his Companions Foundation for Giftedness and Creativity
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